1 IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
2 WACO DIVISION

3 ALIGN TECHNOLOGY, INC. *
* June 23, 2026
4 VS. *
* CIVIL ACTION NO. 6:24-CV-187
5 CLEARCORRECT OPERATING, *
LLC, ET AL. *
6

BEFORE THE HONORABLE ALAN D ALBRIGHT
7 JURY TRIAL PROCEEDINGS
Volume 2 of 7
8

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ALIGN – EXHIBIT 2042
ClearCorrect Operating, LLC. v. Align Technology, Inc. IPR2025-00818

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08:45 1 (Hearing begins.)
08:45 2 THE BAILIFF: All rise.
08:45 3 THE COURT: Thank you. You may be
08:45 4 seated.
08:45 5 Yes, sir, Mr. Durst.
08:45 6 MR. DURST: Good morning, Your Honor.
08:45 7 THE COURT: Good morning.
08:45 8 MR. DURST: It's a good day in Waco.
08:45 9 THE COURT: Every day in Waco's good.
08:45 10 MR. DURST: Good. Good.
08:45 11 Your Honor, we have two things we think
08:45 12 that we would request the Court's attention to this
08:46 13 morning before we bring the jury in.
08:46 14 Number 1, Your Honor, is we are
08:46 15 increasingly concerned about the defendants' compliant
08:46 16 with the Court's MIL No. 18, which is the MIL that
08:46 17 appropriately prohibits product-to-product comparison
08:46 18 for purposes of analyzing infringement.
08:46 19 We have not objected so far, Your Honor,
08:46 20 but we anticipate this may be an issue today.
08:46 21 And the purpose of my remarks this
08:46 22 morning is --
08:46 23 THE COURT: With what --
08:46 24 MR. DURST: Pardon? We're putting on our
08:46 25 infringement witness this morning, Your Honor,

08:46 1 Dr. Reitman.
08:46 2 And so this is really nothing other than
08:46 3 a heads-up that we may be on our feet for the first
08:46 4 time objecting this morning if defendants do that.
5 THE COURT: Okay.
08:46 6 MR. DURST: The other, Your Honor, is, as
08:46 7 your staff knows, your team knows, we have briefed an
08:47 8 issue with respect to exhibits that are going to be
08:47 9 used in our second witness this morning, Your Honor.
08:47 10 And we think there's a possibility that witness will be
08:47 11 reached before the break. So --
08:47 12 THE COURT: The damages witness?
08:47 13 MR. DURST: Yes, Your Honor.
08:47 14 THE COURT: Okay. And this has to do
08:47 15 with the apportionment issue?
08:47 16 MR. DURST: This is a -- Mr. Nash is
08:47 17 going to handle this, Your Honor.
08:47 18 MR. NASH: Yes, Your Honor. It's not
08:47 19 actually apportionment issue. This relates to the
08:47 20 scanner sales. So we've heard about the materials
08:47 21 patents and the scanner patents. This is related to
08:47 22 scanner sales data.
08:47 23 The expert relied on this in the context
08:47 24 of Georgia-Pacific Factor 6 in his report. As part of
08:47 25 the overall Book of Wisdom, this would have been at the

08:47 1 table and would have been considered as part of his
08:47 2 analysis in arriving at a reasonable royalty rate. He
08:47 3 does not opine on any incremental difference in
08:47 4 damage -- or damage associated with the scanners.
08:47 5 And I believe they're arguing both
08:47 6 relevance and prejudicial, Your Honor. And I have
08:48 7 responses on both if you'd like to hear them.
08:48 8 THE COURT: I thought maybe I could hear
08:48 9 their objection first.
08:48 10 MR. NASH: Yeah, yeah.
08:48 11 THE COURT: Maybe I'll understand what it
08:48 12 is.
08:48 13 MR. MUELLER: Yes, Your Honor.
08:48 14 Mr. Hirsch will address the damages issue.
08:48 15 I would like, Your Honor, if I could have
08:48 16 just a minute after that, to discuss this
08:48 17 product-versus-product issue.
08:48 18 THE COURT: I'll -- I can deal with the
08:48 19 product-versus-product issue on -- if you're crossing
08:48 20 there. I'm not worried about that.
08:48 21 MR. MUELLER: Understood.
08:48 22 The only other thing I was just going to
08:48 23 note is Dr. Li, as just one example of many yesterday,
08:48 24 literally said on direct examination that the same
08:48 25 material was used in Zendura FLX as SmartTrack, their

08:48 1 product. They elicited a product-to-product comparison
08:48 2 at the material level with Dr. Li, and it wasn't right.
08:48 3 And we do plan to rebut that.
08:48 4 THE COURT: Okay.
08:48 5 MR. HIRSCH: Good morning, Your Honor.
08:48 6 Jordan Hirsch for ClearCorrect.
08:48 7 The issue that we raised in our
08:48 8 objection, Your Honor, is that the damages expert
08:49 9 Mr. Lasinski has not put forth any damages number for
08:49 10 the '936 patent, for the scanner patent.
08:49 11 THE COURT: That was my understanding
08:49 12 that the problem was.
08:49 13 MR. HIRSCH: There's no number. There's
08:49 14 no royalty rate. There's no apportionment. There's no
08:49 15 final number. There's no analysis with respect to the
08:49 16 scanner patent or any of the revenues associated with
08:49 17 the accused products as to any of the Georgia-Pacific
08:49 18 factors or what the result of a Georgia-Pacific
08:49 19 analysis would be with respect to that patent.
08:49 20 So our concern is twofold.
08:49 21 First, that with no number, no
08:49 22 apportionment, no rate, just eliciting the bottom-line
08:49 23 revenues, accused revenues, would be improper. There's
08:49 24 nothing for the jury to do with that number. There's
08:49 25 been no analysis or explanation as to how that could

08:49 1 possibly transform into a number.
08:49 2 And then second, Mr. Lasinski has said in
08:49 3 his report and Align repeated it in their briefing last
08:49 4 night, that he says: I don't have sufficient
08:50 5 information to provide a number.
08:50 6 And we don't want that being elicited in
08:50 7 front of the jury because we obviously dispute that.
08:50 8 That would have been a discovery dispute. There was no
08:50 9 such discovery dispute raised, and we don't believe
08:50 10 that it would be proper to create the impression, the
08:50 11 incorrect impression, that we somehow did not provide
08:50 12 the information they asked for.
08:50 13 THE COURT: This relates only to the
08:50 14 scanner?
08:50 15 MR. HIRSCH: Correct. The '936, that's
08:50 16 right.
08:50 17 THE COURT: Say the patent again.
08:50 18 MR. HIRSCH: '936.
08:50 19 THE COURT: Okay. I'll hear -- I'll hear
08:50 20 a response.
08:50 21 MR. HIRSCH: Thank you, Your Honor.
08:50 22 MR. NASH: First, Your Honor, I believe
08:50 23 you already addressed this exact same issue in the
08:50 24 context of their motion for summary judgment, Docket
08:50 25 Item 359, which was their MSJ on -- of no damages on

08:50 1 the scanner patent. That was denied.
08:50 2 THE COURT: Well, maybe it should have
08:50 3 been a Daubert. Because what I'm hearing is that your
08:50 4 expert didn't in his report have a number that he was
08:51 5 going to give. He didn't perform apportionment, and he
08:51 6 didn't have a final number for the -- of what the
08:51 7 damages would be.
08:51 8 Is that -- am I misunderstanding it, or
08:51 9 is that wrong?
08:51 10 MR. NASH: If I may clarify that,
08:51 11 Your Honor. He didn't opine on an incremental
08:51 12 difference in the damages award that he was awarding.
08:51 13 He did not specifically opine on a scanner-based damage
08:51 14 number. He did opine on how the scanner sales factor
08:51 15 into his hypothetical negotiation analysis. I've got
08:51 16 those exact paragraph cites from his expert report.
08:51 17 THE COURT: Well, let's assume for a
08:51 18 second --
08:51 19 MR. NASH: Yes.
08:51 20 THE COURT: -- the '936 is the only
08:51 21 patent in the case, and I look at his report. Where do
08:51 22 I find out how much he tells the jury that the parties
08:51 23 would have agreed to as a reasonable royalty?
08:51 24 MR. NASH: Well, Your Honor, I think, if
08:51 25 I may, it's well-settled Federal Circuit law that a

08:51 1 party need not present expert testimony on damages or
08:52 2 every aspect of damages, such as a single royalty rate.
08:52 3 THE COURT: I get the feeling that the
08:52 4 answer is you don't -- he doesn't have an answer.
08:52 5 MR. NASH: It is relevant to -- you're
08:52 6 right, Your Honor. Let me answer your question first.
08:52 7 He does not have a specific number for a
08:52 8 hypothetical royalty rate associated with scanners.
08:52 9 THE COURT: With regard to the '936
08:52 10 patent?
08:52 11 MR. NASH: That's right. But --
08:52 12 THE COURT: And are you going to be
08:52 13 asking the jury for a damage amount for the '936 patent
08:52 14 individually? I mean, is --
08:52 15 MR. NASH: No, Your Honor.
08:52 16 THE COURT: Okay. Is the damage amount
08:52 17 going to be for all of the patents as one?
08:52 18 MR. NASH: The damage amount is
08:52 19 associated with the materials patents that we will be
08:52 20 asking for. The jury is permitted to arrive at a
08:52 21 damage number on scanners if they wanted to even
08:52 22 without expert supporting testimony.
08:52 23 THE COURT: Where -- how would they do
08:52 24 that? I mean, what -- what part of the verdict form
08:52 25 would that be on?

08:52 1 MR. NASH: You're right, Your Honor.
08:52 2 There is not a -- there's not a specific request on
08:52 3 that. But --
08:53 4 THE COURT: So --
08:53 5 MR. NASH: Yes, Your Honor.
08:53 6 THE COURT: So is the '936 asserted as a
08:53 7 patent?
08:53 8 MR. NASH: It is asserted as a patent,
08:53 9 and there have been accused sales which --
08:53 10 THE COURT: Okay. And how does the jury
08:53 11 determine what -- let's do a hypothetical. I grant a
08:53 12 Rule 50 on the other patents. The only patent that
08:53 13 survives is the '936.
08:53 14 What damages testimony has your expert
08:53 15 given as to what the damages would be that the parties
08:53 16 would have agreed to, the reasonable royalty rate, for
08:53 17 the '936 patent?
08:53 18 It's your only patent left. What do they
08:53 19 do?
08:53 20 MR. NASH: They would have the sales
08:53 21 information, and they would --
08:53 22 THE COURT: I got that. And I think you
08:53 23 know that I have under Daubert stricken probably at
08:53 24 least a half dozen cases where they say they have the
08:54 25 sales information but the expert didn't go through and

08:54 1 perform a reasonable royalty analysis.
08:54 2 I've never allowed that to go to a jury.
08:54 3 I've given parties an opportunity to start over and fix
08:54 4 it, but I've never allowed that to go past the pretrial
08:54 5 conference stage that I'm aware of. So what do you
08:54 6 have besides the sales information on the '936?
08:54 7 MR. NASH: We do not have a specific
08:54 8 number associated with the scanner patent, Your Honor.
08:54 9 THE COURT: And this is not a lost
08:54 10 profits case, right?
08:54 11 MR. NASH: It is not a lost profits case,
08:54 12 but, if I may --
08:54 13 THE COURT: Uh-huh.
08:54 14 MR. NASH: -- Georgia-Pacific Factor 6
08:54 15 allows the parties to consider derivative sales in the
08:54 16 context of the hypothetical negotiation, and derivative
08:54 17 sales would include other products including things
08:54 18 like the scanners. So that would be what would be at
08:54 19 the table when they're making their royalty rate
08:55 20 determinations. So it is relevant to that, and that is
08:55 21 part of his analysis.
08:55 22 THE COURT: It's part of his analysis to
08:55 23 what end? I mean, where does -- where does the
08:55 24 information impact what the amount of damages would be?
08:55 25 MR. NASH: I'm sorry, Your Honor. I

08:55 1 didn't hear the question.
08:55 2 THE COURT: So we've agreed that he did
08:55 3 not do an independent -- by "independent," I mean only
08:55 4 for '936 -- analysis, and all you have is the sales
08:55 5 numbers. And so how does -- what number does it
08:55 6 impact?
08:55 7 MR. NASH: It impacts how the parties
08:55 8 would have negotiated that reasonable royalty rate. So
08:55 9 when they're sitting at the table, because of the
08:55 10 ability to sell aligners that are made out of the
08:55 11 patented device, they would also be aware of how that
08:56 12 affects their ability to sell other things too.
08:56 13 And because of those other things too,
08:56 14 like whether it's convoyed sales or derivative sales or
08:56 15 accessories, things like that get factored into where
08:56 16 they would arrive at on a reasonable royalty rate.
08:56 17 THE COURT: For what patent?
08:56 18 MR. NASH: So for the materials patents,
08:56 19 as they sat down to negotiate a rate on that, because
08:56 20 it's a patented product and there would be what they
08:56 21 call derivative sales, they would be discussing that
08:56 22 and be aware of those type of additional derivative
08:56 23 sales.
08:56 24 And that would affect -- you know, all
08:56 25 the Georgia-Pacific factors are a balancing and whether

08:56 1 this would increase a rate a little bit or decrease the
08:56 2 rate a little bit. And so the fact that there would be
08:56 3 available additional sales in that context is relevant
08:56 4 to which way --
08:56 5 THE COURT: Which factor would that go
08:56 6 to?
08:56 7 MR. NASH: Georgia-Pacific Factor 6,
08:56 8 Your Honor. I have his section of the report, if you'd
08:56 9 like to see it.
08:56 10 THE COURT: A response?
08:56 11 MR. HIRSCH: Okay. Your Honor, I think
08:57 12 what Align is suggesting is that for -- a patent for
08:57 13 which they have no damages number should be relevant to
08:57 14 patents for which they do have a damages number.
08:57 15 THE COURT: Well, I get -- I think for
08:57 16 the moment -- in my head; maybe I'm making a mistake
08:57 17 here -- the path I see coming is that the jury's not
08:57 18 going to be asked how much to give on the '936 patent
08:57 19 because I'm not going to include that on the verdict
08:57 20 form if they haven't adequately provided the damages.
08:57 21 So setting -- that's my current thinking.
08:57 22 But if we leave out the '936 patent in
08:57 23 terms of -- and all that we have are the amount of
08:57 24 sales of the scanners and there might have been
08:57 25 convoyed or might not have been convoyed sales, and

08:57 1 that goes to Factor No. 6 or some other factor that
08:58 2 impacts what the parties would have agreed to on
08:58 3 damages with respect to the other patents but without
08:58 4 mention of the '936 patent, is that or is that not
08:58 5 something that they would be able to -- that the jury
08:58 6 should get to hear the damages person say, when I came
08:58 7 up with the right number for the materials patents,
08:58 8 this was -- I'm not giving them any extra money for
08:58 9 these, but it's something that I took into
08:58 10 consideration, and in the mystical, magical, fictional
08:58 11 world of damages that we're forced to live in, I get to
08:58 12 say that it would have weighed in favor of the
08:58 13 plaintiff.
08:58 14 MR. HIRSCH: Yeah. I would -- thank you,
08:58 15 Your Honor. I would say two things.
08:58 16 Number one, I don't think that
08:58 17 Mr. Lasinski has provided that specific opinion, that
08:58 18 the -- the bottom-line revenues. What he says in
08:58 19 Georgia-Pacific 6 is the ability to offer customers
08:59 20 products such as scanners would be relevant. And then
08:59 21 he says the extent of sales would be relevant. So he
08:59 22 considers that.
08:59 23 He never says, hey. Here's the revenues
08:59 24 and this has this or that effect on the royalty. He
08:59 25 just says very, very -- it's two sentences. Very

08:59 1 broadly, hey --
08:59 2 THE COURT: Does he articulate -- I'm
08:59 3 sorry to interrupt you. Does he articulate an
08:59 4 underlying reason for that? I mean, the -- you know,
08:59 5 sometimes -- I'm always put in this position -- the
08:59 6 judge is always put in the position where the expert
08:59 7 wants to say, well, you know, it's because I'm an
08:59 8 expert. You know, I mean, I know that's how that truck
08:59 9 would work because I've repaired a thousand trucks and
08:59 10 I'm an expert, you just got to trust me.
08:59 11 Does he do anything beyond, say, what
08:59 12 you're saying he's going to say?
08:59 13 MR. HIRSCH: No. This is Paragraph 140
08:59 14 of his report. He says in the last two sentences:
08:59 15 Align's ability to sell aligners made out of its
08:59 16 patented SmartTrack material -- and I can show this to
08:59 17 Your Honor if it would be easier -- allows it to offer
09:00 18 to its customers other products such as intraoral
09:00 19 scanners and associated peripherals as well as
09:00 20 scanner-enabled Ortho restorative workflow services.
09:00 21 The extent of such derivative sales is substantial for
09:00 22 both Align and ClearCorrect -- by the way, it's talking
09:00 23 about Align scanners, not even ours -- i.e., they
09:00 24 represent a significant share of each company's annual
09:00 25 revenues.

09:00 1 And then he says, summarizing his
09:00 2 conclusion of Factor 6: I consider this factor to
09:00 3 favor the negotiation posture of the hypothetical
09:00 4 licensor. And then --
09:00 5 THE COURT: But does he -- I'm sorry.
09:00 6 Does he articulate either why or how -- I mean, there's
09:00 7 a -- there's an aspect of it where it's, well, people
09:00 8 will buy more of these because -- at McDonald's because
09:00 9 they also offer fountain sodas, and he says, well, I
09:00 10 know that because I'm an expert.
09:00 11 But also, does he quantify in any way --
09:00 12 MR. HIRSCH: No.
09:01 13 THE COURT: -- because McDonald's has
09:01 14 fountain sodas, that means someone would have paid this
09:01 15 much more for an automatic hamburger machine?
09:01 16 MR. HIRSCH: No, Your Honor. It's one --
09:01 17 the entirety of Georgia-Pacific 6 is one paragraph. I
09:01 18 read the two sentences that relate to the scanners.
09:01 19 And in any event, Your Honor, that's
09:01 20 referring to Align's sales of its scanners, not even
09:01 21 our scanners, other than that one comment that says:
09:01 22 Derivative sales is substantial for both Align and
09:01 23 ClearCorrect. That's it.
09:01 24 THE COURT: And then let me ask you my
09:01 25 final question for you, which is the refuge to which

09:01 1 judges all cling, which is why shouldn't I say that's
09:01 2 fine? Why don't you just handle it -- that on cross?
09:01 3 MR. HIRSCH: Sure. Because the '936 is
09:01 4 an asserted patent and because they're accusing
09:01 5 scanners, lobbing out the revenue numbers for that
09:01 6 patent --
09:01 7 THE COURT: So really what you don't want
09:01 8 the jury to hear is the revenue number for the
09:02 9 scanners.
09:02 10 MR. HIRSCH: Correct. Correct. Because
09:02 11 there's been no damages analysis. So that number
09:02 12 should not come out.
09:02 13 And in addition, Your Honor, again, I
09:02 14 also want to make sure that Mr. Lasinski doesn't say
09:02 15 that the reason why he doesn't have a number is because
09:02 16 he didn't have sufficient information.
09:02 17 THE COURT: I get that.
18 MR. HIRSCH: Thank you, Your Honor.
09:02 19 THE COURT: Mr. Nash?
09:02 20 MR. NASH: Your Honor, I think you put
09:02 21 your finger on exactly what I think is their resolution
09:02 22 here, which is opposing counsel's free to cross the
09:02 23 expert and say expressly, you do not have a damages
09:02 24 number specifically associated with the '936. So I
09:02 25 think that takes care of that issue.

09:02 1 The expert will be explaining how he has
09:02 2 used these scanners' sales data. It says more than
09:02 3 just what counsel was reading, which is:
09:02 4 ClearCorrect's ability to sell aligners made out of the
09:02 5 accused material allows it to offer a product with
09:02 6 highly desirable properties and attributes which opens
09:03 7 the door for it into the doctors' practices. Once in
09:03 8 front of potential or existing customers, ClearCorrect
09:03 9 representatives are able to offer a suite of products.
09:03 10 And that is indeed a Georgia-Pacific
09:03 11 Factor 6. Often in the Georgia-Pacific factors, you're
09:03 12 not quantifying specific things. You're just weighing
09:03 13 whether they exist or not and how that affects the
09:03 14 royalty rate, like positive or negative.
09:03 15 And in this case, it would be a positive
09:03 16 thing that they would want to be able to offer this
09:03 17 license. And so these are the things.
09:03 18 THE COURT: I was trying to keep up with
09:03 19 what counsel read to me from his report. Does he
09:03 20 articulate in there the amount of the sales and why
09:03 21 that would impact? Does he articulate that in his
09:03 22 report?
09:03 23 MR. NASH: He does cite to those sales,
09:03 24 and he has a schedule of those sales. And he says that
09:03 25 because they're not insubstantial, that would be a

09:03 1 positive factor in favor of the reasonable royalty rate
09:03 2 calculation.
09:03 3 And that's -- that's the weighing that
09:04 4 you do often, like, in the context of, say, like a
09:04 5 transfer analysis, this, like, motion to transfer.
09:04 6 It's like this factor says slightly in favor, slightly
09:04 7 below.
09:04 8 And, Your Honor, as to the prejudicial
09:04 9 effect of the sales revenue here, we're talking about a
09:04 10 very small amount relative to the amounts that we'll
09:04 11 already be discussing. So --
09:04 12 THE COURT: Since I haven't heard the
09:04 13 number, I guess it's the new methodology that no one
09:04 14 says what the number is, keeping us all in suspense.
09:04 15 What am I going to hear your expert say a reasonable
09:04 16 royalty for the three materials patents is going to
09:04 17 total?
09:04 18 MR. NASH: For the materials patents,
09:04 19 Your Honor? What's the ultimate damage calculation?
09:04 20 THE COURT: Uh-huh.
09:04 21 MR. NASH: $73 million.
09:04 22 THE COURT: Okay.
09:04 23 MR. NASH: I think that was in the
09:04 24 opening.
09:04 25 THE COURT: Okay. And --

09:04 1 MR. NASH: And that was based off -- I'm
09:04 2 sorry, Your Honor. I didn't mean to interrupt.
09:04 3 THE COURT: And what is the amount of the
09:04 4 sales of the scanners?
09:04 5 MR. NASH: Okay. So to give context, I
09:04 6 think it's helpful to know that the reasonable royalty
09:05 7 amount that you just wrote down is off of a base of
09:05 8 166 million plus 170 million.
09:05 9 So that's how you arrive at that. It's
09:05 10 like hundreds of millions of dollars. That's the total
09:05 11 sales revenue for materials-related damages. The total
09:05 12 scanner-related sales that he noted in his report is
09:05 13 4.5.
09:05 14 THE COURT: $4.5 million.
09:05 15 MR. NASH: Yeah. And that's the total
09:05 16 gross sales, I believe. I'd have to look at his
09:05 17 schedule specifically.
09:05 18 So I don't think there's any prejudicial
09:05 19 effect. We're not talking about like in the context of
09:05 20 this case that they cite, which is LaserDynamics,
09:05 21 that's an entire market value. That's when you have a
09:05 22 situation where the accused product is like the
09:05 23 semiconductor chip, but you're accusing sales of
09:05 24 laptops. And so it'd be prejudicial to bring in, like,
09:05 25 the laptop sales, since you have an EMD that is much

09:05 1 smaller than that, right -- or sorry -- a small salable
09:05 2 unit that's much smaller than that.
09:05 3 Here, it's the opposite. We're not
09:05 4 talking about big huge numbers that would be coming in
09:06 5 that would somehow sway the jury that there should be a
09:06 6 larger damage amount.
09:06 7 We're talking about 160 million,
09:06 8 170 million. And then we're saying, oh, by the way,
09:06 9 the fact that they can sell scanners too, which are
09:06 10 admittedly of a much smaller degree and much smaller
09:06 11 scale, would somehow -- would indeed be a factor that
09:06 12 you would consider in thinking through the reasonable
09:06 13 royalty for those materials.
09:06 14 THE COURT: Anything else from...
09:06 15 MR. HIRSCH: Your Honor, again, I think
09:06 16 that the issue is if Mr. Lasinski wants to say there's
09:06 17 some peripheral sales, as he says in Paragraph 140, he
09:06 18 can refer to that concept.
09:06 19 But that's different than launching out
09:06 20 an accused revenue base where there is an asserted
09:06 21 patent that targets that revenue base and he has no
09:06 22 number. It's just inviting the jury to increase
09:06 23 damages based on the '936 where there's been no damages
09:07 24 analysis.
09:07 25 THE COURT: Let me see if I hear you

09:07 1 correctly, which is you would not object to the damages
09:07 2 expert being able to say there were some peripheral
09:07 3 sales on scanners without giving an amount.
09:07 4 MR. HIRSCH: I think that's --
09:07 5 THE COURT: And that those -- he
09:07 6 considered those, and they weigh in favor of the amount
09:07 7 that -- of the amount, the total he came up with, which
09:07 8 is 73 million.
09:07 9 MR. HIRSCH: For the materials patents, I
09:07 10 think that's fine. That's consistent with his report.
09:07 11 THE COURT: That's -- that's what I'll
09:07 12 allow the damages expert to say.
09:07 13 MR. HIRSCH: Thank you, Your Honor.
09:07 14 THE COURT: Without -- he will not be
09:07 15 allowed to say the amount of sales or -- and he will
09:07 16 not be allowed to mention the '936 patent.
09:07 17 MR. HIRSCH: Thank you, Your Honor.
09:07 18 And also, with respect to why he does not
09:07 19 have a number that -- I want to just clarity so we
09:07 20 don't jump up --
09:07 21 THE COURT: I can't imagine -- since I'm
09:07 22 not going to submit a number -- I'm not going to submit
09:07 23 a question on the '936, I can't imagine counsel as good
09:07 24 as the plaintiff's counsel would want to ask why there
09:08 25 is or is not a number for a patent that's not going to

09:08 1 be -- they're not going to be asked about.
09:08 2 MR. HIRSCH: Thank you. Thank you,
09:08 3 Your Honor. Appreciate it.
09:08 4 And, Your Honor, just to be clear, if we
09:08 5 on cross simply establish that there is no number --
09:08 6 THE COURT: I can't imagine why you would
09:08 7 do that for fear of opening the door.
09:08 8 MR. HIRSCH: Understood. Thank you,
09:08 9 Your Honor.
09:08 10 THE COURT: So.
09:08 11 Anything else?
09:08 12 MR. NASH: On that last point,
09:08 13 Your Honor, I mean, the expert's report does say if,
09:08 14 like I didn't arrive at a number, I didn't have
09:08 15 reliable data, or I didn't have sufficient data is how
09:08 16 he says it, and that's -- that would be the door that
09:08 17 would be opened if -- if it were to go that direction.
09:08 18 I'm just saying --
09:08 19 THE COURT: If they -- if they --
09:08 20 MR. NASH: He will not be talking about a
09:08 21 discovery dispute in the context of that. I'm just
09:08 22 wanting to be very clear.
09:08 23 THE COURT: I think I articulated what
09:08 24 he's allowed to say about --
09:09 25 MR. NASH: I understand, Your Honor.

09:09 1 THE COURT: -- about the scanner. He's
09:09 2 able to say that there were sales of scanner products
09:09 3 that were related or derivative. And when he is doing
09:09 4 the magic and voodoo that they do, it came out in favor
09:09 5 of the number -- that the fact that there were sales of
09:09 6 scanners is a plus factor for supporting that the right
09:09 7 number's $73 million.
09:09 8 MR. NASH: I understand. Thank you so
09:09 9 much, Your Honor.
09:09 10 THE COURT: And without articulating a
09:09 11 number of sales.
09:09 12 MR. MUELLER: Just one housekeeping
09:09 13 thing, Your Honor. We would respectfully request if we
09:09 14 could just reserve Rule 50 until the end of the
09:09 15 evidence as opposed to doing any sort of argument when
09:09 16 the plaintiff rests.
09:09 17 THE COURT: I don't understand why we
09:09 18 would do that from your perspective. I don't
09:09 19 understand why you would not want to have a Rule 50
09:09 20 motion at the end of their case-in-chief.
09:09 21 Is that what you're asking?
09:09 22 MR. MUELLER: We're happy to do it, Your
09:09 23 Honor. We're ready to do it. It's just a question of
09:10 24 if Your Honor has the time to do a break in the action
09:10 25 and do it at that point. We're happy to do it then.

09:10 1 THE COURT: I have learned -- in fact, I
09:10 2 sent Judge Wolfe a note yesterday about just that,
09:10 3 which is, it's much easier on me to do what you
09:10 4 suggest, and I find that I always get bitten in an
09:10 5 unfortunate place when I do that.
09:10 6 And so I've learned to just break and do
09:10 7 the Rule 50 motion so that I don't have problems
09:10 8 afterwards.
09:10 9 MR. MUELLER: That's great by us,
09:10 10 Your Honor. Thank you very much.
09:10 11 THE COURT: Anything else?
09:10 12 MR. MUELLER: Nothing from defendants.
09:10 13 THE COURT: So are we ready to go?
09:10 14 MR. DURST: We are ready to proceed,
09:10 15 Your Honor.
09:10 16 THE BAILIFF: All rise.
09:11 17 (Pause in proceedings.)
09:12 18 THE BAILIFF: All rise.
09:12 19 THE COURT: Please remain standing for
09:12 20 the jury.
09:12 21 (Jury entered the courtroom.)
09:12 22 THE COURT: Thank you. You may be
09:12 23 seated.
09:12 24 MR. HUNG: Your Honor, may I proceed?
09:12 25 THE COURT: Please.

09:12 1 MR. HUNG: We'd like to call Dr. Maureen
09:13 2 Reitman to the stand.
09:13 3 (The witness was sworn.)
09:13 4 DIRECT EXAMINATION
09:13 5 BY MR. HUNG:
09:13 6 Q. Good morning, Dr. Reitman.
09:13 7 A. Good morning.
09:13 8 Q. Can you please introduce yourself to the jury?
09:13 9 A. Yes. Good morning. My name is Dr. Maureen
09:14 10 Reitman. I'm a materials scientist. I'm a principal
09:14 11 engineer and a group vice president for polymers,
09:14 12 chemistry, biomedical engineering, and health sciences
09:14 13 at a company called Exponent, which is a science and
09:14 14 engineering consulting firm.
09:14 15 Q. How long have you worked with polymers?
09:14 16 A. Over 30 years. Since college.
09:14 17 Q. Where'd you go to school?
09:14 18 A. I went to MIT. I did my undergraduate degree
09:14 19 there and then continued for my doctoral degree, both
09:14 20 in material science focused on plastics.
09:14 21 Q. What did you do after MIT?
09:14 22 A. I went to work for the 3M Company down in
09:14 23 Austin actually, working first in technology
09:14 24 development and using 3M technologies in films, dental
09:14 25 materials, dental plastics, other healthcare materials,

09:14 1 and then ultimately moving into product development.
09:14 2 So commercialization using those kinds of materials and
09:14 3 materials technologies.
09:14 4 Q. Did you receive any patents at 3M?
09:15 5 A. I did. I hold three patents including for a
09:15 6 new material.
09:15 7 Q. Dr. Reitman, do you still live in Austin?
09:15 8 A. No. I met my husband while he was at UT. He
09:15 9 was a Marine working on becoming a diplomat for the
09:15 10 U.S. And when he got the assignment to go to Kuwait, I
09:15 11 went with him and moved there and then eventually moved
09:15 12 back to Washington, D.C.
09:15 13 Q. How did you come to work for Exponent?
09:15 14 A. When I went to Washington, D.C., I called up
09:15 15 some friends from school and said I'm looking for a job
09:15 16 back in the U.S. And they suggested consulting at
09:15 17 Exponent, and that's what I've been doing ever since.
09:15 18 Q. At a very high level, what do you do for
09:15 19 Exponent?
09:15 20 A. I answer questions about plastics. So I do
09:15 21 consulting work. I help -- people have questions about
09:15 22 performance, sometimes companies, sometimes companies
09:16 23 in the context of disputes.
09:16 24 But I also have management responsibilities,
09:16 25 so I help to develop our team and to manage our

09:16 1 research investments.
09:16 2 Q. Have you received any professional recognition
09:16 3 for your work?
09:16 4 A. Yes. On numerous occasions. Probably the two
09:16 5 most relevant are that I am a Fellow of the Society of
09:16 6 Plastics Engineers primarily for my work related to
09:16 7 medical plastics. And I have also been elected to the
09:16 8 National Academy of Engineering, which is something I'm
09:16 9 really proud of.
09:16 10 MR. HUNG: Your Honor, we offer
09:16 11 Dr. Reitman as an expert in polymer science and
09:16 12 engineering.
09:16 13 MR. MUELLER: No objection, Your Honor.
09:16 14 THE COURT: Admitted.
09:16 15 BY MR. HUNG:
09:16 16 Q. Dr. Reitman, at a high level, what have you
09:16 17 been asked to do in this case?
09:16 18 A. I was asked to look at the materials patents
09:16 19 and to look at the Zendura FLX material and aligners
09:16 20 made from them to see if they infringe those patents.
09:16 21 And I was also asked to respond to certain
09:17 22 things raised by Dr. Spiegelberg.
09:17 23 Q. What did you look at to arrive at your
09:17 24 opinions?
09:17 25 A. I looked at the patents, of course, including

09:17 1 the prosecution history.
09:17 2 Because these are materials issues, I also
09:17 3 looked at materials technical data sheets, which are
09:17 4 public documents, and I looked at the company
09:17 5 documents, the internal documents provided by the two
09:17 6 parties in this dispute.
09:17 7 Q. Did you do any testing?
09:17 8 A. I did also do testing to confirm some of the
09:17 9 information that was in the documents.
09:17 10 Q. When you did your testing, which standards did
09:17 11 you apply, or standard?
09:17 12 A. I used standards from ASTM, which is one of
09:17 13 the standards organization that used to stand for the
09:17 14 American Society for Testing and Materials. And these
09:17 15 are just methods that we use so we can get comparable
09:17 16 information.
09:17 17 Q. Dr. Reitman, have you prepared slides today,
09:17 18 demonstratives?
09:17 19 A. Yes. I have.
09:18 20 Q. Okay. I'll publish them.
09:18 21 While we're waiting, Dr. Reitman, right in
09:18 22 front of you are two physical exhibits, PTX-1795 and
09:18 23 1796. And then also PTX-129 in your binder.
09:18 24 Can you pull those out and see if you
09:18 25 recognize those?

09:18 1 A. Yes. One is the Zendura FLX material. So
09:18 2 this is the packaged item from Bay Materials. If you
09:18 3 open it up, it has the discs, the plastic inside.
09:18 4 There are ten in this package.
09:18 5 And then the other is aligners, ClearCorrect
09:18 6 aligners, which have been made from the disc, the
09:19 7 Zendura FLX. So the individual aligners are also up
09:19 8 here.
09:19 9 Q. And what about Exhibit PX -- PTX-129 in your
09:19 10 binder?
09:19 11 A. I've added the web page I believe -- or no.
09:19 12 That's the picture. No. That's the web page.
09:19 13 MR. HUNG: I offer those three,
09:19 14 Mr. Mueller.
09:19 15 MR. MUELLER: No objection, Your Honor.
09:19 16 THE COURT: Admitted.
09:19 17 BY MR. HUNG:
09:19 18 Q. All right. Just for the jury's benefit, hold
09:19 19 up that first exhibit again so they can see it.
09:19 20 Okay. And what do you use that for?
09:19 21 A. So this plastic disc is a multi-layer plastic
09:19 22 that you can heat up. And when it softens, you can
09:19 23 shape it over a mold into the form of the aligner. So
09:19 24 this is what you make the aligner out of.
09:20 25 Q. Is it hard to make a multi-layer aligner

09:20 1 like -- material like Zendura FLX?
09:20 2 A. Just having multi-layers is not hard to make.
09:20 3 This is sort of the standard technology for making --
09:20 4 this is one of the things we do in plastics, is we can
09:20 5 make multi-layer films.
09:20 6 Q. Have you heard of something called contract or
09:20 7 toll manufacturers?
09:20 8 A. Yes. There are companies that specialize
09:20 9 on -- specialize in making multi-layer films. You just
09:20 10 tell them what kinds of materials you want to use, and
09:20 11 they make film for you.
09:20 12 Q. All right. Let's go to our first -- okay.
09:20 13 Let's go to our first exhibit, PTX-129.
09:20 14 What is this showing?
09:20 15 A. This is the web page information, and it's for
09:20 16 the Zendura FLX. And it tells you that it is a
09:20 17 three-layer material. It also tells you that the
09:21 18 three-layer material has an elastomeric inner core and
09:21 19 that the outsides are hard. It's a hard outer shell.
09:21 20 So two types of materials in three layers.
09:21 21 Q. Okay. Dr. Reitman, let's go to -- I didn't --
09:21 22 I should have mentioned this roadmap.
09:21 23 Can you tell the jury about this roadmap?
09:21 24 What are we going to talk about today?
09:21 25 A. Well, we're going to talk about quite a few

09:21 1 things. So the idea is to tell you what's coming.
09:21 2 There are six topics all together. Looks like we're on
09:21 3 Topic 2.
09:21 4 Q. Okay. The material properties of the patents.
09:21 5 Let's talk about the patents. All of these have been
09:21 6 admitted.
09:21 7 Can you just remind the jury of the asserted
09:21 8 claims?
09:21 9 A. Yes. There are 11 asserted claims. So the
09:21 10 '613, '384, '090, and '091 patents. You can see the
09:21 11 claims on the bottom there.
09:21 12 Q. To infringe these patents, does -- do the
09:21 13 defendants have to infringe all of these?
09:21 14 A. No. Only one. You only have to infringe one
09:21 15 of them to infringe.
09:22 16 Q. At the highest level, what do these patents
09:22 17 describe?
09:22 18 A. They describe a multi-layer film, a
09:22 19 three-layer, at least, film made out of two materials,
09:22 20 that if you select the materials according to the
09:22 21 disclosure, you'll get aligners that have beneficial
09:22 22 and improved properties compared to what was available
09:22 23 at the time of the invention.
09:22 24 Q. Have you heard of something called related
09:22 25 patents?

09:22 1 A. Yes.
09:22 2 Q. How are these patents related?
09:22 3 A. So all of these patents, they stem from the
09:22 4 same 2012 application. So that's the comparison time.
09:22 5 They're all related. They have the same specification.
09:22 6 So that's the same teachings about the invention.
09:22 7 Q. Does that mean if I look in the patents,
09:22 8 there's this whole section that is verbatim, word for
09:22 9 word the same?
09:22 10 A. Yes. If you look at the patent, the front
09:22 11 page will be a little different. The middle sections
09:23 12 will be word for word the same. That's the
09:23 13 specification. And at the end, the claims will be
09:23 14 different because the claims are specific to each
09:23 15 patent. But the things that are being taught in the
09:23 16 middle, that's all the same.
09:23 17 Q. And what do those -- what date do those go
09:23 18 back to?
09:23 19 A. That's -- goes back to the 2012 application.
09:23 20 Q. We're going to be hearing a lot about TPU
09:23 21 elastomers and copolyesters. So let's get those out of
09:23 22 the way. What are those?
09:23 23 A. A TPU elastomer is a plastic that is soft. So
09:23 24 elastomers, stretchy. TPU stands for thermoplastic
09:23 25 polyurethane. The polyurethane tells you about the

09:23 1 chemistry. Thermoplastic means you can melt it.
09:23 2 The TPU elastomers have -- they're a
09:23 3 particular type of material. If you ever had like a
09:23 4 CamelBak water bladder, that soft material, that's a
09:23 5 TPU elastomer.
09:23 6 The copolyester is a different chemistry. So
09:24 7 polyester instead of polyurethane. That gives it
8 different properties. That's the idea in material
9 science.
09:24 10 So the copolyester is actually a harder
09:24 11 material. Based on its chemistry, it gives you
09:24 12 different properties, and it's used for things like
09:24 13 harder containers, even regular water bottles.
09:24 14 Q. That CamelBak water bottle, what is that made
09:24 15 of actually, specifically, like copolyester?
09:24 16 A. CamelBak actually uses Tritan copolyester
09:24 17 specifically for the hard water bottles.
09:24 18 Q. How did you -- what are the benefits of this
09:24 19 invention that we're looking at on the screen, these
09:24 20 patents?
09:24 21 A. Well, the benefits are aligners with improved
09:24 22 properties, like the ability to continue to provide
09:24 23 that gentle continuous force for teeth positioning, but
09:24 24 also comfort and durability, so the ability to flex, to
09:24 25 pop onto the teeth, to form to the teeth while -- so

09:24 1 the performance things that lead to aligners are made
09:25 2 possible by the materials you choose, and that's what
09:25 3 this patent -- these patents are about.
09:25 4 Q. Okay. Again, high level, how did you
09:25 5 determine whether Zendura FLX, the sheet or the
09:25 6 aligners, satisfied the claim requirements of these
09:25 7 various claims?
09:25 8 A. I looked at the claims specifically. I broke
09:25 9 them down into their parts. And then I looked at the
09:25 10 Zendura FLX and the aligners made from them and just
09:25 11 did a direct comparison.
09:25 12 Q. Okay. Let's -- now, we're going to be hearing
09:25 13 lots of these terms, and we'll be finding these terms
09:25 14 in the patent. And we'll be finding these terms in
09:25 15 Zendura FLX. But I'm hoping at a very high level, you
09:25 16 can walk the jury through these terms that they'll be
09:25 17 hearing over and over again.
09:25 18 So let's start with material. What is that?
09:25 19 A. That's just what kind of plastic is it?
09:25 20 Q. What about flexural modulus?
09:25 21 A. That is basically when you bend something, how
09:26 22 hard is it to do that, so the resistance to bending.
09:26 23 Q. Hardness?
09:26 24 A. This kind of hardness is basically when you
09:26 25 poke at it with an indenter, so how hard is it when you

09:26 1 measure it. The device we use for one of the tests is
09:26 2 on the far right.
09:26 3 Q. Now, all these tensile terms, such as
09:26 4 stretching, pulling, can you explain these five in
09:26 5 bulk?
09:26 6 A. So they're all from the same test, which is
09:26 7 shown on the right. You basically grab the material
09:26 8 and pull it apart.
09:26 9 And I'm looking at, you know, how hard is it
09:26 10 to pull it apart, how much can I move it -- that's
09:26 11 elongation -- how much force do I have to apply to move
09:26 12 it. And then I measure that at two points, at yield,
09:26 13 which is when the material gives, and at break, which
09:26 14 is when it breaks.
09:26 15 Q. We've heard a little bit about this one,
09:26 16 stress relaxation.
09:26 17 A. This is just when you take plastic and you
09:26 18 apply a force to it, and then you measure over time how
09:27 19 much does it push back.
09:27 20 So we're doing it in a wet environment for
09:27 21 24 hours. So when you first push on it, it resists,
09:27 22 and then you're measuring how much it gives up.
09:27 23 Q. Of the 11 claims in this case, across these
09:27 24 four patents, is there any dispute as to many of these
09:27 25 limitations, all of these limitations?

09:27 1 A. No. Most of them are agreed. There's no
09:27 2 dispute that I'm aware of.
09:27 3 Q. All right. Now, I want to jump to the end
09:27 4 because -- and I apologize. Now we're going to be
09:27 5 walking through patents which have all these numbers,
09:27 6 and Zendura FLX, which has all these numbers. And I
09:27 7 just want you to lay out your opinions now so they can
09:27 8 understand them, okay?
09:27 9 And can you focus on the '613 patent, Claim 1,
09:27 10 and tell the jury your opinion as to why Zendura FLX
09:27 11 infringes? And let's just pick Claim 1.
09:28 12 A. Okay. So this is Claim 1 of the '613, and
09:28 13 it's telling you that it's a method of making the
09:28 14 appliances. So that's the ClearCorrect aligners.
09:28 15 That -- if you jump to the bottom, it tells you that
09:28 16 you're thermoforming the sheet over a positive model.
09:28 17 So we know that they're made by thermoforming.
09:28 18 The model of the patient's teeth, that's how
09:28 19 it's made. And all of this is related to having a
09:28 20 sheet made of three layers where there are two
09:28 21 polymers.
09:28 22 So what I did is I looked at the Zendura FLX,
09:28 23 which is the material, the sheet, and it has three
09:28 24 layers. The layers have to have one layer that's hard.
09:28 25 And the layers have to have one layer that's soft. And

09:28 1 that's in the Zendura FLX.
09:28 2 The hard layer, though, specifically has to be
09:28 3 a copolyester with a flexural modulus greater than
09:28 4 about 150,000 PSI. The hard layer in Zendura FLX is a
09:29 5 copolyester, and it has a modulus higher than that
09:29 6 number.
09:29 7 The soft layer has to be a TPU elastomer.
09:29 8 That's that flexible material we talked about. And it
09:29 9 has to have an elongation at break greater than about
09:29 10 200 percent, and it has to have a hardness in a certain
09:29 11 range, between 60A and about 85D.
09:29 12 The soft layer of Zendura FLX is a TPU
09:29 13 elastomer. It does elongate more than 200 percent
09:29 14 before it breaks, and the hardness is in that range.
09:29 15 So my opinion is that Zendura FLX and the
09:29 16 aligners made from Zendura FLX meet every one of the
09:29 17 requirements in this claim and therefore infringe.
09:29 18 Q. Which limitation, if any, in this claim is
09:29 19 disputed in this case?
09:29 20 A. I think it's just about the elongation of the
09:30 21 TPU elastomer.
09:30 22 Q. And we're going to look at all these material
09:30 23 properties later, lots more that other claims add.
09:30 24 Which of those properties are disputed in this
09:30 25 case?

09:30 1 A. I think the only property that's disputed is
09:30 2 the TPU elastomer elongation, and in one of -- some of
09:30 3 the claims, there's a requirement about is it by
09:30 4 itself?
09:30 5 Q. But not all?
09:30 6 A. No. Not all of them. Just some.
09:30 7 Q. Hoping to dispel this issue just now to get it
09:30 8 out of the way.
09:30 9 Does this patent cover soft-hard-soft?
09:30 10 A. Yes.
09:30 11 Q. Does this patent cover hard-soft-hard?
09:30 12 A. Yes.
09:30 13 Q. Can you explain why this patent also covers
09:30 14 hard-soft-hard?
09:30 15 A. This patent, you're making the appliances, but
09:30 16 we focus on the material. The material has to be three
09:30 17 layers, and it has to have two types of materials. So
09:30 18 hard and soft materials. And then the third one you
09:30 19 get to pick. So it can be hard-soft-hard or
09:31 20 soft-hard-soft.
09:31 21 Q. All right. Dr. Reitman, now let's go into the
09:31 22 claims. Let's fill in these material properties. You
09:31 23 saw the materials. Let's fill in the values relatively
09:31 24 quickly. We'll pick them out. In truth, many of them
09:31 25 don't matter because they're not disputed. Let's fill

09:31 1 that in, okay?
09:31 2 We looked at Claim 1 already. And let's just
09:31 3 go past this because you talked about this.
09:31 4 And can you explain this reference table and
09:31 5 how it relates to what we just looked at?
09:31 6 A. Yes. So I put things together to make it
09:31 7 easier for you to do this assessment too. On the
09:31 8 left-hand side is the list of things you have to know
09:31 9 about. There's two columns, one for the hard layer,
09:31 10 one for the soft lawyer. And then I'm filling in the
09:31 11 requirements from the patent.
09:31 12 So in this one, the yellow, the hard has to be
09:31 13 copolyester. The soft has to be TPU elastomer. The
09:31 14 flex modulus has to be greater than 150,000 PSI. For
09:32 15 the soft layer, the hardness and elongation are there.
09:32 16 And then at the bottom, you can see that we have to
09:32 17 have three or more layers in the plastic, and it has to
09:32 18 be thermoformed. So this is the basic setup, and we're
09:32 19 going to build on that and do the comparison.
09:32 20 Q. Okay. That was '613, Claim 1. That's the
09:32 21 first materials patent. Let's look at the other three
09:32 22 dependent claims, 12, 13, and 14.
09:32 23 What do those add to that reference sheet?
09:32 24 A. In terms of the material properties, nothing.
09:32 25 This just tells you about the layer selection and

09:32 1 order.
09:32 2 Q. All right. Now let's go to the second patent,
09:32 3 the '384 patent. What is this second patent adding to
09:32 4 that reference sheet, if anything?
09:32 5 A. So this is about the appliances themselves
09:32 6 instead of the method. But in terms of what you need
09:32 7 from the materials to meet this, there's no additional
09:32 8 information.
09:32 9 Q. All right. Now let's look at the '090, Claims
09:33 10 1, 3, and 10. And let's walk -- let's walk through
09:33 11 these. Okay?
09:33 12 Which materials does the '090 add to the
09:33 13 reference data sheet?
09:33 14 A. So this is back to being the method of making
09:33 15 the aligners. And for the multi-layer sheet, it's
09:33 16 three -- three layers where the first layer is still
09:33 17 the copolyester with what we already had, but now we're
09:33 18 adding elongation at yield of greater than 4 percent,
09:33 19 tensile modulus greater than about 150,000 PSI, tensile
09:33 20 strength at yield of 4,000 to 6,500 PSI, and elongation
09:33 21 at break of greater than 70 percent.
09:33 22 So that's for the hard layer or for the first
09:33 23 layer that's the copolyester.
09:33 24 The second one, the TPU elastomer, we're
09:33 25 adding that it needs to have a ultimate tensile

09:34 1 strength of greater than 5,000 PSI.
09:34 2 We're also learning that the copolyester has
09:34 3 to have an elastic modulus greater than that of the TPU
09:34 4 elastomer. But other than that, it's basically the
09:34 5 same kind of information.
09:34 6 So, again, you have a mold you're
09:34 7 thermoforming, and in this case, you're trimming the
09:34 8 excess after molding.
09:34 9 Q. All right. Can we look at our reference
09:34 10 table, and can you fill this in now? Or tell us what
09:34 11 you did.
09:34 12 A. So the things that are in yellow are the
09:34 13 things that we just talked about that weren't in
09:34 14 the first -- in the table already.
09:34 15 So you can see we're building out the table.
09:34 16 These are the things you need to know in order to do
09:34 17 the analysis.
09:34 18 Q. All right. Now, the two dependent claims for
09:34 19 the '090, Claims 3 and 10, what do these add to our
09:34 20 reference table, if anything?
09:34 21 A. The main thing is -- so in 3, you're getting
09:34 22 that it's a copolyester for the third layer. And for
09:35 23 10, you're finding out that you need the copolyester to
09:35 24 have a stress relaxation at 24 hours in a wet
09:35 25 environment that is greater than 10 percent.

09:35 1 Q. And what have we done now to the reference
09:35 2 table?
09:35 3 A. So I added that for the hard layer in the
09:35 4 table.
09:35 5 Q. And finally our last patent, the '091, Claims
09:35 6 1, 10, and 11. What are these adding to our reference
09:35 7 table, if anything?
09:35 8 A. This is back to being the sheet and
09:35 9 appliances, but it doesn't introduce any additional
09:35 10 requirements. So the table does not change.
09:35 11 Q. All right. Let's continue on to our proof of
09:35 12 infringement. And let's talk about documents first.
09:35 13 Okay?
09:35 14 And looking at -- oh, I'm sorry. Give me one
09:35 15 second.
09:35 16 Okay. What are we seeing in this -- actually,
09:36 17 I need to move to admit.
09:36 18 MR. HUNG: So let me list the number.
09:36 19 It's in the next tab, Mr. Mueller. PTX-129, 1666,
09:36 20 1676, 344, 395, 404, 077, 050, 1769, 378, and 795, all
09:36 21 PTX.
09:36 22 I can ask her what they are.
09:36 23 MR. MUELLER: Yeah, I would.
09:36 24 BY MR. HUNG:
09:36 25 Q. What are those, ma'am?

09:36 1 A. These are pictures and data sheets and other
09:36 2 information I used in my analysis.
09:36 3 MR. MUELLER: No objection, Your Honor.
09:36 4 THE COURT: They're admitted.
09:36 5 BY MR. HUNG:
09:36 6 Q. All right. Let's look at this first one. I
09:36 7 apologize for putting it on the page a little bit
09:36 8 early.
09:36 9 What are we looking at in PTX-1666?
09:36 10 A. So to see if I have a multi-layer film, I took
09:37 11 the film and I cut it to look at the edges. But of
09:37 12 course it's small, so I looked under a microscope.
09:37 13 This picture is from under the microscope. In
09:37 14 the top, you can see the slice, and you can see three
09:37 15 layers.
09:37 16 If you follow the blue box down, that's the
09:37 17 zoomed-in picture and there are three layers. I put
09:37 18 this in epoxy so I could hold it, but basically there
09:37 19 are three layers. They're all lined up together, the
09:37 20 hard copolyester, the soft TPU elastomer, and then
09:37 21 again the hard copolyester that make up the Zendura
09:37 22 FLX.
09:37 23 Q. Now, PTX-1676, what is this showing?
09:37 24 A. This is when the Zendura FLX is formed into a
09:37 25 ClearCorrect aligner. I've now sliced through the

09:37 1 aligner so you can see the tooth shape. And you see
09:37 2 that it's still the three layers, and the layers are
09:37 3 still distinct with the borders between the layers.
09:37 4 Q. Okay. Now, PTX-0344, what is this showing,
09:38 5 ma'am?
09:38 6 A. This is an internal document from Bay
09:38 7 Materials describing the Zendura FLX. There's some
09:38 8 blacked-out stuff, but the information at the bottom
09:38 9 tells you that the -- one of the layers is a Tritan
09:38 10 copolyester and one of the layers is a TPU elastomer.
09:38 11 They describe the layer as hard-soft-hard, and
09:38 12 it is three layers, a triple-layer configuration.
09:38 13 Q. Okay. So what have we filled in in our
09:38 14 reference table?
09:38 15 A. So now we know that for the hard layer column,
09:38 16 we're going to call that a Tritan copolyester. For the
09:38 17 soft layer column, we're going to call that the Texin
09:38 18 TPU elastomer.
09:38 19 And we know that there are three layers. So
09:38 20 the green boxes mean that they are -- they meet the
09:38 21 requirements. And so now we're filling this in and
09:38 22 saying so far these things we know meet the
09:38 23 requirements.
09:39 24 Q. All right. Let's look at that Tritan layer.
09:39 25 And now at -- using PTX-0395, what are we

09:39 1 seeing? What is this showing about the properties?
09:39 2 A. So this is a data sheet from Eastman which is
09:39 3 the company that makes the plastic. When they make the
09:39 4 plastic, they do all kinds of testing, and then they
09:39 5 tell you what those values are so you can use them to
09:39 6 decide if you want to pick the plastic.
09:39 7 This data sheet on the first page tells us
09:39 8 that the Tritan is a copolyester. And on this second
09:39 9 page, it gives us some of the properties measured by
09:39 10 the standard methods. So you can see four of these
09:39 11 properties here.
09:39 12 For this particular data sheet, it tells you
09:39 13 that the way that they tested it was that they extruded
09:39 14 a layer. That means that they basically melted the
09:39 15 plastic and pushed it into a film.
09:39 16 One of the things that can happen for some
09:39 17 plastics is if you push them when they're hot, the
09:40 18 molecules can line up and you can think about if I pull
09:40 19 on the molecules when they're stretched versus in the
09:40 20 other direction, I might get different properties. So
09:40 21 plastics people think about that.
09:40 22 For this particular plastic, they did that
09:40 23 test for you. MD means machine direction. TD means
09:40 24 transverse direction. And you can see how different
09:40 25 the numbers are that they got. They're actually not

09:40 1 very different at all.
09:40 2 So for this plastic, when it's extruded into a
09:40 3 layer, it doesn't make a difference for the properties.
09:40 4 Q. And to be clear, which plastic is this, the
09:40 5 TPU or the copolyester?
09:40 6 A. This is the Tritan copolyester. This is the
09:40 7 hard layer copolyester.
09:40 8 Q. All right. Now, what have we filled in with
09:40 9 that document in your reference table?
09:40 10 A. I put those numbers into the table. They're
09:40 11 green because they meet the requirement. So the
09:40 12 tensile modulus is 200,000 PSI. Elongation at yield is
09:41 13 7 percent. The tensile strength at yield has two
09:41 14 numbers close together. They're both about 5,800 PSI.
09:41 15 The elongation at break has two numbers close together.
09:41 16 They're between about 180 and 200 percent elongation.
09:41 17 Q. All right. Let's go to our next document,
09:41 18 PTX-404. And this is for Texin.
09:41 19 And what is this showing you about the
09:41 20 properties in our table?
09:41 21 A. Yeah. So this is a different manufacturer
09:41 22 doing the same thing with the technical data sheet, the
09:41 23 TDS, and saying here are -- for my thermoplastic
09:41 24 polyurethane, here are my properties.
09:41 25 Q. And now looking at our reference table, what

09:41 1 does that data sheet help us fill in?
09:41 2 A. So now we're on the far right for the soft
09:41 3 layer, and we've added a hardness of [redacted] on the Shore
09:41 4 scale, an elongation of break of [redacted] percent, and a
09:41 5 ultimate tensile strength of [redacted] PSI.
09:42 6 Q. Now, let me pause here. We just looked at two
09:42 7 data sheets. Two data sheets for the two materials
09:42 8 undisputedly in the product, Zendura FLX.
09:42 9 Why, Dr. Reitman, do you feel it's appropriate
09:42 10 to rely upon data sheets?
09:42 11 A. Because this is the way that companies that
09:42 12 make plastic tell us about the testing that they
09:42 13 already did to give you the properties so people like
09:42 14 me can make a choice about selection.
09:42 15 And for this patent, we're talking about
09:42 16 selecting two different plastics based on the
09:42 17 properties that they're testing and telling us in these
09:42 18 data sheets. They use standard methods. People in my
09:42 19 industry use this for this exact purpose all the time.
09:42 20 Q. Does extrusion or thermoforming Zendura FLX
09:42 21 change its properties from what we see in these data
09:42 22 sheets, ma'am?
09:42 23 A. Not enough to make a difference for the
09:42 24 infringement analysis, and sometimes not at all.
09:43 25 Q. All right. Let's go to our next thing.

09:43 1 Actually, what is this showing? What does
09:43 2 PTX-0332 show?
09:43 3 A. This is showing that an internal document from
09:43 4 Bay Materials and ClearCorrect, that shows that they're
09:43 5 actually using the technical data sheet too. So TDS is
09:43 6 technical data sheet. They're saying the elongation at
09:43 7 break of the soft layer, the layer itself they're
09:43 8 saying is [redacted] percent. And they're looking at the data
09:43 9 sheet to get that number.
09:43 10 Q. Okay. What are we seeing here in PTX-77?
09:43 11 A. This is more internal data from Bay Materials.
09:43 12 On the far right are the Tritan and Texin hard layer
09:43 13 and soft layer pieces of information.
09:43 14 If you go down to Row 4, it tells you, for
09:43 15 example, the comparative hardness. In Section 5, it
09:44 16 tells you for the layers, you're getting a tensile
09:44 17 elongation at break of [redacted] percent for the copolyester
09:44 18 and again this [redacted] percent for TPU elastomer.
09:44 19 It also tells you in Section 6 that the
09:44 20 flexural modulus for the Tritan copolyester, that's the
09:44 21 hard layer, is 1,495 megapascals, which can be
09:44 22 converted by multiplying by about 145 to get to the
09:44 23 number in PSI.
09:44 24 Q. Let me make sure this point isn't lost. Let's
09:44 25 go back to this PTX-332.

09:44 1 What is this saying about when one should rely
09:44 2 upon a data sheet to understand the property of a
09:44 3 layer?
09:44 4 A. For selecting a plastic, as is taught in this
09:44 5 patent, you would look to the data sheet. And that's
09:44 6 what's done here in this document. The Covestro data
09:44 7 sheet tells you the elongation at break of the soft
09:45 8 layer.
09:45 9 Q. And for PTX-332, who said that?
09:45 10 A. This is ClearCorrect, I believe, or Bay
09:45 11 Materials.
09:45 12 Q. And if we looked at the next document just
09:45 13 now, can you read the actual -- the summary test
09:45 14 results heading, and what does that tell us about
09:45 15 what's being looked at here?
09:45 16 A. So this is comparing the extruded sheet and
09:45 17 the -- extruded or laminated sheet. So these are
09:45 18 layers that are -- they're made by processing.
09:45 19 Q. So if you look down there and see tensile
09:45 20 break E percentage, elongation at break, Layers 1 and
09:45 21 2, and then we slide all the way over and we see [redacted],
09:45 22 what is Mr. Lahlouh, John Lahlouh, saying in this
09:45 23 sheet?
09:45 24 A. That the Layer 2, which is the soft TPU
09:45 25 elastomer, is -- has an elongation at break of [redacted]

09:45 1 percent.
09:45 2 Q. Let's be clear. That's the only real disputed
09:45 3 limitation in this case; is that right?
09:45 4 A. That's my understanding.
09:45 5 Q. All right. Let's -- tell me what you filled
09:46 6 in here in the reference data sheet.
09:46 7 A. So we added the flexural modulus for the hard
09:46 8 layer.
09:46 9 Q. All right. What is PTX-50 showing?
09:46 10 A. This is internal testing data from Bay
09:46 11 Materials testing the soft layer, and this one is for
09:46 12 the tensile modulus in PSI, the average value of 7,567.
09:46 13 Q. All right. And now what have we done to our
09:46 14 reference table?
09:46 15 A. We added that for the soft layer. So rounded
09:46 16 to 7,500. It is definitely less than the 200,000 PSI
09:46 17 for the hard layer. So it's green.
09:46 18 Q. Let's go to our last limitation, stress
09:46 19 relaxation. What is PTX-384 showing?
09:46 20 A. This is a Bay Materials confidential internal
09:46 21 document that talks about testing the copolyesters, and
09:47 22 the first row is the Tritan copolyester. One of the
09:47 23 properties is the force retention after 24 hours.
09:47 24 That's the stress relaxation test. So they've
09:47 25 calculated 70 percent.

09:47 1 Q. All right. And what does this do to our
09:47 2 table?
09:47 3 A. I added that into the Stress Relaxation
09:47 4 column.
09:47 5 Q. Okay. Let's talk about a few of these other
09:47 6 requirements. And you have that bag in front of you
09:47 7 with the ten discs in it.
09:47 8 Can you explain what this shows with respect
09:47 9 to the mold that we looked at?
09:47 10 A. So on the Bay Materials packaging, there's
09:47 11 instructions, and it tells you to thermoform, right?
09:47 12 So Bay Materials tells you to use a pressure
09:47 13 thermoformer, and it tells you you can get more
09:47 14 information at their website, at Zenduradental.com,
09:47 15 which is what we did.
09:47 16 Q. And that exhibit is PTX-1769. And let's look
09:47 17 at the instructions from Zendura Dental.
09:47 18 What do we see in PTX-378?
09:48 19 A. So this is from that website, and it gives you
09:48 20 instructions for thermoforming. And you can see in the
09:48 21 machine the mold that's placed in the machine. And
09:48 22 what you would do is you would take the plastic sheet
09:48 23 and put it into the machine. You would heat it up, and
09:48 24 then you would suck it down over the mold, and that
09:48 25 would be the thermoforming. So this is telling you,

09:48 1 here's the mold. Get ready to do thermoforming.
09:48 2 Q. And let's look at the next step.
09:48 3 What is this page showing, PTX-378, Page 3?
09:48 4 A. So after you thermoform it and you can kind of
09:48 5 see the mold in the tooth-shaped cavities on the
09:48 6 right-hand side picture, you have to cut and trim the
09:48 7 excess. You can see the extra plastic material is
09:48 8 still sticking out. In order to actually wear it, you
09:48 9 have to trim that off.
09:48 10 Q. Is this how one makes a plastic clear aligner,
09:48 11 Dr. Reitman?
09:48 12 A. Yes.
09:48 13 Q. All right. Are you aware of any way to make a
09:49 14 Zendura FLX aligner besides thermoforming it over a
09:49 15 positive mold and then trimming it?
09:49 16 A. No.
09:49 17 Q. So let's go to our chart. Everything's filled
09:49 18 in, right?
09:49 19 A. Yes.
09:49 20 Q. Are all the limitations of the asserted claims
09:49 21 satisfied?
09:49 22 A. Yes.
09:49 23 Q. Are there any uses for Zendura FLX besides
09:49 24 clear aligners?
09:49 25 A. No.

09:49 1 Q. Why do you say that?
09:49 2 A. That's how it's been described. That's how
09:49 3 it's been brought to market. That's how it's labeled.
09:49 4 I am not aware of any other use for it.
09:49 5 Q. Are there noninfringing -- any noninfringing
09:49 6 alternatives to Zendura FLX?
09:49 7 A. No. In order to get the desirable properties,
09:49 8 you need the structure and two material types that are
09:49 9 taught in the patent.
09:49 10 Q. Changing topics slightly.
09:49 11 Zendura FLX customers, which companies are you
09:49 12 aware of that use Zendura FLX material to make
09:49 13 aligners?
09:49 14 A. In the United States, at least ClearCorrect,
09:50 15 Ormco, and Angel, so aligners that are thermoformed
09:50 16 from Zendura FLX.
09:50 17 Q. And do all of those aligners infringe?
09:50 18 A. Yes.
09:50 19 Q. And let's just look at one of them.
09:50 20 What is PTX-95 showing?
09:50 21 A. This is a Straumann internal communication
09:50 22 that confirms that they know that the Ormco TruGEN is
09:50 23 made from Zendura FLX.
09:50 24 Q. Now, let's go to the second piece. You said
09:50 25 documents. We've gone through all these documents.

09:50 1 Let's talk about testing. You spent a lot of time on
09:50 2 testing. In your binder are PTX-1671, 1663, 1648 --
09:50 3 84 -- 1684, 1685, 1654, 1655, 1652, 1653, 10115, 1672,
09:51 4 412, 1656, and 1657.
09:51 5 Do you recognize those documents, ma'am?
09:51 6 A. Yes.
09:51 7 Q. What are they?
09:51 8 A. They are test data and standards from work
09:51 9 that I did.
09:51 10 MR. HUNG: I'd like to offer these.
09:51 11 MR. MUELLER: No objection, Your Honor.
09:51 12 THE COURT: Admitted.
09:51 13 BY MR. HUNG:
09:51 14 Q. All right. Can you summarize the tests that
09:51 15 you ran briefly for the jury?
09:51 16 A. Three major categories. One, I checked the
09:51 17 material because you got to know what type of plastic
09:51 18 it is.
09:51 19 Two, I tested for properties that were called
09:51 20 out, same as on the data sheet.
09:51 21 And three -- using ASTM methods.
09:51 22 And then three, I did the stress relaxation
09:51 23 test that's described in the patent itself.
09:51 24 Q. And this first one, Fourier Transform Infrared
25 spectroscopy, that's a fancy way of saying your

09:51 1 microscope, right?
09:51 2 A. No. It's a fancy way of saying I did a
09:52 3 fingerprint.
09:52 4 Q. Okay. Sorry.
09:52 5 A. So basically, it's a way to say what's in the
09:52 6 molecule. This machine will give you an idea, and you
09:52 7 look for a pattern of spikes and you match them.
09:52 8 Q. Let's look at that. PTX-1671, what does this
09:52 9 show?
09:52 10 A. This is the data. So what we're trying to do
09:52 11 is match what we got for the material to the reference.
09:52 12 The yellows are the reference.
09:52 13 So in the upper one, you can see the position
09:52 14 along the bottom is a match for the Tritan copolyester.
09:52 15 So those are the outer layers. And the inner layer
09:52 16 matches for the Texin TPU.
09:52 17 So this just confirms what we already knew
09:52 18 from documents, that the outer layers are the Tritan
09:52 19 copolyester, and the inner layer is the TPU elastomer.
09:52 20 Q. I undersold your work. I have to go back.
09:52 21 When you were doing this testing, what were
09:52 22 you testing on?
09:52 23 A. Oh, I was testing on the layers, which is what
09:53 24 the patent tells you. And I also did testing on the
09:53 25 product, both the sheet and the thermoformed aligners.

09:53 1 Q. How did you get the material for your layers?
09:53 2 A. I called up the manufacturer of the plastics
09:53 3 and got the resins and then made them into layers, so
09:53 4 basically melted them according to the manufacturing
09:53 5 guidance to create film that I could then test.
09:53 6 Q. Did you consider, as part of these tests you
09:53 7 ran, the effect of manufacturing Zendura FLX on the
09:53 8 material properties?
09:53 9 A. Yes. Of course.
09:53 10 Q. And what did you find?
09:53 11 A. Well, I knew from the data sheets the relative
09:53 12 potential effects, and I knew from the materials what
09:53 13 the likely effects would be. So I used melt processing
09:53 14 to make the layers, and I considered the potential
09:53 15 effects of extrusion, which we already had seen were
09:54 16 not going to be significant for this type of
09:54 17 analysis --
09:54 18 Q. Did you --
09:54 19 A. -- and for these materials.
09:54 20 Q. Did you consider when Bay Materials is doing
09:54 21 its extrusion and thermoforming, et cetera, how those
09:54 22 properties might affect the materials as you prepared
09:54 23 them?
09:54 24 A. Yes. That was absolutely part of my planning
09:54 25 of my experiments and why I checked some of the things

09:54 1 I did in the data sheets.
09:54 2 Q. All right. Okay. Let's look at your testing.
09:54 3 Let's start with -- we covered PTX-1671. Let's go
09:54 4 to -- I think we saw this one. This is the microscope.
09:54 5 What is 1666 showing?
09:54 6 A. This is just me actually looking at the
09:54 7 material and seeing the three layers. When I did the
09:54 8 chemical testing, I tested in the layers themselves.
09:54 9 So I actually got -- was able to test in the layer.
09:54 10 And that's why it's labeled on the left, the
09:54 11 copolyester on the outside, the TPU on the inside.
09:54 12 Q. Okay. Let's go to 1778. What is this?
09:54 13 A. This is the hardness test. Using that meter
09:55 14 for the soft TPU, the hardness was measured at 42D on
09:55 15 the Shore scale.
09:55 16 Q. Okay. PTX-1684 and 1685. What does this
09:55 17 show?
09:55 18 A. The layers themselves are not big enough to --
09:55 19 in the product to do a Shore test, but you can do a
09:55 20 different type of indentation test. So this is just
09:55 21 where I did the indentation in the layers. So they're
09:55 22 lined up up and down on the left.
09:55 23 And you can see that the outer layers are
09:55 24 measurably harder, so bigger bars, than the middle
09:55 25 layer, which is the data on the right.

09:55 1 Q. Okay. What does PTX-1654 and 1655 show?
09:55 2 A. This is that bending test. And basically from
09:55 3 this, I confirmed that the flexural modulus is around
09:55 4 246,000 PSI.
09:55 5 Q. All right. And now what is PTX --
09:56 6 A. And that was actually for the flexural modulus
09:56 7 of the copolyester layer, the hard layer.
09:56 8 Q. What do we see for the soft layer, PTX-1652,
09:56 9 PTX-1653?
09:56 10 A. So this is the tensile testing, so the pulling
09:56 11 test. You can see the samples. This is the soft -- or
09:56 12 the hard layer, the hard copolyester, and I got a
09:56 13 tensile modulus around 178,000 PSI, a tensile strength
09:56 14 at yield of around 5,800 PSI, and elongation at yield,
09:56 15 average of 6.3 percent, and an elongation at break,
09:56 16 average of 162 percent.
09:56 17 Q. Did you run these same tests on the soft
09:56 18 layer?
09:56 19 A. I did.
09:56 20 Q. Okay. Let's look at that.
09:56 21 PTX-1661 and PTX-1662. What did you find?
09:56 22 A. So this is the soft TPU layer, and I ran the
09:56 23 tensile testing again, and I got a tensile modulus of
09:57 24 9,300 PSI, an ultimate tensile strength around
09:57 25 7,900 PSI, and an elongation at break around 385

09:57 1 percent.
09:57 2 Q. These tensile tests, these are all on the
09:57 3 sheets that you went through the trouble of melting and
09:57 4 taking pellets and creating your own, right?
09:57 5 A. Yes. So you can see that I made layers that
09:57 6 are uniform thickness. They look the way they're
09:57 7 supposed to for these materials.
09:57 8 Q. I want to look at another test. You ran a
09:57 9 test on the whole sheet, right, also? All three layers
09:57 10 together?
09:57 11 A. Yes.
09:57 12 Q. Why?
09:57 13 A. Because I knew that I was going to need to
09:57 14 respond to Dr. Spiegelberg and because I wanted to see
09:57 15 how the layers interact. So basically, this is three
09:57 16 layers together, and when you pull on them, you're
09:57 17 going to get the effect of the combined. And the
09:57 18 copolyester's a hard layer, so it's going to pick that
09:57 19 up first. It's going to be hard to get at the
09:58 20 properties of the middle layer, but I wanted to see
09:58 21 what would actually happen.
09:58 22 Q. So I want to make sure the jury understands
09:58 23 this. You've done all this testing on the middle
09:58 24 layer, the sheet by itself, right?
09:58 25 A. Yes.

09:58 1 Q. And now you've run testing on all three layers
09:58 2 together?
09:58 3 A. Yes.
09:58 4 Q. And I want to make sure this is clear.
09:58 5 Why do you think this is not the right test to
09:58 6 run?
09:58 7 A. Because you can't reliably get at the
09:58 8 properties of the middle layer by itself because the
09:58 9 hard copolyester interferes with collecting that data.
09:58 10 When you pull on this, you can sometimes get
09:58 11 the whole TPU to stretch all the way but only if the
09:58 12 copolyester gets out of the way.
09:58 13 And that's actually what's shown in that
09:58 14 middle picture. So I've stretched the three-layer many
09:58 15 more than 200 percent elongation, but only because the
09:58 16 copolyester broke first and now I can test the TPU.
09:59 17 So it's stretched in the middle. You see the
09:59 18 TPU. On the far right, you kind of see the gray
09:59 19 shading. That's the copolyester piece that broke at a
09:59 20 lower elongation.
09:59 21 Q. So to make sure the jury understands this,
09:59 22 tell me if I have this right. On the outside you have
09:59 23 the hard layers, right?
09:59 24 A. Yes.
09:59 25 Q. And you have the soft layer in the middle?

09:59 1 A. Yes.
09:59 2 Q. And now you're stretching the whole thing?
09:59 3 A. Yes.
09:59 4 Q. And I like to think of it like glass and a
09:59 5 rubber band in the middle. Right? Bear with me.
09:59 6 When you're pulling these strings together,
09:59 7 sometimes the glass on the outside cracks and lets you
09:59 8 continue to stretch that rubber band, right?
09:59 9 A. Yes.
09:59 10 Q. But sometimes they break together because the
09:59 11 glass cuts the middle. Is that a fair analogy?
09:59 12 A. Right. If the glass cuts the rubber band,
09:59 13 then the rubber band won't be able to behave like the
09:59 14 rubber band. So yeah. That's...
09:59 15 Q. Is that a fair test of the rubber band?
09:59 16 A. No.
09:59 17 Q. When they break together, let's talk about
09:59 18 that. What happens? What is this showing?
09:59 19 A. This is when they break together. So the
10:00 20 copolyester has a crack in it that basically goes and
10:00 21 damages the TPU like you just explained.
10:00 22 Q. Do you have an animation to explain this?
10:00 23 A. I do.
10:00 24 Q. Okay. Let's play it. And I'm going to just
10:00 25 play it, and you talk while I --

10:00 1 A. Okay. So the -- in the cartoon, the blue is
10:00 2 the copolyester. The light blue with stripes is the
10:00 3 TPU. So you're stretching it.
10:00 4 What happens is eventually the copolyester,
10:00 5 which is hard and brittle, will start to crack. And
10:00 6 those cracks go in, and they move towards the middle.
10:00 7 And when they hit the TPU, if they damage the TPU in
10:00 8 the middle, then you're going to actually break the TPU
10:00 9 early.
10:00 10 So that's what happens, is the TPU breaks
10:00 11 early.
10:00 12 But if instead the crack comes in and doesn't
10:00 13 damage the TPU, then the TPU can keep stretching. And
10:00 14 it'll stretch more than 200 percent, and that is
10:00 15 something that I observed in the experiments.
10:00 16 Q. And to go back, is what we saw in that picture
10:01 17 where it was stretched?
10:01 18 A. Yes.
10:01 19 Q. And the outer layers broke on the right side
10:01 20 of that -- that image?
10:01 21 A. Yes.
10:01 22 Q. Okay. If you're going to run this test -- I
10:01 23 know you don't think it's the right test. If you're
10:01 24 going to run this test, what do you find in looking at
10:01 25 PTX-1672?

10:01 1 A. So testing it all together, you can see that
10:01 2 the copolyester always breaks first. But if it doesn't
10:01 3 damage the TPU, the TPU elongates over 200 percent.
10:01 4 The average value for the whole group is 383 percent.
10:01 5 Q. Now, to be clear, you tested this because you
10:01 6 thought you'd have to discuss it with Dr. Spiegelberg,
10:01 7 right?
10:01 8 A. Yes.
10:01 9 Q. Did you run other tests on layers?
10:01 10 You ran all these other tests on layers as
10:01 11 well, right?
10:01 12 A. Well, yes, because that's what you're supposed
10:01 13 to do, is to run the layer test to understand the layer
10:01 14 properties.
10:01 15 Q. One more. Stress relaxation. The wet test.
10:02 16 What did you find, PTX-1656 and 1657?
10:02 17 A. So you can see the data. Basically it did
10:02 18 relax. And for the copolyester layer, the relaxation
10:02 19 is 63 percent on average.
10:02 20 Q. Okay. Let's go to Dr. Spiegelberg's
10:02 21 noninfringement opinions. Let's just get those out of
10:02 22 the way, and let's focus on these now.
10:02 23 What are -- what do you understand his two
10:02 24 main noninfringing opinions to be?
10:02 25 A. He opines that the elastomer breaks at less

10:02 1 than 200 percent. And he says that the elastomer layer
10:02 2 does not consist of only the TPU.
10:02 3 Q. Let's take these one at a time. Because
10:02 4 you're not going to get to respond after he comes up,
10:02 5 so let's take them one at a time.
10:02 6 Explain why he's wrong on that first issue.
10:03 7 A. Well, it's the stuff we already showed you.
10:03 8 So the layer -- the data sheets tell us that the TPU
10:03 9 soft layer will extend more than 200 percent. The
10:03 10 testing that I did of those layers is more than --
10:03 11 elongates more than 200 percent. The documents that
10:03 12 Bay Materials had internally confirm that they also
10:03 13 believe that the layer elongated more than 200 percent.
10:03 14 And when I ran the test on the three-layer
10:03 15 material, once the copolyester fractured, you could see
10:03 16 that the TPU elongated more than 200 percent.
10:03 17 So there's experimental observation. There's
10:03 18 information from the manufacturer of the plastics
10:03 19 itself. And there's recognition from the defendants
10:03 20 that that's the behavior that they had expected and saw
10:03 21 in their product.
10:03 22 Q. I think we've shown this, but let's show it
10:04 23 briefly one more time. Okay?
10:04 24 This is on the testing on the layer, PTX-1661
10:04 25 and 1662. What did this show?

10:04 1 A. So when you pull on it, it stretches more than
10:04 2 200 percent.
10:04 3 Q. In fact, 384 percent if you're testing a layer
10:04 4 by itself, to understand that?
10:04 5 A. Yes. That is the number.
10:04 6 Q. And we looked at this data sheet. It's a very
10:04 7 important internal document. What is PTX-332 showing?
10:04 8 A. This says that internally they looked at the
10:04 9 data sheet to tell them the elongation of break of the
10:04 10 soft layer and that it was [redacted] percent.
10:04 11 Q. And I know we talked about the three-layer
10:04 12 testing. What did this show?
10:04 13 A. That the elongation of the TPU layer is
10:04 14 greater than 200 percent as long as the copolyester
10:04 15 doesn't damage it.
10:04 16 Q. Now, PTX-1673 and 10115, and I think this is
10:04 17 the results we've already seen for 383 percent, right,
10:05 18 ma'am?
10:05 19 A. Yes. The average does turn out to that.
10:05 20 Q. Okay. I want to focus on a tiny area of
10:05 21 disagreement with you. It's a slideshow, but let's
10:05 22 just embrace it.
10:05 23 MR. MUELLER: Your Honor, I object.
10:05 24 MR. HUNG: Your Honor, I'll move on.
10:05 25 BY MR. HUNG:

10:05 1 Q. Dr. Spiegelberg says you used the wrong
10:05 2 specimen; is that right?
10:05 3 A. For that testing, yes.
10:05 4 Q. And when you ran tests on all three layers
10:05 5 together, he said you used the wrong specimen type,
10:05 6 which was?
10:05 7 A. I used a Type 5, the mini specimen.
10:05 8 Q. What does he think you should have used?
10:05 9 A. A Type 4, which is a larger specimen.
10:05 10 Q. Why did he use a Type 4?
10:05 11 A. Because he thought that the plastic was
10:05 12 nonrigid, and Type 4 was the type to use.
10:05 13 Q. Okay. Using PTX-394, can you explain to us
10:05 14 why it was appropriate for you to use a Type 5
10:06 15 specimen?
10:06 16 A. Yes. So this is the ASTM standard. This is
10:06 17 D638 for the tensile testing. For the specimen, you go
10:06 18 to the section for specimen. It's at Section 6.
10:06 19 There's two paragraphs for making the selection.
10:06 20 Zendura FLX is a rigid plastic, and so you go to
10:06 21 Paragraph 6.1.1, which tells you that there's lots of
10:06 22 different types of specimens that you can use. And in
10:06 23 particular, Type 5 is what you should use if you have,
10:06 24 for example, only limited material, which I did because
10:06 25 I had only three packs.

10:06 1 Q. Now, let's take those each.
10:06 2 Rigid and limited material. Why do you think
10:06 3 Zendura FLX is rigid? As a sheet.
10:06 4 A. Because the properties in the documents tell
10:06 5 me that the flexural modulus is a certain value and
10:06 6 that's what the standard tells you to check.
10:07 7 So the standard tells you to -- what the
10:07 8 definition of rigid is. Or it tells you where to get
10:07 9 that definition and then how to make the decision.
10:07 10 Q. We're still looking at ASTM D638, and now
10:07 11 we're looking at Table 1.
10:07 12 What does this tell us about how to determine
10:07 13 whether something's rigid or not?
10:07 14 A. It tells you to look at the definitions in
10:07 15 ASTM D883.
10:07 16 Q. And that's this line, "See terminology D883
10:07 17 for definitions"?
10:07 18 A. Yes.
10:07 19 Q. Okay. Let's go to that standard. And this is
10:07 20 PTX-412.
10:07 21 What does this say about a rigid plastic?
10:07 22 A. It says that the rigid plastic has a modulus
10:07 23 of elasticity greater than 700 megapascals.
10:07 24 Q. Do you know the modulus of elasticity, either
10:07 25 in flexion or in tension, for Zendura FLX as a sheet?

10:07 1 A. Yes. We saw that in the documents. It is
10:07 2 more than twice this number. It's over 1,400
10:08 3 megapascals. So that makes Zendura FLX rigid.
10:08 4 Q. And let's look here, PTX-77.
10:08 5 What is this showing about the flexural
10:08 6 modulus?
10:08 7 A. This says it is 1,471 megapascals. 1,471 is
10:08 8 more than twice 700.
10:08 9 Q. Okay. Now, you offered a second reason,
10:08 10 limited samples.
11 A. Yes.
10:08 12 Q. Why do you say you have limited samples?
10:08 13 A. Well, I did not have unlimited material, and I
10:08 14 had to run a lot of different kinds of tests on these.
10:08 15 So I used the mini sample, which is common when you
10:08 16 have -- well, it's actually instructed when you have
10:08 17 limited material.
10:08 18 These sheets, the reason they're in a foil
10:08 19 package, you're supposed to keep them away from
10:08 20 moisture if you're going to use them. So you have to
10:08 21 use them within a period of time. And that was one of
10:08 22 the considerations when planning out the experiments.
10:08 23 Q. All right. Let's go to the second area of
10:09 24 disagreement, which is the consisting of -- I'll call
10:09 25 it the "consisting of" limitation. And can you explain

10:09 1 this area of disagreement?
10:09 2 A. Yes. So a few of the claims require that the
10:09 3 second layer consists of just the TPU elastomer. And
10:09 4 Dr. Spiegelberg says that when you make the film, you
10:09 5 get mixing at the edges. And so that would not be just
10:09 6 the TPU elastomer.
10:09 7 But my work shows that you actually don't get
10:09 8 very much mixing at all, nothing measurable. There's
10:09 9 definitely no mixing in the middle. And one of the
10:09 10 ways we can tell that there isn't mixing is based on
10:09 11 the chemical measurements I did, but also the reason it
10:09 12 pulls apart is because the layers are in fact
10:09 13 separable. They are distinct.
10:09 14 Q. Help me understand that. Why does the layers
10:09 15 pulling apart -- is that delamination?
10:09 16 A. Yes.
10:09 17 Q. Why does delamination from the soft layer show
10:09 18 there's no mixing?
10:10 19 A. It shows that the TPU stays together and the
10:10 20 copolyester stays together as separate layers.
10:10 21 Q. I think you ran -- this is the microscope
10:10 22 test. Can you show the jury how this relates to this
10:10 23 noninfringement opinion?
10:10 24 A. Well, you can see the pretty sharp lines
10:10 25 between the layers in the lower picture. So you can

10:10 1 see that the layers are distinct at this magnification.
10:10 2 That has to do with them -- the polymers staying
10:10 3 separate.
10:10 4 Q. And when we look at this image, this
10:10 5 microscope image, PTX-1666, even if we assume that
10:10 6 there's mixing between layers at the junction of the
10:10 7 layers, what do we see in the middle of the soft TPU
10:10 8 layer?
10:10 9 A. The middle is just TPU by itself.
10:10 10 Q. Pure TPU?
10:10 11 A. Yes.
10:10 12 Q. All right. Does every claim -- we were -- my
10:10 13 client Align is asserting 11 claims from the materials
10:10 14 patents in this case, right, ma'am?
10:10 15 A. Yes.
10:10 16 Q. Does every claim require this "consisting of"
10:11 17 language?
10:11 18 A. No. It doesn't.
10:11 19 Q. Looking -- let's look at our first claim,
10:11 20 Claim 1 of the '613.
10:11 21 What does this say? Does this use
10:11 22 "consisting"?
10:11 23 A. No. It says: A soft polymer layer comprising
10:11 24 a thermoplastic polyurethane elastomer.
10:11 25 So this is comprising, not consisting.

10:11 1 Q. All right. I want to summarize your
10:11 2 infringement, and I want to -- I'm going to touch on
10:11 3 SmartTrack in just a second, but I want to sort of end
10:11 4 with where we began.
10:11 5 Can you summarize for the jury and explain to
10:11 6 them, having shown documents and tests and discussed
10:11 7 Dr. Spiegelberg's opinions, why Zendura FLX infringes
10:11 8 the asserted claims using '613, Claim 1?
10:11 9 A. So the '613, Claim 1, we saw that the aligners
10:11 10 are made from a method of making the dental appliance
10:12 11 for positioning patients' teeth, and we saw that there
10:12 12 is a sheet that comprises three layers -- three or more
10:12 13 layers where there is a hard polymer layer and a soft
10:12 14 polymer layer, right? So we need three layers. We
10:12 15 need two polymers.
10:12 16 The Zendura FLX has a hard polymer layer that
10:12 17 is the copolyester and does have the flex modulus
10:12 18 greater than about 150,000 PSI.
10:12 19 The soft layer, it is a thermoplastic
10:12 20 polyurethane elastomer. That layer has an elongation
10:12 21 at break greater than 200 percent. And the hardness
10:12 22 falls in the range between 60A and 85D.
10:12 23 The way that aligners are made is by having a
10:12 24 positive model of the patient's teeth in a target
10:12 25 position, and then you're fabricating that as a

10:12 1 negative of the positive -- that just means we fit them
10:13 2 together -- by thermoforming the sheet over the
10:13 3 positive model.
10:13 4 So every piece in here, every element in here
10:13 5 is present in the aligners made from Zendura FLX
10:13 6 because of the properties and structure of the Zendura
10:13 7 FLX material.
10:13 8 Q. Now, let me just touch on one thing, the
10:13 9 target position.
10:13 10 A. Yes.
10:13 11 Q. How does the fact that aligners sold in
10:13 12 multiple aligners relate to this target position?
10:13 13 A. So the aligners you heard are part of -- often
10:13 14 part of multiple positions and treatments. So you're
10:13 15 making multiple aligners for the target position at
10:13 16 each point.
10:13 17 So by having the pairs of the progression,
10:13 18 that is the target position for that stage.
10:13 19 Q. Does this claim cover soft-hard-soft?
10:13 20 A. Yes.
10:13 21 Q. Is it limited to soft-hard-soft?
10:13 22 A. No.
10:13 23 Q. Does it cover hard-soft-hard?
10:13 24 A. Yes.
10:13 25 Q. Can you explain that piece one last time?

10:13 1 A. Sure. So the sheet, it has to have three
10:14 2 layers. It has to be made out of two materials.
10:14 3 One of the materials has to be hard. It has
10:14 4 to be a copolyester. It has to have certain
10:14 5 properties, the flex modulus.
10:14 6 The other has to be soft. It has to be a TPU
10:14 7 elastomer. And it has to have certain properties, such
10:14 8 as the elongation as hardness.
10:14 9 The third layer can be any third layer from
10:14 10 any of these claims. That means it can be either hard
10:14 11 or soft. That's why both structures are covered under
10:14 12 this claim.
10:14 13 Q. Let's just confirm your opinions for the
10:14 14 claims individually. We looked at this reference data
10:14 15 sheet.
10:14 16 Is it your opinion that all of these material
10:14 17 properties are satisfied and the other requirements?
10:14 18 A. Yes. Everything in green there is satisfied.
10:14 19 Q. And now for Claim 1, does making a Zendura FLX
10:14 20 aligner infringe Claim 1?
10:14 21 A. Yes.
10:14 22 Q. Of the '613 patent?
10:15 23 A. Yes.
10:15 24 Q. And what about Claims 12, 13, and 14?
10:15 25 A. Yes.

10:15 1 Q. Does plurality of Zendura FLX aligners -- that
10:15 2 just means multiple FLX aligners -- do those practice
10:15 3 the limitations of Claim 11 of the '384?
10:15 4 A. Yes.
10:15 5 Q. Does making a Zendura FLX aligner practice the
10:15 6 limitations of Claim 1 of the '090?
10:15 7 A. Yes.
10:15 8 Q. And what about Claims 3 and 10 of that patent?
10:15 9 A. Also yes.
10:15 10 Q. And finally, for the '091 patent, Claim 1,
10:15 11 does a Zendura FLX sheet that's incorporated into an
10:15 12 aligner satisfy these limitations?
10:15 13 A. Yes.
10:15 14 Q. And what about its dependent claims -- what
10:15 15 about Claims 10 and 11?
10:15 16 A. Those are also satisfied. It's also
10:15 17 infringed.
10:15 18 Q. One last topic, whether SmartTrack practices
10:15 19 the patents.
10:15 20 Do Align's patents cover SmartTrack?
10:15 21 A. Yes.
10:15 22 Q. And let's look at -- which -- which asserted
10:16 23 claims? Does SmartTrack practice all the four asserted
10:16 24 patents?
10:16 25 A. All four patents cover SmartTrack, yes.

10:16 1 Q. To clear up one point of confusion, I think
10:16 2 you saw -- were you here for Dr. Li's testimony
10:16 3 yesterday?
10:16 4 A. Yes.
10:16 5 Q. And she referred to the first SmartTrack
10:16 6 patent, the '691, as a SmartTrack patent.
10:16 7 Do you recall that?
10:16 8 A. Yes.
10:16 9 Q. Are these other four patents SmartTrack
10:16 10 patents?
10:16 11 A. Yes. They're all SmartTrack patents. They
10:16 12 all describe SmartTrack.
10:16 13 Q. Do they all cover SmartTrack?
10:16 14 A. Yes. They all cover SmartTrack.
10:16 15 Q. And let's just look at properties of '613,
10:16 16 Claim 1, as an example.
10:16 17 How does SmartTrack practice that claim, as an
10:16 18 example?
10:16 19 A. So you would take the same approach using the
10:16 20 same sort of reference table that we did before. In
10:16 21 this case Align uses a Tritan copolyester as well.
10:16 22 That is a hard copolyester. [redacted]
10:17 23 [redacted]
10:17 24 [redacted]
10:17 25 [redacted]

10:17 1 [redacted]
10:17 2 [redacted]
10:17 3 [redacted]
10:17 4 [redacted].
10:17 5 SmartTrack has three layers. And the aligners
10:17 6 made from SmartTrack are thermoformed over a positive
10:17 7 model. So all of those are met.
10:17 8 Q. One last question I just realized. Align uses
10:17 9 Tritan and Desmopan, right, ma'am?
10:17 10 A. Yes.
10:17 11 Q. Desmopan is a brand name that appears in
10:17 12 Europe; is that right?
10:17 13 A. Yes. So Covestro has different TPUs by
10:17 14 different geographies, and so Texin is mostly in North
10:17 15 America. Desmopan is worldwide, but it's made out of
10:18 16 Europe.
10:18 17 Q. So to be clear, Desmopan is the tradename used
10:18 18 in Europe, and in the U.S., it would be Texin; is that
10:18 19 right?
10:18 20 A. Desmopan is made in Europe and sold
10:18 21 everywhere. Texin is made in the United States and
10:18 22 mostly sold in the United States.
10:18 23 They both use the same chemistries. They're
10:18 24 both made by Covestro, and they're both TPU elastomers.
10:18 25 MR. HUNG: Thank you very much,

10:18 1 Dr. Reitman.

10:18 2 CROSS-EXAMINATION

10:18 3 BY MR. MUELLER:

10:19 4 Q. Good morning, Dr. Reitman.

10:19 5 A. Good morning.

10:19 6 Q. My name is Joe Mueller. It's nice to meet

10:19 7 you.

10:19 8 A. Nice to meet you as well.

10:19 9 Q. May I ask you a few questions?

10:19 10 A. Of course.

10:19 11 Q. Now, Dr. Reitman, you are here to testify

10:19 12 about four patents being asserted by Align in this

10:19 13 case, correct?

10:19 14 A. Yes.

10:19 15 Q. And those patents share what is called in the

10:19 16 patent world a specification, right?

10:19 17 A. Yes. They do.

10:19 18 Q. And that means the figures and some of what's

10:19 19 called the written description material is identical in

10:19 20 all four patents, right?

10:19 21 A. Yes. For the applications, the specification

10:19 22 information would be the same.

10:19 23 Q. And in fact, the specification is the same as

10:19 24 the earliest patent application filed by Dr. Li years

10:19 25 before that, right?

10:19 1 A. All of these stem from that 2012 application.
10:20 2 So those are the teachings of that application.
10:20 3 Q. And so just to be very, very clear, the
10:20 4 teachings of the 2012 application are precisely the
10:20 5 same teachings in these four patents, right?
10:20 6 A. That is what I remember. Yes.
10:20 7 Q. And the claims are the section at the end of a
10:20 8 patent, right?
10:20 9 A. Yes.
10:20 10 Q. And the claims have changed a bit over time,
10:20 11 true?
10:20 12 A. Not quite. The claims for each specific
10:20 13 patent, some of the claims in the -- in the course of
10:20 14 getting to issuance did evolve. And some of them, I
10:20 15 don't think they did. But each patent, once it had its
10:20 16 claims, those claims didn't change.
10:20 17 Q. But we can agree on this: All of the claims
10:20 18 in all of these patents are directed to the same
10:21 19 written description, true?
10:21 20 A. They all stem from that application, yes.
10:21 21 Q. They're based on the same written description,
10:21 22 true?
10:21 23 A. I believe all that information is the same. I
10:21 24 think of it in terms of the application has the
10:21 25 information. So I think we're saying the same thing.

10:21 1 Q. The same as the application back in 2012?
10:21 2 A. They all stem from that application in 2012.
10:21 3 Yes.
10:21 4 Q. Do you understand that in 2016, Dr. Li
10:21 5 submitted a sworn declaration to the Patent Office,
10:21 6 true?
10:21 7 A. She did submit several declarations. Yes.
10:21 8 Q. And let's make sure we have the chronology
10:21 9 right of some of the events that we discussed
10:21 10 yesterday.
10:21 11 You were here for the testimony yesterday?
10:21 12 A. I was here yesterday for testimony. Yes.
10:21 13 Q. So 2012, Dr. Li and the folks at Align applied
10:21 14 for patent application protection on SmartTrack
10:22 15 technology, right?
10:22 16 A. Well, on multi-layer technology based on
10:22 17 having two types of plastics.
10:22 18 Q. We'll come back to that.
10:22 19 In 2018, Bay Materials launched Zendura FLX,
10:22 20 right?
10:22 21 A. Yes. I think that's the right date.
10:22 22 Q. And you saw all the evidence that top
10:22 23 executives at Align were concerned about the
10:22 24 competitive threat posed by Zendura FLX, true?
10:22 25 A. I saw the documents you presented yesterday

10:22 1 describing communications between executives. Yes.
10:22 2 Q. So let's take a look. DTX-2867, this is an
10:22 3 admitted exhibit. This is an executive management
10:22 4 committee presentation from 2019.
10:22 5 Do you see that, Dr. Reitman?
10:22 6 A. I do.
10:22 7 MR. MUELLER: Let's go to Page 2, if we
10:22 8 could.
9 BY MR. MUELLER:
10:22 10 Q. And here, we have in the bottom, in the
10:22 11 summary of where we are two months into the year, Bay
10:23 12 Materials' hard-soft-hard structure, big threat to
10:23 13 superiority of SmartTrack. Right?
10:23 14 A. Yes. That's what's written there.
10:23 15 Q. Now, after the top executives at Align
10:23 16 recognized that Bay Materials' hard-soft-hard structure
10:23 17 is a big threat to superiority of SmartTrack, Align
10:23 18 went back to the Patent Office, right?
10:23 19 A. Align was continuously interacting with the
10:23 20 Patent Office is what I recall.
10:23 21 Q. Align made new filings with the Patent Office
10:23 22 after recognizing the competitive threat of Zendura
10:23 23 FLX, correct?
10:23 24 A. There were additional filings after this date,
10:23 25 yes.

10:23 1 Q. And one of those filings was the new
10:23 2 declaration from Dr. Li, true?
10:23 3 A. I believe there are declarations after this
10:23 4 date from Dr. Li as well, yes.
10:23 5 Q. And, Dr. Reitman, Dr. Li, as we saw yesterday,
10:23 6 made modifications to what she had said in 2016,
10:24 7 correct?
10:24 8 A. The new declaration was directed at a new set
10:24 9 of questions. So it is different than the old
10:24 10 declaration directed at a different set of questions.
10:24 11 Q. There are differences between what Dr. Li said
10:24 12 to the Patent Office in 2016 and what Dr. Li said to
10:24 13 the Patent Office in 2019, correct?
10:24 14 A. Yes. For the reasons I just said.
10:24 15 Q. So let's take a look at some -- the
10:24 16 declaration from 2019, and this is DTX-84.
10:24 17 MR. MUELLER: And if we could go to the
10:24 18 signature page which is on Page 9.
19 BY MR. MUELLER:
10:24 20 Q. Do you see Dr. Li executed this in
10:24 21 September 2019?
10:24 22 A. Yes. I do.
10:24 23 Q. This is just a few months after the executive
10:24 24 meeting committee -- executive management committee
10:24 25 presentation identifying Bay Materials' hard-soft-hard

10:25 1 structure as a big threat. You saw that document just
10:25 2 a moment ago, right?
10:25 3 A. I saw that document and, yes, the two dates do
10:25 4 relate in that way.
10:25 5 Q. Okay. So if we go to Paragraph 5, this is a
10:25 6 paragraph we did not get a chance to look at yesterday.
10:25 7 I want to look at it with you.
10:25 8 So Paragraph 5 of this declaration says, if we
10:25 9 go to the second -- well, second sentence: As
10:25 10 mentioned above, SmartTrack material was developed
10:25 11 during more than seven years of diligent evaluation of
10:25 12 over 250 materials, including numerous iterations in
10:25 13 which materials were tested and compared with the
10:25 14 results used to design new materials.
10:25 15 Do you see that, Dr. Reitman?
10:25 16 A. Yes.
10:25 17 Q. And let's look at the next sentence. Again,
10:25 18 this is in the 2019 declaration. During evaluation of
10:25 19 the over 250 materials, only, only the materials
10:26 20 according to the current claims met Align's development
10:26 21 criteria.
10:26 22 Do you see that, Dr. Reitman?
10:26 23 A. Yes.
10:26 24 Q. Okay. Now, let's have that in mind. And this
10:26 25 is a declaration that led to one of the patents

10:26 1 asserted in this case, correct?
10:26 2 A. I believe so.
10:26 3 Q. And you would agree with me that the other
10:26 4 patents asserted in this case also issued after Zendura
10:26 5 FLX was released, correct?
10:26 6 A. I honestly don't remember all of the issuance
10:26 7 dates, but they would be on the front pages.
10:26 8 Q. All right. And you know that in this case,
10:26 9 you, Dr. Reitman, are saying the four patents that
10:26 10 issued after Zendura FLX cover a hard-soft-hard
10:26 11 structure. That's your position?
10:26 12 A. Yes. As I've explained today.
10:26 13 Q. And again, the claims are directed to and
10:27 14 supported by the written description material, true?
10:27 15 A. Yes. The teachings come from the application
10:27 16 and specification.
10:27 17 Q. And that's the very same material that was in
10:27 18 the 2012 application, right?
10:27 19 A. The applications stem from that. I don't
10:27 20 recall all the details.
10:27 21 Q. So let's go to the 2016 declaration of Dr. Li.
10:27 22 This is DTX-462, and I want to examine the
10:27 23 corresponding paragraph, Paragraph 5 in Dr. Li's
10:27 24 declaration in 2016.
10:27 25 So here, if you go to the second sentence,

10:27 1 Dr. Li said to the Patent Office: As mentioned above,
10:27 2 the SmartTrack material was developed during more than
10:27 3 seven years of diligent evaluation of over 250
10:27 4 materials.
10:27 5 Right?
10:27 6 A. Yes.
10:27 7 Q. Do you see that?
10:27 8 A. That's what's written.
10:27 9 Q. And the next sentence says: During evaluation
10:27 10 of the over 250 materials, only the materials of the
10:28 11 instant claims met Align's development criteria.
10:28 12 Do you see that?
10:28 13 A. Yes.
10:28 14 Q. So what Dr. Li was saying to the Patent Office
10:28 15 in 2016 is that only the materials of the claims at
10:28 16 that time, the instant claims, met Align's development
10:28 17 criteria, true?
10:28 18 A. That is what is stated here, yes.
10:28 19 Q. So let's take a look at what those claims
10:28 20 said. This is the '691 patent. It's DTX-72.
10:28 21 This is one of the earlier patents in this
10:28 22 family of patents, right, Dr. Li (sic)?
10:28 23 A. I'm Dr. Reitman.
10:28 24 Q. I'm sorry, Dr. Reitman. I apologize.
10:28 25 This is one of the earlier patents in this

10:28 1 family of patents; am I right?
10:28 2 A. Yes. That is my recollection.
10:28 3 Q. So let's look at Claim No. 1, if we could,
10:28 4 Dr. Reitman, the very first claim.
10:29 5 It says: A removable orthodontic tooth
10:29 6 positioning appliance having teeth receiving cavities
10:29 7 shaped to directly receive at least some of a patient's
10:29 8 teeth and apply a resilient positioning force to the
10:29 9 patient's teeth, the appliance comprising: A hard
10:29 10 polymer layer comprising a copolyester and having a
10:29 11 hard polymer layer elastic modulus.
10:29 12 Have I read that correctly?
10:29 13 A. Basically.
10:29 14 Q. And a first soft outer polymer layer and a
10:29 15 second soft outer polymer layer each comprising a
10:29 16 thermoplastic polyurethane elastomer.
10:29 17 Do you see that, Dr. Reitman?
10:29 18 A. Yes.
10:29 19 Q. And then it goes on in the last limitation
10:29 20 there, the last set of language: Wherein the hard
10:29 21 inner polymer layer is disposed between the first soft
10:29 22 outer polymer layer and the second soft outer polymer
10:30 23 layer.
10:30 24 Do you see that, Dr. Reitman?
10:30 25 A. Yes.

10:30 1 Q. And so this is telling us soft-hard-soft,
10:30 2 correct?
10:30 3 A. For this claim, that appears to be the
10:30 4 disclosure, yeah.
10:30 5 Q. And if we go back to the declaration submitted
10:30 6 at the time in 2016, only the materials according to
10:30 7 the instant claims met Align's development criteria,
10:30 8 right?
10:30 9 A. 2016 I thought was --
10:30 10 Q. The one on the right is 2019.
10:30 11 A. Okay. 2019, yes.
10:30 12 Q. I'm sorry, the one on the right is 2016. The
10:30 13 one on the left is 2019.
10:30 14 The one on the right says "Instant claims."
10:30 15 That is from the 2016 --
10:30 16 MR. MUELLER: If you could put the
10:30 17 signature box on there too just to make sure I get it
10:30 18 right and not confuse the two.
10:30 19 BY MR. MUELLER:
10:30 20 Q. Here we go. This is the 2019 on the left?
10:31 21 A. Okay.
10:31 22 Q. And the 2016 on the right?
10:31 23 A. Oh, I was confused. Thank you.
10:31 24 Q. And if we look at the 2016 Paragraph 5, in the
10:31 25 2016 Paragraph 5, Dr. Li told the Patent Office that

10:31 1 only the materials of the instant claims met Align's
10:31 2 development criteria, right?
10:31 3 A. Yes. That's in there.
10:31 4 Q. And those claims at that time were
10:31 5 soft-hard-soft, correct?
10:31 6 A. I'm not sure that's true from the overall
10:31 7 patent and the filings, but the record would -- would
10:31 8 show that.
10:31 9 Q. Well, Dr. Reitman, we can look at it again.
10:31 10 Here's Claim No. 1. Let's look at that last
10:31 11 language: Wherein the hard inner polymer layer is
10:31 12 disposed between the first soft outer polymer layer and
10:32 13 the second soft outer polymer layer.
10:32 14 Do you see that, Dr. Reitman?
10:32 15 A. Yes. For that claim.
10:32 16 Q. And so the claims at that time when Dr. Li
10:32 17 made her 2016 declaration and said only the material
10:32 18 according to the instant claims met their development
10:32 19 criteria, those were soft-hard-soft?
10:32 20 A. I don't think the final claims had issued at
10:32 21 that time. But for this claim, what issued is what you
10:32 22 just said.
10:32 23 Q. So we can agree the declaration that she
10:32 24 submitted in 2016 was in support of the patent that
10:32 25 issued with the soft-hard-soft claim language, correct?

10:32 1 A. For this claim, yes.
10:32 2 Q. Now, nothing has changed in terms of the
10:32 3 written description since then, true?
10:32 4 A. I think that's true for the way the
10:32 5 specification works.
10:32 6 Q. Nothing has been added. There were no new
10:32 7 experiments added to the written description. There
10:32 8 was no new teachings added to the written description
10:32 9 in the years since, right?
10:33 10 A. That's my understanding, yes.
10:33 11 Q. And yet you, Dr. Reitman, are here to say that
10:33 12 the patents also cover hard-soft-hard, notwithstanding,
10:33 13 notwithstanding that Dr. Li had told the Patent Office
10:33 14 in 2016 the only thing they had made work was
10:33 15 soft-hard-soft?
10:33 16 THE COURT: Hold on.
10:33 17 MR. HUNG: Your Honor, can I object and
10:33 18 may we approach?
10:33 19 THE COURT: Sure.
10:33 20 (Bench conference.)
10:33 21 MR. HUNG: Your Honor, you granted
10:33 22 summary judgment of written description. He's
10:33 23 basically making a written description argument right
10:33 24 now.
10:33 25 THE COURT: Overruled.

10:33 1 (Bench conference concludes.)
10:33 2 BY MR. MUELLER:
10:33 3 Q. Dr. Reitman, can you please answer the
10:33 4 question I just asked?
10:33 5 THE COURT: Why don't you go ahead and
10:33 6 repeat it. Why don't you go ahead and repeat the
10:33 7 question.
10:33 8 MR. MUELLER: Absolutely, Your Honor.
10:33 9 BY MR. MUELLER:
10:33 10 Q. Dr. Reitman, I'll just put it in pieces just
10:33 11 to make sure we're clear.
10:33 12 In 2016, Dr. Li told the Patent Office in a
10:34 13 sworn declaration, we've done hundreds of experiments,
10:34 14 and the only material that works, according to our
10:34 15 criteria, is the material according to the instant
10:34 16 claims, the claims at that time, true?
10:34 17 A. For the product specification, yes.
10:34 18 Q. And the claims at that time were
10:34 19 soft-hard-soft, right?
10:34 20 A. For this claim, yes.
10:34 21 Q. Nothing, nothing has changed in the
10:34 22 description in the patents, the written description, in
10:34 23 the years since, true?
10:34 24 A. I don't think there's been additional
10:34 25 teachings. The information was actually already there

10:34 1 in the file.
10:34 2 Q. And yet you're here to say that these patents
10:34 3 somehow cover hard-soft-hard, notwithstanding that
10:34 4 Dr. Li told the Patent Office ten years ago the only
10:34 5 thing they had that worked was soft-hard-soft.
10:34 6 Your position is these patents somehow covered
10:34 7 hard-soft-hard. Do I have that right?
10:35 8 A. I stand by the testimony for the reasons that
10:35 9 I've given, yes.
10:35 10 Q. Now, by the way, you're being compensated for
10:35 11 your time. And there's nothing wrong with that.
10:35 12 Experts are permitted to be compensated for their time
10:35 13 working on a case like this, right?
10:35 14 A. There's nothing wrong with that. And yes.
10:35 15 I'm -- well, I'm a salaried employee. So I'm
10:35 16 compensated by my employer regardless of what I'm
10:35 17 doing. But yes. My employer bills for my time.
10:35 18 Q. And the billing rate's over $1,000 an hour,
10:35 19 true?
10:35 20 A. This year it is, yes, for all my
10:35 21 responsibilities.
10:35 22 Q. And, Dr. Reitman, you've testified in over
10:35 23 70 cases.
10:35 24 Do I have that right?
10:35 25 A. Over many years, that's probably true.

10:35 1 Q. And His Honor's rules forbid us from asking
10:35 2 any questions about the details of other cases. I want
10:35 3 to be careful that neither one of us gets into any
10:35 4 other cases.
10:35 5 But you have been retained by Align in other
10:35 6 litigation -- without any details, you have been
10:35 7 retained by Align in other litigation, correct?
10:35 8 A. In one other matter, yes.
10:35 9 Q. All right.
10:36 10 MR. MUELLER: We can take this down.
10:36 11 Thank you.
12 BY MR. MUELLER:
10:36 13 Q. Dr. Reitman, there was testimony yesterday
10:36 14 about Align being a pioneer in the clear aligner space,
10:36 15 right?
10:36 16 A. Yes. I believe so.
10:36 17 Q. And I don't -- I said in my own opening
10:36 18 statement: Credit where credit is due. Invisalign is
10:36 19 a good product.
10:36 20 Did you hear me say that?
10:36 21 A. I did.
10:36 22 Q. But it's also true that the idea of clear
10:36 23 aligners has been known for decades and is not an Align
10:36 24 idea, right?
10:36 25 A. Clear appliances have existed, like retainers

10:36 1 and mouthguards and things like that, but I believe the
10:36 2 aligners for the repositioning actually did come into
10:36 3 the market because of Align.
10:36 4 Q. Well, the concept of moving teeth with clear
10:36 5 overlay appliances has been around since 1926, correct?
10:36 6 A. There are appliances that have been clear
10:37 7 plastics at various points in time. Again, mostly like
10:37 8 thicker mouthguard retainer-type things or that
10:37 9 required multiple dental visits. So clear plastics
10:37 10 have been used in the mouth for a long time.
10:37 11 Q. Dr. Reitman, my question is simply the concept
10:37 12 of moving teeth with clear overlay appliances has been
10:37 13 around for 100 years; am I right?
10:37 14 A. I'm not sure the full movement as aligners has
10:37 15 been around, but definitely clear plastics in the mouth
10:37 16 have been around.
10:37 17 Q. Well, let's take a look at DTX-433. This is
10:37 18 Tab 4 in Volume I of your binder. This is, I believe,
10:37 19 an admitted exhibit, The Invisalign System.
10:37 20 Do you see that?
10:37 21 And this, I believe, is admitted. So I'm
10:38 22 going to go to Page 45. And we'll put it on the screen
10:38 23 to make this a little bit easier.
10:38 24 Invisalign itself says: The concept of moving
10:38 25 teeth with clear overlay appliances has been around

10:38 1 since 1926.
10:38 2 Right?
10:38 3 A. That what's written there. Yes.
10:38 4 Q. And in fact, you know that there was prior
10:38 5 publications, including by someone named Sheridan,
10:38 6 introducing a clear dental appliance called the Essix
10:38 7 retainer made from thermoplastic copolyester material
10:38 8 by 1993, right?
10:38 9 A. Let me check the dates. The 1926, I think, is
10:38 10 the gum-massaging appliance. The Essix, I don't --
10:38 11 Q. Dr. Reitman, just to make this a little bit
10:38 12 easier, I was just reading Invisalign's own product
10:38 13 material.
10:38 14 Did I read it correctly?
10:38 15 A. In the Tuncay, it says: The -- as early as
10:39 16 1926; however, Remensnyder had introduced the
10:39 17 Flex-O-Tite gum-massaging appliance.
10:39 18 Q. Dr. Reitman, if you could, our time is short.
10:39 19 I was just reading from their product material, and I
10:39 20 quoted it. It says, quote: The concept of moving
10:39 21 teeth with clear overlay appliances has been around
10:39 22 since 1926.
10:39 23 Did I read that correctly?
10:39 24 A. That section of the thing, yes. I think
10:39 25 there's another section as well.

10:39 1 Q. And you know, Dr. Reitman, that by 1993, other
10:39 2 folks had introduced a clear dental appliance called
10:39 3 the Essix retainer made from thermoplastic copolyester
10:39 4 material, true?
10:39 5 A. I don't remember the year. But yes. Essix
10:39 6 had a retainer that was clear.
10:39 7 Q. And so the bottom line, Dr. Reitman, is for
10:39 8 sure Invisalign is a good product that reflects some
10:39 9 hard work, but it's also true clear aligners are not
10:39 10 the idea of Align. That's been around for a long time,
10:39 11 true?
10:39 12 A. There are specific things about aligners that
10:39 13 were developed by Align, but there are other appliances
10:40 14 that are related to aligners that are not developed
10:40 15 by --
10:40 16 Q. Dr. Reitman, if you would please stay with my
10:40 17 question.
10:40 18 Before Align, before Align -- I'll be very
10:40 19 specific. Before Align was founded, the idea of clear
10:40 20 dental aligners was known?
10:40 21 A. Clear dental appliances. I don't know that
10:40 22 they were aligners as we are talking about today.
10:40 23 Q. Now, let's go back to your infringement
10:40 24 position, your position that these four patents somehow
10:40 25 cover hard-soft-hard dental aligners.

10:40 1 Do you have that position in mind?
10:40 2 A. I do.
10:40 3 Q. And let's talk about some of the requirements
10:40 4 of the patents and whether they could be met by a
10:40 5 hard-soft-hard structure. And you discussed with
10:40 6 Mr. Hung the requirement of elongation at break, right?
10:40 7 A. Yes.
10:40 8 Q. And to prove infringement of the claims of the
10:40 9 patents at issue in this case, Align must show
10:41 10 elongation at break requirements are satisfied, true?
10:41 11 A. Yes.
10:41 12 Q. And so --
10:41 13 A. For the claims that include them, yes.
10:41 14 Q. And all of the claims asserted in this case
10:41 15 include elongation at break requirements, true?
10:41 16 A. For the TPU elastomer layer, yes.
10:41 17 Q. All of the claims in this case require
10:41 18 elongation break requirements, correct?
10:41 19 A. Yes. There are requirements specific to the
10:41 20 TPU elastomer.
10:41 21 Q. Now, you heard Dr. Li testify that after
10:41 22 Zendura FLX was released and as the top executives were
10:41 23 appreciating that it was a competitive threat to
10:41 24 SmartFlex, Align did testing of Zendura FLX, right?
10:41 25 A. Yes. I believe she mentioned the testing of

10:41 1 Zendura FLX once it was on the market.
10:41 2 Q. And in fact, Align ran more than one test on
10:41 3 Zendura FLX at that time, correct?
10:41 4 A. I think so. Yes.
10:41 5 Q. Years before this litigation was filed, true?
10:42 6 A. I believe at least some testing was before
10:42 7 this litigation.
10:42 8 Q. So please turn, if you could, Dr. Reitman, to
10:42 9 Tab 12 in your binder, and take your time and let me
10:42 10 know when you're there. This is DTX-417.
10:42 11 A. I am at that tab.
10:42 12 Q. This reflects some of the testing done by
10:42 13 Align on Zendura FLX, right?
10:42 14 A. Yes. Zendura FLX is tested here.
10:42 15 MR. MUELLER: Your Honor, I offer it.
10:42 16 MR. HUNG: No objection.
10:42 17 THE COURT: Admitted.
10:42 18 BY MR. MUELLER:
10:42 19 Q. If we could go to the last page of the
10:43 20 document, do you see this particular document was
10:43 21 created and modified in 2021, right?
10:43 22 A. I see that. Yes.
10:43 23 Q. Now, let's take a look at Page 6. This is
10:43 24 Align testing elongation at break, right?
10:43 25 A. Yes. This is one set of tests.

10:43 1 Q. And compared Zendura FLX, EX30, which is that
10:43 2 older material we've heard testimony about, and
10:43 3 SmartTrack, right?
10:43 4 A. Those are the three materials being tested in
10:43 5 this test, yes.
10:43 6 Q. And tested in particular elongation at break
10:43 7 of these materials, right?
10:43 8 A. Yes. The full sheet for each of these is
10:44 9 being tested in this test.
10:44 10 Q. And the orange is the Zendura FLX, correct?
10:44 11 A. Yes. That's how to read this graph.
10:44 12 Q. And this was, to be clear, testing raw Zendura
10:44 13 FLX material, not Zendura FLX that had been
10:44 14 thermoformed into the shape of an aligner, right?
10:44 15 A. You can't actually do a D638 on an aligner
10:44 16 because of the geometry. So this is --
10:44 17 Q. Pardon me. My question was simply this is not
10:44 18 being done on the aligners. It's being done on the raw
10:44 19 material, correct?
10:44 20 A. On the sheet, yes.
10:44 21 Q. And the conclusion drawn by Align was the
10:44 22 average elongation at break of Zendura FLX was 123.7 in
10:44 23 the left-hand test, the first protocol, correct?
10:44 24 A. That is the average reported there. Yes.
10:44 25 Q. And the requirement in the patent claims is

10:44 1 200 percent, right?
10:45 2 A. Not for this. This is the -- the elongation.
10:45 3 Q. The elongation -- Dr. Reitman, the
10:45 4 elongation -- let's put it this way: The elongation at
10:45 5 break requirement uses 200 percent, correct?
10:45 6 A. For the TPU elastomer layer.
10:45 7 Q. And for this particular elongation at break
10:45 8 test, the elongation at break of Zendura FLX was 123.7,
10:45 9 right?
10:45 10 A. Yes. The combined multi-layer --
10:45 11 THE COURT: Ma'am, can you just answer
10:45 12 his question directly? If you feel like you need to
10:45 13 give additional information, your lawyer can bring that
10:45 14 out. But just answer his question, please.
10:45 15 THE WITNESS: Yes, sir.
10:45 16 BY MR. MUELLER:
10:45 17 Q. The second protocol in the middle, the orange
10:45 18 Zendura FLX elongation at break was 125.3, correct?
10:45 19 A. Yes.
10:45 20 Q. Dr. Reitman, is 125.3 higher or lower than
10:45 21 200 percent?
10:45 22 A. It's lower.
10:46 23 Q. The right one, the right protocol over here,
10:46 24 also is below 200, correct?
10:46 25 A. That number is also below 200. Yes.

10:46 1 Q. It's 139.6, right?
10:46 2 A. Yes.
10:46 3 Q. All three of these tests of Zendura FLX had
10:46 4 elongation at break conclusions below 200 percent,
10:46 5 true?
10:46 6 A. Yes.
10:46 7 Q. Let's turn to Tab 13 in your binder. This is
10:46 8 DTX-418. This is titled Evaluation of ABA Laminate
10:46 9 Films from Covestro.
10:46 10 And Covestro is a company you discussed with
10:46 11 Mr. Hung, correct?
10:46 12 A. Yes.
10:46 13 Q. It's a plastics manufacturer, right?
10:46 14 A. Yes.
10:46 15 Q. This document is dated June 4th, 2019, true?
10:46 16 A. Yes.
10:46 17 MR. MUELLER: I offer it, Your Honor.
10:46 18 MR. HUNG: No objection.
10:46 19 THE COURT: Admitted.
10:46 20 BY MR. MUELLER:
10:46 21 Q. Let's go to Page 4. This shows testing on a
10:47 22 number of producer ID materials in the left-hand
10:47 23 column, correct?
10:47 24 A. Yes.
10:47 25 Q. And just to be clear, Covestro works with

10:47 1 Align, correct?
10:47 2 A. Yes.
10:47 3 Q. Supplies SmartTrack materials, right?
10:47 4 A. I believe they're the supplier, yes.
10:47 5 Q. So let's take a look at what this SmartTrack
10:47 6 supplier concluded about Zendura FLX.
10:47 7 Do you see there was testing of Zendura FLX
10:47 8 by -- in this document here too?
10:47 9 A. I see that marked. Yes.
10:47 10 Q. And one of the materials that they tested --
10:47 11 I'm sorry. If we look at the top here, it's tensile
10:47 12 testing results.
10:47 13 Do you see that?
10:47 14 A. Yes.
10:47 15 Q. And if we look at the third column starting on
10:47 16 the right, do you see there's an elongation at break
10:47 17 column?
10:47 18 Do you see that?
10:47 19 A. Yes.
10:47 20 Q. And, Dr. Reitman, what is the number listed
10:47 21 for Zendura FLX?
10:47 22 A. 110.3 percent.
10:48 23 Q. That's lower than 200, correct?
10:48 24 A. Yes.
10:48 25 Q. And if we go to, just by way of example,

10:48 1 JTX-2, this is the '613 patent, one of the patents at
10:48 2 issue in this case, and go to Claim 1, the elongation
10:48 3 at break number is greater than about 200 percent,
10:48 4 right?
10:48 5 A. For the soft polymer layer, yes.
10:48 6 Q. And every elongation at break number we've
10:48 7 seen so far is less than 200, correct?
10:48 8 A. For the materials tested, yes.
10:48 9 Q. Let's go to Tab 14 in your binder. This is
10:48 10 DTX-419. This is titled Data on File, Technical Data
10:48 11 for Invisalign Aligner Materials Marketing Claim.
10:48 12 This is DTX-419.
10:48 13 Do you see this, Dr. Reitman?
10:48 14 A. I do.
10:48 15 MR. MUELLER: I offer it.
10:48 16 MR. HUNG: No objection.
10:48 17 THE COURT: Admitted.
10:49 18 BY MR. MUELLER:
10:49 19 Q. Let's go to Page 4. This is an Align
10:49 20 document, right?
10:49 21 A. Yes.
10:49 22 Q. Let's go to Page 4. Here, again, we have
10:49 23 elongation at break data from Align testing of Zendura
10:49 24 FLX.
10:49 25 Do you see that?

10:49 1 A. Yes.
10:49 2 Q. And the number in the center of the page for
10:49 3 elongation at break for Zendura FLX when dry is what?
10:49 4 A. It's reported as 123.
10:49 5 Q. Is 123 higher or lower than 200?
10:49 6 A. Lower.
10:49 7 Q. And on the right, we have the wet testing of
10:49 8 Zendura FLX. What's that number?
10:49 9 A. It says 116.
10:49 10 Q. Is 116 higher or lower than 200?
10:49 11 A. Lower.
10:49 12 Q. And again, this is Align testing of Zendura
10:49 13 FLX years before this lawsuit and the opinions you've
10:49 14 offered this jury, correct?
10:49 15 A. Yes.
10:49 16 Q. Align testing of Zendura FLX years before this
10:50 17 lawsuit reached numbers far below 200 on elongation on
10:50 18 break, correct?
10:50 19 A. For the Zendura FLX, yes.
10:50 20 Q. And Zendura FLX is the material that's used in
10:50 21 the aligners that are accused of infringement, right?
10:50 22 A. Yes.
10:50 23 Q. So the very material used in the aligners
10:50 24 accused of infringement was tested by Align years
10:50 25 before this case was filed, correct?

10:50 1 A. Yes.
10:50 2 Q. And the conclusion in that prelitigation
10:50 3 testing by Align, by Align, was that elongation at
10:50 4 break was less than 200, true?
10:50 5 A. For the multi-layer, yes.
10:50 6 Q. Now --
10:50 7 THE COURT: Counsel, Mr. Mueller, are you
10:50 8 anywhere close to being --
10:50 9 MR. MUELLER: Oh, yes, Your Honor. This
10:50 10 is a good time for a break.
10:50 11 THE COURT: Yes.
10:50 12 Ladies and gentlemen of the jury, we'll
10:50 13 take our recess for 10 or 15 minutes. We'll be back.
10:50 14 THE BAILIFF: All rise.
10:50 15 (Jury exited the courtroom.)
10:51 16 THE COURT: Thank you. You may be
10:51 17 seated.
10:51 18 You may step down.
10:51 19 Is there anything we need to take up?
10:51 20 MR. MUELLER: No, Your Honor. Thank you.
10:51 21 MR. DURST: Nothing here, Your Honor.
10:51 22 THE COURT: Please be back by about
10:51 23 5 minutes after 11:00.
10:51 24 (Recess taken.)
11:07 25 THE BAILIFF: All rise.

11:07 1 THE COURT: Please remain standing for
11:07 2 the jury.
11:07 3 (Jury entered the courtroom.)
11:07 4 THE COURT: Thank you. You may be
11:07 5 seated.
11:07 6 BY MR. MUELLER:
11:07 7 Q. Dr. Reitman, when we broke, we were about to
11:07 8 turn to some Bay Materials testing of Zendura FLX.
11:07 9 You've reviewed such testing, correct?
11:07 10 A. Yes. Generally.
11:07 11 Q. Let's take a look at DTX-455. This is Tab 15
11:08 12 in your binder, and take your time.
11:08 13 A. I am at that tab.
11:08 14 Q. And this is titled Zendura XL-1 Design
11:08 15 Verification Report: Tensile and Elongation
11:08 16 Properties.
11:08 17 This is DTX-455.
11:08 18 Do you see that, Dr. Reitman?
11:08 19 A. Yes.
11:08 20 MR. MUELLER: I offer it, Your Honor.
11:08 21 MR. HUNG: No objection.
11:08 22 THE COURT: Admitted.
11:08 23 BY MR. MUELLER:
11:08 24 Q. Let's take a look at Page 1.
11:08 25 Do you see it says: Zendura XL-1 is a aligner

11:08 1 material which is formed into an orthodontic appliance
11:08 2 used in the mouth.
11:08 3 Do you see that?
11:09 4 A. Yes.
11:09 5 Q. And in Paragraph 3, purpose of the
11:09 6 verification, it says: This report addresses
11:09 7 verification of Zendura XL-1 prototype for meeting
11:09 8 design requirement of properties.
11:09 9 Do you see that?
11:09 10 A. Yes.
11:09 11 Q. And it goes on to talk about adequate tensile
11:09 12 strength, modulus, and elongation at yield, correct?
11:09 13 A. Yes.
11:09 14 Q. And the date in the top right-hand corner is
11:09 15 September 21st, 2018, right?
11:09 16 A. Yes.
11:09 17 Q. Let's turn to the Section 4, a little further
11:09 18 down, test information.
11:09 19 Do you see there's a reference to an ASTM
11:09 20 standard, testing standard?
11:09 21 A. Yes.
11:09 22 Q. That's ASTM 638 or D638, correct?
11:09 23 A. Yes.
11:09 24 Q. And that's the right standard to use for an
11:09 25 elongation at break test. You would agree?

11:09 1 A. For plastics, yes.
11:09 2 Q. And in fact, you yourself used ASTM's testing
11:10 3 standard in your own tests done in this case, correct?
11:10 4 A. Yes.
11:10 5 Q. The "A" stands for American. It's an American
11:10 6 testing standard, true?
11:10 7 A. Yes.
11:10 8 Q. Now, let's go a little bit further down to the
11:10 9 results section.
11:10 10 And if we look at the elongation at break
11:10 11 column for Zendura, do you see those numbers in the
11:10 12 middle?
11:10 13 A. Yes.
11:10 14 Q. There's five different samples that were
11:10 15 tested, correct?
11:10 16 A. Yes.
11:10 17 Q. And the average of those samples was 102,
11:10 18 correct?
11:10 19 A. Yes.
11:10 20 Q. Is that higher or lower than 200?
11:10 21 A. That number is lower.
11:10 22 Q. It's almost half of 200, correct?
11:10 23 A. Yes.
11:10 24 Q. And none of the samples was higher than 110,
11:10 25 right?

11:10 1 A. That's correct.
11:10 2 Q. So in this Bay Materials test, long before
11:11 3 this lawsuit was filed, that they were doing on their
11:11 4 own material, their sample data showed an elongation at
11:11 5 break using the American testing standard of 102 on
11:11 6 average, correct?
11:11 7 A. For the multi-layer, yes.
11:11 8 Q. Now, let's go to Tab 17 in your binder, and
11:11 9 take your time. And let me know when you're there,
11:11 10 Dr. Reitman.
11:11 11 A. Tab 17, you said?
11:11 12 Q. 17, please.
11:11 13 A. I'm at that tab.
11:11 14 Q. And Bay Materials in this tab -- I'm sorry,
11:11 15 this tab is titled Report: Oral Environment Effect on
11:11 16 Zendura FLX and Erkoloc-Pro.
11:11 17 This is DTX-1775.
11:11 18 Do you see that? This is more Bay Materials
11:11 19 testing, can we agree?
11:12 20 A. Yes. I see it. And yes. It's from Bay
21 Materials.
11:12 22 MR. MUELLER: Your Honor, may I offer it?
11:12 23 MR. HUNG: No objection.
11:12 24 THE COURT: Admitted.
11:12 25 BY MR. MUELLER:

11:12 1 Q. This is dated November 8th, 2023. And do you
11:12 2 see it lists key mechanical parameters for aligner
11:12 3 retainer performance. And one of those is elongation
11:12 4 at break, right?
11:12 5 A. Yes. I see that written there.
11:12 6 Q. Let's go to the testing data further down.
11:12 7 Page 14.
11:12 8 And here we see the break, elongation break
11:12 9 column in the middle and Zendura FLX at the top
11:12 10 left-hand corner of this table.
11:12 11 Do you see that, Dr. Reitman?
11:12 12 A. I do.
11:12 13 Q. And there's ten samples being tested, correct?
11:12 14 A. Yes. For that sample, yes.
11:13 15 Q. And if we go up to the top right-hand corner
11:13 16 of this document, see the date November of 2023?
11:13 17 A. Yes.
11:13 18 Q. Before Align filed this lawsuit, correct?
11:13 19 A. I don't know the filing date.
11:13 20 Q. All right. Well, we'll go down a little
11:13 21 further, and I just want to ask you about the data
11:13 22 here.
11:13 23 The average elongation at break of Zendura FLX
11:13 24 in this data was what?
11:13 25 A. The number for the mean is 124.83 percent.

11:13 1 Q. And is 124.83 higher or lower than
11:13 2 200 percent?
11:13 3 A. That number is lower.
11:13 4 Q. And so, Dr. Reitman, we've now looked at Align
11:13 5 and Covestro testing of Zendura FLX from before the
11:13 6 lawsuit, correct?
11:13 7 A. Yes.
11:13 8 Q. Their -- their testing showed elongation at
11:13 9 break below 200, true?
11:13 10 A. For the multi-layer, yes.
11:13 11 Q. We've now looked at multiple, multiple Bay
11:13 12 Materials tests of their own Zendura FLX material,
11:14 13 correct?
11:14 14 A. Yes.
11:14 15 Q. Their testing also showed elongation at break
11:14 16 below 200, true?
11:14 17 A. For the multi-layer, yes.
11:14 18 Q. Now, you in this case have done your own
11:14 19 testing, right?
11:14 20 A. Yes.
11:14 21 Q. You have used or tried to use in your -- using
11:14 22 your methodology the American testing standard, the
11:14 23 ASTM standard, right?
11:14 24 A. I used ASTM standards for certain of my tests,
11:14 25 yes.

11:14 1 Q. Now, you have a dispute with Dr. Spiegelberg,
11:14 2 who's an expert witness that we'll be calling, with
11:14 3 respect to how to apply that standard in this case,
11:14 4 correct?
11:14 5 A. For a specimen selection, yes.
11:14 6 Q. Dr. Spiegelberg's position is it's important
11:14 7 to look at the effects of the extrusion lamination
11:14 8 process on the raw ingredients before you test them.
11:14 9 That's his position, right?
11:14 10 A. Can you say that again, please?
11:14 11 Q. Sure. Sure. Dr. Spiegelberg's position is
11:14 12 that it's important to look at the effects of what's
11:15 13 called the extrusion lamination process before the test
11:15 14 is done, right?
11:15 15 A. Yes. I think that's right.
11:15 16 Q. And his position is you can't just look at
11:15 17 data sheets for raw ingredients. His position is you
11:15 18 need to look at the materials once the extrusion
11:15 19 lamination process has occurred before they're tested,
11:15 20 right?
11:15 21 A. I think that's part of it, yes.
11:15 22 Q. And you disagree with him, and the point for
11:15 23 now is just there's a disagreement on that question,
11:15 24 fair?
11:15 25 A. Sort of, in that I considered that but then

11:15 1 did the testing because of what I learned from the
11:15 2 consideration.
11:15 3 Q. And I was trying to listen carefully on
11:15 4 your -- when you were answering Mr. Hung's question.
11:15 5 You said you considered the effects of
11:15 6 extrusion lamination. But, Dr. Reitman, you didn't
11:15 7 test the materials that had been through that process
11:15 8 of extrusion lamination, right?
11:15 9 A. No. For certain of the tests, I did test
11:15 10 that. For others, I did not.
11:16 11 Q. Okay. Now, you told the jury about some of
11:16 12 your test results during your direct examination of
11:16 13 Mr. Hung, correct?
11:16 14 A. Yes.
11:16 15 Q. And just to set the chronology here, you
11:16 16 provided some testing data to us as part of your
11:16 17 original report in this case, your expert report,
11:16 18 right?
11:16 19 A. Yes.
11:16 20 Q. You sat for a deposition where you answered
11:16 21 questions about that report, correct?
11:16 22 A. Yes.
11:16 23 Q. Then you provided us some more data, correct?
11:16 24 A. Yes. Some of the underlying data.
11:16 25 Q. And the truth is, Dr. Reitman, even under your

11:16 1 own tests, your own tests, the majority of the results
11:16 2 had an elongation at break below 200, true?
11:16 3 A. For the layer, no. They all were over. For
11:16 4 the multi-layer, yes, because of the reasons I
11:16 5 explained.
11:16 6 Q. So for the multi-layer tests, for the
11:16 7 materials that had gone through the process of
11:17 8 extrusion lamination -- or not even gone through, but
11:17 9 they were in the multi-layer composition.
11:17 10 Do I have that right?
11:17 11 A. For tests of the multi-layer, yes.
11:17 12 Q. For tests of the multi-layer. And again,
11:17 13 these are multi-layer clear aligners we're talking
11:17 14 about in this case, right?
11:17 15 A. Yes. The final product is. Yes.
11:17 16 Q. For tests of the multi-layer, the majority of
11:17 17 your testing results had elongation at break less than
11:17 18 200, correct?
11:17 19 A. Yes. I believe so.
11:17 20 Q. Okay. So again, this is an important point
11:17 21 for the jury because I want to make sure we have it
11:17 22 exactly right.
11:17 23 This case is about clear aligners involving
11:17 24 Zendura FLX material, right?
11:17 25 A. Yes.

11:17 1 Q. One of the requirements of the claims, in
11:17 2 every one of the claims being asserted, is an
11:17 3 elongation at break of 200 or more, correct?
11:17 4 A. For the soft layer, yes.
11:17 5 Q. The majority of your own tests, the majority
11:17 6 of your own tests in your litigation testing had
11:18 7 elongation at break of the multi-layer below 200, true?
11:18 8 A. Yes.
11:18 9 Q. Now, just a couple of final questions here,
11:18 10 Dr. Reitman. You had the chance in this case to review
11:18 11 various materials produced in the case by both sides,
11:18 12 right?
11:18 13 A. Yes.
11:18 14 Q. And that included the lab notebooks of John
11:18 15 Lahlouh, correct?
11:18 16 A. Yes. I believe so.
11:18 17 Q. And you reviewed his deposition testimony as
11:18 18 well, right?
11:18 19 A. Yes.
11:18 20 Q. And after reviewing all that material, you
11:18 21 offered this jury no opinion that Mr. Lahlouh had set
11:18 22 out to intentionally copy the Align patents or
11:18 23 SmartTrack, correct?
11:18 24 A. I have not offered that.
11:18 25 MR. MUELLER: Thank you, Dr. Reitman.

11:18 1 I pass the witness, Your Honor.
11:18 2 MR. HUNG: Can you pull up PTX-1876, the
11:18 3 '691 patent?
11:18 4 REDIRECT EXAMINATION
11:18 5 BY MR. HUNG:
11:18 6 Q. Dr. Reitman, this is the first SmartTrack
11:19 7 patent, correct?
11:19 8 A. Yes.
11:19 9 Q. And let's go to the claims. Claim 1 should be
11:19 10 at the end.
11:19 11 Is this patent asserted in this case?
11:19 12 A. No.
11:19 13 Q. This is -- do you see how this refers to a
11:19 14 hard polymer layer, a soft polymer layer, and a second
11:19 15 soft polymer layer?
11:19 16 Do you see that?
11:19 17 A. Yes.
11:19 18 Q. This patent's not asserted, correct?
11:19 19 A. Correct.
11:19 20 MR. HUNG: Let's go to DTX-84 at Page 3.
11:19 21 Let's highlight the "during evaluation."
11:19 22 Thank you.
23 BY MR. HUNG:
11:19 24 Q. You discussed this declaration, the second
11:19 25 declaration with Mr. Mueller just now, right?

11:19 1 A. Yes.
11:19 2 Q. What did you -- and you were here when Dr. Li,
11:19 3 who's still in the audience, testified, right?
11:19 4 A. Yes.
11:19 5 Q. And you heard her discuss what she mentioned
11:19 6 in this declaration?
11:19 7 A. Yes.
11:19 8 Q. Do you recall that?
11:19 9 What did you understand this sentence here to
11:19 10 mean: During evaluation of the over 250 materials,
11:19 11 only the materials according to the current claims met
11:19 12 Align's development criteria?
11:20 13 A. I understood that to be what's there, which is
11:20 14 the claims which require a hard polymer layer and a
11:20 15 soft polymer layer and three layers all together were
11:20 16 improved, and for the specific product development --
11:20 17 development criteria, the other product met that best.
11:20 18 Q. And I believe you were just shown five
11:20 19 documents, five documents, indicating that the
11:20 20 elongation at break of Zendura FLX's multi-layer is
11:20 21 over -- is under 200 percent.
11:20 22 Do you recall just discussing those documents
11:20 23 with Mr. Mueller?
11:20 24 A. Yes.
11:20 25 Q. Are those documents reporting elongation at

11:20 1 break of the inner layer, or are they reporting it of
11:20 2 the whole sheet?
11:20 3 A. The whole sheet. They're not getting at the
11:20 4 inner layer properties.
11:21 5 Q. Let's look at just a couple of these. Let's
11:21 6 look at DTX-417.6.
11:21 7 And you recall you were asked about these
11:21 8 values here. You see ST30 is here and Zendura FLX is
11:21 9 here. ST30's in blue, and Zendura FLX is in orange.
11:21 10 Do you see that, ma'am?
11:21 11 A. Yes.
11:21 12 Q. And what is this showing?
11:21 13 A. The results for the multi-layer films for the
11:21 14 tests. You can see that the values are within the
11:21 15 standard deviations across all the conditions. So the
11:21 16 materials are giving you elongation values for the
11:21 17 multi-layer and are within the spec for the ST30.
11:21 18 Q. Let's be clear. This is a test on the whole
11:21 19 sheet. These are values for the whole sheet, not for
11:21 20 the inner layer; is that right, ma'am?
11:22 21 A. Right. These are the multi-layers. These are
11:22 22 the -- when you put them together, this is what you get
11:22 23 for the whole thing, including the effect of the
11:22 24 copolyester.
11:22 25 Q. Are these reflecting the elongation at break

11:22 1 for just the TPU layer?
11:22 2 A. No.
11:22 3 Q. And actually, interestingly, what is the value
11:22 4 for the elongation at break for SmartTrack's whole
11:22 5 sheet?
11:22 6 A. For SmartTrack, you get numbers that are quite
11:22 7 similar, under basically around 130 to 140 percent
11:22 8 elongation.
11:22 9 Q. Is that less than 200?
11:22 10 A. Yes.
11:22 11 Q. Does SmartTrack practice the asserted patents
11:22 12 that we've been discussing today?
11:22 13 A. Yes.
11:22 14 Q. Let's look at another one. Just a couple
11:22 15 more. Let's look at DTX-418 at Page 4. And you were
11:22 16 asked about this.
11:22 17 MR. HUNG: Let's highlight the elongation
11:22 18 at break for Zendura FLX and the 110.3.
19 BY MR. HUNG:
11:23 20 Q. What is that value reporting? Is that
11:23 21 reporting it at the whole sheet, all three layers
11:23 22 together, or is this reporting the inner layer?
11:23 23 A. This is the whole sheet. This is the combined
11:23 24 effect of all three layers.
11:23 25 Q. We looked at --

11:23 1 A. It's not the TPU layer.
11:23 2 Q. We looked at three more documents discussing
11:23 3 elongation at break, and I'm happy to pull them up. I
11:23 4 think you -- did you want to discuss those -- well, let
11:23 5 me ask a simpler question. Let's just do one more.
11:23 6 Let's go to 419 at 4.
11:23 7 MR. HUNG: And let's highlight elongation
11:23 8 at break, Zendura FLX, 123 percent.
9 BY MR. HUNG:
11:23 10 Q. Do you see that?
11:23 11 A. Yes.
11:23 12 Q. Is that reporting the elongation at break of
11:23 13 all sheets together, the two outer ones and the middle,
11:23 14 or just the inner layer?
11:23 15 A. The whole thing together. Just like for
11:23 16 SmartTrack, it's the whole thing together.
11:23 17 Q. Okay. One last document. PTX-332.3. We
11:24 18 talked about this one. This is a ClearCorrect
11:24 19 document.
11:24 20 Do you recall discussing this?
11:24 21 A. Yes.
11:24 22 Q. And when ClearCorrect, one of the defendants
11:24 23 in this case, reports the elongation at break of the
11:24 24 layer -- not the whole thing, of the layer, what do
11:24 25 they report?

11:24 1 A. They specifically said [redacted] percent for the TPU
11:24 2 elastomer.
11:24 3 MR. HUNG: Thank you very much,
11:24 4 Dr. Reitman.
11:24 5 MR. MUELLER: Nothing further,
11:24 6 Your Honor.
11:24 7 THE COURT: Thank you, ma'am.
11:24 8 Next witness, please?
11:24 9 MR. NASH: Your Honor, plaintiff calls
11:24 10 Mr. Michael Lasinski.
11:24 11 (The witness was sworn.)
11:24 12 DIRECT EXAMINATION
11:24 13 BY MR. NASH:
11:25 14 Q. Good morning, Mr. Lasinski.
11:25 15 A. Good morning.
11:25 16 Q. Could you please introduce yourself to the
11:25 17 jury?
11:25 18 A. Sure. My name is Michael Lasinski. I'm a
11:25 19 partner at a company called HKA Consulting.
11:25 20 Q. And could you tell us a little bit about
11:25 21 yourself including your experience that's relevant to
11:25 22 this case?
11:25 23 A. Sure. I live in Chicago. I have three sons.
11:25 24 They are all living in Chicago near me, as well as my
11:25 25 wife.

11:26 1 I am a certified public accountant. I'm
11:26 2 certified in licensing, a Certified Licensing
11:26 3 Professional. That's somebody who actually licenses
11:26 4 intellectual property like patents like we're going to
11:26 5 talk about here today. I'm certified in financial
11:26 6 forensics.
11:26 7 I went to the University of Michigan. I got
11:26 8 an electrical engineering degree, and I actually wrote
11:26 9 the software for the first remote entry system on cars.
11:26 10 It feels like a hundred years ago now.
11:26 11 And then I got into this business where I've
11:26 12 been helping companies license intellectual property as
11:26 13 well as doing stuff like I am today, which is
11:26 14 testifying on intellectual property damages.
11:26 15 MR. NASH: Your Honor, we tender
11:26 16 Mr. Lasinski as an expert in patent damages.
11:26 17 MR. HIRSCH: No objection, Your Honor.
11:26 18 THE COURT: Admitted.
11:26 19 BY MR. NASH:
11:26 20 Q. Mr. Lasinski, what are you here to talk about
11:26 21 today?
11:26 22 A. Well, I'm here to talk about patent damages,
11:26 23 or the amount of money that would go from ClearCorrect
11:26 24 and Straumann on the one hand to Align on the other
11:27 25 hand if the patents are found to be infringed.

11:27 1 Q. Now, do you have any opinion about whether
11:27 2 ClearCorrect or Straumann infringes?
11:27 3 A. No. I do not. That's actually an assumption
11:27 4 that I make as part of my work.
11:27 5 Q. Okay. And do you have any slides to help you
11:27 6 with your testimony today?
11:27 7 A. I do. Yes.
11:27 8 MR. NASH: Okay. Mr. Smith, can we have
11:27 9 PDX-7.1?
10 BY MR. NASH:
11:27 11 Q. Are these your slides?
11:27 12 A. These are those slides. Yes.
11:27 13 MR. NASH: Okay. Let's go to the next
11:27 14 one. PDX-7.2.
15 BY MR. NASH:
11:27 16 Q. Mr. Lasinski, can you please summarize for us
11:27 17 what your damages opinion is in this case?
11:27 18 A. Sure. So we've heard about the Zendura FLX
11:27 19 material, and I have a damages opinion on that, as well
11:27 20 as clear aligners, and I have a damages opinion on
11:27 21 that.
11:27 22 I have a 20- -- what they call a 24 percent
11:27 23 royalty rate for the Zendura FLX material. And I
11:27 24 multiply that by the amount of sales of Zendura FLX
11:27 25 material over the period that we're here to talk about.

11:27 1 That's $166.1 million or a damages figure of
11:28 2 39.9 million.
11:28 3 For the clear aligners, I have a royalty rate
11:28 4 of 12 percent, and a total amount of sales there of
11:28 5 about $280 million and a damages figure for that for
11:28 6 about 300 -- I'm sorry, $33.5 million. Total damages
11:28 7 of 73.4 million.
11:28 8 Q. Well, how do you figure out these types of
11:28 9 numbers?
11:28 10 A. Well, we heard a little bit about this at the
11:28 11 opening, and we have what's known as the hypothetical
11:28 12 negotiation. And that's where the parties would sit
11:28 13 down at a table, a hypothetical table, if you will,
11:28 14 Align on the one hand and Straumann on the other hand,
11:28 15 and come to an agreement for what a reasonable amount
11:28 16 of payment would be for a license to those -- those
11:28 17 intellectual properties.
11:28 18 Q. And who would have been the parties at this
11:29 19 hypothetical negotiation, Mr. Lasinski?
11:29 20 A. It would have been Align on the one hand as
11:29 21 the licensor, and it would have been ClearCorrect and
11:29 22 Straumann on the other hand as the licensee.
11:29 23 Q. And what are the assumptions that would be
11:29 24 built into this hypothetical negotiation?
11:29 25 A. Well, there's really three assumptions.

11:29 1 First is that the parties are willing to take
2 a license.
11:29 3 The second is that the patents that we are
11:29 4 talking about are valid and infringed. I assume that
11:29 5 they are valid and infringed.
11:29 6 And then there's reasonable knowledge of the
11:29 7 facts so there's no surprises. Both parties understand
11:29 8 what's going on in the other person's mind, if you
11:29 9 will, about the products.
11:29 10 Q. And when would it have happened?
11:29 11 A. Well, in this case, the sales of the products,
11:29 12 Zendura FLX as well as the clear aligners, were
11:29 13 happening prior to the patent issuing, the first
11:29 14 materials patent that we heard about.
11:29 15 So that would happen in April, right around
11:29 16 April of 2021 as that first patent issues.
11:30 17 Q. And why is that the date we use?
11:30 18 A. Well, because that's the start of the
11:30 19 infringement period, is when the first patent issues.
11:30 20 There's no infringement, my understanding, before a
11:30 21 patent has issued.
11:30 22 Q. Okay. And now, is there anything else we need
11:30 23 to know before we start looking at what Align and
11:30 24 Straumann would have agreed to?
11:30 25 A. Sure. So inside the hypothetical negotiation

11:30 1 framework, there's 15 factors that the courts have set
11:30 2 forward and that people like me, damages experts, use
11:30 3 to determine what they would have been thinking about
11:30 4 when they were at the hypothetical negotiation table.
11:30 5 And this is -- these are those 15 factors.
11:30 6 Q. And what do you call those factors?
7 A. They're the Georgia-Pacific factors. They're
11:30 8 from a case -- I think it was 1970 -- in New York.
11:30 9 Q. I see. And did you analyze all of these
11:30 10 factors in forming your opinion?
11:30 11 A. Yes. I did.
11:30 12 Q. Okay. Well, let's talk about the ones on the
11:30 13 left, starting with comparable license and other
11:31 14 licensing factors.
11:31 15 A. Sure. So I looked for and did not find any
11:31 16 comparable licenses. That's not surprising because
11:31 17 Align has a clear track record of not licensing its
11:31 18 patents like these types of patents to competitors.
11:31 19 Q. What about that middle bucket we see there.
11:31 20 It says economic factors?
11:31 21 A. Sure. So the middle bucket relates to kind of
11:31 22 competitive or economic factors. So are the companies
11:31 23 competitors? Do the companies believe that the
11:31 24 products making or being made under the patents will be
11:31 25 successful or, you know, generate a lot of profits in

11:31 1 the industry?
11:31 2 You know, on Align's side, do they feel like
11:31 3 they could have made some of the sales that were being
11:31 4 made by ClearCorrect because they're a competitor to
11:31 5 them?
11:31 6 Q. And what about in the bucket on the far right?
11:31 7 A. So the bucket on the far right are technical
11:32 8 factors. And here, I talked to, for example,
11:32 9 Dr. Reitman, who was just heard from. And she told me
11:32 10 that this is an important technology. It relates to
11:32 11 comfort, patient comfort. Therefore, they use it more
11:32 12 often. Better clinical outcomes. So that was
11:32 13 important.
11:32 14 And then also very importantly, I understand
11:32 15 that there were no acceptable noninfringing
11:32 16 alternatives. So the parties would have known that
11:32 17 they would continue to use an infringing product.
11:32 18 Q. So what's your conclusion after analyzing all
11:32 19 15 of these factors?
11:32 20 A. After analyzing these factors, I conclude that
11:32 21 the negotiating range would favor Align or it would be
11:32 22 at the higher end of the negotiation range.
11:32 23 Q. Okay. Now, I'd like to talk to you about how
11:32 24 you analyze damages generally.
11:32 25 A. Sure.

11:32 1 MR. NASH: Let's go to the next slide.
2 BY MR. NASH:
11:32 3 Q. What are the steps you use to calculate
11:33 4 damages?
11:33 5 A. Sure. So we saw in the first -- we saw in the
11:33 6 first page I had a royalty rate and a royalty base.
11:33 7 So first, I calculated the royalty rate for
11:33 8 each of the products that we're going to talk about,
11:33 9 and then I tabulated or looked at the documents in the
11:33 10 record to determine what that royalty base was. I
11:33 11 multiplied those two together to get the damages that
11:33 12 we're going to talk about.
11:33 13 Q. I see the word "royalty" used in a couple of
11:33 14 contexts there.
11:33 15 Just at a high level, what is a royalty?
11:33 16 A. Sure. A royalty is a license for intellectual
11:33 17 property like patents. You can think about it like
11:33 18 rent for an apartment. You don't own the apartment
11:33 19 that you're living in, so you have to pay rent.
11:33 20 And that's a very similar concept for
11:33 21 intellectual property. ClearCorrect and Straumann
11:33 22 don't own these patents, but they would pay a royalty
11:33 23 to Align.
11:33 24 Q. Which Straumann business units do we care
11:33 25 about for purposes of this analysis?

11:33 1 A. Well, we've heard about Bay Materials.
11:33 2 They're the ones that make the Zendura FLX material.
11:34 3 So we care about them. And then as well as
11:34 4 ClearCorrect, they're the ones that actually make and
11:34 5 sell the aligners.
11:34 6 Q. Okay. Well, let's focus first on that royalty
11:34 7 rate, Mr. Lasinski.
11:34 8 A. Sure.
11:34 9 Q. I see that you already had two percentages
11:34 10 here. Why is that?
11:34 11 A. Well, because there were -- the two business
11:34 12 units that I just talked about, there are different
11:34 13 economic factors that went into those business units.
11:34 14 We heard earlier that Straumann, through Bay Materials,
11:34 15 sells the aligner material. And then through
11:34 16 ClearCorrect, they sell aligners. And there are other
11:34 17 companies that sell aligners that use Zendura FLX as
11:34 18 well.
11:34 19 So I broke it into two different buckets.
11:34 20 Q. Well, let's start with that first bucket, the
11:34 21 royalty rate for Zendura FLX.
11:34 22 Now, can you at a high level explain your
11:34 23 process?
11:34 24 A. Sure. So I have a four-step process that I
11:34 25 use here.

11:34 1 First, I determine the profits that were
11:34 2 available or projected for Zendura FLX.
11:35 3 And then I go through two apportionments of
11:35 4 those profits so that Bay Materials and/or Straumann in
11:35 5 this case retained those portions of the profits, and
11:35 6 the remainder is left over for payment of a royalty.
11:35 7 Q. Well, let's start with that first step.
11:35 8 Can you explain that in your analysis for the
11:35 9 first step?
11:35 10 A. Sure. So around the time of the hypothetical
11:35 11 negotiation for Bay Materials and for Zendura FLX, I
11:35 12 had projections. And I was able to use those
11:35 13 projections to determine what Bay Materials was
11:35 14 thinking that they would make from the products that we
11:35 15 were talking about here.
11:35 16 And what I found was there would be a
11:35 17 65 percent gross margin on those products, but there
11:35 18 would be expenses in addition to just the material
11:35 19 expenses that would be incurred as well. And they're
11:35 20 about 10.1 percent.
11:35 21 So I was able to calculate a 54.9 percent
11:35 22 margin or a profit margin on Zendura FLX sales.
11:36 23 Q. I'd like you to turn to JTX-19 and JTX-22 in
11:36 24 your binder.
11:36 25 A. I'm sorry, you said 19 and 22?

11:36 1 Q. That's right.
11:36 2 A. Okay.
11:36 3 Q. Do you recognize those documents?
11:36 4 A. Yeah. These are the documents that I was just
11:36 5 talking about.
11:36 6 Q. I see. And you relied on them in forming your
11:36 7 analysis?
11:36 8 A. I did. Yes.
11:36 9 MR. NASH: I offer them, Your Honor.
11:36 10 MR. HIRSCH: No objection.
11:36 11 THE COURT: Admitted.
11:36 12 BY MR. NASH:
11:36 13 Q. Okay. So what's the next step in determining
11:36 14 the reasonable royalty rate for Zendura FLX?
11:36 15 A. So the next step was I determined industry
11:36 16 profit, like industry profit percentages.
11:36 17 So what I did here was I looked up what Bay
11:36 18 Materials' industry code is. It's called the North
11:36 19 American Industry Classification System. I found where
11:36 20 they -- where Bay Materials is in this classification
11:37 21 system that's used in the U.S., and then I used data
11:37 22 from another source called Risk Management Associates.
11:37 23 It's the type of thing that tracks companies in the
11:37 24 same industry as Bay Materials for small and medium
11:37 25 size companies, companies with less than $250 million

11:37 1 worth of assets or sales like Bay Materials.
11:37 2 And it gives us averages too so we can
11:37 3 understand what normal companies in that industry make.
11:37 4 And people like me, banking professionals, other
11:37 5 financial analysts, use that to determine what normal
11:37 6 industry profitability is.
11:37 7 Q. I'd like you to turn to PTX-356, PTX-357, and
11:37 8 PTX-360 in your binder.
11:37 9 A. Okay.
11:37 10 Q. Do you recognize those documents?
11:37 11 A. Yes. These are the documents I just
11:37 12 discussed.
11:37 13 Q. And you relied on them in your opinion?
11:38 14 A. Yes. I did.
11:38 15 MR. NASH: Your Honor, I offer them.
11:38 16 MR. HIRSCH: No objection.
11:38 17 THE COURT: Admitted.
11:38 18 BY MR. NASH:
11:38 19 Q. Okay. You mentioned Step 2 is the industry
11:38 20 profit and the 10.1. Do you just stop there and then
11:38 21 give all that's left of that profit to Align?
11:38 22 A. No. They keep the 10.1 percent. I'm sorry.
11:38 23 Bay Materials keeps the 10.1 percent, but then I have a
11:38 24 next step that I have to do for the remaining profit,
11:38 25 and that was actually to apportion that profit between

11:38 1 Align and Bay Materials.
11:38 2 Q. And what information did you use to determine
11:38 3 how to compensate Straumann and Bay Materials for the
11:38 4 Step 3 that you do in your calculation?
11:38 5 A. Sure. That's on my next slide. And what we
11:38 6 have here was information on when Straumann bought Bay
11:39 7 Materials. When a company buys another company, they
11:39 8 look at the different assets that have been bought and
11:39 9 they allocate that purchase price between the different
11:39 10 assets.
11:39 11 And one of the things that they did was
11:39 12 allocate purchase price to the intangible assets. And
11:39 13 so I used that allocation. I compared the allocation
11:39 14 of the intangible assets to the purchase price to
11:39 15 figure out what portion of that remaining profit should
11:39 16 stay with Straumann and Bay Materials in this case.
11:39 17 Q. So let's return back to your four steps. I
11:39 18 think we've gotten through three of them?
11:39 19 A. Yes.
11:39 20 Q. Okay. What's the fourth and final step?
11:39 21 A. So the fourth and final step then is now I've
11:39 22 allocated twice normal industry profit as well as
11:39 23 intangible asset profit to Straumann, and then the
11:39 24 remainder is available for a royalty to be paid.
11:39 25 In this case, we saw the additional

11:40 1 24.5 percent left over. I determined a royalty of
11:40 2 24 percent to be the right royalty.
11:40 3 Q. And how much profit does Straumann and Bay
11:40 4 Materials keep as part of that?
11:40 5 A. 30.9 percent.
11:40 6 Q. Okay. And do you think this is a reasonable
11:40 7 amount?
11:40 8 A. Yes. I do. As we just talked about, the
11:40 9 Georgia-Pacific factors are in favor of Align, but
11:40 10 still Straumann is keeping the majority of the profit.
11:40 11 Q. Well, let's turn next to the royalty rate for
11:40 12 clear aligners.
11:40 13 MR. NASH: Mr. Smith, can we get the next
11:40 14 slide?
11:40 15 There we go.
11:40 16 BY MR. NASH:
11:40 17 Q. What was that amount?
11:40 18 A. 12 percent.
11:40 19 Q. Can you tell me how you calculated that?
11:40 20 A. Sure. If we can go to the next slide, we have
11:40 21 the same basic four-step process where I determine
11:40 22 profits and then do two allocations back to Straumann
11:40 23 and in this case ClearCorrect. But I do it in a
11:40 24 slightly different way.
11:40 25 Q. Well, could you turn to JTX-21?

11:40 1 A. Yes.
11:41 2 Okay. I'm there.
11:41 3 Q. What's this document?
11:41 4 A. So this document looks at gross sales and
11:41 5 profit of ClearCorrect aligners.
11:41 6 Q. What did you find?
11:41 7 A. So in this case, I found that -- well, in this
11:41 8 case, I didn't have projections like I had for Bay
11:41 9 Materials. I actually had profits. And so I looked at
11:41 10 the profits, the gross profits that they were making
11:41 11 from the clear aligners. I found that to be
11:41 12 reasonable.
11:41 13 But I also looked at the operating or the
11:41 14 expenses that were being occurred -- incurred, and I
11:41 15 found that to be suspect or unreasonable. And I found
11:41 16 that for a number of different reasons.
11:42 17 Q. Well, what did you do then to calculate
11:42 18 operating expenses in that case?
11:42 19 A. So since I did not believe that the operating
11:42 20 expenses and do not believe that the operating expenses
11:42 21 in this case were reliable, I looked at that same
11:42 22 industry data that we talked about before. I didn't
11:42 23 use the operating margin, but I used the operating
11:42 24 expenses for this calculation.
11:42 25 Q. I see. And so what's reflected, then, in

11:42 1 Step 1 for purposes of understanding how you arrive at
11:42 2 a net profit?
11:42 3 A. So what I did here was I looked at the gross
11:42 4 profits that -- from that -- from the schedules that we
11:42 5 were just talking about. I used industry data that I
11:42 6 tested against other profitability data in the case,
11:42 7 like Align's data, Straumann's data, as well as some
11:42 8 information that I saw produced in other documents,
11:42 9 tested that information.
11:42 10 I also -- before I calculated the overall
11:43 11 profit, I calculated and took out any royalty rates or
11:43 12 any royalties that would be paid on the Zendura FLX
11:43 13 material, so not -- as to not double count those
11:43 14 royalties. And that's what went into my calculation
11:43 15 here.
11:43 16 Q. Okay. And so just so we understand, the
11:43 17 royalty that we talked about earlier with respect to
11:43 18 Zendura FLX, that is not being added here. Is that my
11:43 19 understanding?
11:43 20 A. No. It's not being added. It is actually
11:43 21 being subtracted. It's a cost. So it's being
11:43 22 subtracted.
11:43 23 Q. Okay. Let's turn to JTX-24 in your binder.
11:43 24 A. Okay. I'm there.
11:43 25 Q. Do you recognize that document?

11:43 1 A. Yes. This is the intercompany sales document
11:43 2 that we were talking about.
11:43 3 MR. NASH: Okay. At this time, we offer
11:43 4 JTX-21 and JTX-24.
11:43 5 MR. HIRSCH: No objection.
11:43 6 THE COURT: Admitted.
11:43 7 BY MR. NASH:
11:43 8 Q. So what's our conclusion at Step 1?
11:44 9 A. Is 28.9 percent profit.
11:44 10 Q. Okay. How do we get to Column 2 now?
11:44 11 A. Column 2, we have a very similar step as to
11:44 12 what we just did for Zendura FLX. Here, we look at
11:44 13 normal industry profits, and I have that staying with
11:44 14 Straumann.
11:44 15 Q. And where did you get the information for
11:44 16 that?
11:44 17 A. I got the information from the same documents
11:44 18 that we just talked about before, the industry code
11:44 19 documents, as well as the RMA documents.
11:44 20 Q. And remind us again, what happens with the
11:44 21 9.8 percent?
11:44 22 A. That stays with Straumann.
11:44 23 Q. Okay. Let's go to the Column 3 next, and
11:44 24 remind us, what's this step about?
11:44 25 A. So this step is allocating intangible asset

11:44 1 profit to Straumann. And we -- again, like Bay
11:44 2 Materials, Straumann bought ClearCorrect. And so we
11:44 3 were able to determine what percentage were
11:45 4 attributable of the purchase price to intangible
11:45 5 assets, and then I used that to determine how much of
11:45 6 the remaining profits should be allocated to Straumann
11:45 7 in this case.
11:45 8 Q. Okay. And I've pulled up PDX-7.13.
11:45 9 Is this that calculation that you were
11:45 10 referring to?
11:45 11 A. This is. Yes.
11:45 12 Q. Okay. And what was the result of that
11:45 13 calculation?
11:45 14 A. That calculation would be an incremental or
11:45 15 additional 7.1 percent profit stays with Straumann.
11:45 16 Q. So going back to the four-step analysis that
11:45 17 you have there.
11:45 18 A. Yes.
11:45 19 Q. What's our next step?
11:45 20 A. Our next step is to allocate the two. So in
11:45 21 this case, there's 12 percent left to pay a royalty on
11:45 22 the one hand, and then 16.9 percent remains with
11:45 23 Straumann.
11:45 24 Q. Now, do you think that's a reasonable amount?
11:45 25 A. Just like for Zendura FLX, I think that that's

11:45 1 a reasonable amount, given what the Georgia-Pacific
11:46 2 factors said as well as my analysis.
11:46 3 Q. Now, I don't want to go back through all the
11:46 4 Georgia-Pacific factors that are used to determine
11:46 5 things like this royalty, but on the economic prong
11:46 6 factor in this hypothetical negotiation, with Straumann
11:46 7 and ClearCorrect and Align be considering for the rate
11:46 8 of aligners, do they consider sales of anything else?
11:46 9 A. Yes. They do. For example, they would
11:46 10 consider sales of, you know, other types of products
11:46 11 that the company makes, and one of them that we've
11:46 12 heard about is the scanners.
11:46 13 Q. Can you look at your binder at PTX-0456 and
11:46 14 PTX-0457?
11:46 15 A. Yes.
11:46 16 Q. Do you recognize these documents?
11:46 17 A. Yes. These are sales documents for scanners.
11:46 18 Q. At this time -- actually, did you consider
11:46 19 these sales in your analysis?
11:46 20 A. Yes. I did.
11:46 21 MR. NASH: Okay. Your Honor, we offer
11:46 22 them.
11:46 23 MR. HIRSCH: Your Honor, these are the --
11:46 24 THE COURT: Understood.
11:46 25 (Simultaneous conversation.)

11:46 1 MR. HIRSCH: -- discussed this morning.
11:46 2 So we do object.
11:47 3 THE COURT: The objection's sustained.
11:47 4 MR. NASH: Let's go back to 7.2. Sorry,
11:47 5 Mr. Smith. Can you get me to 7.2?
6 BY MR. NASH:
11:47 7 Q. Okay. So now we have the royalty rates.
11:47 8 What is the next step in calculating damages?
11:47 9 A. The next step is to tabulate the royalty base
11:47 10 or to calculate the royalty base.
11:47 11 Q. And what are the relevant sales here?
11:47 12 A. In Zendura FLX, it's 166.1 million, and then
11:47 13 for clear aligners, it's 279 million.
11:47 14 Q. All right. Well, let's start with Zendura
11:47 15 FLX.
11:47 16 Do the defendants make, use, and offer for
11:47 17 sale -- sorry -- make, use, and sell Zendura FLX
11:47 18 material in the United States?
11:47 19 A. Yes. They do.
11:47 20 Q. Okay. And what does that number consist of?
11:48 21 A. Well, on the next slide, I've tabulated the
11:48 22 sales and --
11:48 23 MR. NASH: Whoops. Can we get to
11:48 24 PDX-7.15, please, Mr. Smith?
11:48 25 Thank you.

11:48 1 A. So I've tabulated them in three different
11:48 2 buckets. First, U.S.-only sales. So sales to U.S.
11:48 3 customers. And that's 54.8 million.
11:48 4 The rest of the world, so sales outside of the
11:48 5 United States, and that's 95.1 million.
11:48 6 And then there was a stub period or a period
11:48 7 in which I couldn't allocate between the U.S. and
11:48 8 global, and I call that "global unallocated" here.
11:48 9 There would be some U.S. sales. There are rest of the
11:48 10 world sales in there. That's 16.2 million.
11:48 11 BY MR. NASH:
11:48 12 Q. Now, I see -- oh, I'd like you to turn to
11:48 13 JTX-20 and 23 in your binder.
11:48 14 A. 20 and 23, you said?
11:49 15 Q. 20 and 23. That's right.
16 MR. NASH: And, Your Honor, may I
17 approach with a secure binder for the witness?
18 BY MR. NASH:
11:49 19 Q. Okay. Mr. Lasinski, I think you were speaking
11:49 20 to the sales that we see here, and I had you turn to
11:49 21 JTX-20 and 23.
11:49 22 A. That's correct. I have 23. I have 23 in this
11:50 23 binder. I do not see 20.
11:50 24 Oh, I got 20. Here it is. Yeah. I've got
11:50 25 20.

11:50 1 Q. Okay. Do you recognize these documents?
11:50 2 A. Yes. I do. These are the documents we were
11:50 3 just discussing.
11:50 4 MR. NASH: At this time, plaintiff offers
11:50 5 20 and -- JTX-20 and 23, Your Honor.
11:50 6 MR. HIRSCH: No objection.
11:50 7 THE COURT: Admitted.
11:50 8 BY MR. NASH:
11:50 9 Q. Now, let's talk about the dates that we see on
11:50 10 this slide, Mr. Lasinski.
11:50 11 A. Yes.
11:50 12 Q. What do they represent?
11:50 13 A. So the dates on the left are the date that I
11:50 14 understand the patent was first marked on a virtual or
11:50 15 a website for Align.
11:50 16 And the date on the right, the dates on the
11:50 17 right, are the dates through which I had information on
11:50 18 the sales that we were just talking about, with the
11:50 19 exception of the bottom row here, which that's the --
11:51 20 what I call the stub period or a period that starts
11:51 21 September 1st, 2025, through December 2025.
11:51 22 I didn't have information to allocate those
11:51 23 sales between the U.S. and the rest of the world. So
11:51 24 that's the period -- is a little bit different than the
11:51 25 other two rows.

11:51 1 Q. I'd like you to turn to PTX-1265 in your
11:51 2 binder.
11:51 3 A. Okay.
11:51 4 Q. At a high level, what is this document?
11:51 5 Oh, I'm sorry. You weren't there yet.
11:51 6 A. Yep. I'm here.
11:51 7 Q. Okay.
11:51 8 A. So this document is the HTML code for the
11:51 9 website that I was just talking about. And it has
11:51 10 information on this marking date as well as the '613
11:51 11 patent that we talked about for the hypothetical
11:51 12 negotiation.
11:51 13 Q. And did you rely on this document in forming
11:51 14 your opinion?
11:51 15 A. Yes. For the marking date we just discussed.
11:51 16 MR. NASH: At this time, we offer it into
11:51 17 evidence, Your Honor.
11:51 18 MR. HIRSCH: No objection.
11:51 19 THE COURT: Admitted.
11:52 20 BY MR. NASH:
11:52 21 Q. Okay. Let's turn to the aligners.
11:52 22 Do defendants make, use, and sell aligners
11:52 23 from -- made from the Zendura FLX material in the
11:52 24 United States?
11:52 25 A. Yes. They do.

11:52 1 Q. And what did you do to find the royalty base
11:52 2 for aligners made of Zendura FLX?
11:52 3 A. So I looked at information produced in the
11:52 4 record, information for -- if you -- if we look at the
11:52 5 next slide, there's information on -- there's
11:52 6 information on --
11:52 7 Q. Hold one second, Mr. Lasinski.
11:52 8 A. Yeah.
11:52 9 Q. I just wanted to know at a high level, do we
11:52 10 have a base here on -- as part of your summary opinion?
11:52 11 A. Sure. Yes. I found $279.7 million based on
11:52 12 information provided to me.
11:52 13 MR NASH: Okay. And we can go into a
11:52 14 breakdown, but, Your Honor, at this time, I think we
11:52 15 need to go on the sealed record because we'll have
11:52 16 third-party confidential financial information.
11:52 17 THE COURT: Okay.
11:53 18 (Sealed proceedings.)
11:53 19 BY MR. NASH:
11:53 20 [redacted]
11:53 21 [redacted]
11:53 22 [redacted]
11:53 23 [redacted]
11:53 24 [redacted]
11:53 25 [redacted]

11:53 1 [redacted]
11:53 2 [redacted]
11:53 3 [redacted]
11:53 4 [redacted]
11:53 5 [redacted]
11:53 6 [redacted]
11:53 7 [redacted]
11:53 8 [redacted]
11:53 9 MR. NASH: Okay. Your Honor, at this
11:53 10 time, we offer them.
11:53 11 MR. HIRSCH: No objection.
11:53 12 THE COURT: Admitted.
11:53 13 [redacted]
11:53 14 [redacted]
11:53 15 [redacted]
11:54 16 [redacted]
11:54 17 [redacted]
11:54 18 [redacted]
11:54 19 [redacted]
11:54 20 [redacted]
11:54 21 [redacted]
11:54 22 [redacted]
11:54 23 [redacted]
11:54 24 [redacted]
11:54 25 [redacted]

11:54 1 [redacted]
11:54 2 [redacted]
11:54 3 [redacted]
11:54 4 [redacted]
11:54 5 [redacted]
11:54 6 [redacted]
11:54 7 MR. NASH: And, Your Honor, I think we
11:54 8 can now go off the sealed record.
09:42 9 (Sealed proceedings end.)
11:55 10 BY MR. NASH:
11:55 11 Q. So you -- whoops. Let's go to -- well, so you
11:55 12 calculated the royalty rates and the royalty bases.
11:55 13 How did you then go about calculating damages?
11:55 14 A. I took these royalty rates. I multiplied them
11:55 15 by the bases, and then I added them up. So the
11:55 16 24 percent for Zendura FLX, approximately
11:55 17 $166.1 million worth of sales, $39.9 million worth of
11:55 18 damages on that hand; and then on the other hand, clear
11:55 19 aligners, 12 percent royalty rate, $279.7 million worth
11:55 20 of sales, $33.5 million worth of damages for
11:55 21 73.4 million of total damages.
11:55 22 Q. Now, at some point we might be hearing about
11:55 23 things like running royalties and lump sum. Which is
11:55 24 this?
11:55 25 A. This is a running royalty that was calculated

11:55 1 up through the time with which I had information.
11:56 2 Q. Okay. So altogether, what's the total amount
11:56 3 you believe defendants should pay for past damages for
11:56 4 the use of Align's patents?
11:56 5 A. In my opinion, it's $73.4 million.
11:56 6 MR. NASH: Thank you, Your Honor. I pass
11:56 7 the witness.
11:56 8 THE WITNESS: Before we start, could I
11:56 9 just get a water?
11:56 10 THE COURT: Let me ask. Maybe.
11:56 11 Ladies and gentlemen of the jury, it's
11:56 12 about noon. Would you prefer to take our lunch break
11:56 13 now, or would you prefer to start the cross and go for
11:56 14 a while? I'm -- y'all are the judges. You tell me
11:56 15 what you'd like to do.
11:56 16 I can't hear.
11:56 17 JUROR: Can we finish?
11:56 18 THE COURT: Finish with him? Y'all are
11:56 19 the judges. That's fine with me.
11:56 20 So yes, sir.
11:56 21 MR. HIRSCH: Thank you, Your Honor.
11:56 22 THE COURT: And yes, now you can have
11:56 23 some water. Mr. Nash will get it for you.
11:57 24 MR. HIRSCH: Good morning, ladies and
11:57 25 gentlemen of the jury. My name's Jordan Hirsch, one of

11:57 1 the attorneys for ClearCorrect.

2 CROSS-EXAMINATION

3 BY MR. HIRSCH:

11:57 4 Q. Mr. Lasinski, nice to see you, sir.

11:57 5 A. Good to see you again.

11:57 6 Q. We actually met, as you referenced, right?

11:57 7 A. We did. Yes.

11:57 8 Q. I took your deposition in this case back in

11:57 9 March of this year; is that right?

11:57 10 A. That is correct.

11:57 11 Q. Well, nice to meet with you again, sir.

11:57 12 I want to start with something you said at the

11:57 13 beginning of your testimony, and that is that for

11:57 14 purposes of your analysis, you assume infringement; is

11:57 15 that correct?

11:57 16 A. I do.

11:57 17 Q. You didn't independently analyze infringement,

11:57 18 fair?

11:57 19 A. I think you're asking me to say yes. But yes,

11:57 20 that's -- that is fair.

11:57 21 Q. Thank you.

11:58 22 You assumed, for purposes of your analysis,

11:58 23 that ClearCorrect infringes, correct, sir?

11:58 24 A. Yes. I did.

11:58 25 Q. And you mentioned and described for us the

11:58 1 hypothetical negotiation, right?
11:58 2 A. Yes, sir.
11:58 3 Q. And you described the hypothetical in which
11:58 4 ClearCorrect and Align assume the patents are infringed
11:58 5 and valid and negotiate a license, true?
11:58 6 A. True. I just -- just so maybe we're not
11:58 7 talking past each other, I said ClearCorrect and
11:58 8 Straumann. But, I mean, if you say ClearCorrect,
11:58 9 that's true, but Straumann would be at the table as
11:58 10 well.
11:58 11 Q. Sure. But in your -- that's fine.
11:58 12 In your hypothetical negotiation, you have
11:58 13 ClearCorrect and Straumann on one side and Align on the
11:58 14 other, right?
11:58 15 A. Correct.
11:58 16 Q. And you're assuming that those parties would
11:58 17 themselves assume infringement and validity and
11:58 18 negotiate a license, true?
11:58 19 A. That is my understanding of the task.
11:59 20 Q. And you understand, sir, that not in the
11:59 21 hypothetical world but in the real world, in this
11:59 22 courtroom, you understand that ClearCorrect says they
11:59 23 don't need to take a license to the asserted patents,
11:59 24 true?
11:59 25 A. I do understand that. Yes.

11:59 1 Q. You understand that in the real world,
11:59 2 ClearCorrect says they don't infringe the asserted
11:59 3 patents, true, sir?
11:59 4 A. I -- I heard that. Yes.
11:59 5 Q. Right. And you would agree with me that if
11:59 6 the ladies and gentlemen of the jury in the real world
11:59 7 decide that ClearCorrect does not infringe, including
11:59 8 because the elongation at break requirement is not met,
11:59 9 you'd agree damages are not that $73 million number
11:59 10 that you showed us, fair?
11:59 11 A. Well, I'm not going to testify at all as to
11:59 12 elongation at break or anything like that. But my
11:59 13 understanding is if there's no infringement, then
11:59 14 there's no damages.
12:00 15 Q. Right. So if the ladies and gentlemen of the
12:00 16 jury conclude there's no infringement, the elongation
12:00 17 at break requirement is not met, the correct damages
12:00 18 number in the real world is actually zero, true?
12:00 19 A. If there's no infringement, my
12:00 20 understanding -- it's a legal conclusion, but my
12:00 21 understanding is there would be no damages.
12:00 22 Q. No damages.
12:00 23 Now, I want to pull up, if we could, Slide 12
12:00 24 from your -- from your damages deck.
12:00 25 A. Sure.

12:00 1 MR. HIRSCH: Pull that up, Mr. Lee.
12:00 2 BY MR. HIRSCH:
12:00 3 Q. And I want to pause for a moment here. This
12:00 4 was your -- your ClearCorrect aligner calculation,
12:00 5 right?
12:00 6 A. Correct.
12:00 7 Q. And this is where you calculate --
12:00 8 A. Clear -- ultimately aligner royalty.
12:00 9 Q. Aligner royalty. Right.
12:00 10 And you calculate the 12 percent royalty,
12:00 11 true?
12:00 12 A. These are the steps that I use. Yes.
12:00 13 Q. Right. And I want to pause for a moment, sir,
12:00 14 on No. 1 in the left-hand side where you say: Identify
12:00 15 ClearCorrect aligner profit.
12:01 16 Do you see that?
12:01 17 A. I do. Yes.
12:01 18 Q. And right below that you say: Adjusted where
12:01 19 necessary.
12:01 20 Right?
12:01 21 A. I do. Yes.
12:01 22 Q. And I want to talk a little bit about that
12:01 23 adjustment. Okay?
12:01 24 A. Sure.
12:01 25 Q. And you would agree with me, Mr. Lasinski,

12:01 1 sometimes when we're digging into these damages
12:01 2 calculations, it's helpful to understand some of the
12:01 3 details. Would you agree?
12:01 4 A. Sure.
12:01 5 Q. It's helpful to explain some of the numbers
12:01 6 that are behind the calculations, fair?
12:01 7 A. I think that's fair.
12:01 8 Q. All right. I want to put on the projector
12:01 9 here something from your expert report, and you can
12:01 10 follow along, sir, if it's easier to see in front of
12:01 11 you. It's Tab No. 6 in your report.
12:01 12 Do you have that before you?
12:01 13 A. I'm here. Yes.
12:01 14 Q. All right. And now Tab 6 in your report is
12:01 15 the actual underlying calculations that you made for
12:01 16 your ClearCorrect aligner royalty rate, true?
12:02 17 A. Yes, sir.
12:02 18 Q. And if we look, we can see right here you've
12:02 19 got your 12 percent, right?
12:02 20 A. I do. Yes.
12:02 21 Q. And now I want to dig in a little bit to the
12:02 22 profit number, if I could. You started, you said,
12:02 23 Mr. Lasinski, by looking at gross margin, right?
12:02 24 A. Yes, sir.
12:02 25 Q. And then you subtract operating expenses,

12:02 1 true?
12:02 2 A. Sure. Can I -- can I just clarify one thing?
12:02 3 Q. Sure.
12:02 4 A. When you say "gross margin," this is the
12:02 5 adjusted gross margin --
12:02 6 Q. Fair enough.
12:02 7 A. -- for the Zendura FLX royalties.
12:02 8 Q. Okay. So we have ClearCorrect, adjusted gross
12:02 9 margin, right?
12:02 10 A. Yes, sir.
12:02 11 Q. And then you subtract operating expenses,
12:02 12 right?
12:02 13 A. Yes, sir.
12:02 14 Q. And you're trying to get to operating
12:02 15 profitability, true?
12:02 16 A. Yes. As one of the steps, correct.
12:02 17 Q. And that's one of the steps that leads to your
12:03 18 12 percent royalty rate, right?
12:03 19 A. Correct.
12:03 20 Q. Now, if we focus for a moment, sir, to dig
12:03 21 into the details a bit, for gross margin, you refer to
12:03 22 ClearCorrect, right? ClearCorrect, gross margin.
12:03 23 Do you see that?
12:03 24 A. Yes. I do.
12:03 25 Q. And then for the operating profitability, you

12:03 1 say ClearCorrect, right, because you're trying to
12:03 2 calculate ClearCorrect's operating profits, true?
12:03 3 A. What their expectations would have been, yes.
12:03 4 That's true.
12:03 5 Q. And then for the operating expenses, though,
12:03 6 you don't write ClearCorrect. You wrote: Average
12:03 7 NAICS 339114 historical relevant operating expenses.
12:03 8 Right?
12:03 9 A. That's exactly right. Yes.
12:03 10 Q. And in fact, sir, what that 339114 refers to
12:03 11 is an industry code number, right?
12:03 12 A. Yes. I mean, just like what I talked about
12:04 13 earlier, that's right. That's right.
12:04 14 Q. That industry code is the dental equipment
12:04 15 industry, true?
12:04 16 A. Yes, sir.
12:04 17 Q. And you would agree with me, the dental
12:04 18 equipment industry includes far more than clear
12:04 19 aligners, right?
12:04 20 A. It does include more than clear aligners.
12:04 21 Q. The dental equipment industry, for example,
12:04 22 includes things like dental chairs, correct?
12:04 23 A. It would. Yes.
12:04 24 Q. Dental chairs, we agree, are not related to
12:04 25 the asserted patents, right?

12:04 1 A. They could be made by the same companies that
12:04 2 make these types of products, but they're not related
12:04 3 to the patents. That's correct.
12:04 4 Q. We agree that the dental chairs themselves,
12:04 5 they're a part of the dental equipment industry, not
12:04 6 related to the patents, fair, sir?
12:04 7 A. That is fair.
12:04 8 Q. All right. And the dental equipment industry
12:04 9 includes things like cement used for dental glues,
12:04 10 right?
12:04 11 A. It can. Yes.
12:04 12 Q. Also not related to the asserted patents.
12:04 13 That's fair?
12:04 14 A. That's my understanding. Yes, sir.
12:04 15 Q. All right. So we've got the dental equipment
12:04 16 industry relevant operating expenses, true?
12:05 17 A. True.
12:05 18 Q. Now, you had, sir, you had -- when you did
12:05 19 your analysis, you had ClearCorrect's operating
12:05 20 expenses, correct?
12:05 21 A. Yes. I did.
12:05 22 Q. And in fact, it's true, is it not, that using
12:05 23 ClearCorrect's operating expenses, their real-world
12:05 24 operating expenses -- not the dental equipment
12:05 25 operating expenses but ClearCorrect's actual operating

12:05 1 expenses -- would result in a negative profit, correct?
12:05 2 A. Well, if you use the information from the P&L,
12:05 3 that is correct. I deem that to be unreliable. So I'm
12:05 4 not sure that that would be right.
12:05 5 But if you use the numbers directly from the
12:05 6 P&L that was produced, that is correct.
12:05 7 Q. Let me ask it this way, sir: Isn't it true
12:05 8 that using the actual operating expenses that
12:05 9 ClearCorrect incurred would result in a negative net
12:06 10 profit number; isn't that true?
12:06 11 A. Using the actual operating expenses from the
12:06 12 document, that is true.
12:06 13 Q. All right.
12:06 14 A. I don't think that those expenses are
12:06 15 reliable. That's why I didn't use them.
12:06 16 Q. ClearCorrect produced its data, true, sir?
12:06 17 A. It did.
12:06 18 Q. That's the data that has the operating
12:06 19 expenses, right?
12:06 20 A. It has what they purport the operating
12:06 21 expenses are. That is correct.
12:06 22 Q. And according to those actual operating
12:06 23 expenses, in that document, ClearCorrect's profit would
12:06 24 be negative, right?
12:06 25 A. According to that document, it would be

12:06 1 negative. That is correct.
12:06 2 Q. All right. And you understand, sir, that that
12:06 3 is one of the reasons why ClearCorrect's here in this
12:06 4 courtroom, right?
12:06 5 A. Well, I -- not for patent infringement.
12:06 6 That's not why they're here.
12:06 7 Q. You were here for the opening statement,
12:06 8 right, sir?
12:06 9 A. I was. Yes.
12:06 10 Q. You understand that ClearCorrect contends that
12:06 11 Align's market practices have prevented ClearCorrect
12:06 12 and others from being profitable, true, sir?
12:07 13 A. I don't have any knowledge about that piece of
12:07 14 the case.
12:07 15 Q. You heard that argument?
12:07 16 A. I heard what was said. I don't know that
12:07 17 specifically that they were prevented from being
12:07 18 profitable because of Align, but I heard something
12:07 19 similar to that. But I don't know anything about --
12:07 20 Q. And you're not here -- you're not here, sir,
12:07 21 to defend the market practices of Align, are you, sir?
12:07 22 A. No. I'm not.
12:07 23 Q. And isn't it correct, Mr. Lasinski, that if
12:07 24 you had used ClearCorrect's actual operating expenses,
12:07 25 their real-world operating expenses, your damages

12:07 1 result wouldn't be 12 percent, would it?
12:07 2 A. Well, if you're asking if I put a different
12:07 3 number in there, would it be 12 percent, it wouldn't
12:07 4 be. But again, I don't know what their actual
12:07 5 operating expenses are --
12:07 6 Q. Sir, you had their data?
12:07 7 A. I did.
12:07 8 Q. Right.
12:07 9 A. But I didn't think it was reliable.
12:07 10 THE COURT: Let's -- again, have you been
12:07 11 in the courtroom?
12:07 12 THE WITNESS: Yes.
12:07 13 THE COURT: What have I told every
12:08 14 witness?
12:08 15 THE WITNESS: To answer.
12:08 16 THE COURT: Just answer his question. If
12:08 17 you want to give Mr. Nash an explanation when he's back
12:08 18 up here about reliability, that's fine. But for now,
12:08 19 just answer the question.
12:08 20 THE WITNESS: Okay.
12:08 21 BY MR. HIRSCH:
12:08 22 Q. All right. Sir, here's my question.
12:08 23 A. Sure.
12:08 24 Q. Isn't it correct, using ClearCorrect's actual
12:08 25 real-world operating expenses, if you had used that in

12:08 1 your calculation, your result wouldn't be 12 percent;
12:08 2 isn't that true?
12:08 3 A. If I use the numbers from that document, that
12:08 4 is correct.
12:08 5 Q. And isn't it true, sir, that if you had used
12:08 6 ClearCorrect's actual real-world operating expenses,
12:08 7 your damages number would not be that $73 million that
12:08 8 you showed us; isn't that true?
12:08 9 A. I would have had to use another method. So it
12:08 10 would not. But it would have been different.
12:08 11 Q. And isn't it correct, sir, that if you had
12:08 12 used the actual ClearCorrect real-world operating
12:08 13 expenses in your calculation, your damages result for
12:08 14 ClearCorrect aligners would be negative?
12:09 15 A. Well, if I had put that number in my -- in
12:09 16 this particular calculation, it would have been
12:09 17 negative. That's correct.
12:09 18 Q. All right. Now, let's pull up your Slide 8
12:09 19 from your testimony a moment ago.
12:09 20 This was your Zendura FLX royalty rate
12:09 21 calculation, correct?
12:09 22 A. Correct.
12:09 23 Q. And here, sir, the second -- your No. 2 says:
12:09 24 Defendants keep industry average profit.
12:09 25 Do you see that?

12:09 1 A. Yes, sir.
12:09 2 Q. And again, I want to dig into the details and
12:09 3 go behind the slide a little bit. Okay?
12:09 4 A. Okay.
12:09 5 Q. I want to look at your -- the math that led
12:09 6 you to these numbers, fair?
12:09 7 A. Sure.
12:09 8 Q. All right. Let's pull up on your -- it's in
12:09 9 your binder. Tab -- I believe it's 11, if you want to
12:09 10 look.
12:09 11 A. Okay.
12:09 12 MR. HIRSCH: And if we could turn the
12:10 13 ELMO on, I can show it to folks.
14 BY MR. HIRSCH:
12:10 15 Q. This is another schedule from your report,
12:10 16 right?
12:10 17 A. This is. Correct.
12:10 18 Q. And this shows the math behind your Zendura
12:10 19 FLX reasonable royalty argument, correct?
12:10 20 A. Yes, sir.
12:10 21 Q. And for this one, you allege it's a 24 percent
12:10 22 royalty rate, right?
12:10 23 A. That's what I say.
12:10 24 Q. And again, if we look at the numbers behind
12:10 25 the -- or the math behind the numbers here, we see

12:10 1 right here another reference to a NAICS industry code,
12:10 2 right?
12:10 3 A. That correct. Yes, sir.
12:10 4 Q. And this time, Mr. Lasinski, that code refers
12:10 5 to a different industry, the plastics industry, true?
12:10 6 A. I think it's like plastics and resin
12:10 7 composites.
12:10 8 Q. I think the full name is plastics material and
12:10 9 resin manufacturing.
12:10 10 Does that sound right?
12:11 11 A. That's right.
12:11 12 Q. So for this calculation, you used -- I'll
12:11 13 abbreviate to plastics industry. Is that okay?
12:11 14 A. I'm okay. I just want to make sure we're
12:11 15 clear on the record.
12:11 16 Q. Thank you.
12:11 17 For this one, you use the plastics industry as
12:11 18 part of your calculations, correct?
12:11 19 A. Yeah. That's the industry Bay Materials is
12:11 20 in.
12:11 21 Q. And what you're doing here, if we want to
12:11 22 understand the numbers a little bit, you have Zendura
12:11 23 FLX operating profits, right? That's what I just
12:11 24 underlined?
12:11 25 A. Yeah. I'm sorry. The screen was blinking out

12:11 1 for me. But yes. That's what you underlined.
12:11 2 Q. And then you're trying to get to excess --
12:11 3 what you call excess earnings, right?
12:11 4 A. Yes, sir.
12:11 5 Q. And so you have Zendura FLX operating profit,
12:11 6 true?
12:11 7 A. Yes, sir.
12:11 8 Q. You're trying to determine how much of that is
12:11 9 excess earnings that you say is attributable to the
12:11 10 asserted patents, true?
12:11 11 A. Well, not at that step. No. You have to do
12:11 12 the next step too.
12:11 13 Q. That's what the excess earnings is trying to
12:11 14 calculate, right?
12:11 15 A. Well, that's a piece in this -- in the process
12:12 16 that's not -- we're not done yet. So you can't say
12:12 17 it's attributable to the patents yet.
12:12 18 Q. Okay.
12:12 19 A. You have to do the next step.
12:12 20 Q. Isn't it correct, sir, that as part of your
12:12 21 methodology, what you're trying to determine are the
12:12 22 excess earnings attributable to the asserted patents.
12:12 23 Isn't that part of what you're doing?
12:12 24 A. Yeah. That's part of it, yes.
12:12 25 Q. All right. So you start with Zendura

12:12 1 profitability, and you're trying to subtract usual
12:12 2 profitability, correct?
12:12 3 A. Correct.
12:12 4 Q. All right. So we have Zendura accused
12:12 5 profits, trying to subtract usual profits, to get to
12:12 6 what you call an excess earnings number, correct?
12:12 7 A. Correct.
12:12 8 Q. All right. And now for this plastics
12:12 9 industry, you again would agree the plastics industry
12:12 10 includes many things unrelated to clear aligners,
12:12 11 right?
12:12 12 A. It does.
12:12 13 Q. All right. And you don't dispute, for
12:12 14 example, that the plastics industry includes a company
12:12 15 called Trinseo, right?
12:13 16 A. I don't dispute that. No.
12:13 17 Q. And you don't dispute that Trinseo makes
12:13 18 things like materials for food packaging, correct?
12:13 19 A. I do not dispute that. No.
12:13 20 Q. We can agree the asserted patents don't relate
12:13 21 to food packaging, fair?
12:13 22 A. I can agree with that. Yes.
12:13 23 Q. Now, I want to focus on the profitability
12:13 24 number for a moment. Okay?
12:13 25 A. Which number now are --

12:13 1 Q. The one that I've highlighted, the industry --
12:13 2 the plastics industry profitability. Have that in
12:13 3 mind?
12:13 4 A. 10.1 percent.
12:13 5 Q. Yep.
12:13 6 A. Okay.
12:13 7 Q. And that's an input to your damages
12:13 8 calculation, right?
12:13 9 A. It is. Yes.
12:13 10 Q. And you'd agree with me, Mr. Lasinski, that
12:13 11 profitability is impacted by costs, right?
12:13 12 A. Yes, sir. It is.
12:13 13 Q. And in fact, as companies in the plastics
12:13 14 industry spend more and have higher costs, their
12:13 15 profitability goes lower, true?
12:13 16 A. No.
12:14 17 Q. Let's see what you said at your deposition.
12:14 18 Do you have that --
12:14 19 A. I do.
12:14 20 Q. -- before you?
12:14 21 Let's go to Tab No. 1, and turn to Page 155.
12:14 22 A. Page 155 --
23 Q. 155.
12:14 24 A. -- is that what you said?
12:14 25 Q. Yep.

12:14 1 A. The little -- the little page numbers on the
12:14 2 right?
12:14 3 Q. Yep. Transcript Page 155. Do you have it?
12:14 4 A. Not yet.
12:14 5 Q. Okay.
12:14 6 A. I'm almost there.
12:14 7 Q. Are you there?
12:14 8 A. I'm there. Yes.
12:14 9 Q. Great. And this is from when you and I first
12:14 10 met back in March of this year, right?
12:14 11 A. I would assume so. Yes.
12:14 12 Q. And we sat down. You took a deposition. You
12:14 13 were under oath, true?
12:14 14 A. I was under oath. Yes.
12:14 15 Q. Let's look at what you said at Page 155,
12:14 16 Line 20.
12:14 17 You were asked this question and gave this
12:14 18 answer: And so as other companies in the plastics
12:14 19 industry spend more and have higher costs, your usual
12:14 20 profit number gets lower, true?
12:15 21 Your answer: If you're asking about the math
12:15 22 of the calculation, that would be true.
12:15 23 That was the question you were asked and the
12:15 24 answer you provided, right, sir?
12:15 25 A. In the -- in the hypothetical that you had put

12:15 1 me in, that is correct.
12:15 2 Q. All right. And is -- it's also true, sir,
12:15 3 that all else being equal, as that profitability number
12:15 4 gets lower, your damages number gets higher, true?
12:15 5 A. If everything else is equal, that would be
12:15 6 true.
12:15 7 Q. So let's talk about costs, because, again, we
12:15 8 agree costs impact profits, true?
12:15 9 A. They do.
12:15 10 Q. And you would agree that companies in the
12:15 11 plastics industry have all types of costs, right?
12:15 12 A. That is correct. Yes.
12:15 13 Q. Companies in the plastics industry have all
12:15 14 types of costs unrelated to the asserted patents, true?
12:15 15 A. They would. Yes.
12:15 16 Q. For example, companies in the plastics
12:15 17 industry can spend money on furniture, right?
12:15 18 A. Well, even -- even -- just so we're -- yes.
12:16 19 They can. Yes. They can.
12:16 20 Q. Thank you.
12:16 21 Companies in the plastics industry can spend
12:16 22 money on cars, right?
12:16 23 A. Sure.
12:16 24 Q. And we agree that the money that a company in
12:16 25 the plastics industry spends on a company car, that's

12:16 1 not related to the asserted patents, true?
12:16 2 A. Well, I mean, unless that company car is being
12:16 3 used to sell the products that we're talking about
12:16 4 here, in those cases it -- it is related.
12:16 5 Q. Let me ask you -- let me ask you this, sir:
12:16 6 Isn't it correct that the asserted patents don't
12:16 7 purport to cover the cost of company vehicles?
12:16 8 A. No. They do not.
12:16 9 Q. All right. But isn't it correct, sir, that
12:16 10 under your damages analysis, the more that a company
12:16 11 like Trinseo spends on company cars, the higher your
12:16 12 damages result?
12:16 13 A. Only if you believe they make no return on
12:17 14 their -- those costs.
12:17 15 Q. Let me put it this way, sir: Isn't it
12:17 16 100 percent correct, 100 percent accurate, that the
12:17 17 more a company like Trinseo spends on company cars, the
12:17 18 higher your damages result. Isn't that 100 percent
12:17 19 accurate?
12:17 20 A. If you limit it to just that, that would be
12:17 21 accurate.
12:17 22 Q. It would be accurate?
12:17 23 A. Yes.
12:17 24 Q. Last thing, Mr. Lasinski. You told me you
12:17 25 were here for openings, right?

12:17 1 A. I was here for openings. Yes.
12:17 2 Q. I want to pull up Align's Slide 79 from its
12:17 3 opening.
12:17 4 You heard Align's opening, right?
12:17 5 A. I did. Yes.
12:17 6 Q. And you saw Align show this slide during their
12:17 7 opening, right?
12:17 8 A. Yes.
12:17 9 Q. It showed ClearCorrect losing money, true?
12:17 10 A. This -- I don't think this shows losing money.
12:17 11 I think this shows change in annual revenues.
12:17 12 Q. It shows a minus 31.5 million in the red,
12:18 13 right?
12:18 14 A. Well, yeah. But that's revenues, not profits.
12:18 15 Q. All right. Let's agree on this, sir. Under
12:18 16 your damages opinion, your hypothetical, ClearCorrect
12:18 17 would pay more money and lose more money, true?
12:18 18 A. What?
12:18 19 Q. Under your hypothetical negotiation, sir, the
12:18 20 $73 million, ClearCorrect would have to pay that money,
12:18 21 correct?
12:18 22 A. Yes. They would. Yes.
12:18 23 Q. Let's go to ClearCorrect's opening slides.
12:18 24 You were here for ClearCorrect's opening as
12:18 25 well, right?

12:18 1 A. I was. Yes.
12:18 2 Q. You saw ClearCorrect put this slide up, right?
12:18 3 A. I did. Yes.
12:18 4 Q. And ClearCorrect showed Align's market share,
12:18 5 correct, sir?
12:18 6 A. I mean, they showed this.
12:18 7 Q. They showed this slide, right?
12:18 8 A. This slide. Yes.
12:18 9 Q. Under your damages opinion, sir, your
12:18 10 hypothetical damages number, Align would get even more
12:18 11 money, true?
12:18 12 A. Yeah. They would get a royalty. That's true.
12:19 13 Q. They would get $73 million more, right?
12:19 14 A. That's correct. Yes.
12:19 15 Q. Last question, sir. Let's come back to the
12:19 16 real world, not in the hypothetical world. Back in the
12:19 17 real world here.
12:19 18 Here in this courtroom, if the ladies and
12:19 19 gentlemen of the jury find no infringement, we all
12:19 20 agree, you and me, folks at Align, folks at
12:19 21 ClearCorrect, we agree there's no damages, right?
12:19 22 A. I think that that is correct. Yes.
12:19 23 MR. HIRSCH: Thank you, sir.
12:19 24 Pass the witness.
12:19 25 REDIRECT EXAMINATION

12:19 1 BY MR. NASH:
12:19 2 Q. Just a few questions, Mr. Lasinski.
12:19 3 A. Sure.
12:19 4 MR. NASH: Could we bring up the ELMO,
12:19 5 please?
6 BY MR. NASH:
12:19 7 Q. I heard a lot about the real world in
12:19 8 counsel's questions to you.
12:19 9 A. Yes.
12:19 10 Q. Did you happen to examine the profitability of
12:19 11 Straumann over a similar time frame as what we've been
12:19 12 discussing?
12:19 13 A. Yes. I did.
12:19 14 Q. Okay. And what did you find?
12:19 15 A. Well, I found that Straumann's operating
12:20 16 profit over a similar time frame is about 23.6 percent.
12:20 17 Q. I'm going to write that here.
12:20 18 Now, I'd like to talk to you about your
12:20 19 hypothetical, okay, negotiation.
12:20 20 MR. NASH: And can we have Slide --
12:20 21 switch to Slides PDX-7.14, please.
12:20 22 Sorry. Actually, let's go to PDX-7.10
12:20 23 first.
24 BY MR. NASH:
12:20 25 Q. What amount of the profit, under your opinion

12:20 1 and the hypothetical negotiation, did Bay Materials and
12:20 2 Straumann keep as part of the profit split analysis
12:20 3 that you did?
12:20 4 A. 30.9 percent.
12:21 5 Q. And that's Bay Materials?
12:21 6 A. Correct.
12:21 7 MR. NASH: Now let's go to PDX-7. --
12:21 8 sorry. 7.14.
9 BY MR. NASH:
12:21 10 Q. And, Mr. Lasinski, what amount of
12:21 11 profitability did Straumann and ClearCorrect keep as
12:21 12 part of the profit split analysis that you did?
12:21 13 A. 16.9 percent.
12:21 14 Q. Now, is there a way to determine an average
12:21 15 amount of profitability associated with those amounts
12:21 16 that we're seeing here?
12:21 17 A. Sure. We saw earlier that sales of the
12:21 18 ClearCorrect clear aligners are around the same amount
12:21 19 of the sales of Zendura FLX. So you could just take
12:21 20 the average of those two numbers.
12:21 21 Q. Okay. And average, you're better at math than
12:21 22 me. It's simple. Just add and divide by 2?
12:21 23 A. Add and divide by 2. Correct.
12:22 24 Q. Okay. I did the math wrong. That's why I
12:22 25 should have asked you. So it's 2, 3, and --

12:22 1 A. It will be 9.
12:22 2 Q. 9. Thank you. Thank you. Thank you.
12:22 3 So we're all clear, did I do the math right
12:22 4 this time, Mr. Lasinski?
12:22 5 A. You did, sir.
12:22 6 Q. Okay. What does this tell you?
12:22 7 A. Well, so in the real world, Straumann is
12:22 8 earning about 23.6 percent operating margin. And then
12:22 9 if you look at the amount that they keep under my
12:22 10 hypothetical negotiation, it comes out to be almost the
12:22 11 same number, 23.9 percent.
12:22 12 MR. NASH: Pass the witness, Your Honor.
12:22 13 MR. HIRSCH: Nothing further.
12:22 14 THE COURT: Thank you, sir.
12:23 15 Can I have counsel up here for one
12:23 16 second?
12:23 17 (Off-the-record bench conference.)
12:24 18 THE COURT: Ladies and gentlemen of the
12:24 19 jury, I asked the lawyers if they wanted to keep going,
12:24 20 and they said yes. And I said, no way.
12:24 21 (Laughter.)
12:24 22 THE COURT: Not true.
12:24 23 We're going to take our lunch recess. It
12:24 24 is -- you think if they got me a bigger clock, I could
12:24 25 tell what time it was when I looked.

12:24 1 Why don't we do this: If you all will be
12:24 2 back -- it's 12:30 -- by 1:45 or so. Does that give
12:24 3 you enough time to get to lunch and get -- I don't
12:24 4 know. There's a food court next door that sometimes is
12:24 5 closed on Mondays. It's open today and it has a lot of
12:24 6 different foods. And it's the quickest thing that's
12:25 7 available.
12:25 8 But -- so -- and also, tomorrow, which is
12:25 9 Wednesday, we will be breaking at 3:00 in the afternoon
12:25 10 so I can take care of some other court business. And
12:25 11 so you can plan accordingly with respect to that.
12:25 12 So please remember my instructions, and
12:25 13 we'll see you back at 1:45.
12:25 14 THE BAILIFF: All rise.
12:25 15 (Jury exited the courtroom.)
12:25 16 THE COURT: You may be seated.
12:25 17 Is there anything we need to take up from
12:25 18 plaintiff?
12:25 19 MR. MUELLER: Nothing from defendants,
12:25 20 Your Honor. Thank you.
12:25 21 MS. DURIE: No, Your Honor.
12:25 22 THE COURT: Okay. Thank you.
12:25 23 (Recess taken.)
02:05 24 THE BAILIFF: All rise.
02:05 25 THE COURT: Thank you. You may be

02:05 1 seated.
02:05 2 Yes, ma'am.
02:05 3 MS. DURIE: Good afternoon, Your Honor.
02:05 4 We just wanted to raise a procedural point with you and
02:05 5 give you sort of a preview --
02:05 6 THE COURT: If you'd come to the
02:05 7 microphone, please.
02:05 8 MS. DURIE: I apologize.
02:05 9 -- and give you a preview of coming
02:05 10 attractions. We have one more fact witness,
02:05 11 Mr. Lahlouh, who we are calling adversely live.
02:05 12 We then have a couple of interrogatory
02:05 13 responses to read into the record and a couple of
02:05 14 relatively short deposition videos.
02:05 15 That will conclude our presentation of
02:05 16 witnesses in our case-in-chief. However, we have an
02:05 17 agreement to keep our case open with respect to two
02:05 18 other witnesses who will be called at the beginning of
02:05 19 the defense case-in-chief, Mr. Marbach and Mr. Kossol.
02:06 20 So I wanted to just raise with you
02:06 21 procedurally in terms of resting how the Court would
02:06 22 like us to handle that.
02:06 23 THE COURT: So my suggestion, and as you
02:06 24 know, when I -- I have code words, like if I say to
02:06 25 someone "I don't understand," I usually mean I

02:06 1 understand but I think you're wrong.
02:06 2 But here, when I say my suggestion, I
02:06 3 actually -- this is a suggestion because I'll do what
02:06 4 y'all want if I can. It seems to make sense to me --
02:06 5 and given the quality of the lawyers here, that -- I
02:06 6 trust you all to make an intelligent decision.
02:06 7 It seems to me that until those two
02:06 8 witnesses are called, you haven't rested, and that's by
02:06 9 agreement of the party. And I think that's great. So
02:06 10 I don't want to disrupt that.
02:06 11 But it doesn't make sense to have the
02:06 12 Rule 50 motion until those two people have been called,
02:06 13 even though you have primarily rested and what you're
02:06 14 planning to do.
02:07 15 So with the agreement from Mr. Mueller on
02:07 16 his side that -- that the plaintiff can close formally
02:07 17 when those two witnesses have rested, and we'll do the
02:07 18 Rule 50 at that time, and also the plaintiff's
02:07 19 agreement. That's what I suggest.
02:07 20 MS. DURIE: That makes sense, Your Honor.
02:07 21 MR. MUELLER: Your Honor, I guess I would
02:07 22 say this: We have thought about this since this
02:07 23 morning. We would like to go forward this afternoon on
02:07 24 the JMOL motion.
02:07 25 Here's why: The two witnesses that

02:07 1 Ms. Durie is referring to are witnesses -- fact
02:07 2 witnesses, fact witnesses, that would relate to, if
02:07 3 anything, the scan patent, the '936 scan patent.
02:07 4 I will tell you a preview right now that
02:07 5 one of our JMOL arguments is going to be that the '936
02:07 6 patent lacks an expert opinion on all of the aspects --
02:07 7 there's not an expert opinion on all of the aspects of
02:07 8 the asserted claims. There's a failure of proof.
02:08 9 THE COURT: Which won't be fixed by those
02:08 10 two witnesses.
02:08 11 MR. MUELLER: Exactly. Exactly.
02:08 12 THE COURT: And I will -- not to preview
02:08 13 anything, but I think there's a high probability I'm
02:08 14 going to grant that motion on that patent and a very
02:08 15 high probability I'm going to deny the Rule 50 motions
02:08 16 on the other patents.
02:08 17 And so having heard that, do you have --
02:08 18 does plaintiff have a problem with them -- can the
02:08 19 plaintiff articulate something that the plaintiffs --
02:08 20 I'm sorry -- that the witnesses might say out of order
02:08 21 that would impact the -- whether or not there's
02:08 22 evidence to support infringement based on what the
02:08 23 expert said? I don't see how it could happen, but --
02:08 24 MS. DURIE: So the witness in question is
02:08 25 a fact witness. He has percipient testimony with

02:08 1 respect to the operation and the source code of the
02:08 2 scanner.
02:08 3 THE COURT: Uh-huh.
02:08 4 MS. DURIE: So I suppose it would depend
02:09 5 on the basis of the motion.
02:09 6 I do think that in view of the final
02:09 7 piece of testimony that was ultimately elicited from
02:09 8 the experts, there was expert testimony with respect to
02:09 9 each limitation of the scanner patent in the record.
02:09 10 To the extent -- I mean, there was
02:09 11 certainly -- the expert provided a conclusion with
02:09 12 respect to each limitation.
02:09 13 To the extent that the complaint is that
02:09 14 there was insufficient factual support in the record
02:09 15 for that conclusion, then certainly the percipient
02:09 16 testimony could be germane to that.
02:09 17 THE COURT: So here's what I'm going to
02:09 18 do: I'm going to have the Rule 50 motion at the end of
02:09 19 what would ordinarily be your case, plaintiff's case.
02:09 20 I'm going to deny all the Rule 50 motions
02:09 21 with respect to infringement. But absent -- and call
02:09 22 me skeptical -- of those two witnesses saying something
02:10 23 that would repair -- I agree with you, a lack of expert
02:10 24 testimony, I will take up the Rule 50 at the end of
02:10 25 your case -- end of the defendant's case, and I intend

02:10 1 to grant it at that time absent those two witnesses
02:10 2 doing something that I don't anticipate they will.
02:10 3 MS. DURIE: Understood, Your Honor.
02:10 4 THE COURT: And I also anticipate you can
02:10 5 go pretty quickly on your Rule 50 motion on the other
02:10 6 infringement arguments because I'm -- I haven't --
02:10 7 MR. MUELLER: Understood, Your Honor.
02:10 8 Just one final question. If we could,
02:10 9 for that issue, do the Rule 50 after those two fact
02:10 10 witnesses? And the reason why I say that is we won't
02:10 11 call our expert on the scan patent. We can save all of
02:10 12 us some time.
02:10 13 THE COURT: Well, I think that's what I
02:10 14 originally suggested that you didn't want to do. I'm
02:10 15 saying the two witnesses --
02:10 16 MR. MUELLER: The witness who we are
02:10 17 reserving on is a fact witness.
02:10 18 THE COURT: Now -- but you've lost me,
02:10 19 because I thought my suggestion was that we wait to do
02:10 20 the Rule 50 until after those two witnesses testified.
02:11 21 And you said, no, you wanted to move forward on it now
02:11 22 and -- because they -- their --
02:11 23 MR. MUELLER: I agree with you. I
02:11 24 thought you are now saying the other way around. If we
02:11 25 can do it today, that'd be great. That would be great.

02:11 1 THE COURT: No. What I'm saying, I'm
02:11 2 going to do it today. I'm going to -- I'm going to do
02:11 3 it as soon as -- forget the two witnesses that are
02:11 4 going to be called out of order.
02:11 5 When plaintiff finishes with their case,
02:11 6 as they articulated it, absent those two, I'm not going
02:11 7 to make them rest because y'all have an agreement that
02:11 8 they can add that. But I am going to take up your
02:11 9 Rule 50 motion if you prefer to do it now.
02:11 10 I'm telling you that I'm going to deny
02:11 11 the Rule 50 motion on all of the patents, but I'm
02:11 12 letting the plaintiff know that absent some information
02:11 13 being provided by those two fact witnesses during your
02:11 14 case-in-chief, your Rule 50 motion on the scanner is
02:11 15 going to be granted at the end of the trial to give the
02:11 16 plaintiff the opportunity to put that evidence in and
02:12 17 persuade me why it shouldn't be.
02:12 18 MR. MUELLER: But my only question was
02:12 19 just at that point in our case, after the fact
02:12 20 witnesses have testified --
02:12 21 THE COURT: Right.
02:12 22 MR. MUELLER: -- if we could approach
02:12 23 Your Honor to see if that changed your tentative
02:12 24 decision. Because if it doesn't, if you're going to
02:12 25 grant our JMOL, we won't call our expert on that

02:12 1 patent.
02:12 2 THE COURT: Then I'll do it that way
02:12 3 because I don't want to waste everyone's time doing
02:12 4 that.
02:12 5 MR. MUELLER: Understood. Thank you,
02:12 6 sir.
02:12 7 THE COURT: I think that's a fair trade.
02:12 8 MS. DURIE: Thank you.
02:12 9 THE COURT: Anything else?
02:12 10 MR. MUELLER: Nothing from defendants,
02:12 11 Your Honor. Thank you.
02:12 12 MS. DURIE: No.
02:12 13 THE BAILIFF: All rise.
02:12 14 MR. MUELLER: One last thing. We had two
02:12 15 demonstrative numbers to read into the record very,
02:12 16 very quickly.
02:12 17 THE COURT: Okay. We're lining up and
02:12 18 you can read those in.
02:12 19 MR. MUELLER: Great. Thank you, sir.
02:12 20 MR. HIRSCH: Read into the record
02:12 21 demonstratives DDX-20.6 and 20.7. I'd like to make
02:12 22 both of those under seal.
02:12 23 Thank you.
02:13 24 (Pause in proceedings.)
02:14 25 THE BAILIFF: All rise.

02:14 1 THE COURT: Please remain standing for
02:14 2 the jury.
02:14 3 (Jury entered the courtroom.)
02:14 4 THE COURT: Thank you. You may be
02:14 5 seated.
02:14 6 Yes, ma'am.
02:15 7 MS. DURIE: Thank you, Your Honor.
02:15 8 Good afternoon. We call John Lahlouh to
02:15 9 the stand.
02:15 10 (The witness was sworn.)
02:15 11 DIRECT EXAMINATION
02:15 12 BY MS. DURIE:
02:15 13 Q. Mr. Lahlouh, good afternoon.
02:15 14 A. Good afternoon.
02:15 15 Q. We have not met. My name is Daralyn Durie.
02:15 16 I'm one of the lawyers representing Align.
02:15 17 A. Nice to meet you.
02:15 18 Q. I have a few questions for you.
02:15 19 A. Sure.
02:15 20 Q. Now, you recently retired from Bay Materials;
02:16 21 is that right?
02:16 22 A. Yes.
02:16 23 Q. And you started there in 2002?
02:16 24 A. That's correct.
02:16 25 Q. And while you were at Bay Materials, you were

02:16 1 involved in the development of Zendura FLX; is that
02:16 2 right?
02:16 3 A. Yes.
02:16 4 Q. Now, yes or no, is it your testimony that
02:16 5 Zendura FLX was developed totally independently of
02:16 6 SmartTrack?
02:16 7 A. Totally independent. Yes.
02:16 8 Q. Now, you were here for the opening statements
02:16 9 in this case, right?
02:16 10 A. Yes.
02:16 11 MS. DURIE: And if we could please put up
02:16 12 DDX-1.20.
13 BY MS. DURIE:
02:16 14 Q. You remember seeing this excerpt from your lab
02:16 15 notebook during opening statements?
02:16 16 A. Yes.
02:16 17 MS. DURIE: And if we could go to
02:16 18 DDX-1.10.
19 BY MS. DURIE:
02:16 20 Q. You remember that Straumann's counsel showed
02:16 21 this timeline with Align updating aligners to exclude
02:17 22 EX30 in 2001 and said: So Align goes to Bay Materials
02:17 23 for help with the EX30, and that becomes incorporated
02:17 24 into the updated version of Align's aligners in 2001.
02:17 25 At that point, the companies went their separate ways.

02:17 1 Now, in fact, Bay Materials and Align did not
02:17 2 go their separate ways in 2001, did they?
02:17 3 A. That's correct.
02:17 4 Q. And if you -- we could introduce -- if you
02:17 5 could turn in your binder there -- you've got a binder
02:17 6 in front of you to -- DTX-413. There should be a
02:17 7 number of exhibits in order.
02:17 8 Exhibit 413 is a copy of your lab notebook; is
02:17 9 that right?
02:17 10 A. That's right.
02:17 11 MS. DURIE: We offer DTX-413.
02:17 12 MR. ZUBLER: No objection.
02:17 13 THE COURT: Admitted.
02:17 14 MS. DURIE: And if we could please put up
02:18 15 Page 22.
02:18 16 THE COURT: I'm sorry. Is it -- are you
02:18 17 putting in the entire notebook?
02:18 18 MS. DURIE: Yes. I am.
02:18 19 If we could please go to Page 22, and if
02:18 20 we could blow up the top portion of the notebook.
21 BY MS. DURIE:
02:18 22 Q. You see here --
02:18 23 MS. DURIE: And actually, I was hoping we
02:18 24 could get the date as well. If we can blow up just the
02:18 25 top portion.

02:18 1 Actually, the date's at the bottom.
02:18 2 Maybe just blow up the date there at the bottom.
3 BY MS. DURIE:
02:18 4 Q. You see there's an entry from July 19th of
02:18 5 2002? It's at the very bottom right.
02:18 6 A. I'm sorry. That's Page 15.
02:18 7 Q. It's actually -- if you could look at it on
02:18 8 the screen, the page numbers of the PDF are different
02:18 9 from the pages in your notebook.
02:18 10 A. Okay.
02:18 11 Q. But you see this is an entry from July 19th of
02:18 12 2002?
02:18 13 A. Yes.
02:18 14 Q. In the title, it says, Replacements to
02:18 15 Isoplast for Align.
02:18 16 Do you see that?
02:18 17 A. Yes. I do.
02:18 18 MS. DURIE: And if we can go to the
02:18 19 middle of the page and blow that up.
20 BY MS. DURIE:
02:19 21 Q. You see there it says: The following resins
02:19 22 were identified by Bay Materials (Ray Stewart) as
02:19 23 replacement for Isoplast and shipped to Align for
02:19 24 evaluation.
02:19 25 And then a little further on, it refers to

02:19 1 material being shipped to Align to Loc's attention.
02:19 2 Do you see that?
02:19 3 A. Yes. I do.
02:19 4 Q. Loc is an individual who worked at Align by
02:19 5 the name of Loc Phan, correct?
02:19 6 A. That's right.
02:19 7 MS. DURIE: And if we go to DTX-616 in
02:19 8 evidence and we pull that up, and we blow up the top
02:19 9 portion of it, please.
10 BY MS. DURIE:
02:19 11 Q. We saw yesterday during Dr. Li's testimony a
02:19 12 patent that had been issued to Loc Phan and his
02:19 13 co-inventor, right?
02:19 14 A. Yes.
02:19 15 Q. They worked for Align, right?
02:19 16 A. That's right.
02:19 17 Q. And that was a patent --
02:19 18 MS. DURIE: If we can go to the top
02:19 19 right, Mr. Smith.
20 BY MS. DURIE:
02:19 21 Q. -- issued in February of 2001 that involved
02:20 22 multi-layer materials, right?
02:20 23 A. I'm not sure.
02:20 24 MS. DURIE: Let's go to Page 12,
02:20 25 Mr. Smith.

02:20 1 And if we can blow up the paragraph at
02:20 2 the bottom of Column 9.
3 BY MS. DURIE:
02:20 4 Q. You see here it talks in this patent about
02:20 5 materials that have a first, second, and third internal
02:20 6 layer where internal layers are sandwiched between
02:20 7 external layers.
02:20 8 Do you see that?
02:20 9 A. Yes.
02:20 10 Q. So this is talking about multi-layer, right?
02:20 11 A. Yes.
02:20 12 Q. More than one layer.
02:20 13 Let's go back to your notebook, DTX-413.
02:20 14 MS. DURIE: And if we go to Page 27,
02:20 15 please, Mr. Smith.
02:20 16 Here, if we can blow this up, beginning
02:20 17 around Line 20.
18 BY MS. DURIE:
02:20 19 Q. You see again there's a reference to materials
02:20 20 for Align Technology and additional items being shipped
02:20 21 to Align Technology in July of 2002?
02:21 22 A. Yes.
02:21 23 MS. DURIE: And if we could then skip
02:21 24 forward to Page 85, Mr. Smith, and blow up the top
02:21 25 portion of that.

BY MS. DURIE:

02:21 Q. Now, if we pull up the date at the very bottom
02:21 left, it's January 3rd of 2003. And we see here some
02:21 dental tray materials with some test results being done
02:21 on materials that had been selected by Align Technology
02:21 and being run by an individual at Align Technology,
02:21 right?
02:21 A. Yes.
02:21 MS. DURIE: And if we could go, please,
02:21 to Page 122 of DTX-413.
BY MS. DURIE:
02:21 Q. Here, we see on March 3rd of 2003, in the
02:21 bottom right-hand corner, again a reference to samples
02:21 for Loc. That again is Loc Phan, the inventor of the
02:22 Align multi-layer patent, right?
02:22 A. That's right.
02:22 Q. And in fact, you continued to work with Align
02:22 from 2002 all the way up to 2007, right?
02:22 A. Correct.
02:22 Q. And then in 2008 or 2009, Bay Materials'
02:22 relationship with Align ended, right?
02:22 A. That's right.
02:22 Q. And in around 2010, Bay Materials started
02:22 supplying ClearCorrect with a single-layer material,
02:22 right?

02:22 1 A. That's not quite right.
02:22 2 Q. Okay. Let's take a look in your binder at
02:22 3 PTX-211. If you could please turn to that in your
02:22 4 binder.
02:22 5 Are you with me?
02:22 6 A. Can you repeat the number, please?
02:22 7 Q. 211. 211. They're in order. The exhibits
02:23 8 are all in numerical order. 211.
02:23 9 MS. DURIE: May I approach to assist the
02:23 10 witness, Your Honor?
02:23 11 THE COURT: Of course.
02:23 12 MS. DURIE: Thank you.
02:23 13 BY MS. DURIE:
02:23 14 Q. So, Mr. Lahlouh, Exhibit 211 is a Design
02:23 15 Review Phase 4 - Product Launch document from Bay
02:23 16 Materials, correct?
02:23 17 A. Correct.
02:23 18 MS. DURIE: We offer PTX-211.
02:23 19 MR. ZUBLER: No objection.
02:23 20 THE COURT: Admitted.
02:23 21 MS. DURIE: And if we could please
02:23 22 publish Page 3, Mr. Smith. And --
02:23 23 There we go. Blow that up.
02:23 24 BY MS. DURIE:
02:23 25 Q. So we see here that: Bay Materials was

02:23 1 contacted by ClearCorrect in late 2009 and began
02:24 2 supplying Zendura to ClearCorrect in April of 2010.
02:24 3 Zendura was an earlier material that you had
02:24 4 been selling before you developed Zendura FLX, the
02:24 5 product in this case, right?
02:24 6 A. That's right.
02:24 7 Q. And it says that: ClearCorrect has a business
02:24 8 model to take market share away from Align by offering
02:24 9 equivalent performance for a lower price.
02:24 10 That was your understanding of the
02:24 11 ClearCorrect business model at the time, right?
02:24 12 A. That's what it says here.
02:24 13 Q. And then in October of 2012, Align announced
02:24 14 that it had developed a new multi-layer material,
15 right?
02:24 16 Sorry, that's not with reference to that
02:24 17 document. But just you are aware that in October of
02:24 18 2012, Align announced it had developed a new
02:25 19 multi-layer material?
02:25 20 A. That's right.
02:25 21 Q. And on January 18th of 2013, Align issued a
02:25 22 press release announcing the availability of
02:25 23 SmartTrack, right?
02:25 24 A. That's right.
02:25 25 Q. And then if you could please turn in your

02:25 1 binder to PTX-314. It should be a little bit further
02:25 2 on in your binder.
02:25 3 Do you see that -- are you there?
02:25 4 A. I have this.
02:25 5 Q. Perfect. 314 is another Bay Materials
02:25 6 document. It is a Zendura XL Development History,
02:25 7 correct?
02:25 8 A. Correct.
02:25 9 MS. DURIE: We offer PTX-314.
02:25 10 MR. ZUBLER: No objection.
02:25 11 THE COURT: Admitted.
02:25 12 MS. DURIE: And if we could go,
02:25 13 Mr. Smith, to Page 2 in the middle of the page.
14 BY MS. DURIE:
02:25 15 Q. There is a reference to the Initiation of
02:25 16 Development Effort. And it says: In 2013 -- that was
02:26 17 after SmartTrack had been announced, right?
02:26 18 A. Right.
02:26 19 Q. Bay Materials began investigating materials
02:26 20 and construction to produce an improved aligner
02:26 21 material.
02:26 22 Do you see that?
02:26 23 A. I see that.
02:26 24 Q. And if we go --
02:26 25 A. Yes.

02:26 1 Q. If we go to the top of Page 7, sir, and if we
02:26 2 could go --
02:26 3 MS. DURIE: And if you could blow up the
02:26 4 top portion of that page.
5 BY MS. DURIE:
02:26 6 Q. Do you see where there's a reference to
02:26 7 Component Requirements?
02:26 8 A. Yes.
02:26 9 Q. And if we go about six rows down, next to
02:26 10 composite flexural modulus, it says: The combined
02:26 11 structure should have value in range of 150,000 to
02:26 12 200,000 PSI based on Zendura and SmartTrack
02:26 13 benchmarking.
02:27 14 Right?
02:27 15 A. Benchmarking. Yes.
02:27 16 Q. And it says the same thing for impact
02:27 17 strength, right? It identified a desired value based
02:27 18 on SmartTrack benchmarking, right?
02:27 19 A. Correct.
02:27 20 Q. Now, in 2014, you ordered an Invisalign for
02:27 21 your daughter; is that right?
02:27 22 A. That's right.
02:27 23 Q. And you requested a copy of the material
02:27 24 safety data sheet for SmartTrack, right?
02:27 25 A. Yes.

02:27 1 Q. If you could turn in your binder to PTX --
02:27 2 A. I'm sorry, I did not request it.
02:27 3 Q. You got a copy, right?
02:27 4 A. I got a copy from the Internet.
02:27 5 Q. You got a copy from the Internet.
02:27 6 And if we could go to PTX-213 in your binder.
02:27 7 213.
02:27 8 A. Yes.
02:27 9 Q. PTX-213 is a copy of a material safety data
02:28 10 sheet for Invisalign, right?
02:28 11 A. Yes.
02:28 12 Q. And it was produced from Straumann's files,
02:28 13 right? We see a little number in the bottom right-hand
02:28 14 corner. It says "CC Align."
02:28 15 That's a number indicating it came from their
02:28 16 files, right?
02:28 17 A. Yes.
02:28 18 MS. DURIE: We offer PTX-213.
02:28 19 MR. ZUBLER: No objection.
02:28 20 THE COURT: Admitted.
02:28 21 BY MS. DURIE:
02:28 22 Q. And if we take a look at 213, and we can blow
02:28 23 up a portion on the first page where it says Product
02:28 24 and Company Identification. This is a material safety
02:28 25 data sheet for SmartTrack aligner material, right?

02:28 1 A. That's right.
02:28 2 Q. Now, it's your testimony that the only reason
02:28 3 you got this material safety data sheet was so that you
02:28 4 could make sure that the aligner was safe for your
02:28 5 daughter; is that right?
02:28 6 A. Yes. But --
02:28 7 Q. But you then used information from this
02:28 8 material safety data sheet to create SmartTrack
02:29 9 simulates, right?
02:29 10 A. Not quite right.
02:29 11 Q. Well, you remember that you gave a deposition
02:29 12 in this case, right?
02:29 13 A. Yes.
02:29 14 Q. We've now talked a fair bit about depositions,
02:29 15 but that's when we had a chance to ask you questions,
02:29 16 right?
02:29 17 A. Correct.
02:29 18 Q. And you would agree that the simulates --
02:29 19 first of all, you would agree you did produce simulates
02:29 20 of SmartTrack material, right?
02:29 21 A. That's right.
02:29 22 Q. And you produced those simulates from what you
02:29 23 described as Align's declaration of their new product,
02:29 24 right?
02:29 25 A. Simulates for benchmarking.

02:29 1 Q. Right. You produced those simulates for
02:29 2 benchmarking from Align's declaration of their new
02:29 3 product, right?
02:29 4 A. These are simulates, as guesses.
02:29 5 Q. And you looked at this material safety data
02:29 6 sheet for benchmarking, right?
02:30 7 A. The safety data sheet gives family of the
02:30 8 products only.
02:30 9 Q. Sir, yes or no, is it true that you looked at
02:30 10 the material safety data sheet for benchmarking?
02:30 11 A. Yes.
02:30 12 Q. Okay. Now, you were doing this in order to
02:30 13 try to evaluate these simulates, right?
02:30 14 A. Yes.
02:30 15 Q. And you were also trying to test actual
02:30 16 aligners made out of SmartTrack material, correct?
02:30 17 A. That's not correct.
02:30 18 Q. Take a look in your binder at PTX-214. It
02:30 19 should be immediately after the data sheet that we were
02:30 20 just looking at. You see this is a Bay Materials
02:30 21 document relating to the composition of Zendura FLX?
02:31 22 A. 214?
02:31 23 Q. Sorry. I apologize. 214. I was wrong about
02:31 24 that. I'm sorry. Yes. 214. It is an analysis of
02:31 25 Align SmartTrack, correct?

02:31 1 A. SmartTrack simulate.
02:31 2 Q. Well, we --
02:31 3 MS. DURIE: First of all, we offer
02:31 4 PTX-214.
02:31 5 MR. ZUBLER: No objection.
02:31 6 THE COURT: Admitted.
02:31 7 MS. DURIE: And let's put it up, and we
02:31 8 can all take a look. Let's blow up the text that's on
02:31 9 the document.
10 BY MS. DURIE:
02:31 11 Q. It says: Analysis of Align SmartTrack.
02:31 12 Right?
02:31 13 A. Yes.
02:31 14 Q. And it says: Spare aligners were obtained
02:31 15 from orthodontists office.
02:31 16 And then it says: Microscopy showed they were
02:31 17 single-layer products, unlike earlier tested sample
02:31 18 that had FTIR consistent with polyurethane outside and
02:31 19 Tritan on inside.
02:31 20 Do you see that?
02:31 21 A. I see that.
02:31 22 Q. So that's a reference to testing an earlier
02:32 23 multi-layer sample, right?
02:32 24 A. This is a reference to testing an aligner,
02:32 25 different from SmartTrack.

02:32 1 Q. So when this is under Analysis of Align
02:32 2 SmartTrack, and you talk about an earlier tested
02:32 3 sample, that wasn't an earlier tested sample from
02:32 4 Align?
02:32 5 And if we take a look --
02:32 6 MS. DURIE: Actually, let's go to the
02:32 7 bottom of that document, Mr. Smith, and pull up the
02:32 8 very end.
9 BY MS. DURIE:
02:32 10 Q. You see it says: Material safety data sheet
02:32 11 for SmartTrack is same as various...
02:32 12 And then you cite a number of different
02:32 13 specific polymers, right?
02:32 14 A. Okay. At the bottom.
02:32 15 Q. So you're saying, I've got information for
02:32 16 SmartTrack. It matches up with Texin and a number of
02:32 17 these other polymers. Should search additionally to
02:33 18 find fit. Right?
02:33 19 A. The FTIR or the MSDS sheets only give broad
02:33 20 general family of materials.
02:33 21 Q. Right. So the safety data sheet gave a family
02:33 22 of materials. You were searching, try to -- trying to
02:33 23 find the fit more specifically of the material that it
02:33 24 might be?
02:33 25 A. It doesn't give a specific fit. This is for

02:33 1 benchmarking.
02:33 2 Q. Now, you did more experiments on Invisalign
02:33 3 aligners in August of 2015, right?
02:33 4 A. Aligners again, not the sheets.
02:33 5 Q. So let's go to PTX-42. In your binder. It
02:33 6 should be pretty near the beginning. I think it's
02:33 7 right after your deposition. Probably the first
02:33 8 numbered tab. 42.
02:33 9 A. 42.
02:33 10 Q. 42.
02:33 11 Are you with me?
02:34 12 A. Yes.
02:34 13 Q. And Exhibit 42 reflects tests that you ran on
02:34 14 Invisalign aligner in 2015, right?
02:34 15 A. Right.
02:34 16 MS. DURIE: We offer PTX-42.
02:34 17 MR. ZUBLER: No objection.
02:34 18 THE COURT: Admitted.
02:34 19 MS. DURIE: And if we could please
02:34 20 publish 42, and blow up the top portion.
21 BY MS. DURIE:
02:34 22 Q. What we see here is various tests that were
02:34 23 run on Invisalign aligners, right?
02:34 24 A. That's right.
02:34 25 Q. And you show data resulting from those tests?

02:34 1 A. Yes.
02:34 2 Q. Now, if you could please turn in your binder
02:34 3 to PTX-46.
02:34 4 A. I'm sorry, which number?
02:34 5 Q. 46. It should just be a couple of tabs
02:34 6 forward from where you were.
02:34 7 A. Yes.
02:34 8 Q. Are you with me?
02:34 9 46 is a Characterization of Invisalign Aligner
02:34 10 report prepared by you, right?
02:35 11 A. Correct.
02:35 12 MS. DURIE: We offer PTX-46.
02:35 13 MR. ZUBLER: No objection.
02:35 14 THE COURT: Admitted.
02:35 15 MS. DURIE: And if we can pull that up,
02:35 16 and just at the top -- start at the top.
17 BY MS. DURIE:
02:35 18 Q. It's a characterization, a report prepared by
02:35 19 you in August of 2018?
02:35 20 MS. DURIE: And if we can scroll down and
02:35 21 look at the background and summary. First of all --
02:35 22 actually, let's keep 1 up there.
23 BY MS. DURIE:
02:35 24 Q. It says: The purpose is to get an updated
02:35 25 understanding of the materials and products adopted by

02:35 1 Invisalign --
02:35 2 A. For benchmarking.
02:35 3 Q. -- in their current orthodontic aligners and
02:35 4 retainers for our benchmarking benefits.
02:35 5 And then it says: Background and summary:
02:35 6 Our earlier knowledge of Invisalign's SmartTrack
02:35 7 aligner was built on their material safety data sheet
02:35 8 and CAS number disclosures.
02:35 9 Right?
02:35 10 A. That's right.
02:35 11 Q. And it says: In the MSDS document, SmartTrack
02:35 12 is identified with multi-layer aromatic thermoplastic
02:36 13 polyurethane/copolyester, right?
02:36 14 A. That's right.
02:36 15 Q. And there was a CAS number that specified the
02:36 16 type of polyurethane, right?
02:36 17 A. Those are generic family names.
02:36 18 Q. And then if you go down to the next paragraph,
02:36 19 it says: In June of 2018, an actual used pair of
02:36 20 Invisalign aligners was procured.
02:36 21 A. Yes.
02:36 22 Q. This aligner was characterized for materials
02:36 23 identity, product configuration, and basic performance.
02:36 24 And then you identified some findings, right?
02:36 25 A. I identified the test, you mean?

02:36 1 Q. Sure.

02:36 2 MS. DURIE: Let's go to last page, Page 9

02:36 3 of the exhibit. And if we can blow up the conclusion,

02:36 4 Paragraph 7.

5 BY MS. DURIE:

02:36 6 Q. It says that you -- the Invisalign SmartTrack

02:36 7 aligner, which was used, procured in 2018, had been

02:36 8 characterized by optical analysis. Right?

02:37 9 A. Yes.

02:37 10 Q. And it said: SmartTrack is composed of

02:37 11 aromatic polyurethane elastomer outer layers and a

02:37 12 polyester inner layers. And then there was a reference

02:37 13 to the results of FTIR analysis, right?

02:37 14 A. The FTIR identifies with RxT50D, but it could

02:37 15 be identified with numerous other FTIR RxTs.

02:37 16 Q. You were performing a fingerprint analysis?

02:37 17 A. No. You can't do that with FTIR.

02:37 18 Q. Okay. Bay Materials then launched Zendura FLX

02:37 19 in 2018, right?

02:37 20 A. Yes.

02:37 21 Q. That was five years after Align had come out

02:37 22 with SmartTrack?

02:37 23 A. That's correct.

02:37 24 Q. And sold -- and Bay Materials sold Zendura FLX

02:37 25 material to ClearCorrect, right?

02:37 1 A. Yes.
02:37 2 Q. Please turn in your binder to PTX-75. Should
02:38 3 be just a few exhibits further on. That's it. I think
02:38 4 you've got it right there.
02:38 5 PTX Exhibit 75 is a ClearCorrect presentation
02:38 6 about the material launch of ClearQuartz, right?
02:38 7 A. Yes.
02:38 8 Q. ClearQuartz is the product made with Zendura
02:38 9 FLX, right?
02:38 10 A. Correct.
02:38 11 Q. And if we turn to Page 2, you'll see this was
02:38 12 shortly after the acquisition of Bay Materials and
02:38 13 Zendura FLX by ClearCorrect -- Straumann, right? By
02:38 14 Straumann?
02:38 15 A. After some time, yes.
02:38 16 MS. DURIE: We offer PTX-75.
02:38 17 MR. ZUBLER: No objection.
02:38 18 THE COURT: Admitted.
02:38 19 BY MS. DURIE:
02:38 20 Q. And if we can go to Page 2, it says:
02:38 21 Customers expect a tri-layer material for their
02:38 22 aligners. Thanks to the acquisition of Bay Materials
02:39 23 and Zendura FLX, this is now a possibility.
02:39 24 Right?
02:39 25 You can also look on the screen. We've got

02:39 1 it. It may be easier to see there.
02:39 2 MS. DURIE: And if we could then go to
02:39 3 Page 4.
02:39 4 A. Yes.
02:39 5 BY MS. DURIE:
02:39 6 Q. It says here: Project Incredibles. And under
02:39 7 Description of Initiative/Solution/New Product, it
02:39 8 says: ClearCorrect current material is less
02:39 9 competitive compared to other aligners. The new
02:39 10 material will allow us to compete head-to-head with
02:39 11 Invisalign.
02:39 12 Right?
02:39 13 A. Yes.
02:39 14 Q. And it says: The triple-layer material allows
02:39 15 for more strength and toughness while being comfortable
02:39 16 for the patient due to its elastic properties.
02:39 17 Right?
02:39 18 A. That's right.
02:39 19 MS. DURIE: And if we could then go to
02:39 20 Page 9.
21 BY MS. DURIE:
02:39 22 Q. There was then a competitive landscape
02:39 23 analysis that was done, right?
02:39 24 A. Yes.
02:40 25 Q. We have Zendura FLX, SmartTrack, and some

02:40 1 other clear aligners, right?
02:40 2 A. This is not quite right because we never have
02:40 3 SmartTrack product as a sheet. So...
02:40 4 Q. Sir, I'm just asking you about the
02:40 5 ClearCorrect document.
02:40 6 It is identifying characteristics of Zendura
02:40 7 FLX, SmartTrack, and other clear aligners, correct?
02:40 8 A. Correct.
02:40 9 Q. And Zendura FLX and SmartTrack both have
02:40 10 multiple layers, right?
02:40 11 A. Correct.
02:40 12 Q. The other clear aligners are single-layer
02:40 13 materials, right?
02:40 14 A. That's right.
02:40 15 Q. And for both Zendura FLX and SmartTrack, the
02:40 16 materials are a multi-layer thermoplastic polyurethane
02:40 17 and copolyester, correct?
02:40 18 A. Yes. But not exactly correct.
02:41 19 Q. That's what's written here in the ClearCorrect
02:41 20 document, right?
02:41 21 A. This is not a direct comparison.
02:41 22 Q. All right.
02:41 23 MS. DURIE: Let's take a look at the next
02:41 24 slide, Page 10.
25 BY MS. DURIE:

02:41 1 Q. If we look at the top, there's a reference to
02:41 2 Invisalign and the SmartTrack material. And it says:
02:41 3 The patented material that helps you get the smile you
02:41 4 want even faster.
02:41 5 Do you see that?
02:41 6 A. I see that.
02:41 7 Q. Now, you knew that Align lists its patents on
02:41 8 its website, right?
02:41 9 A. Probably. Yes.
02:41 10 Q. Well, if you're not sure, let's take a look in
02:41 11 your binder at PTX-65. It should be just two tabs
02:41 12 behind -- actually, one tab behind where we were.
02:41 13 PTX-65 is a Bay Materials report dated May 1,
02:42 14 2024, correct?
02:42 15 Oh, I'm sorry, sir.
02:42 16 A. I'm sorry. Yeah. Okay.
02:42 17 Q. Bay Materials, May 1, 2024?
02:42 18 A. Yes.
02:42 19 MS. DURIE: We offer PTX-65.
02:42 20 MR. ZUBLER: No objection.
02:42 21 THE COURT: Admitted.
02:42 22 BY MS. DURIE:
02:42 23 Q. And if we go to the Page 3 of this exhibit at
02:42 24 the bottom, towards the bottom, it says: On Align
02:42 25 website, most of the Invisalign treatment processes and

02:42 1 products are covered by Align U.S. patents.
02:42 2 Do you see that?
02:42 3 A. Can you go back, please?
02:42 4 Q. Sure. If you look at the screen, you may be
02:42 5 able to see it more easily. It's blown up there. It's
02:42 6 at the bottom of Page 3.
02:42 7 Do you see that?
02:42 8 A. I see that.
02:42 9 Q. And in fact, you had reviewed some of Align's
02:42 10 patents over the years, right?
02:42 11 A. A few of them, yes.
02:42 12 Q. Now, the specific polyester material for the
02:43 13 hard polymer layer in Zendura FLX is a Tritan plastic,
02:43 14 right?
02:43 15 A. That's correct.
02:43 16 MS. DURIE: Your Honor, may I approach?
02:43 17 I have a board that it would be --
02:43 18 THE COURT: Sure.
02:43 19 MS. DURIE: Thank you.
20 BY MS. DURIE:
02:43 21 Q. So I thought, Mr. Lahlouh, while we went
02:43 22 through this, it might be helpful to have a copy of the
02:43 23 patent claim up just to assist the jury for our
02:43 24 reference.
02:43 25 Now, first of all, Zendura FLX is used to make

02:43 1 dental appliances, right?
02:44 2 A. Correct.
02:44 3 Q. And those dental appliances are for
02:44 4 positioning a patient's teeth, right?
02:44 5 A. That's right.
02:44 6 Q. And Zendura FLX is a sheet of material, right?
02:44 7 A. Yes.
02:44 8 Q. And it has three polymer layers, right?
02:44 9 A. That's right.
02:44 10 Q. Zendura FLX has a hard polymer layer, right?
02:44 11 A. Hard polymer outer layers, yes.
02:44 12 Q. Right. But it has a hard polymer layer,
02:44 13 right?
02:44 14 A. Correct.
02:44 15 Q. And that hard polymer layer is made up of a
02:44 16 copolyester, right?
02:44 17 A. Yes.
02:44 18 Q. And that copolyester is a Tritan polyester; is
02:44 19 that right?
02:44 20 A. That's right.
02:44 21 Q. And it has a flexural modulus of over
02:44 22 150,000 PSI, right?
02:45 23 A. That's right.
02:45 24 Q. Now, Zendura FLX also has a soft polymer
02:45 25 layer, right?

02:45 1 A. An inner soft layer, yes.
02:45 2 Q. That's right. It has -- but it has -- just
02:45 3 again, it has a soft polymer layer, right?
02:45 4 A. Yes.
02:45 5 Q. And that soft polymer layer is made up of
02:45 6 thermoplastic polyurethane elastomer, right?
02:45 7 A. That's right.
02:45 8 Q. Now, I'm going to skip the elongation at break
02:45 9 for a moment, but it has a hardness that's between 60A
02:45 10 and 85D, right?
02:45 11 A. That's right.
02:45 12 Q. The hardness is actually [redacted], right, which
02:45 13 falls between those two points?
02:45 14 A. That's right.
02:45 15 Q. Now, this elongation at break of greater than
02:45 16 about 200 percent, so I want to focus you
02:46 17 specifically --
02:46 18 A. Excuse me. The elongation to break greater
02:46 19 than 200 percent --
02:46 20 Q. Greater --
02:46 21 A. -- of the individual sheet.
02:46 22 Q. Well, let's actually --
02:46 23 A. Not the multi-layer.
02:46 24 Q. Let's talk about the soft polymer layer,
02:46 25 Mr. Lahlouh, if we may.

02:46 1 A. Sure.
02:46 2 Q. I want to focus your attention on 1[c], a soft
02:46 3 polymer layer having an elongation at break of greater
02:46 4 than about 200 percent.
02:46 5 Now, you would agree that -- well, first of
02:46 6 all, the soft polymer layer is made using a material
02:46 7 that's sold by a company called Covestro, right?
02:46 8 A. Yes.
02:46 9 Q. Okay. And you would agree that the TPU layer,
02:46 10 the resin of that layer as it comes from Covestro, that
02:47 11 elongation at break is greater than 200 percent, right?
02:47 12 A. Yes. The elongation to break of the
02:47 13 individual sheet from the resin manufacturer.
02:47 14 Q. So again, let's -- let's try to -- I just want
02:47 15 to make sure you focus on my questions. Okay?
02:47 16 A. Yes.
02:47 17 Q. So as you get the material from the supplier,
02:47 18 from Covestro, that resin, as it comes from Covestro,
02:47 19 the elongation at break is more than 200 percent,
02:47 20 right?
02:47 21 A. That's right.
02:47 22 Q. And if you could turn in your binder to
02:47 23 PTX-404.
02:47 24 A. Yes.
02:47 25 Q. Exhibit 404 is the product data sheet for that

02:47 1 Texin resin that you get from Covestro that forms the
02:48 2 soft layer, correct?
02:48 3 A. That's right.
02:48 4 MS. DURIE: We offer PTX-404.
02:48 5 MR. ZUBLER: No objection.
02:48 6 THE COURT: Admitted.
02:48 7 MS. DURIE: And if we could put up
02:48 8 Page 4. Go down to the bottom half of the document.
9 BY MS. DURIE:
02:48 10 Q. It says ultimate elongation of that material,
02:48 11 [redacted] percent, correct?
02:48 12 A. Yes. The elongation of the resin sheet before
02:48 13 being processed into a multi-layer.
02:48 14 Q. It is the elongation of the resin that is used
02:48 15 to form the soft layer, right?
02:48 16 A. Of the individual sheet.
02:48 17 Q. So let's go now to PTX-332 in your binder.
02:49 18 A. Okay.
02:49 19 Q. Now, before we get to 332, I just want to take
02:49 20 a step back.
02:49 21 Zendura FLX has more than one layer, right?
02:49 22 A. Has three layers.
02:49 23 Q. Right. We are talking here about the
02:49 24 elongation of break, not of the hard layer but of the
02:49 25 soft layer, right?

02:49 1 A. Soft layer.
02:49 2 Q. Okay. And PTX-332 is a list of documents for
02:49 3 the Zendura FLX product from Bay Materials' files,
02:49 4 right?
02:49 5 A. Yes.
02:49 6 MS. DURIE: We offer PTX-332.
02:49 7 MR. ZUBLER: No objection.
02:49 8 THE COURT: Admitted.
02:49 9 MS. DURIE: And if we could please turn
02:49 10 to Page 3. Blow up the bottom portion of the page.
11 BY MS. DURIE:
02:49 12 Q. You see it says: 5.8 elongation --
02:49 13 MS. DURIE: No, that was perfect.
14 BY MS. DURIE:
02:49 15 Q. 5.8 elongation at break of soft layer,
02:50 16 [redacted] percent?
02:50 17 A. The soft layer sheet before being introduced
02:50 18 into the product.
02:50 19 Q. Well, until that soft sheet is put into the
02:50 20 product, it's not a layer, is it?
02:50 21 A. It's a polymer sheet.
02:50 22 Q. It's a -- that's right, sir. It's a polymer
02:50 23 sheet. And then that soft polymer sheet gets
02:50 24 incorporated into Zendura FLX. And at that point, it
02:50 25 becomes the soft layer, right?

02:50 1 A. It becomes a product, a three-layer product.
02:50 2 Q. With a soft layer?
02:50 3 A. It becomes a product which is different from
02:50 4 the properties of the individual layer.
02:50 5 Q. Sir, please try to answer my question.
02:50 6 That soft material gets incorporated as a soft
02:50 7 layer, right?
02:50 8 A. Gets incorporated, yes.
02:50 9 Q. And what your product data sheet says for
02:51 10 Zendura FLX is that the elongation at break of the soft
02:51 11 layer is [redacted] percent.
02:51 12 A. That's inaccurate.
02:51 13 Q. Correct?
02:51 14 A. That's not true.
02:51 15 Q. Do you agree, looking at your screen, that
02:51 16 that's what your documentation says?
02:51 17 A. The properties of the inner layer are
02:51 18 different from the original sheet of [redacted].
02:51 19 Q. So let me try my question again.
02:51 20 Do you agree that in your own documentation,
02:51 21 when you were identifying the characteristics of your
02:51 22 product and the characteristics of the layers -- sir,
02:51 23 just listen to my question -- the characteristics of
02:51 24 the layers within them, that what you wrote was that
02:51 25 the elongation at break of the soft layer was

02:51 1 [redacted] percent?

02:51 2 A. 5.8 specifically says the layer, not the

02:52 3 product. It doesn't show here a product.

02:52 4 Q. You would agree, sir, there is no layer until

02:52 5 there is a product in which that layer can be found?

02:52 6 A. The product is different from the individual

02:52 7 sheet.

02:52 8 THE COURT: You need to answer her

02:52 9 question.

02:52 10 A. Yes.

02:52 11 MS. DURIE: Thank you, sir. I have no

02:52 12 further questions.

02:52 13 CROSS-EXAMINATION

02:52 14 BY MR. ZUBLER:

02:53 15 Q. Good afternoon, Mr. Lahlouh.

02:53 16 A. Good afternoon.

02:53 17 Q. Let's cut right to the chase.

02:53 18 A. Yes.

02:53 19 Q. Do you understand that Align is accusing you

02:53 20 of copying the SmartTrack design and Align's SmartTrack

02:53 21 patent?

02:53 22 A. Yes.

02:53 23 Q. Did you copy Align's SmartTrack design?

02:53 24 A. No. Not at all.

02:53 25 Q. Did you copy Align's SmartTrack patent?

02:53 1 A. No. Not at all.
02:53 2 Q. Who invented Zendura FLX, sir?
02:54 3 A. Zendura FLX was invented by myself and
02:54 4 Dr. Stewart.
02:54 5 Q. Now, before we go into the whole history of
02:54 6 Zendura FLX, I want to address and ask you about some
02:54 7 of the questions that Ms. Durie asked you a few moments
02:54 8 ago.
02:54 9 A. Right.
02:54 10 Q. If you'll recall, she asked you about a
02:54 11 document called an MSDS, a manufacturer safety data
02:54 12 sheet.
02:54 13 A. Yes.
02:54 14 Q. Do you recall that, sir?
02:54 15 A. Yes. I do.
02:54 16 Q. Is that a public document or a confidential
02:54 17 document?
02:54 18 A. This is a public document.
02:54 19 Q. Where did you get it?
02:54 20 A. I got it from the Internet.
02:54 21 Q. Does an MSDS document, a manufacturer safety
02:54 22 data sheet, does it tell you the specific polymers used
02:54 23 in the material?
02:54 24 A. No. It doesn't.
02:54 25 Q. To this day -- please go ahead.

02:54 1 A. It only tells you about the generic family of
02:54 2 material.
02:54 3 Q. To this day, Mr. Lahlouh, do you know the
02:55 4 specific polymers used in Align's SmartTrack product?
02:55 5 A. To this day, I do not know.
02:55 6 MR. ZUBLER: Now, if we could pull up
02:55 7 PTX-46, which is --
8 BY MR. ZUBLER:
02:55 9 Q. You don't need to open it in your binder. We
02:55 10 can show it on the screen, Mr. Lahlouh.
02:55 11 This is a document that Ms. Durie showed you.
02:55 12 And if you can see, Mr. Lahlouh, at the
02:55 13 beginning of this document, there's a section that
02:55 14 begins "Purpose."
02:55 15 Do you see that?
02:55 16 A. Yes.
02:55 17 Q. And it says: To get an updated understanding
02:55 18 of the materials and products adopted by Invisalign in
02:55 19 their current orthodontic aligners and retainers, for
02:55 20 our benchmarking benefits.
02:55 21 Do you see that, sir?
02:55 22 A. That's correct.
02:55 23 Q. You mentioned benchmarking a couple of times
02:55 24 in response to Ms. Durie's questions.
02:55 25 Do you recall that, sir?

02:55 1 A. Yes. I do.
02:55 2 Q. What is benchmarking?
02:55 3 A. Benchmarking is comparing another product to
02:56 4 my product for general comparison, to see how is my
02:56 5 product doing. Is it doing well, the same, or better?
02:56 6 I don't want to be the same. I want to be better.
02:56 7 Q. Is benchmarking -- based on your experience,
02:56 8 sir, in the materials industry, is benchmarking a
02:56 9 common or an uncommon practice in the industry?
02:56 10 A. Benchmarking is a common practice in the
02:56 11 industry.
02:56 12 Q. Does benchmarking involve copying, sir?
02:56 13 A. No. Not at all.
02:56 14 Q. Now, looking further at PTX-46, if we could
02:56 15 look at the second paragraph, Background and Summary,
02:56 16 and there's a sentence that begins "Additionally."
02:56 17 Additionally, Invisalign's patent focuses on a
02:56 18 three-layer construction, with a hard copolyester inner
02:56 19 layer surrounded by two soft polyurethane outer layers.
02:57 20 Do you see that, sir?
02:57 21 A. Yes. I do.
02:57 22 Q. What is your understanding of Invisalign's
02:57 23 patent as described in this document, sir?
02:57 24 A. Invisalign's patent states a soft, hard, then
02:57 25 soft, so two soft outer layers of urethanes surrounding

02:57 1 a polyester in the middle.
02:57 2 Q. And with Zendura FLX, what is the order and --
02:57 3 of the layers in Zendura FLX?
02:57 4 MS. DURIE: I'm going to object,
02:57 5 Your Honor, with respect to an improper comparison.
02:57 6 May we approach?
02:57 7 THE COURT: I understand what you're
02:57 8 saying.
02:57 9 MS. DURIE: Yes.
02:57 10 THE COURT: You're accusing him of
02:57 11 copying. He's trying to establish he didn't copy. I'm
02:57 12 going to overrule your objection.
02:57 13 MS. DURIE: Okay.
02:57 14 BY MR. ZUBLER:
02:57 15 Q. I'll repeat my question, Mr. Lahlouh.
02:57 16 A. Yes.
02:57 17 Q. What is the configuration of Zendura FLX in
02:57 18 terms of the configuration of layers?
02:57 19 A. Zendura FLX is composed of hard outer layers
02:58 20 and the soft inner layer.
02:58 21 Q. Now, is that the same or different than the
02:58 22 configuration of layers in SmartTrack?
02:58 23 A. That's totally different from SmartTrack's.
02:58 24 Soft --
02:58 25 THE COURT: I'm sorry to interrupt you.

02:58 1 If I could have counsel up here for a second.
02:58 2 MS. DURIE: Yep.
02:58 3 (Bench conference.)
02:58 4 THE COURT: Plaintiff wants at the end of
02:58 5 the trial an instruction that this testimony was for
02:58 6 the purpose of copying and not infringement.
02:58 7 MS. DURIE: Yes.
02:58 8 THE COURT: I'd be happy to give that. I
02:58 9 don't think you care, do you?
02:58 10 MR. ZUBLER: This testimony -- the
02:58 11 testimony she elicited was for copying, yes.
02:58 12 MS. DURIE: I would appreciate that.
02:58 13 Thank you.
02:58 14 THE COURT: So we'll -- I'm not going to
02:58 15 remember that. I think it's --
02:58 16 MS. DURIE: I will.
02:58 17 THE COURT: I was going to say, I get
02:59 18 your concern. But he's -- but this guy's not an
02:59 19 infringement guy.
20 MS. DURIE: No. I understand.
02:59 21 THE COURT: So I'm happy to give them
02:59 22 that instruction.
02:59 23 MS. DURIE: I appreciate that. Thank
02:59 24 you.
02:59 25 MR. ZUBLER: Thank you, Your Honor.

02:59 1 (Bench conference concludes.)
02:59 2 BY MR. ZUBLER:
02:59 3 Q. Mr. Lahlouh, if I could now ask you to keep
02:59 4 looking at PTX-46, and if we could turn to the third
02:59 5 page of it, sir.
02:59 6 THE COURT: And, counsel, I interrupted
02:59 7 you. He was in the middle of an answer, and I didn't
02:59 8 mean to interrupt him. If you'd like -- I guess I did
02:59 9 mean to because I did it, but if you want to ask your
02:59 10 question again, if you care to, and have him give the
02:59 11 jury the answer, you can, or you can keep going. I
02:59 12 just -- I don't know that he answered the question that
02:59 13 you had posed.
02:59 14 MR. ZUBLER: Um --
02:59 15 THE COURT: Or that you remember it.
03:00 16 MR. ZUBLER: I've forgotten what
03:00 17 happened, Your Honor. Thank you. I will ask the prior
03:00 18 question again just so the record is clear.
03:00 19 BY MR. ZUBLER:
03:00 20 Q. Mr. Lahlouh, we looked at PTX-46, and you
03:00 21 described the configuration of layers in Align's
03:00 22 patent.
03:00 23 My question to you, sir, is: What was the
03:00 24 configuration -- what is the configuration of layers in
03:00 25 Bay Materials' Zendura FLX material?

03:00 1 A. Zendura FLX material is composed of hard outer
03:00 2 layers and a soft TPU inner layer.
03:00 3 Q. And is that configuration the same or
03:00 4 different than the SmartTrack material?
03:00 5 A. It's totally different.
03:00 6 Q. Now, if we could go back to PTX-46 on Page 3.
03:00 7 A. Yes.
03:00 8 Q. And this is part of the document we were
03:00 9 looking at, the benchmarking document. If you can see
03:00 10 Table 1 that's shown here, sir.
03:00 11 A. Yes.
03:00 12 Q. What is being shown in Table 1 in the first
03:00 13 column, sir?
03:00 14 A. In the first column is a prototype of FLX
03:01 15 laminate, HT-PU-HT. The HT is a grade of hard
03:01 16 copolyester.
03:01 17 Q. And what does the -- so we're looking at the
03:01 18 HT-PU-HT line. You said HT is a hard copolyester; is
03:01 19 that right?
03:01 20 A. HT is the hard copolyester.
03:01 21 Q. And what does PU stand for, sir?
03:01 22 A. PU is polyurethane.
03:01 23 Q. And is that a hard or soft layer, sir?
03:01 24 A. That's a soft layer.
03:01 25 Q. And the third HT, is that hard or soft, sir?

03:01 1 A. That's also hard, similar to the No. 1 HT.
03:01 2 Most of them are hard copolyesters.
03:01 3 Q. And as part of this benchmarking testing, can
03:01 4 we now look at the three columns to the right?
03:01 5 What are those showing, sir?
03:01 6 A. Those are showing three simulates of
03:01 7 SmartTrack that use soft polyurethane on the outside
03:01 8 and HT or hard on the inside, hard polyester.
03:02 9 Q. Is this document, sir, describing Zendura FLX
03:02 10 as the same or different than SmartTrack?
03:02 11 A. It is totally different. Not only is the
03:02 12 types of polymers used are different where they sit
03:02 13 outside or inside, you can also see the thickness of
03:02 14 the layers is different.
03:02 15 Q. What are you pointing to there, sir?
03:02 16 A. On the second row there, it shows that FLX,
03:02 17 the three layers are equal thickness 10, 10, 10. In
03:02 18 the SmartTrack simulates, it shows a skinny 3 and then
03:02 19 25 for the hard and then 3 again or skinny layer on the
03:02 20 outside.
03:02 21 Q. What are the units on those measurements, sir?
03:02 22 A. Those are in mils.
03:02 23 Q. Mils?
03:02 24 A. Mils are thousands of an inch.
03:02 25 Q. Thousands of an inch?

03:02 1 A. Yes.

03:03 2 Q. Mr. Lahlouh, Ms. Durie also asked you some

03:03 3 questions about some documents, some Bay Materials

03:03 4 documents, that purported to show a measurement of the

03:03 5 elongation at break of [redacted] percent for a given layer in

03:03 6 a product.

03:03 7 Do you recall that, sir?

03:03 8 A. Yes. I do.

03:03 9 Q. And you mentioned, sir, I believe, that that

03:03 10 was a measurement for a layer; is that correct?

03:03 11 A. That's correct.

03:03 12 Q. And I want to be very clear about the

03:03 13 distinction that I -- that may be relevant here. When

03:03 14 you mentioned it's for the layer, what did you mean?

03:03 15 A. I mean that's the measurement of the layer

03:03 16 processed on its own, not within a product.

03:03 17 Q. And when you say there's a difference between

03:03 18 the polymer in the -- in a layer versus a polymer in

03:03 19 a -- polymer in a product, what's the difference?

03:04 20 A. The properties of the product cannot be

03:04 21 predicted from the properties of the sheet. The

03:04 22 elongation to break in the product is totally different

03:04 23 and not predictable from the sheet.

03:04 24 Q. We'll come back to that, Mr. Lahlouh.

03:04 25 A. Sure.

03:04 1 Q. One final question about Ms. Durie's questions
03:04 2 to you.
03:04 3 Were you here in court when Mr. Mueller said
03:04 4 during the opening statements that Bay Materials and
03:04 5 Align went on separate paths?
03:04 6 A. Yes.
03:04 7 Q. Did Align and Bay Materials go on separate
03:04 8 paths in terms of the configuration of their
03:04 9 multi-layer materials?
03:04 10 A. No.
03:04 11 Q. Did they proceed on different paths in terms
03:04 12 of a hard-soft-hard versus a soft-hard-soft?
03:04 13 A. No.
03:04 14 Q. Did any of Bay Materials' work with Align
03:05 15 relate to Zendura FLX?
03:05 16 A. No.
03:05 17 Q. Was Zendura FLX ever on the path -- strike
03:05 18 that.
03:05 19 Was Zendura FLX on the path that Align took or
03:05 20 the path that Bay Materials took?
03:05 21 A. It was on the path that Bay Materials took.
03:05 22 Q. Thank you.
03:05 23 A. You're welcome.
03:05 24 Q. Now, if I could, Mr. Lahlouh, I'd like to step
03:05 25 back in time. We didn't get a chance to ask you

03:05 1 questions first, so I wanted to provide a little more
03:05 2 background about you, sir.
03:05 3 Mr. Lahlouh, you were -- I believe you
03:05 4 testified that you retired earlier this year; is that
03:05 5 correct?
03:05 6 A. That's correct.
03:05 7 Q. Congratulations.
8 A. Thank you.
03:05 9 Q. What have you been doing in your retirement,
03:05 10 sir?
03:05 11 A. I've been spending some time with my family,
03:05 12 my beautiful wife and three adult children.
03:05 13 Q. And, sir, from what country -- I'm sorry.
03:06 14 Strike that.
03:06 15 From what company did you retire?
03:06 16 A. I retired from Bay Materials.
03:06 17 Q. How long did you work at Bay Materials, sir?
03:06 18 A. 24 years.
03:06 19 Q. And what was your title at Bay Materials?
03:06 20 A. I was the principal polymer engineer.
03:06 21 Q. What were your responsibilities as the
03:06 22 principal polymer engineer at Bay Materials?
03:06 23 A. My -- my responsibilities include
03:06 24 identification and selection of different polymers,
03:06 25 different resins, development of processes, how to

03:06 1 process those polymers, making -- characterization,
03:06 2 looking at different product concepts, like do I use a
03:06 3 single layer? Does it give me the product requirements
03:06 4 I want? Do I want to make a blend to generate a
03:06 5 product? Can I use multi-layers to combine different
03:07 6 properties into one?
03:07 7 And then responsibilities going to development
03:07 8 also of test methods, characterization, and
03:07 9 documentation of experiments or work.
03:07 10 Q. We'll dive into those details in a little bit,
03:07 11 but let me just ask you a little bit more about your
03:07 12 background and how you got to Bay Materials.
03:07 13 Mr. Lahlouh, where did you grow up?
03:07 14 A. I came over to the U.S. as an immigrant from
03:07 15 Sudan back in 1979.
03:07 16 Q. Why did you come to the United States, sir?
03:07 17 A. For a better quality of life and better
03:07 18 opportunities.
03:07 19 Q. What is your educational background?
03:07 20 A. I have a master's degree in chemistry and
03:07 21 technology of polymers.
03:07 22 Q. Now, after you got to the United States but
03:07 23 before you got to Bay Materials, what did you do?
03:07 24 A. I worked for a material science company known
03:07 25 as Raychem. It's a company that focuses on

03:08 1 development -- research and development in different
03:08 2 products and different applications, including
03:08 3 radiation polymers. And it's a true research company.
03:08 4 Q. That was Raychem. But now I want to ask you
03:08 5 about Bay Materials.
03:08 6 You're the first witness in this case to talk
03:08 7 about Bay Materials, which has been the subject of a
03:08 8 lot of conversation. At a high level, what is Bay
03:08 9 Materials?
03:08 10 A. Bay Materials is a research center for
03:08 11 polymers and materials.
03:08 12 Q. In your work at Bay Materials, other than
03:08 13 dental multi-layer materials, have you worked on any
03:08 14 interesting products there?
03:08 15 A. At Bay Materials at one time we were doing
03:08 16 consulting. I worked on a product for protecting the
03:08 17 Navy ship hulls against corrosion. That required a
03:09 18 product using polymers and graphene to replace a very
03:09 19 expensive and sensitive to cracking platinum wire.
03:09 20 So that was for the Navy, to protect the
03:09 21 ships. And it was fantastic progress, and it was
03:09 22 innovative application there.
03:09 23 Q. Now, when did you actually join Bay Materials?
03:09 24 A. I joined in 2002.
03:09 25 MR. ZUBLER: Could we pull up DDX-5.2,

03:09 1 please?
03:09 2 BY MR. ZUBLER:
03:09 3 Q. What is shown here -- actually, look at
03:09 4 your -- you can look at your screen, Mr. Lahlouh.
03:09 5 A. Yes.
03:09 6 Q. What is shown in DDX-5.2?
03:09 7 A. This is a picture showing me on the right-hand
03:09 8 side standing next to Dr. Ray Stewart, the founder of
03:09 9 the company. And then the rest of the team there is --
03:09 10 there is scientists, engineers, and support staff as
03:09 11 well.
03:09 12 Q. And who are the inventors of Zendura FLX, sir?
03:10 13 A. Myself and Dr. Stewart.
03:10 14 Q. And is Dr. Stewart the person in the dark
03:10 15 sunglasses there, sir?
03:10 16 A. Yes. He is.
03:10 17 Q. Now, what is Dr. Stewart's educational
03:10 18 background?
03:10 19 A. Dr. Stewart has a Ph.D. in organic chemistry.
03:10 20 Q. When you started at Bay Materials, how many
03:10 21 employees were there?
03:10 22 A. We were five. I was the first engineer.
03:10 23 Q. Today how many employees are at Bay Materials?
03:10 24 A. There is 35 now.
03:10 25 Q. And in the development of Zendura FLX, how

03:10 1 many people at Bay Materials worked on Zendura FLX?
03:10 2 A. Four.
03:10 3 Q. Now, when you started working at Bay Materials
03:10 4 in 2002, what materials did Bay Materials -- strike
03:10 5 that.
03:10 6 What materials -- start again.
03:10 7 When you started working at Bay Materials in
03:10 8 2002, was Bay Materials making any material for dental
03:10 9 aligners?
03:10 10 A. Bay Materials at that time was approached by
03:11 11 Align Technology. They needed help in selecting a new
03:11 12 material to replace what they were using at that time.
03:11 13 Q. Why did Align want a new material and Bay
03:11 14 Materials' assistance in a new material?
03:11 15 A. The materials were -- they were using, I'm not
03:11 16 sure, but I understand it was meeting cracking or
03:11 17 health hazards.
03:11 18 Q. What was the material that Bay Materials
03:11 19 provided to Align?
03:11 20 A. We provided EX30, a rigid polyurethane.
03:11 21 Q. You mentioned a polyurethane, and we've heard
03:11 22 about TPUs in this case. What exactly is a TPU?
03:11 23 A. A TPU is a thermoplastic polyurethane.
03:11 24 Q. And is there more than one type of TPU, or are
03:11 25 all TPUs the same?

03:11 1 A. There are rigid TPUs. There are soft and
03:12 2 rubbery TPUs. Imagine the shoe soles. There are
03:12 3 dozens of types of TPUs.
03:12 4 Q. And how long -- for how long of a period of
03:12 5 time, I should say, did Bay Materials supply the EX30
03:12 6 material to Align?
03:12 7 A. About six years, I would say.
03:12 8 Q. And during the time that Bay Materials was
03:12 9 providing this EX30 material to Align, did you ever
03:12 10 meet with any Align personnel or scientists?
03:12 11 A. I remember meeting with Dr. Chunhua Li once or
03:12 12 twice, and I probably met with Dr. Loc Phan.
03:12 13 Q. When did you meet with Dr. Li?
03:12 14 A. Around the year maybe 2004, 2005.
03:12 15 Q. Why would the Bay Materials team be meeting
03:12 16 with personnel from Align?
03:12 17 A. Dr. Li I believe was new at Align Technology,
03:12 18 and she came to meet with us to learn more about the
03:13 19 EX30. So we were providing guidance, particularly
03:13 20 Dr. Stewart, putting -- advising about how the material
03:13 21 is very difficult to -- is very challenging to dry and
03:13 22 to process and to characterize. And she was visiting
03:13 23 Bay Materials to learn more.
03:13 24 MR. ZUBLER: Your Honor, may I approach
03:13 25 the witness?

BY MR. ZUBLER:

03:13 Q. Mr. Lahlouh, I've handed you what's been

03:13 marked as DPX Defendants' Physical Exhibit No. 6.

03:13 A. Yes.

03:13 Q. Do you recognize that, sir?

03:13 A. Yes. This is Zendura FLX.

03:13 Q. What is it, sir?

03:13 MS. DURIE: I'm sorry. Can we have a

03:13 copy?

03:13 MR. ZUBLER: Oh, it's a physical exhibit.

03:13 I'm happy to --

03:13 MS. DURIE: Do you mind if I just come

03:13 take a look?

03:13 MR. ZUBLER: Please. I'm sorry.

03:14 BY MR. ZUBLER:

03:14 Q. Let's just start over again, sir.

03:14 A. Sure.

03:14 Q. What is DPX-6?

03:14 A. This is a Zendura FLX multi-layer sheet coming

03:14 out of the package here.

03:14 Q. And can you please describe for the jury what

03:14 is Zendura FLX and its characteristics?

03:14 A. Zendura FLX is this. Feels flexible, and it

03:14 is at the same time rigid. It looks like a single

03:14 layer that is transparent, but in reality it is three

03:14 1 layers of sheets, two hard outer layers and an inner
03:14 2 layer that is soft.
03:14 3 This three-layer with the hard-soft-hard is
03:14 4 stain resistant. And if I nick it here and try to tear
03:15 5 it, it will be very difficult to try to tear it apart.
03:15 6 It has good tear resistance, good stain resistance,
03:15 7 good characteristics.
03:15 8 Q. You mentioned stain resistance. You mentioned
03:15 9 tear resistance.
03:15 10 A. Yes.
03:15 11 Q. Do those characteristics relate or not relate
03:15 12 to the hard-soft-hard configuration that we've been
03:15 13 discussing?
03:15 14 A. They certainly relate to those aspects.
03:15 15 MR. ZUBLER: May I approach the witness,
03:15 16 Your Honor?
03:15 17 I've handed the witness what's been
03:15 18 marked as Defendants' Physical Exhibit DPX-16.
19 BY MR. ZUBLER:
03:15 20 Q. Mr. Lahlouh, do you recognize that, sir?
03:15 21 A. Yes. This is one of my lab notebooks.
03:15 22 MR. ZUBLER: Your Honor, we would move to
03:15 23 have DPX-16 admitted.
03:15 24 MS. DURIE: No objection.
03:15 25 THE COURT: Admitted.

03:16 1 MR. ZUBLER: And then we would move to
03:16 2 have DPX-6, the Zendura FLX, admitted as well.
03:16 3 MS. DURIE: No objection.
03:16 4 THE COURT: Admitted.
5 BY MR. ZUBLER:
03:16 6 Q. Now, Mr. Lahlouh, that notebook, why do you
03:16 7 have a notebook?
03:16 8 A. The notebook is a professional way of
03:16 9 recording every experiment or every piece of work.
03:16 10 This is -- as you know, Bay Materials is a research
03:16 11 center, and we try to follow very professional rules of
03:16 12 maintaining records of experimental work.
03:16 13 MR. ZUBLER: Now, if we could, if we
03:16 14 could pull up DTX-413 which was admitted earlier by
03:16 15 Align.
16 BY MR. ZUBLER:
03:16 17 Q. And this is an electronic copy of the same
03:16 18 notebook that you have in front of you, sir. So we can
03:16 19 look at the screen going forward here.
03:16 20 MR. ZUBLER: If we could turn to the lab
03:16 21 notebook, Page 24.
03:16 22 BY MR. ZUBLER:
03:16 23 Q. Do you see that page, sir?
03:16 24 A. Yes.
03:17 25 MR. ZUBLER: And if we could zoom in on

03:17 1 the top upper left-hand corner and the title where it
03:17 2 says: EX30 replacement candidates.
3 BY MR. ZUBLER:
03:17 4 Q. Do you see that, sir?
03:17 5 A. That's correct. I see.
03:17 6 Q. What does that refer to?
03:17 7 A. That -- that refers to materials that we need
03:17 8 or that we were looking at to replace the EX30.
03:17 9 Q. And why were you looking to replace the EX30
03:17 10 material that you were providing to Align?
03:17 11 A. The EX30 was a good material, but it was too
03:17 12 stiff, too hard, and not comfortable for the patient.
03:17 13 Q. How many layers were included in EX30?
03:17 14 A. EX30 is a single layer of rigid polyurethane.
03:17 15 Q. It's a single layer, sir; is that right?
03:17 16 A. Yes.
03:17 17 Q. Now, if we could look at the bottom of this
03:17 18 page. There's -- in the lower left-hand corner,
03:17 19 there's a signature. Whose signature is that?
03:17 20 A. This is my signature.
03:17 21 Q. And in the lower right-hand corner, there's a
03:17 22 date. What's the date?
03:18 23 A. That's August 5th, 2002.
03:18 24 Q. Why did you sign and date your notebooks?
03:18 25 A. The signature identifies the person who did

03:18 1 the work. The date records the date when this work was
03:18 2 done.
03:18 3 Q. Is that a standard or nonstandard practice for
03:18 4 scientists, to sign and date lab notebooks?
03:18 5 A. It is a professional standard technique.
03:18 6 Q. Now I'd like to turn to Page 26 in your lab
03:18 7 notebook.
03:18 8 MR. ZUBLER: But before we put it up on
03:18 9 the screen, Your Honor, we have a placard that I'd like
03:18 10 to approach the witness with. Is that all right?
03:18 11 And if I could have a microphone, please.
03:19 12 BY MR. ZUBLER:
03:19 13 Q. All right. Mr. Lahlouh --
03:19 14 A. Yes.
03:19 15 Q. -- do you recognize this portion taken from
03:19 16 the lab notebook we've been looking at?
03:19 17 A. Yes. I do.
03:19 18 Q. What is the title of this page, sir?
03:19 19 A. Multi-layered construction.
03:19 20 Q. What does that refer to?
03:19 21 A. That refers to three or more layers of
03:19 22 materials.
03:19 23 Q. Now, this is two pages after the page we were
03:19 24 looking at previously. This is Page 26. We were
03:19 25 looking at 24 before.

03:19 1 What is the date shown on this?
03:19 2 A. The date is August 12th, 2002.
03:19 3 Q. That's 2002, 24 years ago, correct, sir?
03:19 4 A. Yes.
03:19 5 Q. Now, I'd like to look a little bit farther
03:19 6 down on this, on your writing here. You have very nice
03:19 7 handwriting, sir, but I'm going to circle some of the
03:20 8 language so the jury can see it. And I apologize if
03:20 9 I'm standing in the way of the jury. There's a section
03:20 10 here that says "a three-layer construction."
03:20 11 Do you see that, sir?
03:20 12 A. Yes.
03:20 13 Q. What does that refer to?
03:20 14 A. That refers to this three-layer that you see
03:20 15 on the diagram here.
03:20 16 Q. And just to be clear, are you referring to
03:20 17 this right here?
03:20 18 A. Yes.
03:20 19 Q. And why were you investigating a three-layer
03:20 20 construction?
03:20 21 A. That's a concept of hard outer layers
03:20 22 surrounding an inner layer for adjusting the
03:20 23 properties. It specifically outlines the use of hard
03:20 24 layers in a multi-layer construction.
03:20 25 Q. Okay. I'm looking here. There's something

03:20 1 that says Surlyn, Selar, and Surlyn.
03:20 2 Do you see that, sir?
03:20 3 A. Yes.
03:20 4 Q. What are the Surlyn layers? Are they hard or
03:20 5 soft layers, sir?
03:20 6 A. They're hard layers.
03:20 7 Q. And what is the advantage of having a hard
03:21 8 layer on the outside of a multi-layer material?
03:21 9 A. Hard layer on the outside ensures that the
03:21 10 product does not stain.
03:21 11 Q. And if you have these hard outer layers on the
03:21 12 outside so it doesn't stain, why do you need a third
03:21 13 layer?
03:21 14 A. A third layer allows for getting a balance of
03:21 15 properties.
03:21 16 Q. What kind of balance?
03:21 17 A. It could be for toughness or elasticity in
03:21 18 making it more flexible. Softer things like that,
03:21 19 impact resistance, noncracking.
03:21 20 Q. Now, Mr. Lahlouh, you mentioned stain
03:21 21 resistance as a feature of having a hard outer layers.
03:21 22 For a dental aligner, is stain resistance an important
03:21 23 or not important characteristic?
03:21 24 A. It is a very important characteristic.
03:21 25 Q. Why is it important?

03:22 1 A. It is important because aligners, the final
03:22 2 product, it's appealing to the user is because it is
03:22 3 clear, and you don't want to have an aligner that would
03:22 4 stain in the mouth.
03:22 5 Q. What can cause an aligner to stain?
03:22 6 A. Simple foods like mustard or coffee or wine,
03:22 7 anything like that can stain.
03:22 8 Q. Now, did you ever build this three-layer
03:22 9 material that's shown on this page of your lab
03:22 10 notebook?
03:22 11 A. Yes. I processed that in the lab into a
03:22 12 sample.
03:22 13 Q. Now, just to be very clear, does that
03:22 14 material -- is that material Zendura FLX, sir?
03:22 15 A. No. It is not Zendura FLX, but it's the
03:22 16 concept of using hard layers on the outside, leading to
03:22 17 FLX in the future.
03:22 18 Q. Thank you, Mr. Lahlouh. We'll move on to a
03:23 19 different document now.
03:23 20 Could you now look at Tab 5 in your binder,
03:23 21 please? This is DTX-416.
03:23 22 Mr. Lahlouh, do you recognize DTX-416, which
03:23 23 is entitled Next Generation Aligner Project Plan?
03:23 24 A. Yes. I do.
03:23 25 MR. ZUBLER: Your Honor, we move

03:23 1 admission of DTX-416.
03:23 2 MS. DURIE: No objection.
03:23 3 THE COURT: Admitted.
03:23 4 BY MR. ZUBLER:
03:23 5 Q. Now, Mr. Lahlouh, this document is entitled
03:23 6 Next Generation Aligner Project Plan.
03:23 7 Do you see that?
03:23 8 A. Yes. I do.
03:23 9 Q. Is this document from Bay Materials, sir?
03:23 10 A. Yes. It is.
03:24 11 Q. And what was the next generation aligner
03:24 12 project plan?
03:24 13 A. I'm looking for different materials, different
03:24 14 from the EX30 or Zendura in this case.
03:24 15 Q. Who wrote this document, sir?
03:24 16 A. I did.
03:24 17 Q. And when did you write this document?
03:24 18 MR. ZUBLER: If we can go to the last
03:24 19 page of this document and zoom in.
03:24 20 A. I wrote this document back in June 17, 2010.
03:24 21 BY MR. ZUBLER:
03:24 22 Q. All right. So you wrote this document in
03:24 23 June 2010.
03:24 24 MR. ZUBLER: And now if we could go back
03:24 25 to the first page that we were looking at. And

03:24 1 actually, if we could jump to the third page of the
03:24 2 document, where it says Materials Overview.
3 BY MR. ZUBLER:
03:24 4 Q. Do you see that section, sir?
03:24 5 A. Yes. I do.
03:24 6 Q. Now, what does this section describe as part
03:24 7 of the next generation project plan?
03:24 8 A. This describes different types of TPUs or
03:25 9 copolyesters or amides that we were looking at as
03:25 10 replacements.
03:25 11 Q. Do you see, sir, there's a reference in this
03:25 12 document to Tritan FX 100 copolyester?
03:25 13 Do you see that, sir?
03:25 14 A. Yes. I do.
03:25 15 Q. What does that refer to?
03:25 16 A. That refers to a Tritan hard copolyester.
03:25 17 It's from the same family that Zendura FLX Tritan is.
03:25 18 Q. So if I'm understanding you correctly, you
03:25 19 said this is from the same family as what?
03:25 20 A. Tritan copolyester.
03:25 21 Q. As a Tritan copolyester in Zendura FLX; is
03:25 22 that right?
03:25 23 A. Yes.
03:25 24 Q. And this document -- is this document from
03:25 25 before or after SmartTrack was released, sir?

03:25 1 A. This is before SmartTrack.
03:25 2 Q. This document was from 2010, you testified.
03:25 3 When was SmartTrack released, sir?
03:25 4 A. SmartTrack, 2013.
03:25 5 Q. Now, if we could go to the fourth page of this
03:25 6 document, sir. And particularly, there's a section
03:26 7 entitled Routes to 20 mil NGA Material.
03:26 8 Do you see that?
03:26 9 A. Yes.
03:26 10 Q. What does NGA stand for?
03:26 11 A. Next generation aligner.
03:26 12 Q. And in this paragraph, the last sentence says:
03:26 13 Possible routes to an NGA material include the
03:26 14 following.
03:26 15 Do you see that?
03:26 16 A. Yes.
03:26 17 Q. And the very last line refers to a laminate,
03:26 18 for example, ABA sheet of CX, BX, and CX.
03:26 19 Do you see that, sir?
03:26 20 A. Yes. I do.
03:26 21 Q. What is that referring to, CX/BX/CX?
03:26 22 A. That refers to hard-soft-hard materials.
03:26 23 Q. And you said this refers to -- could you
03:26 24 repeat that answer, sir?
03:26 25 A. Three layers, hard-soft-hard.

03:26 1 Q. Did you ever build this material, sir?
03:26 2 A. Yes. I did.
03:26 3 Q. And to be clear, is this the configuration --
03:26 4 the exact configuration of Zendura FLX?
03:26 5 A. This is the configuration of hard-soft-hard
03:27 6 that is used in FLX.
03:27 7 Q. But is this the final configuration of Zendura
03:27 8 FLX, sir?
03:27 9 A. Not the materials, but the concept of
03:27 10 configuration, yes.
03:27 11 Q. Now, after this memo in 2010, this next
03:27 12 generation aligner memo, what projects were you working
03:27 13 on over the next several years at Bay Materials?
03:27 14 A. I'm sorry, which years?
03:27 15 Q. Yeah. So this document we were looking at was
03:27 16 from 2010 --
03:27 17 A. Yes.
03:27 18 Q. -- the document we were looking at on the
03:27 19 screen. After that document, what projects were you
03:27 20 working on at Bay Materials?
03:27 21 A. Alongside working in developing the next
03:27 22 generation material, we were also doing consulting work
03:27 23 at the same time to other companies because we were a
03:27 24 small company trying to generate funds to fund our
03:27 25 projects, the aligner -- the orthodontic projects.

03:28 1 Q. You said you do consulting projects for other
03:28 2 companies.
03:28 3 What kind of companies were you working with,
03:28 4 sir?
03:28 5 A. We were working with all kinds of companies,
03:28 6 including Google, for example, making those sheets of
03:28 7 balloons. We were consulting with Medtronic, another
03:28 8 pharmaceutical company, I believe. We were working
03:28 9 with different consulting projects.
03:28 10 Q. Now, Mr. Lahlouh, I see sitting next to you
03:28 11 there's two stacks of notebooks. Could you hold up one
03:28 12 or two of those, sir, please?
03:28 13 And how many total notebooks do you have there
03:28 14 next to you?
03:28 15 A. I have next to me about, I believe, 20
03:28 16 notebooks.
03:28 17 Q. And what are those --
03:28 18 A. Each notebook has 208 pages, and all of them
03:28 19 are research projects. Not all of them are on
03:28 20 orthodontic aligners, but including also the consulting
03:28 21 work that we were doing.
03:29 22 Q. And do those lab notebooks, though, do they
03:29 23 refer to any other multi-layer materials that you were
03:29 24 working on?
03:29 25 A. Yes. Numerous examples in the lab notebooks.

03:29 1 MR. ZUBLER: These -- those notebooks
03:29 2 have been marked DPX-16 through DPX-29 and DPX-32 and
03:29 3 DPX-33. We would move admission of those exhibits.
03:29 4 MS. DURIE: No objection.
5 BY MR. ZUBLER:
03:29 6 Q. Now, in your development of --
03:29 7 (Off-the-record discussion.)
03:29 8 THE COURT: Ladies and gentlemen of the
03:29 9 jury, if we look a little rattled up here, it may be.
03:29 10 But again, as I told you earlier, you're not going to
03:29 11 get physical exhibits. You're going to -- you'll be
03:29 12 receiving photos of these, and you'll not have the
03:29 13 actual physical exhibits. We don't have a way of doing
03:29 14 that anymore.
03:29 15 So I'm admitting the exhibits, but you
03:29 16 all will be getting photos of the exhibits and not the
03:29 17 exhibits themselves.
03:30 18 BY MR. ZUBLER:
03:30 19 Q. Now, in developing Zendura FLX, Mr. Lahlouh,
03:30 20 approximately how many different experiments did you
03:30 21 run?
03:30 22 A. Around 850 experiments, including different
03:30 23 polymers that we looked at, blends, multi-layers. And
03:30 24 then there is the processing each time to work with
03:30 25 this. So there is processes. There is conditioning.

03:30 1 There is making the parts for prototyping. Cycles of
03:30 2 making samples and going back after a week or so to do
03:30 3 more.
03:30 4 Q. Why did you need to run so many experiments?
03:30 5 A. We needed to run that many experiments because
03:30 6 we wanted to be comprehensive. We looked at all kinds
03:30 7 of polymers out there, and it's challenging because we
03:30 8 have to select FDA-approved materials, first of all.
03:31 9 They have to -- we want to make sure that they are
03:31 10 clear at the end.
03:31 11 Not every combination will result into a clear
03:31 12 product. We wanted to check the properties of the --
03:31 13 each time we made prototypes, we went back to test them
03:31 14 to make sure we are on track.
03:31 15 So it takes time and effort, especially in a
03:31 16 small group.
03:31 17 Q. Mr. Lahlouh, when you make a multi-layer
03:31 18 product with multiple layers each with their own
03:31 19 individual characteristics, are the properties of the
03:31 20 ultimate final multi-layer product predictable or
03:31 21 unpredictable?
03:31 22 A. They're unpredictable.
03:31 23 Q. If we could now -- if you could now look at
03:31 24 Tab 9 in your binder, sir, which is DTX-263.
03:31 25 A. Yes.

03:31 1 Q. And this might have already been admitted as a
03:31 2 plaintiff's exhibit, but just to be sure, do you
03:31 3 recognize the document at Tab 9, DTX-263?
03:32 4 A. Yes.
03:32 5 Q. What is it, sir?
03:32 6 A. The Zendura XL Development History.
03:32 7 Q. All right.
03:32 8 MR. ZUBLER: Your Honor, we would move
03:32 9 admission of DTX-263.
03:32 10 MS. DURIE: No objection.
03:32 11 THE COURT: Admitted.
03:32 12 MR. ZUBLER: If we could publish DTX-263
03:32 13 to the jury.
03:32 14 BY MR. ZUBLER:
03:32 15 Q. The document is entitled Zendura XL
03:32 16 Development History.
03:32 17 What is Zendura XL?
03:32 18 A. Zendura XL is the previous name for Zendura
03:32 19 FLX.
03:32 20 Q. And --
03:32 21 A. It's the same.
03:32 22 Q. And towards the bottom of the page, it says --
03:32 23 MR. ZUBLER: If we could go to actually
03:32 24 Page 2, I should say.
25 BY MR. ZUBLER:

03:32 1 Q. Towards the bottom of the page, there's a
03:32 2 section entitled Initiation of Development Effort?
03:32 3 Do you see that, sir?
03:32 4 A. Yes. I do.
03:32 5 Q. Now, the first sentence says: In 2013, Bay
03:32 6 Materials began investigating materials and
03:32 7 construction to produce an improved aligner material.
03:33 8 Do you see that, sir?
03:33 9 A. Yes. I do.
03:33 10 Q. Now, you told us earlier, looking at your lab
03:33 11 notebook, that that was from 2002. And we looked at a
03:33 12 2010 document that you said related to the concept of
03:33 13 Zendura FLX.
03:33 14 Why did this document refer to 2013 as the
03:33 15 date when Bay Materials began investigating materials
03:33 16 and construction to produce an improved aligner
03:33 17 material?
03:33 18 A. This document refers to the development of the
03:33 19 product. Before 2013, between 2010 and 2013, we were
03:33 20 still doing the experimentations in the lab making
03:33 21 little sheets and laminates on the hot press to make --
03:33 22 for testing.
03:33 23 But after 2013, that's the development of the
03:33 24 product, meaning we had to go and develop the process
03:33 25 for that product using pilot scale equipment.

03:33 1 I used to travel from California to
03:33 2 Pennsylvania to access those pilot scale equipment for
03:34 3 doing a process specific for making these laminates.
03:34 4 Q. Now, the jury has heard a fair amount about
03:34 5 technical data sheets for individual polymers. Are you
03:34 6 familiar with the technical data sheet that describes
03:34 7 an individual polymer?
03:34 8 A. Yes. I do.
03:34 9 Q. Do you use those in your work, sir?
03:34 10 A. The technical data sheets only give us
03:34 11 guidelines about the properties or process of a single
03:34 12 sheet.
03:34 13 Q. During your development of Zendura FLX, did
03:34 14 you use technical data sheets?
03:34 15 A. I used them as guidelines, not to predict the
03:34 16 outcome of the three layer.
03:34 17 Q. And based on your experience, how did the
03:34 18 properties that were listed on the technical data
03:34 19 sheets for the individual polymers relate to the
03:34 20 characteristics and properties of the layers in the
03:34 21 completed Zendura FLX multi-layer product?
03:34 22 A. They're different. Totally different.
03:34 23 Q. Now, for product performance, sir, what is
03:35 24 relevant for the performance of a product for a
03:35 25 patient, for example, with a dental aligner?

03:35 1 Is it -- are the individual materials in
03:35 2 Zendura FLX before manufacturing relevant or are the
03:35 3 individual materials relevant as they are incorporated
03:35 4 in Zendura FLX?
03:35 5 A. After they're incorporated. That's what is
03:35 6 important for the patient.
03:35 7 Q. And why is that, sir?
03:35 8 A. Because that's what the patient is going to
03:35 9 feel in their mouth, the product.
03:35 10 Q. The multi-layer product?
03:35 11 A. Yes.
03:35 12 Q. Now, are you familiar with how Zendura FLX is
03:35 13 manufactured?
03:35 14 A. Yes.
03:35 15 Q. How is it manufactured?
03:35 16 A. I developed the process for manufacturing
03:36 17 Zendura FLX. And as I said, you know, we -- I used to
03:36 18 travel to Pennsylvania to access the equipment that I
03:36 19 can develop the process there. And it took numerous
03:36 20 times going back and forth because there was no process
03:36 21 for Zendura FLX. No process outlined out there.
03:36 22 Q. What is the name of the process that's used to
03:36 23 make Zendura FLX?
03:36 24 A. It's called an extrusion lamination process.
03:36 25 It's a two-step process.

03:36 1 In the first step, I would have to extrude the
03:36 2 outer layers using just one material, the copolyester,
03:36 3 at very high temperature, 520 degrees Fahrenheit, to
03:36 4 make sheets, collected in a row, two rows.
03:36 5 Then in a second step, not necessarily right
03:36 6 away, in a second step, I would extrude -- melt extrude
03:37 7 the polyurethane, the soft polyurethane in the melt and
03:37 8 extrude it between deployed fill of the outer layer.
03:37 9 That's how it gets laminated in a continuous
03:37 10 manner.
03:37 11 Q. And based on your experience, does the
03:37 12 extrusion lamination process impact the material
03:37 13 properties of the layers of Zendura FLX?
03:37 14 A. Yes. The extruded product is totally
03:37 15 different from the individual layers.
03:37 16 Q. I want to return to the exhibit from your
03:37 17 initial lab notebook that we looked at a moment ago.
03:37 18 MR. ZUBLER: May I approach the witness
03:37 19 again, Your Honor?
03:37 20 BY MR. ZUBLER:
03:37 21 Q. Coming back to this part of your lab notebook
03:37 22 from 2002, if we could focus on just one sentence here
03:38 23 that you wrote. And I'll read it because it may not be
03:38 24 visible to everyone. But it's --
03:38 25 MR. ZUBLER: Also, if we could put it on

03:38 1 the screen perhaps for the jurors so they can see it
03:38 2 there as well.
3 BY MR. ZUBLER:
03:38 4 Q. It says -- and I'm looking below Line 10:
03:38 5 While Selar PA 3426 polyamide from Dupont alone is
03:38 6 brittle, the multi-layer construction was more flexible
03:38 7 and nonbrittle.
03:38 8 Do you see that language, sir?
03:38 9 A. Yes.
03:38 10 Q. I'm just going to mark that on the document.
03:38 11 What is that describing, sir?
03:38 12 A. That describes that you cannot predict the
03:38 13 product properties from the first layer from the sheet
03:38 14 by itself. In fact, in this case, there was
03:38 15 synergistic effect that a brittle material, when it was
03:38 16 put into a laminate, it turned into a flexible
03:38 17 material.
03:38 18 Q. And when did you write this statement, sir?
03:39 19 A. I wrote this back in 2002, August.
03:39 20 Q. Now, when was Zendura FLX first sold?
03:39 21 A. In 2018.
03:39 22 Q. And how many people worked on the project for
03:39 23 Zendura FLX?
03:39 24 A. Four scientists and engineers.
03:39 25 Q. Can you describe what it was like working on

03:39 1 Zendura FLX with those engineers?
03:39 2 A. Zendura FLX was very intriguing. It was
03:39 3 challenging. We had to work hard. We had to, you
03:39 4 know, do this in cycles continuously.
03:39 5 Q. And how has the dental industry responded to
03:39 6 Zendura FLX?
03:39 7 A. Zendura FLX was accepted by the industry
03:39 8 overwhelmingly.
03:39 9 Q. Can you describe what you mean by
03:39 10 "overwhelmingly"?
03:39 11 A. It was global acceptance. They loved it. It
03:40 12 was just the proper -- the good package of properties
03:40 13 in one.
03:40 14 Q. What companies use Zendura FLX today?
03:40 15 A. All over the world. There's no single
03:40 16 company.
03:40 17 Q. Can you name some of them, sir?
03:40 18 A. Yes. ClearCorrect is one of them. Encore
03:40 19 uses it. Australia, companies in Australia use it. In
03:40 20 the Middle East, they would use it. In China, they use
03:40 21 it.
03:40 22 It's all over the place. Companies, many,
03:40 23 many different companies.
03:40 24 Q. Now, have you received any patents related to
03:40 25 your work in developing Zendura FLX?

03:40 1 A. Yes. I did.
03:40 2 Q. If you could look at Tab 10 in your binder,
03:40 3 sir, which is DTX-595.
03:40 4 A. Yes.
03:40 5 Q. Do you recognize that, sir?
03:40 6 A. Yes. I do.
03:40 7 MR. ZUBLER: We would move admission of
03:40 8 DTX-595.
03:40 9 MS. DURIE: I do object, Your Honor, on
03:40 10 403 grounds.
03:40 11 THE COURT: I can't hear you. I'm sorry.
03:41 12 MS. DURIE: Sorry. I apologize,
03:41 13 Your Honor. I object on 403 grounds.
03:41 14 MR. ZUBLER: May we approach, Your Honor?
03:41 15 THE COURT: Sure.
03:41 16 (Bench conference.)
03:41 17 MS. DURIE: I don't mind him talking
03:41 18 about it in a way he just did and saying -- I said I
03:41 19 don't mind him, as he just did, saying he got patents.
03:41 20 But the specifics of the patent and the claims are not
03:41 21 relevant to any issue, and I think it's going to be
03:41 22 confusing to the jury as to what to make of it.
03:41 23 MR. ZUBLER: Your Honor -- I'm sorry to
03:41 24 interrupt.
03:41 25 This is very relevant, Your Honor, for

03:41 1 two reasons to rebut the copying allegations. There's
03:41 2 actually reference in this document, and I can show it
03:41 3 to you, where he references that the contrast between
03:41 4 the product he was developing and the SmartTrack
03:41 5 material including testing results, and he contrasts it
03:41 6 expressly and says it's different and it's superior.
03:41 7 And it was -- and the patent was granted over the
03:41 8 SmartTrack patent.
03:42 9 MS. DURIE: I think that's exactly the
03:42 10 403 issue. That's not relevant to the infringement of
03:42 11 these claims. The fact that he could get a different
03:42 12 patent for a different purpose.
03:42 13 THE COURT: I think it's responsive to
03:42 14 the copying allegation. I'll overrule the objection.
03:42 15 MR. ZUBLER: Thank you, Your Honor.
03:42 16 (Bench conference concludes.)
03:42 17 MR. ZUBLER: Your Honor, we move
03:42 18 admission of DTX-595.
03:42 19 THE COURT: And I'll note your objection
03:42 20 and it's overruled.
03:42 21 MR. ZUBLER: If we could publish DTX-595
03:42 22 for the jury.
23 BY MR. ZUBLER:
03:42 24 Q. What is this document, sir?
03:42 25 A. This is the patent for Zendura FLX.

03:42 1 Q. And who are the named inventors on this
03:42 2 patent, sir?
03:42 3 A. Dr. Ray Stewart and myself, John Lahlouh.
03:42 4 Q. And if you look at the title of it in the
03:42 5 upper left-hand corner, it says: Dual Shell Dental
03:42 6 Appliance and Material Constructions.
03:42 7 Do you see that, sir?
03:42 8 A. Yes.
03:42 9 Q. What does dual shell refer to?
03:42 10 A. Dual shell right away tells you that this has
03:43 11 two hard layers. That's what a dual shell is.
03:43 12 Q. And if we could look down the lower right-hand
03:43 13 corner, there's a section called Abstract that
03:43 14 summarizes the patent.
03:43 15 Do you see that, sir?
03:43 16 A. Yes.
03:43 17 Q. And in particular, if we could look at the
03:43 18 sentence -- the second sentence that says: The
03:43 19 polymeric sheet compositions are useful for making
03:43 20 dental appliances having outer layers comprised of a
03:43 21 material having a modulus of from about 1,000 MPA to
03:43 22 2,500 MPA ("hard") and an inner core comprised of
03:43 23 elastomeric material or materials having a modulus of
03:43 24 from about 50 MPa to 500 MPa ("soft").
03:43 25 Do you see that, sir?

03:43 1 A. Yes. I do.
03:43 2 Q. What does that refer to?
03:43 3 A. That refers to the soft layer in between the
03:43 4 two shells.
03:43 5 Q. Now, if we could -- if I could now turn your
03:44 6 attention to Table 3 of the patent.
03:44 7 MR. ZUBLER: If we could zoom in on that,
03:44 8 sir.
03:44 9 BY MR. ZUBLER:
03:44 10 Q. Table 3 is entitled Monolayer and Multilayer
03:44 11 Sheets.
03:44 12 Do you see that, sir?
03:44 13 A. Yes.
03:44 14 Q. What is described in Table 3 of your patent?
03:44 15 A. In Table 3 of the patent, the four numbers to
03:44 16 the right are -- the three numbers to the right, from
03:44 17 2, 3, and 4, those are different FLX configurations,
03:44 18 multi-layer.
03:44 19 Q. And when you say "FLX configuration," what do
03:44 20 you mean?
03:44 21 A. Meaning hard-soft-hard.
03:44 22 Q. Your invention?
03:44 23 A. Yes.
03:44 24 Q. And what is -- and before we go into the
03:44 25 details of each column, what generally is the data

03:44 1 that's being reported here?
03:44 2 A. What's the date?
03:45 3 Q. What data or what information is being
03:45 4 provided here, sir?
03:45 5 A. This is the properties of the product --
03:45 6 products that are compared to one another. P1, for
03:45 7 example, is a rigid polyurethane like the Zendura A.
03:45 8 The next one is a monolayer of polyester.
03:45 9 The third one -- the third one is a simulate
03:45 10 of SmartTrack. It is listed here as composed of outer
03:45 11 layers of Texin 950. That was our simulate of
03:45 12 75 microns and an inner layer of a hard material
03:45 13 600 microns, and then again an outer TPU elastomer, 75
03:45 14 microns. So this is one of the simulates for
03:46 15 SmartTrack.
03:46 16 Q. Who generated the data in this table, sir?
03:46 17 A. Myself and Dr. Stewart.
03:46 18 Q. So if I'm understanding you correctly, this is
03:46 19 data comparing certain Zendura FLX or hard-soft-hard
03:46 20 configurations with other products; is that correct?
03:46 21 A. That's correct.
03:46 22 Q. Now, why were you reporting to the Patent
03:46 23 Office testing data about your products in comparison
03:46 24 to other products?
03:46 25 A. We wanted to make it clear that we have a

03:46 1 different product.
03:46 2 MR. ZUBLER: Now, can we pull up Column
03:46 3 16 of the same patent, Lines 1 to 9, and if we could
03:46 4 highlight Line 6.
5 BY MR. ZUBLER:
03:46 6 Q. Which says --
03:46 7 A. Yes.
03:46 8 Q. -- prior art material P3 is described in U.S.
03:46 9 Patent No. 9,655,693 B2.
03:46 10 Do you see that, sir?
03:47 11 A. Yes. I do.
03:47 12 Q. What patent is that referring to?
03:47 13 A. I believe that's referring to SmartTrack
03:47 14 Align's patent.
03:47 15 Q. Why were you referring in your patent to
03:47 16 Align's patent?
03:47 17 A. To show that we are not copying here. We are
03:47 18 just showing as how our product compares to a similar
03:47 19 product.
03:47 20 Q. Now, if we could look at Line 8 still in
03:47 21 Column 16. It says: Test samples 1 to 4 are
03:47 22 multilayer laminates (as described herein),
03:47 23 demonstrating improved stress relaxation properties,
03:47 24 increased tear strength, and excellent stain
03:47 25 resistance.

03:47 1 A. Yes.
03:47 2 Q. When it refers to test samples 1 to 4, is that
03:47 3 referring to your products or the prior products?
03:47 4 A. My products.
03:47 5 Q. And now finally, if we could look at Column
03:47 6 16, Lines 10 to 11, it says: Compared to the prior art
03:48 7 materials, test samples 1 to 4 exhibited a number of
03:48 8 unexpected properties.
03:48 9 Do you see that, sir?
03:48 10 A. Yes.
03:48 11 Q. And again, test samples 1 to 4 are which
03:48 12 products?
03:48 13 A. 1 to 4 are my products.
03:48 14 Q. And then if we look down to Line 17, it says:
03:48 15 This is in contradiction to the teachings of U.S.
03:48 16 Patent No. 9,655,693.
03:48 17 Do you see that, sir?
03:48 18 A. Yes.
03:48 19 Q. And it goes on to say that that patent teaches
03:48 20 that an outer layer of elastomer is required to protect
03:48 21 the inner hard layer.
03:48 22 Do you see that?
03:48 23 A. That's correct.
03:48 24 Q. Again, just to be absolutely clear, what
03:48 25 patent is being referred to when it says U.S. Patent

03:48 1 No. 9,655,693?
03:48 2 A. I believe that's the SmartTrack patent.
03:48 3 Q. Did the Patent Office, after you provided this
03:49 4 data, did it grant or deny you a patent?
03:49 5 A. They granted us a patent.
03:49 6 Q. How many patents did you ultimately get, sir,
03:49 7 as part of this disclosure?
03:49 8 A. Four, I believe.
03:49 9 Q. Now, Mr. Lahlouh, do you understand that Align
03:49 10 is accusing you of copying Align's SmartTrack design in
03:49 11 developing Zendura FLX?
03:49 12 A. That's right.
03:49 13 Q. Did you copy the SmartTrack design?
03:49 14 A. No. Never.
03:49 15 Q. Now, but during the time you worked at Zendura
03:49 16 FLX (sic), did Bay Materials evaluate other companies'
03:49 17 products?
03:49 18 A. Yes.
03:49 19 Q. Why would you do that?
03:49 20 A. For benchmarking, for comparison of how our
03:49 21 product compares to what is out there in the market.
03:49 22 Q. And what multi-layer competitor products did
03:49 23 Bay Materials evaluate?
03:49 24 A. We compared a few, for example, 3M's Clarity
03:49 25 product.

03:50 1 Q. And did you ever inspect or test Align's
03:50 2 SmartTrack product?
03:50 3 A. I have never seen Align's SmartTrack product.
03:50 4 I had to make simulates because it's not available.
03:50 5 Q. What do you mean, "it's not available," sir?
03:50 6 A. Align Technology does not have their products,
03:50 7 the three-layer sheets, available to anyone out there
03:50 8 except they would give them directly to the
03:50 9 orthodontists. So any researcher could not access a
03:50 10 SmartTrack.
03:50 11 Q. What about Zendura FLX, is Bay Materials' --
03:50 12 Bay Materials' Zendura FLX material available for
03:50 13 purchase by companies other than Bay Materials and
03:50 14 ClearCorrect?
03:50 15 A. Absolutely. It's sold all over the world and
03:50 16 is packaged as sheets, multi-layer sheets.
03:51 17 Q. And during your time at Bay Materials, sir,
03:51 18 did you ever review Align patents?
03:51 19 A. I have reviewed a few.
03:51 20 Q. And why would you review another company's
03:51 21 patents?
03:51 22 A. I would review other companies' patents, not
03:51 23 just Align's, but to keep up with what is going on in
03:51 24 the industry, what is new, what's going on.
03:51 25 Q. In any of the Align patents that you've

03:51 1 reviewed, have any of them that you've seen described a
03:51 2 hard-soft-hard material like Zendura FLX?
03:51 3 A. No. Align's patents have been consistent on
03:51 4 soft-hard-soft.
03:51 5 Q. Mr. Lahlouh, I'd like to close with a few
03:51 6 questions about the patents that Align is asserting in
03:51 7 this case.
03:51 8 You understand that there's four patents that
03:51 9 Align has asserted against ClearCorrect based on its
03:52 10 use of Bay Materials' Zendura FLX material.
03:52 11 Do you understand that, sir?
03:52 12 A. Yes. I do.
03:52 13 Q. Now, have you reviewed those four patents,
03:52 14 sir?
03:52 15 A. Yes. I have.
03:52 16 Q. When do you understand that those patents, the
03:52 17 four that are issued in this case, when do you
03:52 18 understand that those were issued by the Patent Office?
03:52 19 A. At least three years after Zendura FLX patent.
03:52 20 Q. Approximately what year?
03:52 21 MS. DURIE: Your Honor, violation of --
03:52 22 it's a violation of MIL 7.
03:52 23 THE COURT: If you want to approach the
03:52 24 bench.
03:52 25 MS. DURIE: I apologize, Your Honor.

03:52 1 Yes.
03:52 2 (Bench conference.)
03:52 3 MS. DURIE: Your Honor, MIL 7.
03:52 4 THE COURT: Tell me first, are you
03:52 5 objecting to the question he just asked or the one you
03:52 6 think he's about to ask?
03:52 7 MS. DURIE: The question he just asked.
03:52 8 THE COURT: Okay.
03:52 9 MS. DURIE: And it's MIL 7, that it's the
03:52 10 suggestion that it's improper to file a patent
03:52 11 application or write claims to cover an adverse party's
03:53 12 product. That was very direct and to the suggestion
03:53 13 that it was improper to get a patent after Zendura FLX
03:53 14 had issued.
03:53 15 MR. ZUBLER: I was not intending to
03:53 16 suggest it was improper, but we can move on,
03:53 17 Your Honor.
03:53 18 THE COURT: Okay. Thank you.
03:53 19 (Bench conference concludes.)
03:53 20 BY MR. ZUBLER:
03:53 21 Q. We were talking, Mr. Lahlouh, about the four
03:53 22 patents that Align has asserted against ClearCorrect.
03:53 23 I believe you said you've reviewed those patents; is
03:53 24 that right, sir?
03:53 25 A. Yes. I have.

03:53 1 Q. And have you reviewed the claims of those
03:53 2 patents?
03:53 3 A. Yes. I did.
03:53 4 Q. And what did you conclude based on your review
03:53 5 of the claims of those patents?
03:53 6 A. My conclusion is that the Zendura FLX or
03:53 7 ClearCorrect does not infringe on Align's patents.
03:53 8 Q. We talked earlier today, Ms. Durie did, about
03:54 9 the elongation at break requirement of the patents in
03:54 10 this case. She had a demonstration -- demonstrative up
03:54 11 there that she had you look at.
03:54 12 Do you recall that, sir?
03:54 13 A. Yes. I do.
03:54 14 Q. Does the TPU layer, the soft layer in Zendura
03:54 15 FLX, have an elongation of break greater than about
03:54 16 200 percent?
03:54 17 A. No.
03:54 18 Q. How do you know that, sir?
03:54 19 A. I have tested the product.
03:54 20 MR. ZUBLER: Your Honor, if -- actually,
03:54 21 if we could pull up DTX-455, which has been admitted.
03:54 22 If we could zoom in on the top of this
03:54 23 document.
24 BY MR. ZUBLER:
03:54 25 Q. It's entitled Zendura XL-1 Design Verification

03:54 1 Report, Tensile and Elongation Properties.
03:54 2 Do you see that, sir?
03:54 3 A. Yes. I do.
03:54 4 Q. What is this document?
03:54 5 A. This is a report on the tensile and elongation
03:55 6 properties of Zendura FLX.
03:55 7 Q. What's a tensile property?
03:55 8 A. A tensile property is when a sample, let's say
03:55 9 a strip, is pulled.
03:55 10 Q. Who wrote this document?
03:55 11 A. I did.
03:55 12 Q. And when did you write it?
03:55 13 A. I wrote it in 2018.
03:55 14 Q. Did you perform this testing before or after
03:55 15 Align sued ClearCorrect in this case?
03:55 16 A. I performed this before.
03:55 17 Q. And why were you testing Zendura FLX?
03:55 18 A. I always test Zendura FLX to get an idea about
03:55 19 its properties.
03:55 20 Q. If we could look at the result section at the
03:55 21 bottom of the first page of DTX-455.
03:55 22 At a high level, what does that describe, sir?
03:55 23 A. That describes the tensile properties, and
03:55 24 there is a few of them. Elongation at yield, break.
03:55 25 All the tensile properties of the material.

03:56 1 Q. Let's focus on elongation at break, that
03:56 2 column, sir.
03:56 3 Do you see that?
03:56 4 A. Yes.
03:56 5 Q. What does that column show with respect to the
03:56 6 elongation at break of Zendura FLX?
03:56 7 A. That shows that when the Zendura FLX is pulled
03:56 8 according to the ASTM test method and 2 inch per
03:56 9 minute, it would break at an average of 102 percent
03:56 10 elongation.
03:56 11 Q. And you mentioned an ASTM standard. What
03:56 12 standard did you apply in doing this testing?
03:56 13 A. This is the American Standard Test Method,
03:56 14 designation 638.
03:56 15 Q. Is that a standard or nonstandard way to test
03:56 16 materials?
03:56 17 A. That's a very standard test method for testing
03:56 18 polymers.
03:56 19 Q. And what does this testing of the elongation
03:56 20 at break of Zendura FLX indicate, if anything, about
03:56 21 the elongation at break of the TPU soft layer within
03:56 22 Zendura FLX?
03:57 23 A. This test demonstrates that the inner layer of
03:57 24 Zendura FLX breaks at an elongation of 102 percent.
03:57 25 Q. Other than this occasion in 2018 that's shown

03:57 1 here, did you ever have other occasion to test the
03:57 2 elongation at break of Zendura FLX?
03:57 3 A. Yes. I've tested it numerous times. Every
03:57 4 time we have a new lot of material coming and new
03:57 5 product made, we test it.
03:57 6 Q. Have you ever had a result in which the
03:57 7 elongation at break was greater than 200 percent?
03:57 8 A. No. Not at all.
03:57 9 Q. Mr. Lahlouh, you told -- strike that.
03:57 10 I want to clear up one other area. I want to
03:57 11 come back to an area of questioning that I asked you
03:57 12 about before. There may have been confusion in my
03:57 13 question asking you about Bay Materials' path and
03:57 14 Align's path back in the early 2000s.
03:57 15 Do you recall I asked you some questions about
03:57 16 that, sir?
03:58 17 A. Yes.
03:58 18 Q. Just to be clear, when I say "path," I'm
03:58 19 referring to a technological approach. All right, sir?
03:58 20 A. Okay.
03:58 21 Q. Now, is Zendura FLX on the same or different
03:58 22 technological path than Align's SmartTrack?
03:58 23 A. It's on a different path.
03:58 24 Q. Does Zendura FLX use a different technological
03:58 25 approach or the same technological approach as

03:58 1 SmartTrack?
03:58 2 A. First of all, it's a different process. It's
03:58 3 a different technology. And I don't know how they are
03:58 4 processing, for example, SmartTrack.
03:58 5 Q. Now, Mr. Lahlouh, I'll close by just asking
03:58 6 you one question. You told the jury earlier that
03:58 7 you're retired.
03:58 8 A. Yes.
03:58 9 Q. Why are you here testifying away from your
03:58 10 retirement in federal court?
03:58 11 A. I'm here today because I wanted in person to
03:58 12 come and tell the true story of the development of this
03:59 13 new, different, and innovative dental product that I
03:59 14 have co-invented.
03:59 15 And I also wanted to say that it didn't come
03:59 16 easy. We were a small group. We were a small force of
03:59 17 four because at that time we were struggling to stay
03:59 18 alive as a small company. So we were doing contract
03:59 19 consulting work and others before getting back on.
03:59 20 So this small force of four scientists, after
03:59 21 persistent and lots of work as you have seen in my lab
03:59 22 notebooks here, this small force created a giant
03:59 23 product.
03:59 24 Now, I know it is a giant product because I
03:59 25 know it has been accepted overwhelmingly all over the

03:59 1 world. And I'm grateful for every minute that I spent
03:59 2 working on this product.
03:59 3 MR. ZUBLER: Thank you, Mr. Lahlouh.
04:00 4 No further questions.
04:00 5 THE WITNESS: You're welcome.
04:00 6 REDIRECT EXAMINATION
04:00 7 BY MS. DURIE:
04:00 8 Q. Mr. Lahlouh, just a couple more questions.
04:00 9 You were asked about DTX-455.
04:00 10 MS. DURIE: If we could put that up.
04:00 11 DTX-455.
04:00 12 A. Sorry. I have it sitting down here.
04:00 13 BY MS. DURIE:
04:00 14 Q. Sorry. You've probably got it there.
04:00 15 MS. DURIE: But can we put it up on the
16 screen?
04:00 17 There we go. And if you can blow up the
04:00 18 bottom portion of the page.
19 BY MS. DURIE:
04:00 20 Q. You were asked about these test results that
04:00 21 you did involving elongation at break.
04:00 22 MS. DURIE: And actually, just scroll up
04:00 23 a little bit so we can see a little bit higher as well.
24 BY MS. DURIE:
04:00 25 Q. The material --

04:00 1 MS. DURIE: If you can just include 4.3
04:00 2 down.
3 BY MS. DURIE:
04:00 4 Q. The material that you were testing here --
04:00 5 MS. DURIE: Can you, Mr. Smith, just
04:00 6 scroll up a little bit so we can see from about 4.3
04:00 7 down?
04:00 8 Thanks.
9 BY MS. DURIE:
04:00 10 Q. The material that you were testing here was
04:01 11 the holes in Zendura FLX, right?
04:01 12 A. That's right.
04:01 13 Q. And so when you were doing the elongation at
04:01 14 break, as we heard from Dr. Reitman, you were pulling
04:01 15 apart both the hard layer and the soft layer, right,
04:01 16 like that?
04:01 17 A. The whole thing is pulled together.
04:01 18 Q. Okay. Now, I want to go to your patent which
04:01 19 is I think Plaintiff's Exhibit 1876.
04:01 20 MS. DURIE: There we go.
21 BY MS. DURIE:
04:01 22 Q. And this is United States Patent 9,655,6- --
04:01 23 MS. DURIE: Oh, that's actually -- sorry,
04:01 24 that's the wrong one. That is '691.
04:01 25 Hang on. What I need is the exhibit

04:01 1 number for 9,655,693.
04:01 2 There we go.
04:01 3 DTX-95? DTX-95. Perfect. Ask and you
4 shall receive.
5 BY MS. DURIE:
04:02 6 Q. So we've got up here DTX-95. That is U.S.
04:02 7 Patent 9,655,693, right?
04:02 8 A. Yes.
04:02 9 Q. That's one of the patents issued to Align
04:02 10 Technologies to Dr. Li and her colleagues, right?
04:02 11 A. Yes.
04:02 12 MS. DURIE: And if we can take a look at
04:02 13 your patent, which is DTX-595, and if we could go to
04:02 14 Page 14. 595, Page 14. If you can blow up the top
04:02 15 portion of Column 16.
16 BY MS. DURIE:
04:02 17 Q. This is what you were asked about in your
04:02 18 direct testimony. It says: Prior art material --
04:02 19 MS. DURIE: Whoops, not quite that. A
04:02 20 little bit more. Second paragraph. "Compared to the
04:02 21 prior art materials," that paragraph.
04:02 22 Second paragraph on Column 16.
04:02 23 There we go. Great.
24 BY MS. DURIE:
04:03 25 Q. So, actually, it says above there in the --

04:03 1 six lines down: Prior art material P3 is described in
04:03 2 U.S. Patent No. 9,655,693.
04:03 3 That's what you talked about under questioning
04:03 4 from counsel just a moment ago, right?
04:03 5 A. Yes.
04:03 6 Q. And that 9,655,693 patent, that is this patent
04:03 7 that was issued to Dr. Li and her colleagues from
04:03 8 Align.
04:03 9 MS. DURIE: If we can go back to that,
04:03 10 the prior exhibit. And if we can go to the claims on
04:03 11 the last page and blow up Claim 1.
12 BY MS. DURIE:
04:03 13 Q. So this patent that you were discussing, this
04:03 14 Align patent that you were discussing in your patent,
04:03 15 is specifically directed to a first soft polymer layer
04:03 16 and a second soft polymer layer and a hard polymer
04:04 17 layer between them.
04:04 18 So this patent is specifically directed to
04:04 19 soft-hard-soft, right?
04:04 20 A. Yes.
04:04 21 Q. And if we take a look at --
04:04 22 MS. DURIE: May I approach, Your Honor?
04:04 23 Thank you.
04:04 24 BY MS. DURIE:
04:04 25 Q. If we take a look up here at the claim of the

04:04 1 '613 patent, unlike the claim that you cited in your
04:04 2 patent, this claim doesn't say soft-hard-soft, does it?
04:04 3 A. It is implied.
04:04 4 Q. Okay.
04:04 5 THE COURT: If you'll answer her
04:04 6 question, please.
04:04 7 BY MS. DURIE:
04:04 8 Q. Yeah. Please answer my question.
04:05 9 A. Yes.
04:05 10 Q. This claim, the claim of the patent at issue
04:05 11 in this lawsuit, does not say soft-hard-soft, does it?
04:05 12 A. No. It does not, but it is implied.
04:05 13 THE COURT: Again, ladies and gentlemen
04:05 14 of the jury, ignore the second half of that answer,
04:05 15 please.
04:05 16 MS. DURIE: Thank you.
04:05 17 BY MS. DURIE:
04:05 18 Q. And for the record, sir, let me ask my
04:05 19 question again.
04:05 20 The text of the patent claim, the thing that
04:05 21 defines the boundary of the invention, it says three
04:05 22 layers. One layer is hard, one layer is soft, correct?
04:05 23 A. Yes. Yes.
04:05 24 MS. DURIE: Thank you.
04:05 25 No further questions.

04:05 1 RECROSS-EXAMINATION

04:05 2 BY MR. ZUBLER:

04:05 3 Q. Mr. Lahlouh, if we could look at '613,

04:05 4 Claim 1, from the demonstrative exhibit from Ms. Durie

04:06 5 that we're looking at up there.

04:06 6 A. Yes.

04:06 7 Q. The text of that patent refers to an

04:06 8 elongation of break and requires an elongation of break

04:06 9 of greater than about 200 percent for the soft polymer

04:06 10 layer.

04:06 11 Do you see that, sir?

04:06 12 A. Yes. I do.

04:06 13 Q. Does the soft polymer layer of your

04:06 14 hard-soft-hard product have an elongation of break of

04:06 15 greater than about 200 percent?

04:06 16 A. No.

04:06 17 MR. ZUBLER: No further questions.

04:06 18 MS. DURIE: Nothing further.

04:06 19 THE COURT: You may step down, sir.

04:06 20 Next witness, please?

04:06 21 MS. DURIE: Thank you, Your Honor.

04:06 22 At this time, we would like to play some

04:06 23 testimony by deposition video from Mr. Christopher -- I

04:06 24 may be mispronouncing this name. If so, I apologize --

04:06 25 Klacyzk, the head of regulatory affairs at

04:06 1 ClearCorrect.

04:06 2 THE COURT: Ladies and gentlemen of the

04:06 3 jury, I'm going to give you a more robust instruction

04:06 4 on this at the end of the trial. But during the course

04:07 5 of preparation of a case to get it to the courtroom,

04:07 6 the lawyers will send out invitations to people and ask

04:07 7 for them to be deposed. The lawyers will attend the

04:07 8 deposition. There'll be a lawyer there taking the

04:07 9 questions. There'll be someone representing the person

04:07 10 who's being deposed. But the most important thing for

04:07 11 your consideration is that just like in this courtroom,

04:07 12 those witnesses are sworn in.

04:07 13 So you all are the judges of the evidence

04:07 14 in this case. You're free to believe someone, not

04:07 15 believe someone, whatever. That's why we have you

04:07 16 here.

04:07 17 With respect to what you're about to see

04:07 18 in this deposition or any deposition that's played for

04:07 19 you, I'm instructing you not to allow the fact that the

04:07 20 person is not here in person to impact the credibility

04:07 21 of the witness. How you deal with what he or she says

04:07 22 is entirely up to you. But the fact that they are

04:07 23 appearing by video deposition should not impact you

04:07 24 because that's perfectly acceptable under the rules

04:08 25 that we handle our cases by.

04:08 1 If you'll play the deposition, please.
04:08 2 (Video deposition of Christopher Klacyzk played as
04:08 3 follows:
04:08 4 Q. Can you please state your full name for the
04:08 5 record?
04:08 6 A. Christopher Arthur Klacyzk.
04:08 7 Q. And what is your position, your current
04:08 8 position at ClearCorrect?
04:08 9 A. I'm the head of regulatory affairs.
04:08 10 Q. All of the ClearCorrect aligners produced and
04:08 11 sold today are made with Zendura FLX; is that correct?
04:08 12 A. Yes.
04:08 13 Q. If you look at the third paragraph here, the
04:08 14 second part of that paragraph says: While the concept
04:08 15 of moving teeth with plastic aligners has been present
04:08 16 since 1926, the Invisalign system (Align Technology) is
04:08 17 the first system to incorporate modern technology in a
04:08 18 way that makes this concept more efficient and
04:08 19 feasible. Since its first introduction, Invisalign has
04:09 20 been established worldwide as an aesthetic alternative
04:09 21 to labial-fixed appliances.
04:09 22 Do you see that?
04:09 23 A. Yes.
04:09 24 Q. Are those statements accurate?
04:09 25 A. To the extent of my knowledge, yes.

04:09 1 Q. Do you know if anyone at ClearCorrect assessed
04:09 2 whether ClearCorrect might be infringing Align's patent
04:09 3 rights?
04:09 4 A. My understanding is because of my familiarity
04:09 5 with our quality management system, that our product
04:09 6 development process and our software development
04:09 7 process both called for a freedom to operate review.
04:09 8 And so I do expect that a patent review is being
04:09 9 conducted.
04:09 10 Q. Bay Materials has other customers for Zendura
04:09 11 FLX apart from ClearCorrect; is that correct?
04:09 12 A. I understand that Bay Materials has at least
04:09 13 two other commercial customers that are producing
04:10 14 aligners at scale, which would be Ormco Spark devices
04:10 15 and Angelalign devices. But they also sell sheet goods
04:10 16 for dental laboratories or individual clinicians to
04:10 17 produce their own aligners.
04:10 18 Q. To your knowledge, does Bay Materials still
04:10 19 sell Zendura FLX to Ormco today?
04:10 20 A. I don't have direct knowledge, but my
04:10 21 understanding is, yes, they are still a customer.
04:10 22 Q. And to your knowledge, is Bay Materials still
04:10 23 selling Zendura FLX to Angelalign?
04:10 24 A. My understanding is that Angelalign is still a
04:10 25 customer.

04:10 1 Q. In your view, who are ClearCorrect's main
04:10 2 competitors in the clear aligner business in the U.S.?
04:10 3 A. Align Technology. So the Invisalign brand is
04:10 4 one of our bigger -- biggest ones. You know, we're
04:10 5 competing against Ormco Spark, 3M to a lesser extent
04:11 6 from a -- as I understand the market shares. Those are
04:11 7 the big ones, and we're monitoring others entering the
04:11 8 market.
04:11 9 I mean, for a while Smile Direct Club was one
04:11 10 of the big competitors after we stopped manufacturing
04:11 11 for them. And then we're watching -- you know, like we
04:11 12 know that Angelalign is in the process of building a
04:11 13 manufacturing facility in Milwaukee.
04:11 14 Q. So this is an e-mail from a Cathrine Rambusch
04:11 15 to yourself and others. You see yourself in the "to"
04:11 16 line about halfway through?
04:11 17 A. Yes.
04:11 18 Q. In July of '23.
04:11 19 Do you see that?
04:11 20 A. I do.
04:11 21 Q. Regarding -- and then in italics it says:
04:11 22 Manufacturing quality leading to patient injury. Here
04:11 23 we have an overarching project to improve on.
04:11 24 Do you see that?
04:11 25 A. Yes.

04:11 1 Q. Do you recall what was the problem she was
04:12 2 referring to here, the manufacturing quality issue that
04:12 3 was leading to patient injuries?
04:12 4 A. She's referencing it as being related to the
04:12 5 trim line. And so part of it -- it would -- it would
04:12 6 have been a treatment planning thing. So the issues we
04:12 7 had just discussed around placement of the spline line
04:12 8 and having enough of the gingiva captured in order for
04:12 9 us to have an accurate trim line. You know, so you
04:12 10 would have pinching of the gingiva as a result of that,
04:12 11 which could lead to lesions.
04:12 12 And then we also had an issue with -- in some
04:12 13 cases we need to manually trim the trim line after it's
04:12 14 automatically trimmed. And in some cases, they would
04:12 15 leave sharp edges behind. And so there would be a
04:12 16 potential for us to cut -- device to cut into the
04:12 17 gingiva.
04:12 18 Q. Did ClearCorrect receive customer complaints
04:12 19 during that time?
04:13 20 A. Yes.
04:13 21 Q. Approximately how many as a percentage of the
04:13 22 total number of cases that ClearCorrect had?
04:13 23 A. I mean, our complaint level, based on the
04:13 24 number of units shipped, was on the order of 2 percent.
04:13 25 Q. How do Align's aligners compare to

04:13 1 ClearCorrect's aligners?
04:13 2 A. There are differences. I mean, one of the
04:13 3 differences is the material itself.
04:13 4 Q. In your experience, how important is the
04:13 5 competition in the aligner market?
04:13 6 A. Well, the competition in any market is
04:13 7 critical in that it drives -- you know, it increases
04:13 8 the quality of products if there is true competition
04:13 9 and potentially also drives the price down.
04:13 10 So from a consumer standpoint, you want
04:13 11 competition in order for the -- the competition to lead
04:13 12 to better, cheaper products.
04:14 13 (End of video deposition.)
04:14 14 MS. DURIE: Your Honor, at this time, we
04:14 15 have some interrogatory responses to read into the
04:14 16 record.
04:14 17 THE COURT: Okay. Ladies and gentlemen
04:14 18 of the jury, another thing that happens in the
04:14 19 preparation of litigation is that parties can exchange
04:14 20 questions to each other. Those are known as
04:14 21 interrogatories.
04:14 22 When a party answers the interrogatories
04:14 23 and returns those answers to the party that sent them
04:14 24 to them, they are sworn, again, just in the same way
04:14 25 that witnesses are sworn. So these -- what counsel is

04:14 1 about to read to you are the sworn answers to
04:14 2 interrogatories that were served -- the interrogatories
04:14 3 that were served on the defendant.
04:14 4 The defendant responded to them under
04:14 5 oath. And counsel's about to tell you what the
04:14 6 interrogatory was and the response was.
04:14 7 MS. DURIE: Thank you, Your Honor.
04:14 8 THE COURT: But if you'd move to a
04:14 9 microphone, please.
04:14 10 MS. DURIE: I apologize, Your Honor. And
04:14 11 thank you. And we've actually agreed, with the Court's
04:14 12 permission, that we will just read the response.
04:15 13 THE COURT: That's fine.
04:15 14 MS. DURIE: Defendants first learned of
04:15 15 U.S. Patent No. 10,973,613 in or around October 2021.
04:15 16 Defendants first learned of U.S. Patent
04:15 17 No. 11,154,384 in or around November 2021.
04:15 18 Defendants first learned of U.S. Patent
04:15 19 No. 10,791,936 in or around January 2022.
04:15 20 Defendants first learned of U.S. Patent
04:15 21 Nos. 11,648,090 and 11,648,091 in or around April 2024.
04:15 22 And with that, Your Honor, we now have
04:15 23 deposition testimony to be played by video from
04:15 24 Guillaume Daniellot, the chief executive officer of the
04:15 25 Straumann Group.

04:15 1 (Video deposition of Guillaume Daniellot played as
2 follows:
04:15 3 Q. Can you please state your name for the record?
04:15 4 A. Guillaume Daniellot.
04:15 5 Q. And you're the CEO of the Straumann Group; is
04:16 6 that correct?
04:16 7 A. That's correct.
04:16 8 Q. Straumann then acquired Bay Materials in
04:16 9 October 2019; is that right?
04:16 10 A. Yes.
04:16 11 Q. But at the bottom of that e-mail, you also
04:16 12 said: In the future...it would be a different story.
04:16 13 If we were able to grow our clear aligner significantly
04:16 14 through our own channels, then it would generate enough
04:16 15 growth on the Bay Material side as well, and we could
04:16 16 then restrict Bay Material innovation to ClearCorrect
04:16 17 product during a certain period of time.
04:16 18 There, you are referencing the possibility in
04:16 19 the future of limiting sales of the Bay Material
04:16 20 material to ClearCorrect, correct?
04:16 21 A. No. That's not correct. I was talking about
04:16 22 Bay Material innovation that would be limited
04:16 23 potentially, meaning that it was not at all about the
04:16 24 Zendura FLX side.
04:16 25 Q. Why did you think it might be advantageous, at

04:17 1 some point in the future, to restrict Bay Material
04:17 2 innovation to ClearCorrect products?
04:17 3 A. As soon as we believe that we can, for
04:17 4 example, develop different kind of material offering
04:17 5 for a different kind of indication on the clear aligner
04:17 6 side.
04:17 7 Q. But why would it be an advantage to restrict
04:17 8 that innovation only to ClearCorrect product?
04:17 9 A. To be able to differentiate ClearCorrect to
04:17 10 some of the offering that we would have in the market.
04:17 11 Q. And this is a memorandum that is written by
04:17 12 you to members of the Straumann strategic management
04:17 13 team, correct?
04:17 14 A. Yes. That's correct.
04:17 15 Q. Next to some technical hurdles, we continue
04:17 16 experiencing difficulties with hiring and retaining
04:17 17 talent, especially in the U.S., which may put the 2022
04:17 18 timelines at risk.
04:17 19 What technical hurdles were you referring to?
04:17 20 A. It was certainly some connections that we have
04:18 21 with our software and some of the manufacturing side,
04:18 22 but I don't remember exactly at that time.
04:18 23 Q. Do you see what's been marked as Exhibit 3 is
04:18 24 an e-mail exchange -- set of e-mail exchanges amongst
04:18 25 yourself and other individuals at the Straumann Group?

04:18 1 A. Yes.
04:18 2 Q. And it says that it involves "follow-up NAM
04:18 3 visit."
04:18 4 Is that North America?
04:18 5 A. That's correct.
04:18 6 Q. And you had this e-mail exchange with Aurelio
04:18 7 Sahagun and Camila Finzi.
04:18 8 What were each of their positions?
04:18 9 A. Aurelio Sahagun was our leader of North
04:18 10 America, and Camila Finzi was our head of orthodontic
04:18 11 business.
04:18 12 Q. And in the third line, you say: There are
04:18 13 many of the reasons for our shortfall which are
04:19 14 self-inflicted wounds.
04:19 15 Do you see that?
04:19 16 A. Yes.
04:19 17 Q. What is the shortfall that you were referring
04:19 18 to?
04:19 19 A. Our sales in North America, in the U.S., were
04:19 20 not in line with our expectations due to, you know,
04:19 21 some things that we should do better and also by the
04:19 22 fact that, you know, we have been blocked by Align on
04:19 23 being able to sell our system to the North American,
04:19 24 and especially U.S., dentists and orthodontists.
04:19 25 Q. You refer under the heading "Aurelio" about

04:19 1 four lines down to a ClearCorrect North America
04:19 2 customer experience emergency plan, right?
04:19 3 A. Uh-huh.
04:19 4 Q. You say there was a lack of leadership to
04:19 5 solve problems, right?
04:19 6 A. Uh-huh.
04:19 7 Q. And then you identified problems like the
04:19 8 blocking of customer accounts, right?
04:20 9 A. Uh-huh.
04:20 10 Q. Problems with customers having different
04:20 11 credit cards associated to their account?
04:20 12 A. Uh-huh.
04:20 13 Q. Right?
04:20 14 You talked about problems that you had with
04:20 15 your sales team?
04:20 16 A. Uh-huh.
04:20 17 Q. Right?
04:20 18 And then if you look under the heading
04:20 19 "Camila," you reference treatment planning quality not
04:20 20 being where it should be, right?
04:20 21 A. Uh-huh.
04:20 22 Q. So you had identified a number of problems
04:20 23 that you were experiencing in the North America market
04:20 24 that you believed to be self-inflicted wounds, right?
04:20 25 A. Correct.

04:20 1 Q. So if we start on the second page of the
04:20 2 exhibit, in the middle of the page there is an e-mail
04:20 3 from Mr. Sahagun to you dated June 1, 2023?
04:20 4 A. Uh-huh.
04:20 5 Q. And he says that he is forwarding to you
04:20 6 examples of a situation that you continue to face with
04:20 7 ClearCorrect service levels, right?
04:20 8 A. Uh-huh. Uh-huh.
04:21 9 Q. Well, let's take a look at the e-mail
04:21 10 immediately below that in the chain. You see there is
04:21 11 an e-mail right below that from Kent Braud at
04:21 12 Straumann?
04:21 13 It is at the very bottom of the second page it
04:21 14 starts.
04:21 15 A. Yes. Okay.
04:21 16 Q. Who is Mr. Braud?
04:21 17 A. He has been the sales leader of ClearCorrect
04:21 18 in the U.S.
04:21 19 Q. And he says: Sharing below from Toni.
04:21 20 Camila, you asked me to share examples of where we are
04:21 21 losing business due to the manufacturing delays.
04:21 22 A. Uh-huh.
04:21 23 Q. Smile Source has moved business to Spark and
04:21 24 SureSmile because of our unpredictable and unreliable
04:21 25 TAT.

04:21 1 What does TAT stand for?
04:21 2 A. Turnaround time.
04:21 3 Q. So in fact, ClearCorrect had been experiencing
04:21 4 problems with its turnaround time dating at least back
04:21 5 to November of 2022?
04:21 6 A. Only from time to time.
04:21 7 Q. Well, if you take a look at your response at
04:22 8 the top of the second page, there's an e-mail from you
04:22 9 June 1, 2023.
04:22 10 Do you see that?
04:22 11 A. Uh-huh.
04:22 12 Q. You're writing that in response to having been
04:22 13 forwarded this series of e-mails --
04:22 14 A. Uh-huh.
04:22 15 Q. -- about issues with things like turnaround
04:22 16 time, right?
04:22 17 A. Yes.
04:22 18 Q. And you say: Recruiting a top operational
04:22 19 leader for ortho is our top one priority in terms of
04:22 20 search --
04:22 21 A. Uh-huh.
04:22 22 Q. -- as I'm now continuously receiving complaint
04:22 23 about manufacturing delays but also manufacturing
04:22 24 quality.
04:22 25 A. Uh-huh.

04:22 1 Q. You did consider the problems that
04:22 2 ClearCorrect was experiencing with manufacturing delays
04:22 3 and manufacturing quality in the summer of 2023 to be
04:22 4 very serious, right?
04:22 5 A. Correct.
04:22 6 Q. And you see in the cover e-mail, it says: I
04:22 7 would like to share with you the presentation given to
04:22 8 Guillaume on last Tuesday. He has requested for a
04:22 9 regular update on quality of CC.
04:23 10 The Guillaume there would be you, correct?
04:23 11 A. Uh-huh.
04:23 12 Q. So that was the presentation that was given to
04:23 13 you?
04:23 14 A. Yes.
04:23 15 Q. Would you agree that the product quality
04:23 16 complaints that you were experiencing were impacting
04:23 17 customer satisfaction?
04:23 18 A. Like every company is manufacturing product
04:23 19 and having some complaints, I think we are not
04:23 20 different than any other companies out there.
04:23 21 Q. And then under that you have three things that
04:23 22 you identify as KPIs. Those are key performance
04:23 23 indicators, right?
04:23 24 A. That's correct.
04:23 25 Q. And the first one you identify there is 50 to

04:23 1 70 percent touch-up. That is what you were
04:23 2 experiencing at the time, right?
04:23 3 A. Correct.
04:23 4 Q. So 50 to 70 percent of the aligners that were
04:23 5 being manufactured were requiring touch-up; is that
04:23 6 right?
04:23 7 A. That's correct.
04:23 8 Q. And then KPIs on the left in terms of where
04:24 9 you were, 10 to 25 percent scrap. What does "scrap"
04:24 10 mean in this context?
04:24 11 A. It means manufacturing parts that are not good
04:24 12 to be shipped.
04:24 13 Q. Right. They have to be scrapped, they have to
04:24 14 be thrown out?
04:24 15 A. Yes.
04:24 16 Q. Okay. And goal, if you take a look at the
04:24 17 right, was to have fewer than 5 percent to be scrapped,
04:24 18 right?
04:24 19 A. That's correct.
04:24 20 Q. And if we look at the current state of
04:24 21 affairs, it says "multiple mixups."
04:24 22 Do you see that?
04:24 23 A. Yes. That's correct.
04:24 24 Q. If we take a look at two slides forward,
04:24 25 ending No. 133, it says: 10 to 25 percent scrap rate

04:24 1 and up to 70 percent touch-up rework are significant
04:24 2 disruptors to quality and cost.
04:24 3 And then there is a reference to Round Rock,
04:24 4 Curitiba, and Markkleeberg, right?
04:24 5 A. Uh-huh. Correct.
04:24 6 Q. And what is Round Rock?
04:24 7 A. It's our manufacturing site in U.S.
04:25 8 Q. And the manufacturing site in the U.S. had a
04:25 9 scrap rate in December of 2023 of 18.8 percent, right?
04:25 10 A. That's correct.
04:25 11 Q. And your manufacturing facility in the U.S.
04:25 12 had a rework rate in December of 2023 of 71 percent,
04:25 13 right?
04:25 14 A. That's correct. And at the same time, you can
04:25 15 compare with the other manufacturing site, and
04:25 16 especially the European one, which is very close to
04:25 17 those numbers. And we have still been very, very
04:25 18 significantly successful with our clear aligner
04:25 19 business in Europe and also in Latin America, despite
04:25 20 the same kind of scrap rate.
04:25 21 Then that's clearly demonstrating that this is
04:25 22 not impacting our capability to be successful and that
04:25 23 this capability to be successful in North America and
04:25 24 in the U.S. in particular was coming from another
04:25 25 important aspect which was the difficult access to the

04:26 1 Align customer group.
04:26 2 Q. And you had various meetings with Bain in the
04:26 3 course of the work that they did, correct?
04:26 4 A. I think this project was led by Florian
04:26 5 Kirsch, who was at that time the leader of our
04:26 6 orthodontic franchise. But I participated in some of
04:26 7 those meetings.
04:26 8 Q. Do you see what's been marked as Exhibit 9?
04:26 9 It's a copy of an interim update preread provided by
04:26 10 Bain, captioned Clear Aligner Landscape Review and
04:26 11 Strategic Implications, dated September 26th, 2024.
04:26 12 Do you see that's what it is?
04:26 13 A. Yes.
04:26 14 Q. So this was the preread that was provided to
04:26 15 you on September 26, 2024, in anticipation of this
04:26 16 first project update meeting, right?
04:26 17 A. Correct.
04:26 18 Q. If you take a look at the series of bullets
04:27 19 about two-thirds of the way down, it says: Align
04:27 20 continues out-investing the industry in clinical
04:27 21 offerings, software, and automation, making a catch up
04:27 22 increasingly difficult.
04:27 23 Was that the perspective that Bain
04:27 24 communicated to you?
04:27 25 A. This is only one of the points that Bain

04:27 1 communicated to us. But on the left side, as you can
04:27 2 see, there is written "a winner takes it all market,"
04:27 3 which imply also the anticompetitive approach that they
04:27 4 have been seeing into the U.S. market. And that's the
04:27 5 approach of the winner takes all challenging for us,
04:27 6 and that has demonstrated why we are having challenges
04:27 7 in the U.S., whereas we are successful in the other
04:27 8 part of the world, especially Europe and Latin America.
04:27 9 Q. Which companies on this list were not
04:27 10 competing with ClearCorrect?
04:28 11 A. The one on the direct to consumer side.
04:28 12 Q. Which is who?
04:28 13 A. The Impress, Byte companies.
04:28 14 Q. One of the key challenges that Bain identified
04:28 15 was that ClearCorrect's pricing and loyalty programs
04:28 16 were not competitive enough to attract orthodontists,
04:28 17 right?
04:28 18 A. I think this is some of the feedback that they
04:28 19 have received, but we think that -- yeah, this is one
04:28 20 of the aspects that came out from the -- from the
04:28 21 survey.
04:28 22 Q. Do you see Exhibit 16 is an e-mail from you to
04:28 23 a number of other individuals at ClearCorrect and at
04:28 24 Straumann from July of 2018?
04:28 25 My question is a timing one. We just looked

04:28 1 here at an e-mail about Align's decision to stop
04:28 2 accepting TRIOS cases back in 2018, right?
04:28 3 A. Uh-huh.
04:28 4 Q. Straumann/ClearCorrect didn't sue Align for an
04:29 5 antitrust violation arising from that conduct for like
04:29 6 six years, right?
04:29 7 You can answer. Six years, right?
04:29 8 A. Six years.
04:29 9 Q. Bay Materials is a wholly owned subsidiary of
04:29 10 Straumann, right?
04:29 11 A. That's correct.
04:29 12 Q. And Bay Materials employees ultimately report
04:29 13 to you, correct?
04:29 14 A. Bay Material report to our head of
04:29 15 orthodontists, which is Florian Kirsch.
04:29 16 Q. Do they provide sales information to you?
04:29 17 A. Again, at times they are providing sales
04:29 18 information to me.
04:29 19 Q. Do you approve Bay Materials' budget?
04:29 20 A. I approve the overall ortho budget. I am
04:29 21 looking at time at the specific Bay Material one, but
04:29 22 nothing really specific that I can recall, except some,
04:29 23 you know, elements that we have been discussing with
04:29 24 the team.
04:29 25 Q. The overall ortho budget includes Bay

04:29 1 Materials?
04:29 2 A. That's correct.
04:29 3 Q. Okay. Are you involved in setting Bay
04:30 4 Materials' strategy?
04:30 5 A. I'm discussing with Bay Material to define
04:30 6 what the strategy could be.
04:30 7 Q. Do you sometimes approve sales contracts for
04:30 8 Zendura FLX?
04:30 9 A. I have been looking at some key contracts that
04:30 10 we have been having with Zendura FLX.
04:30 11 Q. And if you turn to the last e-mail, it begins
04:30 12 at the bottom of the second to last page.
04:30 13 You see there is an e-mail from Constantine
04:30 14 Davlantes at Bay Materials to you?
04:30 15 A. Uh-huh.
04:30 16 Q. And he is Bay Materials' general manager; is
04:30 17 that right?
04:30 18 A. That's correct.
04:30 19 Q. And the subject line is: Approval requested
04:30 20 for Angel and Ormco contract proposals.
04:30 21 Do you see that?
04:30 22 A. That's correct.
04:30 23 Q. So he is asking you to approve those contract
04:30 24 proposals for Bay Materials, right?
04:30 25 A. Yes.

04:30 1 Q. So David Lee from Straumann, responsible for
04:31 2 Bay Material, met with the CEO of Angel to discuss
04:31 3 partnership building, right?
04:31 4 A. To discuss about the interest into what kind
04:31 5 of cooperation we can have.
04:31 6 Q. And you were getting updated, as the CEO of
04:31 7 Straumann, with respect to these discussions, right?
04:31 8 A. I received that information, that -- for
04:31 9 information, yes.
04:31 10 Q. Can you explain for us what you were referring
04:31 11 to when you referred to Align's anticompetitive
04:31 12 behavior?
04:31 13 A. The challenge we are facing in the U.S.
04:31 14 market, which is really specific versus all the rest of
04:31 15 the commercial region, is that Align has placed their
04:31 16 iTero scanner in all the different customers that they
04:31 17 are having and have been locking customers in through
04:31 18 their technology.
04:31 19 The iTero, in the U.S., can send a file only
04:32 20 to the Align clear aligner and cannot send it anywhere
04:32 21 else. And on the other side -- meaning that we cannot
04:32 22 enter into any of those accounts, because even if we
04:32 23 present our ClearCorrect offering, they have no access
04:32 24 to this.
04:32 25 If we are also going to see then some

04:32 1 customers that are having other kind of scanners, they
04:32 2 are not having the possibility also to go to the
04:32 3 aligner side from Align, which means that we cannot
04:32 4 sell our own scanners, because customers want to have
04:32 5 of course a wide usage of their technology.
04:32 6 Then there is no way for us to enter into the
04:32 7 iTero users, which are doing a lot of clear aligners
04:33 8 side, by the lack of access to our manufacturing.
04:33 9 Q. And this is a presentation authored by Bain &
04:33 10 Company, correct?
04:33 11 A. That's correct.
04:33 12 Q. This is not authored by Straumann?
04:33 13 A. Not at all.
04:33 14 Q. If you look at Slide 6, which ends in the
04:33 15 Bates range 5722, this is one of the slides that
04:33 16 counsel for Align directed your attention to, right?
04:33 17 A. Correct.
04:33 18 Q. And the title reads: Summary of key project
04:33 19 findings (after 2 weeks).
04:33 20 Did I read that correctly?
04:33 21 A. Yeah. That's correct.
04:33 22 Q. The parenthetical, you understand, refers to
04:33 23 the fact that Bain had been working on this project for
04:33 24 two weeks, correct?
04:33 25 A. That's correct.

04:33 1 Q. You've been -- Straumann's been in this
04:33 2 business for more than seven years, correct?
04:33 3 A. Yes. That's correct.
04:33 4 Q. Well, let me ask you about the substance of
04:33 5 the slide. Do you agree with the conclusions being
04:33 6 reached about the, quote, significant gaps across key
04:34 7 success factors with respect to ClearCorrect?
04:34 8 A. Well, no. We have been discussing with them
04:34 9 live during the meeting that it's a very shortsighted
04:34 10 view. They were only having two weeks into this
04:34 11 analysis. They have only talked to very few customers
04:34 12 and a lot not related to ClearCorrect customers.
04:34 13 Actually, a lot of them was competitor customers that
04:34 14 were having just a perception about organization.
04:34 15 Then why, obviously, Bain is trying to paint a
04:34 16 very negative perspective in order that they can sell
04:34 17 more working days. I think this is something that we
04:34 18 have taken with a grain of salt and that we also
04:34 19 challenge from that perspective.
04:34 20 Q. ClearCorrect is a distant follower with
04:34 21 significant gaps across key success factors. The
04:34 22 distant follower, that's a reference to ClearCorrect's
04:34 23 position relative to its competitors, right?
04:35 24 A. It's related especially to the customer
04:35 25 expectations.

04:35 1 Q. Well, "follower." Who is ClearCorrect
04:35 2 following?
04:35 3 A. Yes. Also, this is -- follower is related to
04:35 4 competitors. Significant gaps has nothing to see with
04:35 5 the other ones. It is key success factors that are a
04:35 6 lot also related to customer expectations.
04:35 7 (End of video deposition.)
04:35 8 MS. DURIE: Your Honor, in connection
04:35 9 with the deposition testimony, we would like to offer
04:35 10 PTX-603, 194, 199, 232, 279, 311, 323, 488, 495, 548,
04:35 11 and 586.
04:35 12 MR. MUELLER: And we have nothing further
04:35 13 on those, Your Honor. Your Honor's given us your
04:35 14 rulings on those.
04:35 15 THE COURT: Okay.
04:35 16 MS. DURIE: And with that, Your Honor,
04:35 17 that concludes our witnesses subject to the witnesses
04:35 18 we discussed that will be called in the defense case.
04:35 19 THE COURT: Understood.
04:36 20 Ladies and gentlemen of the jury, we're
04:36 21 going to take a 10- or 15-minute recess, and then we'll
04:36 22 come back and we'll begin the case of the defendants.
04:36 23 So please remember my instructions not to discuss the
04:36 24 case.
04:36 25 THE BAILIFF: All rise.

04:36 1 (Jury exited the courtroom.)
04:36 2 THE COURT: You may be seated.
04:36 3 Does the defendant have a Rule 50 motion?
04:36 4 MR. MUELLER: We do, Your Honor.
04:36 5 MS. DURIE: Your Honor, just for the
04:36 6 record, I note the record did not note that those
04:36 7 exhibits were admitted.
04:36 8 THE COURT: Admitted.
04:37 9 MS. DURIE: Thank you.
04:37 10 THE COURT: Thank you. I'm sorry.
04:37 11 MR. MUELLER: May I begin, Your Honor?
04:37 12 Your Honor, first, no reasonable jury
04:37 13 could find infringement of the '936 patent. That is
04:37 14 the patent for which we will take it up again, under
04:37 15 Your Honor's guidance from earlier, after the
04:37 16 additional factual testimony. We'll at least touch the
04:37 17 base briefly.
04:37 18 There's a failure of proof on the surface
04:37 19 data limitation in the claims. Neither of the experts
04:37 20 presented by Align provided sufficient testimony that
04:37 21 the accused scan products meet the limitations of the
04:37 22 surface data limitation.
04:37 23 And again, we will revisit that after the
04:37 24 fact testimony, but we believe there will be no fact
04:37 25 testimony that could fill that expert testimony gap.

04:37 1 That alone would be dispositive, Your Honor, on that
04:37 2 patent.
04:37 3 And I'll maybe move on to the other
04:37 4 patents, Your Honor, just in the interest of time.
04:37 5 We'll provide more detail after the
04:38 6 factual testimony, but the first issue would be, at a
04:38 7 high level, a lack of sufficient proof in the form of
04:38 8 sufficient expert testimony with respect to the '936
04:38 9 patent.
04:38 10 Next, Your Honor, for the -- and I
04:38 11 apologize, Your Honor. Just also in the interest of
04:38 12 time, we have the argument, of course, of JMOL of no
04:38 13 damages in the '936, but given Your Honor's guidance on
04:38 14 the substantive issues, it might be best just to save
04:38 15 that for after the fact testimony as well, if that's
04:38 16 okay with Your Honor.
04:38 17 Okay. No reasonable jury could find
04:38 18 direct infringement of the '613, '384, '090, and '091
04:38 19 patents. These patents claim specific multi-layer
04:38 20 materials, and no reasonable jury could find that
04:38 21 aligners made with Zendura FLX infringe.
04:38 22 For all four patents, no reasonable jury
04:39 23 could find that the accused products have a soft TPU
04:39 24 layer with an elongation at break greater than
04:39 25 200 percent.

04:39 1 No reasonable jury could find the accused
04:39 2 products have a soft TPU layer with an elongation at
04:39 3 break greater than 200 percent in light of the evidence
04:39 4 presented during Align's case-in-chief.
04:39 5 And that's a requirement that cuts across
04:39 6 all of these four patents. All four require that the
04:39 7 soft TPU layer have an elongation at break of greater
04:39 8 than about 200 percent.
04:39 9 Every test of Zendura FLX before this
04:39 10 lawsuit returned an elongation at break under
04:39 11 200 percent. That includes Align's own testing.
04:39 12 Including its so-called wet testing and dry testing.
04:39 13 Bay Materials' testing of Zendura FLX
04:39 14 resulted in findings that placed the elongation at
04:39 15 break at almost half of the 200 percent requirement.
04:40 16 And the only above 200 percent numbers in
04:40 17 the record thus far, Your Honor, come from
04:40 18 Dr. Reitman's testing, which is methodologically
04:40 19 flawed. And I'll note that even the majority of those
04:40 20 tests of the multi-layer devices returned results below
04:40 21 200 percent.
04:40 22 No reasonable jury could rely on that
04:40 23 evidence in light of the full record of testing
04:40 24 evidence before and during litigation to find
04:40 25 infringement, and in particular, to find the elongation

04:40 1 at break requirement met.
04:40 2 And because that requirement is in every
04:40 3 asserted claim, the single failure of proof defeats
04:40 4 infringement for all four patents.
04:40 5 In addition, no reasonable jury could
04:40 6 find indirect infringement of the '613, '384, '090, and
04:40 7 '091 patents. Align has been vague in its presentation
04:40 8 as to who is allegedly inducing infringement and who is
04:40 9 being induced. There has not been sufficient linking
04:41 10 evidence in the form of expert testimony on those
04:41 11 critical issues.
04:41 12 There cannot be indirect infringement
04:41 13 without direct infringement, of course, and for all the
04:41 14 reasons I've already given, there's no direct
04:41 15 infringement. And moreover, Align has failed to show
04:41 16 direct infringement by a third party for the exact same
04:41 17 reasons.
04:41 18 Align has failed to present evidence of
04:41 19 actual infringing acts by any customer, which is an
04:41 20 independent failure to prove direct infringement by
04:41 21 such customers.
04:41 22 For the methods of making aligners
04:41 23 claimed in the '613 and '090 patents, there's no proof
04:41 24 of any third-party customer in the United States
04:41 25 actually practicing the asserted claims.

04:41 1 Likewise, there is no proof of any
04:41 2 third-party customer actually making, using, selling,
04:41 3 offering for sale, or importing -- importing the
04:41 4 aligners claimed in the '384 and '091 patents.
04:41 5 And so without proof of those predicate
04:42 6 acts, there can be no liability for the alleged
04:42 7 inducement.
04:42 8 Moreover, no reasonable jury could find
04:42 9 the intent requirement that is mandated for indirect
04:42 10 infringement. Mere knowledge of the patents is not
04:42 11 enough under controlling precedent. Both inducement
04:42 12 and contributory infringement require knowledge of the
04:42 13 patents and knowledge of the infringement.
04:42 14 THE COURT: Mr. Mueller, who is your
04:42 15 first witness going to be?
04:42 16 MR. MUELLER: Mr. Kossol, Matt Kossol.
04:42 17 THE COURT: And about how long will he
18 take?
04:42 19 MR. MUELLER: He's going to be on direct
04:42 20 for about 25 minutes, and the estimate on cross is 6
04:42 21 minutes.
04:42 22 THE COURT: I'm trying to figure out
04:42 23 whether it makes sense to just let the jury go home
04:42 24 now, and we can go as long as we need to here but not
04:42 25 keep them waiting while we're doing this.

04:42 1 MR. MUELLER: I'm almost done,
04:42 2 Your Honor, really. There's not much left, and I think
04:42 3 we'd prefer to finish his testimony --
04:42 4 THE COURT: That's fine.
04:42 5 MR. MUELLER: Okay.
04:42 6 So no reasonable juror could find intent
04:42 7 required for indirect infringement. Mere knowledge of
04:42 8 the patents is not enough.
04:43 9 Align has presented no evidence that
04:43 10 ClearCorrect knew about the asserted patents, let alone
04:43 11 knew about infringement before the lawsuit was filed.
04:43 12 Indeed, the interrogatory responses that
04:43 13 Ms. Durie read earlier were all after the Zendura FLX
04:43 14 product was launched.
04:43 15 Once the lawsuit began, after the
04:43 16 products was launched, the defendants promptly asserted
04:43 17 reasonable noninfringement defenses which we have
04:43 18 already highlighted through cross-examination and
04:43 19 through examination of Mr. Lahlouh during the
04:43 20 plaintiff's case-in-chief.
04:43 21 So in light of that evidence, there is no
04:43 22 basis for a reasonable juror to find the reckless
04:43 23 intent for indirect infringement.
04:43 24 And for the very same reasons, there is
04:43 25 no basis for a reasonable juror to find willful

04:43 1 infringement with respect to the patents-in-suit.
04:43 2 No evidence of presuit knowledge, and as
04:43 3 for post-suit knowledge, ClearCorrect has substantial
04:44 4 well-developed defenses to charges that have been made.
04:44 5 And moreover, we believe no reasonable
04:44 6 juror, no reasonable juror could find that ClearCorrect
04:44 7 has copied any feature from SmartTrack or the Align
04:44 8 patents.
04:44 9 Turning to damages. We believe there's
04:44 10 no basis for presuit damages for the '384 or '091
04:44 11 patents. No reasonable juror could find presuit
04:44 12 damages for those patents because Align has not proved
04:44 13 sufficiently marking and has not provided presuit
04:44 14 notice of infringement.
04:44 15 ClearCorrect is, therefore, entitled to
04:44 16 JMOL of no presuit damages on those patents.
04:44 17 THE COURT: Which patents?
04:44 18 MR. MUELLER: It's the '384 and the '091,
04:44 19 Your Honor.
04:44 20 Every document Align has introduced on
04:44 21 marking is either after the date of the complaint or
04:44 22 does not list the '384 and the '091 patents. That
04:44 23 includes PTX-1265 as well as JTX-78. One predates the
04:45 24 complaint but only lists the '613 patent. The other
04:45 25 postdates the complaint.

04:45 1 And then finally, Your Honor, there's no
04:45 2 damages because of the various methodological defects.
04:45 3 And Mr. Lasinski's opinions, we have previously briefed
04:45 4 those, and we have preserved for Your Honor's granting
04:45 5 of our continuing objection on the Daubert rulings.
04:45 6 Our Daubert challenges to Mr. Lasinski
04:45 7 and many of those same methodological challenges apply
04:45 8 to the testimony that he actually offered at trial.
04:45 9 He conceded that he had used
04:45 10 ClearCorrect's -- that he did not use ClearCorrect's
04:45 11 real-world profit and loss data but rather used some
04:45 12 industry data that included companies with businesses
04:45 13 unlike ClearCorrect's. And he conceded on the stand
04:45 14 today that if he had used ClearCorrect's profit and
04:45 15 loss data, his model actually would have yielded net
04:45 16 negative profit figures.
04:45 17 He also admitted that his damages
04:46 18 calculation could change based on costs incurred by
04:46 19 such companies that have no relationship to the
04:46 20 asserted patents. Spending on company cars, for
04:46 21 example.
04:46 22 So again, because of these and the other
04:46 23 methodological defects that we highlighted in the
04:46 24 Daubert motion practice, no reasonable juror could find
04:46 25 Mr. Lasinski's opinions to be of sufficient basis for a

04:46 1 damages award in Align's favor on the materials
04:46 2 patents.
04:46 3 And again, I'll reserve on the '936
04:46 4 patent until we raise that one, Your Honor, when the
04:46 5 remaining fact testimony is in the record.
04:46 6 In addition, in addition, Mr. Lasinski
04:46 7 did not conduct a per patent reasonable royalty
04:46 8 analysis. Instead, he evaluated damages as to the four
04:46 9 asserted materials patents on an undifferentiated
04:46 10 basis. He did not offer a backup number if one or more
04:46 11 of those patents is not infringed.
04:47 12 And that's a problem because as
04:47 13 discussed, there are some patent-specific arguments
04:47 14 that could defeat infringement for certain of the
04:47 15 patents but not others.
04:47 16 Moreover, the '613 and '090 patents are
04:47 17 method patents. There's no 271(f) claim in the case,
04:47 18 which means the methods must be practiced in the United
19 States.
04:47 20 Align has introduced no evidence, no
04:47 21 evidence about Ormco's Spark aligners, the one category
04:47 22 of products made by third-party Ormco that Align seeks
04:47 23 damages on, let alone evidence that those aligners are
04:47 24 made in the U.S.
04:47 25 It has thus failed to prove that the

04:47 1 method claims of the '613 patent and the '090 patent
04:47 2 are directly infringed by Ormco in the U.S.
04:47 3 And if those patents, those -- the '613
04:47 4 and the '090 were to be eliminated from the case
04:47 5 including on the basis of the failure of proof of
04:47 6 damages, the failure of proof as to the method claims
04:48 7 being practiced in the U.S., the jury has no basis to
04:48 8 award damages on the remaining two patents, the '384
04:48 9 and the '090, because Mr. Lasinski failed to provide a
04:48 10 patent-by-patent breakdown of his proposed royalty
04:48 11 numbers.
04:48 12 And that concludes our JMOL motions,
04:48 13 again, with the exception of the '936-related issues,
04:48 14 Your Honor.
04:48 15 THE COURT: I'd like to hear a response
04:48 16 just with respect to pretrial notice with respect to
04:48 17 the '384 and the '091.
04:48 18 MR. HUNG: Your Honor, with respect --
04:48 19 Your Honor, we submitted an exhibit during the
04:48 20 cross-examination of Mr. Lahlouh which indicates that
04:48 21 they were on notice of our patents and that in fact
04:48 22 they had gone to our website and reviewed it.
04:48 23 THE COURT: That doesn't -- that's not
04:48 24 notice. I mean, that's not notice they may infringe.
04:48 25 They can be aware of the patents.

04:49 1 I had a suit where the inventor of our
04:49 2 patent went and started competing against us. He had
04:49 3 knowledge of his patent. At what point did you put
04:49 4 them on notice that you thought they were infringing?
04:49 5 MR. HUNG: You're talking about -- you're
04:49 6 talking about marking as --
04:49 7 THE COURT: No. I'm talking about what
04:49 8 notice did you give -- I understand they may have had
04:49 9 awareness of the patents prior to when you filed the
04:49 10 suit.
04:49 11 What notice did you give them that you
04:49 12 thought they were infringing prior to filing the
04:49 13 lawsuit?
04:49 14 MR. HUNG: Prior to filing the lawsuit?
04:49 15 I'm a little confused because for -- for
04:49 16 two of the patents, for two of the patents, there was
04:49 17 notice because -- there was knowledge of the patents
04:49 18 undisputedly. For all four of the patents, there was
04:49 19 knowledge of the patents.
04:49 20 And then with respect to notice, there is
04:49 21 the website. The '613, undisputedly, they're not even
04:49 22 moving on the '613. They have notice by the marking
04:49 23 website.
04:49 24 THE COURT: So these products were
04:49 25 marked?

04:49 1 MR. HUNG: I'm sorry. Yes?
04:49 2 THE COURT: The products were marked?
04:49 3 MR. HUNG: The marking website, yes.
04:49 4 THE COURT: That was what I was not
5 catching.
6 MR. HUNG: Yes.
04:49 7 THE COURT: Then I'll overrule that as
04:49 8 well. I'm sorry. I didn't catch the marking part.
04:50 9 Okay. I'm going to overrule all the
04:50 10 Rule 50 motions.
04:50 11 If you all would take as short a break as
04:50 12 possible, as soon as everyone's reassembled, we'll put
04:50 13 on the defendants' witness. And then we'll try and get
04:50 14 that person done today.
04:50 15 MR. MUELLER: Thank you, Your Honor.
04:50 16 THE BAILIFF: All rise.
04:50 17 (Recess taken.)
05:00 18 THE BAILIFF: All rise.
05:00 19 THE COURT: Please remain standing for
05:00 20 the jury.
05:00 21 (Jury entered the courtroom.)
05:01 22 THE COURT: Thank you. You may be
05:01 23 seated.
05:01 24 Yes, sir.
05:01 25 MR. MUELLER: Your Honor, we're prepared

05:01 1 to proceed with our case.

05:01 2 THE COURT: Please.

05:01 3 MR. MUELLER: And ClearCut -- excuse me,

05:01 4 ClearCorrect calls as our first witness Matthew Kossol.

05:01 5 And Mr. Hirsch will conduct the examination,

05:01 6 Your Honor.

05:01 7 THE COURT: Thank you.

05:01 8 (The witness was sworn.)

05:01 9 DIRECT EXAMINATION

05:01 10 BY MR. HIRSCH:

05:02 11 Q. Good afternoon, sir.

05:02 12 A. Good afternoon.

05:02 13 Q. Can you introduce yourself to the ladies and

05:02 14 gentlemen of the jury, please?

05:02 15 A. I can.

05:02 16 Hi. My name is Matthew Kossol.

05:02 17 Q. And, Mr. Kossol, are you currently employed?

05:02 18 A. I am. Yes.

05:02 19 Q. Where do you work, sir?

05:02 20 A. I work at ClearCorrect.

05:02 21 Q. And we're going to talk a little bit more

05:02 22 about ClearCorrect. But for the moment, can you tell

05:02 23 us your role at ClearCorrect?

05:02 24 A. Sure. I'm a senior product development

05:02 25 engineer.

05:02 1 Q. And in that capacity as a senior product
05:02 2 development engineer, what role do you have relating to
05:02 3 the manufacture of the ClearCorrect aligners that use
05:02 4 Zendura FLX?
05:02 5 A. Yeah. So among other things, the primary role
05:02 6 is really overseeing the development of the
05:02 7 manufacturing processes of the aligners.
05:02 8 Q. Before we go deeper into ClearCorrect, I think
05:03 9 it would be helpful, Mr. Kossol, to get a little bit
05:03 10 more information about you.
05:03 11 Can you tell us about where you live and a
05:03 12 little bit about your family, please?
05:03 13 A. Yeah. Sure. So I live here in Texas about
05:03 14 20 minutes south of our manufacturing facility in Round
05:03 15 Rock. I live there with my wife of six years, and we
05:03 16 just added two twin baby girls to our family as well
05:03 17 18 months ago.
05:03 18 Q. Did you go to college, sir?
05:03 19 A. I did. Yes.
05:03 20 Q. And tell us where did you go and what did you
05:03 21 study?
05:03 22 A. I went to University of North Carolina at
05:03 23 Chapel Hill, and I studied biomedical engineering.
05:03 24 Q. And you graduated from the University of North
05:03 25 Carolina?

05:03 1 A. That's correct. Yes.
05:03 2 Q. All right. And after you graduated college,
05:03 3 what work did you do?
05:03 4 A. So after graduating, I went into industry. I
05:03 5 got a job for a company called RTI Surgical as a
05:03 6 product development engineer making spine implants.
05:03 7 Q. Now, at some point, you obviously joined
05:04 8 ClearCorrect?
05:04 9 A. That's correct. Yes.
05:04 10 Q. And when was that? When did you join
05:04 11 ClearCorrect?
05:04 12 A. I joined in May of 2019.
05:04 13 Q. And what are the reasons that you decided to
05:04 14 start working at ClearCorrect?
05:04 15 A. I mean, really the wife and I had been living
05:04 16 in North Carolina our whole lives. And we decided we
05:04 17 wanted something a little bit different. The
05:04 18 opportunity at ClearCorrect came up. We came. We
05:04 19 visited Texas. We liked Texas a lot. So we decided to
05:04 20 make the move.
05:04 21 Q. All right. And you've been at ClearCorrect
05:04 22 ever since; is that right?
05:04 23 A. That is correct. Yes.
05:04 24 Q. Let's talk a little bit more about
05:04 25 ClearCorrect and its history and its business. Sound

05:04 1 okay?
05:04 2 A. Sure.
05:04 3 Q. All right. First, tell us, when was
05:04 4 ClearCorrect founded?
05:04 5 A. In 2006.
05:04 6 Q. And in 2006, when the company started, at that
05:04 7 point, where was it located?
05:04 8 A. So at that point, it was in Houston, Texas.
05:04 9 Q. And what was the -- what was ClearCorrect's
05:04 10 business when it began in 2006?
05:04 11 A. The same. We made clear aligners.
05:05 12 Q. And today what's ClearCorrect's business?
05:05 13 A. We make clear aligners.
05:05 14 Q. All right. And so the company was started in
05:05 15 Houston; is that right?
05:05 16 A. That is correct.
05:05 17 Q. Where is ClearCorrect located now?
05:05 18 A. Now it's in Round Rock, Texas.
05:05 19 Q. And we've heard a little bit about Straumann
05:05 20 throughout the course of this trial. What's
05:05 21 ClearCorrect's relationship with Straumann?
05:05 22 A. ClearCorrect, as of 2017, is a subsidiary of
05:05 23 Straumann. So they're a parent company.
05:05 24 Q. All right. And you mentioned the manufacture
05:05 25 of clear aligners earlier, correct, sir?

05:05 1 A. Yes.
05:05 2 Q. And where does that occur? Where does
05:05 3 ClearCorrect make its aligners?
05:05 4 A. We make them here in Round Rock, in Texas.
05:05 5 Q. How many people work with you at the Round
05:05 6 Rock location of ClearCorrect?
05:05 7 A. There's about 170 people on staff.
05:05 8 Q. Now, did you -- Mr. Kossol, did you prepare a
05:05 9 video showing the manufacture process of the
05:06 10 ClearCorrect aligner?
05:06 11 A. I did. Yes.
05:06 12 MR. HIRSCH: All right. I want to pull
05:06 13 up, if we could, DDX-1. -- or strike that.
14 BY MR. HIRSCH:
05:06 15 Q. Before we get there, sir, before we get
05:06 16 there --
05:06 17 A. Okay.
05:06 18 Q. -- before we get into the manufacture, we're
05:06 19 going to get into the video.
05:06 20 MR. HIRSCH: Can we actually pull up
05:06 21 DDX-1.28.
22 BY MR. HIRSCH:
05:06 23 Q. Before we go inside the facility, let's start
05:06 24 outside of it.
05:06 25 Can you tell us what we're looking at?

05:06 1 A. Sure. This is a picture of some of my
05:06 2 colleagues on the operation side at our facility in
05:06 3 Round Rock. I think this picture, we're celebrating
05:06 4 our 20-year anniversary, not long ago.
05:06 5 Q. Tell us a little bit about the work that some
05:06 6 of these folks do at the company.
05:06 7 A. Yeah. So these are the manufacturing folks
05:06 8 that make aligners. They run all of our process steps.
05:06 9 They're really the people that make the product happen,
05:06 10 make it come alive.
05:06 11 Q. And the sign of the building outside or the
05:06 12 sign on top of the building, ClearCorrect, what happens
05:06 13 in that physical literal building?
05:06 14 A. This is where we make the aligners.
05:07 15 Q. And the material that the aligners are made
05:07 16 with, where does that come from?
05:07 17 A. That is from Bay Materials.
05:07 18 Q. So Bay Materials supplies material to
05:07 19 ClearCorrect, right?
05:07 20 A. That is correct. Yes.
05:07 21 Q. And then what does ClearCorrect do with that
05:07 22 material?
05:07 23 A. So we take that, we call raw material, and we
05:07 24 turn it into the aligner products.
05:07 25 Q. In the current aligners that ClearCorrect

05:07 1 makes now, what material is used?
05:07 2 A. We use Zendura FLX for that.
05:07 3 Q. When did that start? When did you start using
05:07 4 Zendura FLX in your aligners?
05:07 5 A. In about mid-2020 is when we started using it.
05:07 6 Q. And we'll talk a little bit about Zendura FLX.
05:07 7 How many layers are in the Zendura FLX
05:07 8 material that you use in your aligners?
05:07 9 A. Yeah. That has -- it has three layers in it.
05:07 10 Q. And what's that composition of those layers?
05:07 11 A. It has a hard outer layer, a soft inner layer,
05:07 12 and then a hard outer layer on the other side.
05:08 13 Q. You mentioned that ClearCorrect began using
05:08 14 the Zendura FLX material in mid-2020; is that right?
05:08 15 A. That is correct. It was in August.
05:08 16 Q. How long did it take ClearCorrect to
05:08 17 transition to use the Zendura FLX material into its
05:08 18 aligners?
05:08 19 A. A good while. It was a probably eight- to
05:08 20 nine-month project transitioning.
05:08 21 Q. And how many people at the company worked on
05:08 22 the transition to use Zendura FLX in the ClearCorrect
05:08 23 aligners?
05:08 24 A. So it was a big project. Overall, upwards of
05:08 25 20 had their hands in it, but we had a core team of

05:08 1 around eight to ten people.
05:08 2 Q. Did that project -- to use Zendura FLX in your
05:08 3 aligners, did that project have a name?
05:08 4 A. It did. Yes.
05:08 5 Q. Tell us about the name.
05:08 6 A. So we called it Project Incredibles. It was
05:08 7 named after a Pixar movie where one of the characters
05:08 8 has flexible arms. Because the flexible arms and we
05:09 9 think it's a good, incredible project, we picked the
05:09 10 name Incredibles.
05:09 11 Q. And were you personally involved in Project
05:09 12 Incredibles?
05:09 13 A. I was. Yes.
05:09 14 Q. Tell us about your role on the project.
05:09 15 A. So I was the senior product development
05:09 16 engineer. I really, among other things, oversaw the
05:09 17 manufacturing development of the product.
05:09 18 Q. All right. Now I want to start, Mr. Kossol,
05:09 19 to go inside that building that we're looking at and
05:09 20 talk about the manufacturing process itself, okay?
05:09 21 A. Okay.
05:09 22 Q. Tell us first, how many ClearCorrect aligners
05:09 23 are made every day at that Round Rock facility?
05:09 24 A. So currently we make around 10,000 a day.
05:09 25 Q. And you mentioned the video that you helped

05:09 1 prepare, correct, sir?
05:09 2 A. That is correct, yes.
05:09 3 Q. All right. And that video shows the
05:09 4 manufacturing process, right?
05:09 5 A. That is correct, yes.
05:09 6 MR. HIRSCH: Let's pull up DTX-2820. And
05:09 7 I just want to first just pull up -- yeah, just this
05:10 8 first frame.
9 BY MR. HIRSCH:
05:10 10 Q. Is this the video you helped prepare, sir?
05:10 11 A. It is.
05:10 12 MR. HIRSCH: I'll offer DTX-2820.
05:10 13 MR. HUNG: 2820. This is the video?
05:10 14 No objection.
05:10 15 THE COURT: No objection? I'm sorry. I
05:10 16 just couldn't hear you. No objection?
05:10 17 MR. HUNG: No objection.
05:10 18 THE COURT: Admitted.
05:10 19 MR. HIRSCH: Thank you, Your Honor.
05:10 20 BY MR. HIRSCH:
05:10 21 Q. Mr. Kossol, I want to start -- before we play
05:10 22 the video, tell us about what we're going to see. At a
05:10 23 very, very high level, what does this video depict?
05:10 24 A. Sure. So this is the video of the actual
05:10 25 manufacturing of the FLX aligners.

05:10 1 Q. On this very first still shot right here,
05:10 2 where are we in the building, and what are we looking
05:10 3 at?
05:10 4 A. So this is one of my colleagues, Joe Ella,
05:10 5 about to walk through two of the main entry doors to
05:10 6 kind of -- where all the machinery is that makes the
05:10 7 product.
05:10 8 Q. And as we walk through the doors, tell us a
05:10 9 little bit about the first step in the manufacturing
05:10 10 process that we're going to see.
05:11 11 A. Sure. So after we receive an order and we do
05:11 12 all of our treatment planning, the first thing for the
05:11 13 manufacturing process is to 3D print dental models of
05:11 14 the patient's dentition.
05:11 15 Q. I'm going to play the first segment of the
05:11 16 video, and as we play it, if you could, Mr. Kossol,
05:11 17 just tell us a little bit about what we're seeing.
05:11 18 Okay?
05:11 19 All right. Let's start and play the first
05:11 20 20 seconds.
05:11 21 A. So here, Joe Ella's walking through the doors.
05:11 22 Here's our room of what we call in-line printers.
05:11 23 Here, one of my colleagues is taking a grid of printed
05:11 24 dental models out of the machine. They come in grids
05:11 25 of about 17. We then have to separate them to

05:11 1 individualize them for the next production step.
05:11 2 Q. All right. And we saw those big red
05:11 3 cabinet-looking things.
05:11 4 A. Yes.
05:11 5 Q. What are those?
05:11 6 A. So those are centrifuges at the end of our
05:11 7 in-line printers, where there's five 3D printers in a
05:11 8 row. You just make sure that they're all clean and all
05:12 9 the resin gets off the models.
05:12 10 Q. What comes out of those printers?
05:12 11 A. The printed 3D models.
05:12 12 Q. And I'm going to hand to you, sir, DPX-30.
05:12 13 MR. HIRSCH: Just let counsel take a
05:12 14 look. And hand to you --
05:12 15 May I approach, Your Honor?
05:12 16 Thank you.
17 BY MR. HIRSCH:
05:12 18 Q. DPX-30, can you tell us what that is?
05:12 19 A. So this is one of our 3D printed dentition
05:12 20 models or tooth models.
05:12 21 Q. And what are those models used for?
05:12 22 A. So this is what we'll actually form the
05:12 23 aligner out of. We will take the Zendura FLX plastic,
05:12 24 heat it up, and using pressure, kind of form the
05:12 25 aligner out of this model.

05:12 1 MR. HIRSCH: I'll move to admit DTX-30.
05:12 2 MR. HUNG: No objection.
05:12 3 THE COURT: Admitted.
05:12 4 BY MR. HIRSCH:
05:12 5 Q. All right. So we have the models. What comes
05:12 6 next in the manufacturing process?
05:13 7 A. So after we have the models, we'll then kind
05:13 8 of make sure they're good to go, and then we'll go
05:13 9 through our thermoforming process.
05:13 10 Q. And tell us -- before we watch it, tell us
05:13 11 what the thermoforming process means.
05:13 12 A. Sure. So that's taking the plastic that
05:13 13 you're going to make the aligner out of and using heat
05:13 14 and pressure to form, honestly, whatever shape into the
05:13 15 plastic you want. In this case, it's an aligner shape.
05:13 16 Q. All right. I want to play the next 25 seconds
05:13 17 or so and again ask you to tell us as it's playing what
05:13 18 we're looking at.
05:13 19 A. Sure.
05:13 20 So here is our -- one of our major
05:13 21 thermoforming machines. It's an automated machine. We
05:13 22 can form up to four aligners at the same time. Here,
05:13 23 one of my colleagues is putting those models onto a
05:13 24 machine.
05:13 25 This is a spooling at one end of the machine

05:13 1 that has the Zendura FLX plastic. And here, you'll see
05:13 2 it gets fed through a oven for heating. And then here,
05:14 3 at a pressure of around 10 atmosphere, we'll actually
05:14 4 push that heated plastic on top of the models.
05:14 5 Q. All right. And you mentioned there's an oven
05:14 6 for heating, right, sir?
05:14 7 A. I did. Yes.
05:14 8 Q. What's the -- what's the temperature that's
05:14 9 used to heat the materials during that step of the
05:14 10 process?
05:14 11 A. So we heat the material to around 350 degrees
05:14 12 Fahrenheit.
05:14 13 Q. And you also mentioned, I believe, 10
05:14 14 atmosphere?
05:14 15 A. That is correct.
05:14 16 Q. What does that mean?
05:14 17 A. So that means like ten times the force of
05:14 18 gravity on top of you. As we're sitting here today,
05:14 19 it's kind of equivalent to a couple hundred feet deep
05:14 20 in the ocean.
05:14 21 Q. What is that pressure used for? What does it
05:14 22 do?
05:14 23 A. So that's really what forms that hot plastic
05:14 24 around the mold to turn it into an aligner.
05:14 25 Q. All right. So we've got a mold with the

05:14 1 Zendura FLX material on it.
05:14 2 Is that where we are?
05:14 3 A. That is correct.
05:14 4 Q. What's the next step in the process?
05:14 5 A. So after this, what we do is laser-mark the
05:14 6 appliances to ensure it has the appropriate patient
05:15 7 information. Then we will trim the appliances and cut
05:15 8 the trim line into them.
05:15 9 Q. Okay. Let's watch that part of the video.
05:15 10 And, please, if you would, Mr. Kossol, again narrate
05:15 11 over for us.
05:15 12 A. Sure.
05:15 13 So here is our laser-marking machine where
05:15 14 each part goes in and gets the correct
05:15 15 patient-identifying information put on it.
05:15 16 And then here, we see our five-axis mill
05:15 17 machine where a mill bit is coming in and cutting the
05:15 18 trim line around the edges of the appliance.
05:15 19 So it's coming off the machine now, but as --
05:15 20 has gone on.
05:15 21 Q. Okay. So that green -- that green light that
05:15 22 we saw at the beginning of that segment, what was that
05:15 23 doing?
05:15 24 A. So that was the laser marking. We're using UV
05:15 25 or heat. It puts the patient information on the part.

05:15 1 Q. And then you mentioned the trim line. What is
05:16 2 a trim line?
05:16 3 A. Yeah. So a trim line is really like the edges
05:16 4 of the aligner or the end of the aligner. After
05:16 5 thermoforming, we still have a big blank and a big
05:16 6 piece of plastic drooped around the whole model.
05:16 7 Here's where we come in and cut the aligner out of
05:16 8 that.
05:16 9 Q. Okay. And how does the -- what does the trim
05:16 10 line, how does that work in terms of the patient's
05:16 11 mouth and how the aligner hits the patient's mouth?
05:16 12 A. Yeah. It is where the aligner terminates. So
05:16 13 it's kind of where the aligner meets the gums.
05:16 14 Q. What kind of trim line does ClearCorrect use
05:16 15 for its aligners?
05:16 16 A. ClearCorrect uses what we call the high flat
05:16 17 trim line.
05:16 18 Q. What does that mean?
05:16 19 A. It means that we capture around 2 millimeters
05:16 20 worth of gum in every appliance that we make. So it
05:16 21 doesn't stop on your teeth. It goes up a little bit
05:16 22 higher.
05:16 23 Q. How does the trim line that you use at
05:16 24 ClearCorrect, how does that compare to the trim line of
05:16 25 other aligners on the market?

05:16 1 A. So other aligners, they can frequently use
05:16 2 what's called a scalloped trim line where the trim line
05:17 3 actually follows what's called gingival contours or
05:17 4 where the crowns meet the gums. And the trim line
05:17 5 stays on the tooth the whole time. It never touches
05:17 6 your gums.
05:17 7 Q. So we've now gone through thermoforming and
05:17 8 laser marking and the trim line, right?
05:17 9 A. Correct.
05:17 10 Q. What's next in the process?
05:17 11 A. After that, we'll separate the part from the
05:17 12 model where you'll see the final aligner. And then
05:17 13 we'll quality inspect it.
05:17 14 Q. All right. Let's watch that segment, and
05:17 15 please take us through it as it's playing.
05:17 16 A. Yep. So here, one of the colleagues is
05:17 17 retrieving the part off the trimming machine, doing an
05:17 18 initial inspection and making sure everything looks
05:17 19 good. Separating the part from the model, obviously.
05:17 20 And then here would be one of our quality
05:17 21 inspectors looking at the parts. We 100 percent
05:17 22 inspect every part for issues before we would ship it
05:18 23 out the door.
05:18 24 Q. What is the last step in the manufacturing
05:18 25 process, sir?

05:18 1 A. So after this -- and we didn't show the
05:18 2 cleaning process. But after this, they would be
05:18 3 cleaned, and we would package the product to ship out
05:18 4 to the customer.
05:18 5 Q. All right. Let's watch that last segment, and
05:18 6 please, for one last time, please tell us what we're
05:18 7 seeing as it's playing.
05:18 8 A. Sure.
05:18 9 So this is our bagging machine where we put an
05:18 10 upper and lower jaw into one bag. They will be put in
05:18 11 a box with the rest of the steps of that what we call
05:18 12 phase. Paperwork will go in that box. And then we'll
05:18 13 put some shipping information on the outside so we can
05:18 14 ship it off to the customer.
05:18 15 Q. All right. I'm going to hand you, Mr. Kossol,
05:18 16 what we've marked as DPX-7.
05:18 17 Do you recognize that, Mr. Kossol?
05:19 18 A. I do. Yes.
05:19 19 Q. Tell us what it is.
05:19 20 A. This is one of our Zendura FLX ClearCorrect
05:19 21 aligners.
05:19 22 Q. It's one of the aligners that just went
05:19 23 through each of those processes we just saw?
05:19 24 A. That is correct.
05:19 25 MR. HIRSCH: We'll move to admit DPX-7.

05:19 1 MR. HUNG: No objection.
05:19 2 THE COURT: Admitted.
05:19 3 BY MR. HIRSCH:
05:19 4 Q. So we've talked, sir, about the ClearCorrect
05:19 5 aligners. Are you familiar with other aligners on the
05:19 6 market?
05:19 7 A. I am. Yes.
05:19 8 Q. And what are the reasons that you've gained
05:19 9 familiarity with other aligners on the market?
05:19 10 A. Yeah. Well, in the product development
05:19 11 engineering but also just in business, we need to keep
05:19 12 an ear to the ground on what competition may be doing
05:19 13 to differentiate ourselves, to understand what's out
05:19 14 there.
05:19 15 Q. But to be clear, who developed each of the
05:19 16 manufacturing processes that we just watched on the
05:19 17 video?
05:19 18 A. We did as ClearCorrect.
05:19 19 Q. Now, you're obviously aware of Align, correct?
05:19 20 A. I am. Yes.
05:19 21 Q. And are you aware of Align's Invisalign
05:19 22 product?
05:19 23 A. I am. Yes.
05:20 24 Q. How does the Invisalign product compare to the
05:20 25 ClearCorrect aligners?

05:20 1 A. I mean, I think it's very different.
05:20 2 Q. And let's start first with the composition of
05:20 3 layers. How does the composition of layers in
05:20 4 Invisalign compare to the composition of layers in the
05:20 5 ClearCorrect aligners that use Zendura FLX?
05:20 6 A. It is completely opposite.
05:20 7 Q. Tell us what you mean.
05:20 8 A. So where our material has a hard-soft-hard
05:20 9 configuration, theirs uses a soft-hard-soft
05:20 10 configuration.
05:20 11 Q. Now, we've heard a little bit about staining.
05:20 12 Are you familiar with staining in the context of
05:20 13 aligners?
05:20 14 A. I am. Yes.
05:20 15 Q. And tell us a little bit about what that means
05:20 16 and how aligners can stain.
05:20 17 A. Sure. So one of the biggest value
05:20 18 propositions of a clear aligner is that it is clear.
05:20 19 It's discreet when you wear it.
05:20 20 If you wear it and you wear it after you've
05:20 21 had coffee or after you've eaten lunch, it's potential
05:20 22 that the aligner could start picking up some of the
05:20 23 remnants of food or food items that you've been
05:21 24 consuming and turn the aligner not clear. It changes
05:21 25 color.

05:21 1 Q. How does the staining of the Invisalign
05:21 2 product compare to the staining of the ClearCorrect
05:21 3 product?
05:21 4 A. It is much different.
05:21 5 Q. Tell us what you mean.
05:21 6 A. The ClearCorrect product does not stain near
05:21 7 as much as the Invisalign product does.
05:21 8 Q. And why is that?
05:21 9 A. It is because the hard outer layers prevent
05:21 10 that staining from occurring.
05:21 11 Q. Now, you understand, sir, that in this case,
05:21 12 Align is accusing ClearCorrect of patent infringement,
05:21 13 right?
05:21 14 A. I am. Yes.
05:21 15 Q. And I want to ask you, sir, about
05:21 16 ClearCorrect's position. I'm not going to get into the
05:21 17 details, but just a yes or no as to your understanding
05:21 18 of the company's position.
05:21 19 Yes or no, the company's position, does
05:21 20 ClearCorrect infringe Align's patents?
05:21 21 A. No. We do not.
05:22 22 Q. And yes or no, just the company's position,
05:22 23 are ClearCorrect's aligners a copy of Align's
05:22 24 Invisalign product?
05:22 25 A. No.

05:22 1 Q. One of the steps that you showed us in the
05:22 2 manufacturing process, you mentioned 100 percent
05:22 3 quality control.
05:22 4 Do you recall that?
05:22 5 A. I do. Yes.
05:22 6 Q. I'm going to focus on the quality control
05:22 7 aspect for a moment. But first, tell us: What role do
05:22 8 you have in your job on quality control of
05:22 9 ClearCorrect's aligners?
05:22 10 A. Yeah. So as a product development engineer, I
05:22 11 work very closely with our quality teams. So I have a
05:22 12 pretty strong role.
05:22 13 Q. Before the aligners leave the building, what
05:22 14 quality control, if any, occurs?
05:22 15 A. A lot. So we have really robust quality
05:22 16 criteria set for every aligner, and then every aligner
05:22 17 is 100 percent inspected for adherence to those quality
05:22 18 parameters.
05:22 19 Q. And then after the aligners go out the door,
05:23 20 what quality control process, if any, does ClearCorrect
05:23 21 have?
05:23 22 A. Yeah. So also a robust one. We have a global
05:23 23 quality team. On that team is what we call a post
05:23 24 market surveillance team. If there are -- is any
05:23 25 complaints, this team will be responsible for fielding

05:23 1 those complaints, making it right with the customer in
05:23 2 whatever way possible. But then also starting projects
05:23 3 so we can address those and make sure they don't happen
05:23 4 again.
05:23 5 Q. You mentioned -- you mentioned complaints.
05:23 6 And you're not -- you're not going to say that
05:23 7 ClearCorrect never gets complaints, are you, sir?
05:23 8 A. I would not say that, no.
05:23 9 Q. What's the process that ClearCorrect has when
05:23 10 it gets feedback from customers?
05:23 11 A. Yeah. So it's really through that post market
05:23 12 surveillance team. We'll receive whatever the
05:23 13 complaint is, do a thorough investigation, figure out
05:23 14 what way to make it right with the customer. And then
05:23 15 depending on what the complaint is and if it had
05:24 16 happened before, start projects to try to make sure
05:24 17 they don't happen again.
05:24 18 Q. What's the overall complaint rate for
05:24 19 ClearCorrect's aligners?
05:24 20 A. I mean, overall, it's pretty low. It's like 1
05:24 21 to 2 percent.
05:24 22 Q. Are there instances -- well, strike that.
05:24 23 When, if ever, Mr. Kossol, has ClearCorrect
05:24 24 made changes to its aligners in response to customer
05:24 25 feedback?

05:24 1 A. Frequently. So we're constantly trying to
05:24 2 improve. We strive for zero complaints.
05:24 3 Q. Can you give us some examples of improvements
05:24 4 that you've made in response to customer feedback?
05:24 5 A. Sure. So we've -- we've changed the resin of
05:24 6 the models, the 3D models that we print, to help with
05:24 7 issues. We've changed our thermoforming parameters.
05:24 8 We've updated trimming quite a bit. We're constantly
05:24 9 making changes.
05:24 10 Q. Now, you said you've been working at
05:24 11 ClearCorrect for seven years, right, sir?
05:24 12 A. That is correct, yes.
05:24 13 Q. And I take it you've spent many hours
05:25 14 overseeing the manufacture of many thousands of
05:25 15 aligners?
05:25 16 A. Millions, but yes.
05:25 17 Q. Why spend all that time, sir, working to give
05:25 18 customers the option of choosing ClearCorrect aligners?
05:25 19 A. Honestly, because choice is good. We have a
05:25 20 different product. One size doesn't fit all. I don't
05:25 21 think one size fits all in any sort of market, not this
05:25 22 market, and I think it's valuable for people to have
05:25 23 options.
05:25 24 MR. HIRSCH: Thank you, sir.
05:25 25 Pass the witness.

05:25 1 CROSS-EXAMINATION
05:25 2 BY MR. HUNG:
05:25 3 Q. Hello, Mr. Kossol.
05:25 4 A. Hi.
05:25 5 Q. You and I've never met before, correct?
05:25 6 A. That is correct.
05:25 7 Q. You just gave some testimony about the
05:25 8 composition of Zendura FLX. And you'd agree with me
05:25 9 that Zendura FLX has a Tritan layer, fair?
05:25 10 Do you know that?
05:25 11 A. That is correct, yes.
05:26 12 Q. That's a Tritan copolyester layer, correct?
05:26 13 A. That is correct.
05:26 14 Q. And you know that SmartTrack has a Tritan
05:26 15 copolyester layer, right, sir?
05:26 16 A. It's my understanding.
05:26 17 Q. And you know that your product has a Texin TPU
05:26 18 layer, right?
05:26 19 A. In the middle, yes.
05:26 20 Q. And you know that SmartTrack has a Desmopan
05:26 21 TPU layer, right?
05:26 22 A. On the -- on the outside is my understanding.
05:26 23 Q. And you know that those are manufactured by
05:26 24 the same company, that layer?
05:26 25 A. I don't know that, but I accept it. Sure.

05:26 1 Q. And you know that those are just different
05:26 2 brand names depending on where those layers are sold.
05:26 3 Do you know that?
05:26 4 A. I did not know that.
05:26 5 Q. You talked about innovation, and you talked
05:26 6 about this -- the trim line.
05:26 7 Isn't it true, sir, that you're moving to a
05:26 8 scalloped trim line, just like my client, Align, in the
05:26 9 near future?
05:26 10 A. Primarily, no.
05:27 11 Q. Well, sir, actually in your own binder right
05:27 12 in front of you right now, you have a PTX-114. If you
05:27 13 could turn to it, it should be the last exhibit, Tab 4.
05:27 14 Do you recognize this document, sir?
05:27 15 A. Not immediately.
05:27 16 Q. You don't recognize this document in the
05:27 17 binder from your counsel?
05:27 18 A. Actually, yeah. Now that I'm flipping through
05:27 19 it, I think I do.
05:27 20 Q. All right. Please take a minute and turn to
05:27 21 Page 25. PTX-114-25, and I think it's numbered Page 31
05:27 22 on the bottom.
05:27 23 A. 25 or 31? I'm sorry.
05:27 24 Q. Yeah. Sorry. It's the -- you're going to see
05:27 25 a map. You're going to see a map of the world.

05:27 1 A. Okay.
05:27 2 Q. Okay.
05:27 3 A. Not there yet.
05:27 4 Okay. There.
05:27 5 Q. Now, sir, as part of your job, do you get to
05:28 6 travel?
05:28 7 A. Not frequently.
05:28 8 Q. Okay. Trivia question. Did you know that
05:28 9 there are 195 countries in the world?
05:28 10 A. I did not.
05:28 11 MR. HUNG: And by the way, could I admit
05:28 12 your exhibit, PTX-114?
05:28 13 MR. HIRSCH: Yeah.
05:28 14 MR. HUNG: Your Honor, I'd like to admit
05:28 15 it.
05:28 16 MR. HIRSCH: No objection.
05:28 17 THE COURT: Okay.
05:28 18 BY MR. HUNG:
05:28 19 Q. Okay. Turn to 31. Thank you.
05:28 20 And, sir, you know that my client, Align, has
05:28 21 a planning center in -- I got to pronounce this
05:28 22 correctly -- Belen, Heredia, San Jose, Costa Rica. To
05:28 23 be clear, the Belen, Heredia district in San Jose in
05:28 24 the country of Costa Rica.
05:28 25 Did you know that?

05:28 1 A. I don't have specifics on where Align does
05:28 2 their treatment planning, no.
05:28 3 Q. Isn't it true, sir, that your company,
05:28 4 ClearCorrect, opened a planning facility in Belen,
05:28 5 Heredia, San Jose, Costa Rica, near ours?
05:29 6 A. I know that we have treatment planners in
05:29 7 Costa Rica, but I'm not sure what they're near.
05:29 8 Q. What about Wroclaw, pronounced Wroclaw,
9 W-r-o-c-l-a-w.
05:29 10 Do you know that Align had a planning facility
05:29 11 in Wroclaw, Poland, for a long time?
05:29 12 A. I had no idea.
05:29 13 Q. Did you know that your -- the company that you
05:29 14 work for, ClearCorrect, built its own planning center
05:29 15 in the same building in Wroclaw, Poland, after Align
05:29 16 built its?
05:29 17 A. I knew we had representation in Poland. Those
05:29 18 specific you just listed, I had no idea.
05:29 19 Q. Now, sir, you showed that factory video,
05:29 20 right? The video of the factory, right?
05:29 21 A. I did.
05:29 22 Q. You're not disputing that my client Align has
05:29 23 long had factories like that?
05:29 24 A. I don't know what Align has had, didn't...
05:29 25 Q. Sir, briefly on -- actually, can you tab back

05:30 1 in that same exhibit?
05:30 2 A. Sure.
05:30 3 Q. And can you go to PTX-114-7, and it's the
05:30 4 eighth page. Now, you'll see a graph that looks like
05:30 5 this. I'm going to call that a force retention graph.
05:30 6 It says that there. Or a stress relaxation graph.
05:30 7 A. Okay. Give me one moment, please. Sorry.
05:30 8 Q. Sure.
05:30 9 A. I'm there.
05:30 10 Q. Yeah. Sir, had you seen a graph like this
05:30 11 before you started working for ClearCorrect?
05:30 12 A. Before I started working for ClearCorrect, not
05:30 13 exactly, no.
05:30 14 Q. But I think you'd agree with me, sir -- let me
05:30 15 pull up your deposition for a second.
05:30 16 I think you'd agree with me that Zendura FLX
05:30 17 has better stress relaxation features than the products
05:30 18 that were before it that ClearCorrect was selling,
05:30 19 right?
05:30 20 A. That is correct. Yes.
05:30 21 Q. And you'd agree with me that Zendura FLX has
05:30 22 this improved stress relaxation as a function of its
05:30 23 three-layer structures and materials, right?
05:30 24 A. As a function of its tensile modulus.
05:31 25 Q. Of its what?

05:31 1 A. Tensile modulus.
05:31 2 Q. Tensile modulus. Thank you.
05:31 3 And you'd agree with me that that stress
05:31 4 relaxation allows Zendura FLX to help ClearCorrect
05:31 5 patients with more complex cases, true?
05:31 6 A. The FLX product is more flexible.
05:31 7 Q. Okay. And, sir, I have to ask you, have you
05:31 8 ever seen this graph, this specific graph, one that
05:31 9 looks similar to this in any way in a patent by Align?
05:31 10 A. If I do, I don't recall.
05:31 11 Q. Okay. Sir, just one closing question on
05:31 12 quality. Do you know who Guillaume Daniellot is?
05:31 13 A. I do. Yes.
05:31 14 Q. Who is he, sir?
05:31 15 A. He is the CEO of the Straumann Group.
05:31 16 Q. He's probably your boss' boss' boss. He's
05:31 17 pretty high up, right?
05:31 18 A. That is correct.
05:31 19 Q. Were you aware that he had received a feedback
05:31 20 from Bain & Company? Have you heard of Bain?
05:31 21 A. No. I have not.
05:32 22 Q. You've never heard of the company Bain, one of
05:32 23 the world's most famous management consulting firms?
05:32 24 A. Sure. Then I think I did know that. Yes.
05:32 25 Q. Now, sir, were you aware that Mr. Daniellot

05:32 1 received information that 50 to 70 percent of cases in
05:32 2 your factories that you oversee required touch-ups?
05:32 3 MR. HIRSCH: Your Honor --
05:32 4 I apologize, counsel. I thought you were
05:32 5 done.
05:32 6 A. I'm sorry. Can you repeat the question?
05:32 7 BY MR. HUNG:
05:32 8 Q. Did you know that 50 to 70 percent of the
05:32 9 aligners that are made in your factory require
05:32 10 touch-ups?
05:32 11 MR. HIRSCH: Your Honor, I object. Lack
05:32 12 of foundation.
05:32 13 MR. HUNG: I'm asking him if he knows.
05:32 14 THE COURT: Well, it's not a deposition.
05:32 15 If there's a reason -- if you want to lay a foundation
05:32 16 for why he might know, you can, and then you can ask.
05:32 17 BY MR. HUNG:
05:32 18 Q. Yeah. You're involved in the factories. You
05:32 19 oversee these factories, right, including the factory
05:32 20 in Round Rock which I think you mentioned three or four
05:32 21 times, right?
05:32 22 A. That is correct. Yes.
05:32 23 Q. And you know that that factory has a 50 to
05:33 24 70 percent touch-up rate, fair?
05:33 25 A. At a point in time, we did.

05:33 1 Q. And you know that that factory had a 10 to 25
05:33 2 percent scrap rate, fair?
05:33 3 A. At a point in time.
05:33 4 Q. And you know that the target rate for that
05:33 5 factory that you oversee was supposed to be 5 percent,
05:33 6 true?
05:33 7 A. Yeah. For scrap rate, we target 5 percent.
05:33 8 MR. HUNG: Thank you.
05:33 9 REDIRECT EXAMINATION
05:33 10 BY MR. HIRSCH:
05:33 11 Q. Mr. Kossol, just a few final questions.
05:33 12 You were asked about various facilities around
05:33 13 the world, sir.
05:33 14 Do you recall that?
05:33 15 A. I do. Yes.
05:33 16 Q. I want to be very clear. The products at
05:33 17 issue in this case, the ClearCorrect aligners at issue
05:33 18 in this case, do you have those in mind?
05:33 19 A. I do.
05:33 20 Q. Where are the products at issue in this case
05:33 21 manufactured?
05:33 22 A. Here in Round Rock.
05:33 23 Q. The material that's used in the ClearCorrect
05:33 24 aligners made in the United States, what's the
05:34 25 material, soft-hard-soft or hard-soft-hard?

05:34 1 A. Hard-soft-hard.
05:34 2 Q. Last question, sir. Do you make high-quality
05:34 3 products in Round Rock?
05:34 4 A. We do. Yes.
05:34 5 MR. HIRSCH: Thank you, sir.
05:34 6 MR. HUNG: No questions, Your Honor.
05:34 7 THE COURT: Thank you, sir. You may step
05:34 8 down.
05:34 9 Ladies and gentlemen of the jury, I have
05:34 10 something to do tomorrow morning at 8:30 that should
05:34 11 take me just a few minutes. If you would -- I have
05:34 12 something to do in court. If you all would get here by
05:34 13 about 8:45, I'm relatively comfortable we can start at
05:34 14 9:00.
05:34 15 I know that means for you you're going to
05:34 16 have to leave one minute earlier. So I'm sorry about
05:34 17 that.
05:34 18 But if y'all would be here by 8:45, we'll
05:34 19 start tomorrow morning at 9:00.
05:34 20 Please remember my instructions not to
05:34 21 discuss the case.
05:34 22 THE BAILIFF: All rise.
05:34 23 (Jury exited the courtroom.)
05:35 24 THE COURT: You may be seated.
05:35 25 So what -- if -- this doesn't need to be

05:35 1 on the record unless someone hears something that they
05:35 2 want to put on the record.
05:35 3 (Off-the-record discussion.)
05:36 4 THE COURT: Any issues we need to take up
05:36 5 on behalf of the defendant?
05:36 6 MR. MUELLER: None from defendants.
05:36 7 Thank you, Your Honor.
05:36 8 MR. DURST: None from the plaintiff,
05:36 9 Your Honor.
05:36 10 (Off-the-record discussion.)
05:36 11 (Hearing adjourned.)
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UNITED STATES DISTRICT COURT)
WESTERN DISTRICT OF TEXAS)

I, Kristie M. Davis, Official Court Reporter for the United States District Court, Western District of Texas, do certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

I certify that the transcript fees and format comply with those prescribed by the Court and Judicial Conference of the United States.

Certified to by me this 12th day of July 2026.

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05:36