

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

PGR202300008
Patent 11,260,624

DEPOSITION OF: RICHARD J. SPONTAK, Ph.D.
Volume II
March 15, 2024
Via RemoteDepo

HUHTAMAKI FLEXIBLE PACKAGING GERMANY GMBH & CO. KG,
Petitioner,

v.

ADAPA FLEXIBLES DENMARK SLAGELSE A/S,
f/k/a DANAPAK FLEXIBLES A/S,

Patent Owner.

PURSUANT TO NOTICE, the deposition of
RICHARD J. SPONTAK, Ph.D., Volume II, was taken on
behalf of the Patent Owner in Davidson County, Tennessee,
by remote means on March 15, 2024, at 8:58 a.m. Mountain
Daylight Time, with all parties participating on
RemoteDepo, before Maria M. Orton, Registered
Professional Reporter and Notary Public within Colorado.

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1 WHEREUPON, the following proceedings were
2 taken pursuant to the Rules of Civil Procedure.

3 * * * * *

4 THE COURT REPORTER: The attorneys
5 participating in this deposition acknowledge that I am
6 not physically present in the deposition room and that I
7 will be reporting this deposition remotely. They further
8 acknowledge that, in lieu of an oath administered in
9 person, the witness will verbally declare his testimony
10 in this matter is under penalty of perjury.

11 The parties and their counsel consent to this
12 agreement and waive any objections to this manner of
13 reporting. Please indicate your agreement by stating
14 your name and your agreement on the record.

15 MR. KILGORE: Yes, we agree. This is
16 Mark Kilgore representing Huhtamaki.

17 MR. ROESER: And this is Randy Roeser for
18 Patent Owner; and we agree as well.

19 RICHARD J. SPONTAK, Ph.D.,
20 being first duly requested to verbally declare his
21 testimony in this matter is under penalty of perjury, was
22 examined and testified as follows:

23 (Deponent's reply to request: I do.)

24 * * * * *

EXAMINATION

BY MR. ROESER:

Q. Good morning. Could you please state your full name for the record, please.

A. Richard John Spontak.

Q. Thank you, Dr. Spontak. We've met before. My name is Randy Roeser, and I represent the Patent Owner in this PGR proceeding. So you've already had your deposition taken in this case. I'll just briefly go over a few ground rules before we get started. You understand you've taken an oath to tell the truth here today?

A. I do.

Q. And because of that, at any time you don't understand the question I'm asking, could you please ask me to rephrase that question?

A. Absolutely, yes.

Q. And so if you -- if you answer my question, it's safe to assume that you understood it?

A. Yes.

Q. Okay. And you are doing a good job of it so far. I would just ask that --

A. These are difficult questions.

Q. I'm leading you in, leading you in. But you are doing a great job. Verbal answers. No head shakes or anything like that. Ms. Orton here is taking down

1 everything we are saying. So, if you could, try to
2 refrain from talking over me. I'll do the same for you
3 so that we have a clear record. It's hard to type down
4 two people talking at once.

5 A. Understood.

6 Q. And is there any reason why you can't give
7 full and accurate testimony here today?

8 A. There is not, but I will remind you of my
9 diabetes condition. I might need to take a break here
10 and there to get some sugar, et cetera.

11 Q. Absolutely. And -- and that was one of the
12 things I was going to mention. If at any time you need
13 to take a break, just let me know. The only thing I'd
14 ask is, if there's a pending question, you answer that
15 question before we go on break.

16 A. Fair enough.

17 Q. And are there any medications you are taking
18 here today that would affect the truthfulness of your
19 testimony?

20 A. No.

21 Q. Okay. Since this is being recorded remotely
22 via Zoom, are there any other documents or applications
23 or anything else pulled up on your computer other than
24 this Zoom proceeding?

25 A. So I'm using a computer that has been

1 supplied by counsel. I have my own computer up right now
2 with PDF files of the patents that are relevant as well
3 as the -- the documentation that I've used throughout
4 this litigation.

5 I also have hard copies of those documents.
6 So if you like, I can actually swing the computer around
7 if you would like to see it.

8 Q. I'm fine with -- I'm -- I don't need to see
9 it, but if you could just tell me what documents you have
10 pulled up on your other computer.

11 A. Sure. I have a list of corrections to my
12 last declaration. I have the petition for post-grant
13 review, the patent owner's revised motion to amend, the
14 petitioner's opposition to patent owner's revised motion
15 to amend, U.S. Patent -- well, the '624 patent, my first
16 declaration, the Riis patent, the Wypych Handbook of
17 Polymers chapter, the Holzmuller patent, the Rivers
18 patent, and then my second and third declaration.

19 Q. Okay. You --

20 A. If you want -- I'm sorry. If you want the
21 exhibit numbers, I can give you those as well.

22 Q. I don't need those. I appreciate that,
23 though. Are there any notations or highlights or
24 anything on those PDF files that you have pulled up?

25 A. No. No. These are all clean.

1 Q. Any other applications or documents or web
2 pages you have pulled up on either of your computers?

3 A. I have my wi-fi off on my computer, so it is
4 isolated. And I have no other -- well, I have
5 applications open for other reasons, like PowerPoint for
6 a document I'm working on, but they are completely
7 irrelevant and they're off to the side.

8 Q. Okay. If at any time you reference or
9 access those documents during your deposition, please
10 note that for the record.

11 A. Sure.

12 Q. And about the hard copies you have with you,
13 what hard copies do you have?

14 A. Again, the '624 patent, the Riis patent, the
15 Holzmuller patent, the Rivers patent. And then I've got
16 my two declarations, plus the revised motion to amend and
17 the original motion to amend.

18 Q. And you said the "two declarations"?

19 A. Yes.

20 Q. What declarations are those?

21 A. So my first one and then the more recent
22 one, the second. My -- my declaration with regard to the
23 revised motion to amend.

24 Q. Understood. You do not have a printed copy
25 of your declaration to patent owner's original motion to

1 amend?

2 A. I do not.

3 Q. Okay. Any notations or highlights or
4 anything else that's on those physical documents?

5 A. These are all clean.

6 Q. Okay. And you have no other notes or
7 anything with you today other than those printed
8 documents?

9 A. That is it.

10 Q. Okay. So let me see if I can show my
11 screen. All right. I'm sharing -- do you see my shared
12 screen?

13 A. I do.

14 Q. Okay. So this is Exhibit 1037 to this PGR
15 proceeding. And since you don't have a hard copy of it
16 with you today, I'll just pull it up --

17 A. Oh, I -- I actually have the first
18 declaration to motion to amend. I don't have the
19 declaration for the original patent. I'm sorry. I
20 misunderstood you.

21 Q. Okay. Understood. So the physical copy you
22 have is of your declaration in support of petitioner's
23 opposition to patent owner's original motion to amend as
24 well --

25 A. Yes.

1 Q. -- as your -- as well as your declaration in
2 support of petitioner's opposition to patent owner's
3 revised motion to amend?

4 A. That is correct.

5 Q. Understood. Okay. So with respect to your
6 declaration in support of petitioner's opposition to
7 patent owner's original motion to amend, Exhibit 1037, if
8 we scroll to the last page, it's dated December 5, 2023,
9 correct?

10 A. December 5, 2023, that is correct.

11 Q. And is that your signature on that last
12 page?

13 A. It is.

14 Q. Okay. And does this declaration contain all
15 of your opinions regarding patent owner's original motion
16 to amend?

17 A. Yes, it does.

18 Q. And you understand that after you submitted
19 this declaration, patent owner submitted a revised motion
20 to amend, correct?

21 A. I understand that to be true, yes.

22 Q. Okay. So the opinions in this second
23 declaration, the one in support of petitioner's
24 opposition to patent owner's original motion to amend,
25 that does not apply to patent owner's revised motion to

1 amend, correct?

2 A. Well, I allude to certain aspects of it in
3 my declaration with regard to the revised motion to
4 amend. So there are a couple of points in there where I
5 mention explicitly that I have already addressed these
6 issues in the -- the declaration with regard to the
7 original motion to amend.

8 Q. Understood. There may be some -- some
9 substantive overlap, but your -- your motion -- let me
10 start over.

11 There may be some substantive overlap
12 between your -- your declaration submitted in response to
13 patent owner's reply to motion to amend from your
14 declaration in response to patent owner's original motion
15 to amend, correct?

16 A. That is correct.

17 Q. But the opinions in your declaration in
18 support of patent owner's original motion to amend, those
19 do not address the revised substitute claims, correct?

20 A. Unless it -- as I said, unless they're
21 alluded to explicitly in my -- my declaration for the
22 revised motion to amend.

23 Q. So the --

24 A. But -- but the -- the declaration for the
25 revised motion to amend is intended to address all of the

1 issues with regard to the revised motion to amend.

2 Q. Understood. And let's actually take a look
3 at -- it's Exhibit 1038 in this proceeding. I have it
4 pulled up on my screen. Is this a copy of your
5 declaration in support of petitioner's opposition to
6 patent owner's revised motion to amend?

7 A. That is the -- the first page, yes.

8 Q. Okay. And if we look at the last page, it's
9 dated March 5 of 2024?

10 A. That is correct. And that --

11 Q. And is that your signature on the last page?

12 A. And that is my signature.

13 Q. Got it. Thank you. So does this
14 declaration contain all of your opinions regarding patent
15 owner's revised motion to amend?

16 A. It does, but there are a couple of
17 corrections that need to be made.

18 Q. Okay. Did you personally prepare this
19 declaration?

20 A. I prepared it in collaboration with counsel.

21 Q. Did you collaborate with anyone at Huhtamaki
22 in preparing this declaration?

23 A. I did not.

24 Q. Have you ever spoken to anyone at Huhtamaki?

25 A. I have not.

1 Q. I would like to go to paragraph 10 of
2 your -- and is it okay if I refer to this document,
3 Exhibit 1038, as --

4 A. That's fine. That's fine. It's better than
5 trying to read out that entire description.

6 Q. It is. I appreciate that. Okay.
7 Paragraph 10 of your -- and can I -- actually, if I can
8 refer to it as your third declaration?

9 A. That works for me.

10 Q. Okay. Perfect. So paragraph 10 of your
11 third declaration, you list out the documents you
12 reviewed and relied upon in forming your opinions; is
13 that correct?

14 A. That is correct.

15 Q. And you have a chart of all of those
16 documents as well?

17 A. That is also correct.

18 Q. Okay. Other than those documents listed in
19 paragraph 10 and this chart, did you rely on any other
20 documents or anything else in forming your opinions in
21 this third declaration?

22 A. No. I mean, the -- the only thing that I
23 did do is, for the active pharmaceutical ingredients, I
24 looked up their chemical structures on the web, things of
25 that nature, but nothing that really made any influence

1 on my decisions -- or on my conclusions.

2 Q. And what do you mean, "active
3 pharmaceutical" --

4 A. Oh, the -- the -- the four that are
5 specifically mentioned in the '624 patent, the fentanyl,
6 lidocaine, et cetera.

7 Q. Okay. So let's turn to paragraph 15 of your
8 third declaration. And that's under the Applicable Legal
9 Standards section.

10 A. Yes.

11 Q. Okay. So in this paragraph you set forth
12 the legal standard you applied in your analysis and in
13 forming your opinions with the revised motion to amend,
14 correct?

15 A. That is correct.

16 Q. And specifically with respect to motions to
17 amend, under 35 U.S.C. Section 326 you list the standard,
18 and you specifically list that the motion to amend must
19 demonstrate, first, that the amendment proposes a
20 reasonable number of substitute claims; second, that the
21 amendment does not seek to enlarge the scope of the
22 claims of the patent or introduce new subject matter;
23 three, that the amendment responds to a ground of
24 unpatentability involved in the trial; and, four, the
25 original disclosure sets forth written description

1 support for each proposed claim; is that correct?

2 A. That is correct.

3 Q. Okay. You do not have an opinion that
4 patent owner did not demonstrate these four requirements
5 in its revised motion to amend, do you?

6 A. I -- I cannot speak to the -- the legality
7 since I'm not an attorney, so this was -- I was helped
8 with this with -- from counsel. So I don't really have
9 an opinion on this.

10 Q. Understood. All right. Let's turn to
11 Section VII of your third declaration, which starts at
12 paragraph 46. And let me know when you are there.

13 A. Yes. So this is Claim Construction.

14 Q. Yes, sir.

15 A. Okay. Yes.

16 Q. And this section of your third declaration
17 includes the claim construction you applied in forming
18 your opinions, correct?

19 A. That is correct.

20 Q. And if we look at paragraph 48, you say
21 that, other than the term "aggressive chemical-resistant
22 film" and "loading," it's your opinion that the '624
23 patent does not use any other unusual terms, nor do the
24 other terms appear to be used outside of their plain and
25 ordinary meaning; is that correct?

1 A. That's correct.

2 Q. So in forming your opinions in this third
3 declaration, other than those two terms, you apply the
4 plain and ordinary meaning to the terms of the revised
5 substitute claims; is that correct?

6 A. That is correct.

7 Q. All right. And I actually want to look at
8 the revised substitute claims. And I'm pulling up patent
9 owner's revised motion to amend. Have you reviewed
10 patent owner's revised motion to amend?

11 A. I have.

12 Q. Did you review it in preparing for your
13 deposition today?

14 A. I read over it quickly, but I have read it
15 in more detail in the past.

16 Q. Okay. And did you review the revised
17 substitute claims in preparation for your deposition?

18 A. I did. And those are also include -- those
19 are summarized in my third declaration.

20 Q. Okay. I have pulled up on the screen the
21 Claims Appendix to Patent Owner's Revised Motion to
22 Amend; do you see that?

23 A. And what page is that on?

24 Q. It is on page 26.

25 A. Yes, I'm there.

1 Q. Okay. And you see that this is the
2 "Proposed Substitute Claim 14 to replace Claim 1, if
3 Claim 1 is found unpatentable"?

4 A. Yes, that is correct.

5 Q. And then this is -- this is a marked-up
6 version of Claim 14 that has underlined and strike-
7 throughs; do you see that?

8 A. Yes, it is. I see that.

9 Q. Okay. So in forming your opinions set forth
10 in your third declaration, what is the plain and ordinary
11 meaning that you apply to the term "contact layer"?

12 A. The contact layer is the layer of the
13 sandwich structure -- and I refer to "sandwich structure"
14 simply because that is what I use in my research. So it
15 consists of the different layers. So the contact layer
16 is the layer that comes in physical contact with whatever
17 ingredient, if it's pharmaceutical or otherwise, that is
18 being packaged.

19 Q. Is that the entirety of the plain and
20 ordinary meaning that you applied to the term "contact
21 layer"?

22 A. I -- it -- you could certainly start to
23 apply certain requirements to a contact layer, but -- so,
24 for example, you don't want it to dissolve, or you don't
25 want penetrants to make their way through the contact

1 layer. But, in general, the -- the meaning would simply
2 be that this is the layer that physically comes into
3 contact with whatever is being packaged.

4 Q. Other than that meaning, did you apply any
5 other meanings to the term "contact layer" in forming
6 your opinions in your third declaration?

7 A. Well, as I said, if we start to include
8 properties, then that would provide a much more detailed
9 description of the contact layer. But, again, the basic
10 idea is that it simply contacts whatever is being
11 packaged.

12 Q. I'm just trying to understand the plain and
13 ordinary meaning that you applied to "contact layer." So
14 if you -- if you applied --

15 A. That would be -- that would be the plain and
16 ordinary meaning, that it simply comes in contact with
17 whatever's being packaged, but it can have much -- a much
18 more detailed description to it, depending on what
19 properties are needed.

20 Q. Did you apply a much more specific meaning
21 to the term "contact layer" in forming your opinions in
22 your third declaration?

23 A. Well, I think that on the basis of what this
24 patent is all about dictates that the contact layer must
25 have certain properties associated with it. And so one

1 wants to make sure that this contact layer does not have
2 any deleterious effect on what is being packaged, so it
3 must be stable, it must be mechanically stable, and it
4 should prevent whatever is being packaged from diffusing
5 into the sandwich structure.

6 Q. And, again, "sandwich structure," in your
7 terminology, is a multilayered film or laminate?

8 A. That's right. It's a multilayered film --
9 or if we want to talk about laminate, but the "sandwich
10 structure" simply means it's layered.

11 Q. And other than that plain and ordinary
12 meaning that you just described, did you apply any other
13 meaning to the term "contact layer" in forming your
14 opinions in this third declaration?

15 A. No.

16 Q. And how did you arrive at that plain and
17 ordinary meaning?

18 A. Firstly, from the definition of "contact,"
19 "contact," of course, meaning that something is coming in
20 close proximity and therefore contacting another
21 component. And so in this case, the contact layer would
22 be coming into contact with the packaged ingredients. So
23 that would be at the very -- at the simplest level. And
24 then the other aspects that I mentioned would be more
25 directed towards what would be required of this contact

1 layer.

2 Q. And did you consider any prior-art
3 references in coming to your plain and ordinary meaning
4 of "contact layer"?

5 A. The contact layer -- the simplest definition
6 is one that does not require prior art because it is
7 self-evident. The additional properties are properties
8 that I am aware of from my previous work dealing with
9 transdermal patches.

10 Q. Did you use any of the prior-art references
11 at issue in this proceeding in coming to your plain and
12 ordinary meaning of "contact layer"?

13 A. Not that -- I mean, the one aspect that was
14 a little bit new to me was the -- the COC usage, because
15 I personally haven't used COCs in my research, but the
16 rest of it, the stability, the mechanical properties, the
17 barrier properties, all those, I -- I did not have to go
18 to the prior art for that. That was something that I
19 knew from my own experience, which goes back quite --
20 quite a long time.

21 Q. Okay. So you didn't -- you didn't use any
22 of the prior-art references in coming to your plain and
23 ordinary meaning of "contact layer"?

24 A. No. Not for "contact layer," no.

25 Q. Did you --

1 A. The COC aspect -- the COC aspect of that was
2 something that I did go to prior art for, but that's the
3 only aspect of -- of the contact layer, not the meaning
4 of the contact layer.

5 Q. Did you use the '624 patent in any way in
6 coming to your meaning of "contact layer" that you
7 applied in this third declaration?

8 A. Not with regard to what the -- the '624
9 patent taught, except for, again, the use of a COC. That
10 was something that, as I mentioned before, was new to me.
11 But the other aspects I -- I was very familiar with.

12 Q. So it sounds like you might have used prior
13 references in the '624 patent as it relates to a specific
14 COC material of a contact layer, but as to plain and
15 ordinary -- plain and ordinary meaning of "contact
16 layer," you didn't look at any prior art?

17 A. No, I didn't -- I didn't need to.

18 Q. Let's turn to the term "base layer." I'm
19 going to have a similar line of questions to that.

20 A. Sure.

21 Q. What is the -- what is the plain and
22 ordinary meaning that you applied to "base layer" in
23 forming your opinions in this third declaration?

24 A. The base layer is basically a fully
25 impermeable layer. This is what essentially protects the

1 sand- -- the multilayer structure, or the sandwich
2 structure, from external conditions, such as water vapor
3 or oxygen or any other environmental effect. And it also
4 prevents any of the ingredient that might have diffused
5 through the multilayer structure from making its way into
6 the environment.

7 Q. Is that the entire plain and ordinary
8 meaning that you applied to the term "base layer" in this
9 third declaration?

10 A. Yes. I -- essentially, it's -- it's the
11 true barrier layer, the main barrier layer.

12 Q. And how did you arrive at that plain and
13 ordinary meaning of "base layer"?

14 A. Again, from my knowledge of barrier
15 materials.

16 Q. Did you look at any of the prior-art
17 references of the '624 patent in coming to the plain and
18 ordinary meaning that you applied to "base layer"?

19 A. No, because I have actually written a review
20 article on this.

21 Q. And then I want to look at the term "tie
22 layer."

23 A. Uh-huh.

24 Q. What is the plain and ordinary meaning that
25 you applied to the term "tie layer" in forming your

1 opinions in this third declaration?

2 A. "Tie layer" is one of those names that I'd
3 prefer not to use. I use the term "adhesion layer"
4 simply because that's the effective purpose of this
5 layer. It is used to adhere two different components
6 that otherwise really wouldn't adhere well to each other.
7 And so it's the layer that essentially prevents or
8 mitigates delamination of a sandwich structure, or of a
9 multilayered structure.

10 Q. Okay. So a tie layer -- so let me back that
11 up.

12 So the plain and ordinary meaning that you
13 applied to the term "tie layer" in your third declaration
14 is the layer that's used to adhere to other components
15 that wouldn't necessarily otherwise adhere and one that
16 prevent --

17 A. Adhere -- adhere sufficiently. So there
18 might be some adhesion, but the tie layer ensures that
19 this multilayered structure is stable so that it can
20 bend, it can be manipulated, which, obviously, it will
21 need to be. So the tie layer holds the components
22 together to prevent them from essentially falling apart.

23 Q. Okay. And I want to make sure we -- I have
24 a complete plain and ordinary meaning that you applied
25 here. So a tie layer -- the plain and ordinary meaning

1 of a tie layer that you applied in this third declaration
2 is a layer that is used to adhere two other components
3 that wouldn't adhere sufficiently and one that prevents
4 those layers from delaminating?

5 A. It -- yes. And the tie layer can also
6 introduce additional beneficial properties. But, again,
7 the basic definition of the tie layer is to enable
8 adhesion and to mitigate delamination.

9 Q. Okay. Is there any other definition that
10 you applied to "tie layer" in forming your opinions in
11 this third declaration?

12 A. Not -- not to the definition, but, as I
13 mentioned, the tie layer can help to introduce additional
14 properties that are beneficial to the functioning of
15 the -- the multilayer structure, but those are not part
16 of the definition of the tie layer.

17 Q. Got it. Yes. I'm just asking about the
18 definition of the tie layer.

19 A. Yes.

20 Q. So is there anything -- any other definition
21 that you apply to the term "tie layer" in this third
22 declaration?

23 A. No.

24 Q. Okay. How did you arrive at that plain and
25 ordinary meaning that you applied in your third

1 declaration of the tie layer?

2 A. Again, from my own experience and my own
3 research, because we have developed adhesion layers
4 and -- in -- in our polymeric systems, so our
5 multicomponent polymeric systems. So this is a very
6 basic idea.

7 Q. Did you look to any of the prior-art
8 references or the '624 patent in coming to the definition
9 of a tie layer that you applied in this third
10 declaration?

11 A. Not the definition. I only looked to the
12 '624 patent and prior art with regard to the chemistry
13 that was employed in developing the tie layer, but not in
14 the definition of the tie layer.

15 Q. Understood. All right. Let's move to --
16 let's go to paragraph 63 of -- let's go back to your
17 third declaration, Exhibit 1038. And I want to look at
18 paragraph 63.

19 A. Okay. Just one minute, please.

20 Q. Yes, sir.

21 A. Yes. Oh, paragraph 60, okay.

22 Q. 63, yes, sir. All right. And just to
23 orient you, this is under the section containing your
24 opinions that the combination of Riis and Wypych renders
25 Substitute Claims 14, 15 and 20 through 24 obvious; do

1 you see that?

2 A. I do.

3 Q. Okay. And so in paragraph 63 -- if you want
4 to go ahead and read that to yourself just so you know
5 what I'm talking about.

6 A. Yes. Okay.

7 Q. Okay. So it's your opinion that Riis
8 discloses a tie layer comprising a first layer and a
9 second layer; is that correct?

10 A. Yes.

11 Q. And so with respect to Riis's Example 5 that
12 we are talking about, the specific layers in Riis's
13 Example 5, is it your opinion that the .17 mil EAA layer
14 and the .65 mil LDPE layer are both tie layers?

15 A. Together they form the tie layer. So there
16 are two layers comprising the tie layer in this case.
17 The EAA is particularly important for adhesion to the
18 aluminum base layer. And the LDPE, the low-density
19 polyethylene, is needed for good adhesion to the C0C
20 layer, the contact layer.

21 Q. So the -- in Riis's Example 5, the EAA
22 layer, the .17 mil EAA layer --

23 A. Uh-huh.

24 Q. -- that's a tie layer, in your opinion?

25 A. It -- it is one -- they're both part of the

1 tie layer, but it is certainly a tie layer.

2 Q. Understood. And it's your opinion also that
3 the .65 mil LDPE layer in Riis's Example 5 is a tie
4 layer, correct?

5 A. For the same reason, it is part of the
6 two-layer tie layer, but, yes, it serves as a tie layer.

7 Q. So your opinion is that Riis's Example 5
8 discloses a two-layered tie layer, and within that tie
9 layer, the EAA layer is one layer of the tie layer and
10 the LDPE layer is another layer of the tie layer?

11 A. Yes, as -- I think, if you recall from my
12 first deposition, I think I called these "sublayers."

13 Q. All right. Let's look actually at Riis
14 Example 5. So I'm going to pull up and share with you --
15 this is Exhibit 1004 if you want to pull that up on your
16 computer or your hard copy --

17 A. I'm doing that right now. And do we have --
18 I just want to make sure we have -- yes, we have the same
19 document.

20 Q. Yes, sir. And this -- and Exhibit 1004 is
21 the Riis prior-art reference; do you see that?

22 A. Yes. Yes.

23 Q. Okay. And let's turn to paragraph 174.
24 That's PDF page 45 if you are pulling it up on your
25 computer.

1 A. Okay.

2 Q. All right. So paragraph 174, this paragraph
3 sets forth Riis's Example 5, correct?

4 A. That is correct.

5 Q. Okay. And towards the middle of paragraph
6 174, it sets forth the eight layers in Riis's Example 5;
7 do you see that?

8 A. Yes.

9 Q. Okay. And so paragraph 174 doesn't label
10 the EAA layer or the LDPE layer as tie layers, does it?

11 MR. KILGORE: Objection, form.

12 THE DEPONENT: May I answer?

13 MR. KILGORE: You can answer.

14 A. So if you -- there is another version of
15 that same figure, I believe, in my declaration that
16 specifically shows what the different layers correspond
17 to. I just have to find it.

18 Q. (By Mr. Roeser) No, I understand you -- you
19 have -- that you have labeled those layers as tie layers
20 or whatever --

21 A. Yes. Okay. Okay.

22 Q. My question is more of what paragraph 174 of
23 Riis discloses. So paragraph 174 of Riis doesn't label
24 any of the layers other than, I think, the primary layer,
25 correct?

1 A. Let me just check. Do you remember -- can
2 you direct me to their figure that shows it?

3 Q. The figure that shows Example 5?

4 A. Yes. I always have difficulty finding the
5 figures in some of these patents. Sometimes they're at
6 the beginning, sometimes they're at the end.

7 Q. So --

8 A. I don't even see them.

9 Q. -- I don't believe Riis has a figure of
10 Example 5.

11 A. Okay. Well, in that case, obviously, then,
12 they can't be labeled, if there isn't a schematic
13 diagram.

14 Q. But in any event, it's your opinion that the
15 .65 mil LDPE layer is a tie layer --

16 A. Yes.

17 Q. -- in Riis's Example 5?

18 A. Yes.

19 Q. And, again, a tie layer behaves as, as you
20 put it, an adhesive layer between two other layers,
21 correct?

22 A. If you go to Figure -- I guess it's
23 Figure 2, on page 38 of my third declaration, it's
24 actually listed there very clearly where the tie layer
25 consists of both EAA and LDPE. So this is on page 38 of

1 my third dec- -- yeah, there it is. So the one on the
2 right is essentially from Riis, with now the layers being
3 identified explicitly, and identifying which is the base
4 layer, which is the tie layer, which is the contact
5 layer.

6 Q. And those are annotations that you --
7 this -- this isn't a figure from Riis itself, correct?

8 A. This is just -- no, it's not from Riis, but
9 it basically takes Riis's verbiage and puts it into
10 schematic form.

11 Q. With the labels of the layers supplied by
12 you, correct?

13 A. Yes, that is correct. That is correct.

14 Q. And so it's your opinion that the purpose of
15 this .65 mil LDPE layer is to act as an adhesive or a tie
16 layer with respect to the contact layer and the base
17 layer; is that correct?

18 A. The LDPE acts as a tie layer or an adhesion
19 layer for the COC, for the contact layer. The EAA is a
20 much better adhesive component to adhere to the aluminum
21 base layer. So that's why there are these two sublayers
22 comprising the tie layer. In principle, you could
23 substitute out the EAA for other types of polyacids. You
24 could potentially also activate the LDPE to better adhere
25 to aluminum. But within the '624 patent and within Riis,

1 both methods -- or both patents basically point to the
2 LDPE and the EAA.

3 Q. So I want to make sure I have your opinion
4 correct. The 0.65 mil LDPE layer in Riis's Example 5,
5 its purpose is to adhere the contact layer to the
6 aluminum layer?

7 A. The EAA con- -- adheres the base layer to
8 the LDPE layer, which then adheres to the COC layer. So
9 that's why it -- it has -- it's a two-tier sublayer
10 structure. One specifically adheres to the aluminum, the
11 other specifically adheres to the COC.

12 Q. So, in your opinion, the primary purpose of
13 the .65 mil LDPE layer in Riis's Example 5 is to tie the
14 COC layer to the EAA layer?

15 A. Effectively, yes.

16 Q. And, then, your opinion is that that primary
17 purpose of the .17 mil EAA layer is to tie the LDPE layer
18 to the aluminum, right?

19 A. Correct.

20 Q. And by virtue of you labeling them as tie
21 layers, or your opinion that their primary purpose is to
22 tie those layers, you would expect there to be sufficient
23 adhesion between the layers that they're adjacent to,
24 correct?

25 MR. KILGORE: Objection, misstating

1 testimony. You can answer.

2 A. So each of the layers has its purpose for
3 adhesion, and together they form the tie layer, which, as
4 I mentioned, consists of two sublayers.

5 Q. (By Mr. Roeser) So because, in your
6 opinion, this .65 mil LDPE layer is used to adhere to the
7 COC layer, you would expect there to be a strong
8 lamination or a strong adherence between those two
9 layers, correct?

10 A. That is correct. There would be -- it would
11 be sufficiently strong for the application that's -- that
12 this construct is intended for.

13 Q. Now, do you understand patent owner's
14 position is that the .65 mil LDPE layer, its primary
15 purpose is as a bulk layer, correct?

16 A. Well, I think we had this discussion also
17 before with regard to what is a bulk film, and I still
18 retain my original description of what that means.

19 Q. Okay. Do you understand that patent owner's
20 position is that, using the definition that they have
21 applied to a bulk layer, it's their -- their position
22 that the .65 mil LDPE layer is a bulk layer primarily,
23 correct?

24 A. I'm not sure I quite understand that
25 position because the LDPE has a particular purpose

1 associated with it. And it also -- as I mentioned, the
2 tie layer can impart other beneficial properties. And
3 that's very important for these types of structures
4 because one doesn't want them to prematurely delaminate
5 or otherwise tear. So the LDPE can serve multiple
6 purposes, not just as an adhesive or tie layer. But
7 that's the way that it has been shown -- depicted in the
8 figure that I mentioned in my third declaration, that
9 it's considered one of the tie layers.

10 Q. Right. I'm just trying to understand -- I'm
11 trying to see whether or not you understand patent
12 owner's position. So I -- I understand your position is
13 that the .65 mil LDPE layer is primarily serving as a tie
14 layer, correct?

15 A. Correct.

16 Q. And that patent owner's position is that
17 the .65 mil LDPE layer is primarily serving as a bulk
18 layer or a layer that imparts heat sealability,
19 structural and mechanical properties?

20 A. Well, that's what I said, a tie layer can
21 introduce those other aspects. It's not limited to
22 adhesion. And so the fact that the LDPE is introduced
23 not only improves the adhesion, but it also adds
24 additional properties which are beneficial to the final
25 application of this type of construct.

1 Q. Okay. I want to look at paragraph 65 of
2 Riis, and that's on PDF page 20, and specifically the --

3 A. Yes, uh-huh.

4 Q. -- specifically this first sentence. Riis
5 discloses that a bulk layer may be provided to provide
6 additional functionality such as stiffness or heat
7 sealability, or to improve machinability, cost,
8 flexibility, barrier properties, et cetera. Do you see
9 that?

10 A. Yes, I see that.

11 Q. And you understand that patent owner's
12 position is that the .65 mil LDPE layer in Riis's
13 Example 5 is primarily serving as a bulk layer?

14 A. I -- again, I have to just point out that
15 I'm aware that is a tie layer and that it imparts these
16 additional properties. The term "bulk layer," to me,
17 simply indicates that we can assign to it bulk
18 properties. So as we had discussed before, we can use
19 the properties of bulk polymers, as I did with the
20 loading values; those densities that I used were for bulk
21 polymers. We don't have to start getting into very, very
22 thin variation -- very -- variations due to very thin
23 polymer films. And so in that -- in that regard, the
24 bulk -- the term "bulk" simply means that we can use and
25 we can expect to see the bulk properties of the polymer.

1 Q. So you would disagree, then, that the
2 .65 mil polyolefin or LDPE layer in Riis's Example 5 is
3 primarily used to add additional functionality, such as
4 stiffness, or heat sealability, or improved
5 machinability, cost, flexibility, barrier properties?

6 MR. KILGORE: Objection, misstates
7 testimony.

8 A. No. It -- it adds that, but the way that I
9 considered it when I developed my opinions was that it
10 constituted a tie layer, an adhesive layer that provided
11 additional properties to this multilayered structure. So
12 the first aspect of this was for the adhesive aspect, to
13 prevent the delamination of this multilayered structure.
14 That was the first and foremost aspect of this LDPE tie
15 layer. But the LDPE tie layer brings with it additional
16 benefits to the -- the manufacturing, the application of
17 these types of multilayered structures.

18 Q. (By Mr. Roeser) So in your opinion, the
19 .65 mil polyolefin or LDPE layer adds stiffness, heat
20 sealability, improved machinability, cost, flexibility,
21 and barrier properties to Riis's Example 5?

22 A. Yes.

23 Q. Is it your opinion that the purpose for
24 including the .65 mil LDPE layer is to act as a tie layer
25 between the COC layer and the EAA layer?

1 A. Yes. It is an adhesion layer, a tie layer.

2 Q. And I understand your definition of what a
3 bulk layer means. I understand it's -- it's something
4 different than what we have pulled up in Riis's paragraph
5 65. I'm going to ask you to apply -- apply this
6 definition of "bulk layer" for the purpose of this
7 question. When --

8 A. You said paragraph 65, was it?

9 Q. Yes, sir. Of Riis.

10 A. Do you know --

11 Q. What I have pulled up on the screen.

12 A. Let's see.

13 Q. It's on PDF page 20. It's on actual page --
14 yeah, 20 of 64.

15 A. Say that again. It's on page --

16 Q. 20 of Exhibit 1004, which is Riis.

17 A. Oh, mine only goes up -- oh, of Riis. Okay.
18 Never mind. Let's see. Okay. And 65, yes. Okay.

19 Q. So whenever I say "bulk layer," I'm talking
20 about a layer in a multilayered film or laminate that its
21 primary purpose is to provide these characteristics that
22 are listed in Riis's paragraph 65.

23 A. Understood.

24 Q. So is the primary purpose of the .65 mil
25 LDPE layer in Riis to provide these characteristics, or

1 is it to adhere or to act as a tie layer between the COC
2 layer and the EAA layer?

3 MR. KILGORE: Objection, form.

4 A. It says that this is a bulk layer that can
5 provide all this. It does not say that the bulk layer
6 cannot be a tie layer. And so I would say that -- yes to
7 both of your questions. It provides the adhesion as a
8 tie layer and it provides all these additional
9 functionalities.

10 Q. (By Mr. Roeser) If you were to remove the
11 LDPE layer from Riis's Example 5, could the EAA layer act
12 as a tie layer to sufficiently adhere the COC layer to
13 the aluminum layer?

14 MR. KILGORE: Objection, incomplete
15 hypothetical.

16 A. So the EAA certainly would adhere to the
17 aluminum. How well it would adhere to the COC, I have no
18 immediate knowledge of that. I would have to examine
19 that a little more carefully. It probably would have
20 some degree of adhesion, and I just don't know the extent
21 of it, and I don't know if it would be sufficient.

22 Q. (By Mr. Roeser) But the .65 mil LDPE layer,
23 in your opinion, provides sufficient and strong adhesion
24 between the COC layer and the EAA layer?

25 A. That's correct. That -- that will

1 definitely help that, yes.

2 Q. If someone were to take a position that the
3 LDPE layer does not provide strong or sufficient adhesion
4 to the COC layer, would you say that they were wrong?

5 MR. KILGORE: Objection, form.

6 A. If -- can you restate that again, please? I
7 just want to make sure I'm clear on it.

8 Q. (By Mr. Roeser) Yes, sir. So if someone
9 were to say that the .65 mil LDPE layer does not provide
10 strong adhesion bonding to the COC layer, would you think
11 they were wrong?

12 A. Based on the chemical similarity between the
13 linear -- the low-density polyethylene and the
14 cycloolefin, I would be very surprised if it didn't have
15 substantial adhesion, especially when these are
16 co-extruded, so they're given the opportunity to adhere
17 in the melt. So I think that I would be very surprised
18 if they didn't -- if there wasn't sufficient adhesion
19 between LDPE and COC.

20 Q. And you would be surprised based on your 30
21 years of experience in this field?

22 A. That, and I'm also thinking in the back of
23 my head to solubility parameters, which tell me that,
24 based on chemical similarity, they should have very
25 similar solubility parameters and therefore they should

1 adhere quite nicely to each other.

2 Q. So I'm trying to make sure I have this
3 correct. Your opinion is that the .65 mil LDPE layer
4 provides a strong adhesion to the COC layer?

5 A. That is correct. Sufficiently strong.
6 Again, "strong" is a relative term, but I'm referring to
7 how it would be used in this particular application, and
8 I think it would be sufficiently strong for use in this
9 multilayered-structure application.

10 Q. Right. And I was actually going to ask if
11 you could quantify what it means to be a strong adhesive
12 bond or a strong bond strength. Do you have any way to
13 quantify that in a newton --

14 A. There -- there are certainly ways to measure
15 it. When I look for adhesion, I usually look at
16 solubility parameters, Hildebrand or Hansen, and that
17 gives me an indication. It's not necessarily fully
18 quantitative but it provides guidance. So I would say
19 that, again, based on chemical similarity, the two
20 polymers should adhere fairly well to each other. And if
21 you -- if you want something that's quite quantitative,
22 then I would probably pull out one or two of my books
23 that are dedicated to adhesion to -- to try to answer
24 that question.

25 Q. Is that -- is that quantitatively what's

1 referred to as, I guess, "strength per length"?

2 A. There -- there are a number of ways in which
3 you can describe it, but that is one, and that is a
4 measurable quantity. You can get that from what's called
5 a "peel test," and that's probably one of the most common
6 ways to measure adhesion. It would be very difficult
7 to -- to work on this with very thin co-extruded layers,
8 such as in this construct, but, yes, you could basically
9 make a thicker film of each component, adhere them under
10 the same conditions that they would be co-extruded, and
11 then try to peel them apart. And then that would give
12 you a measure of the adhesive strength.

13 Q. And is the -- I -- I guess the one I'm
14 thinking of right now is the strength per length, so
15 that's newtons over millimeters, correct, usually
16 measured?

17 A. It's -- it's -- I don't use the term
18 "strength." I would prefer to say it's the load per --
19 per length, yes.

20 Q. So would -- I guess, would 2 newtons over
21 15 millimeters qualify as strong adhesion strength?

22 MR. KILGORE: Objection, form. And also,
23 objection, we've gotten pretty far outside the scope of
24 his declaration. But you can answer.

25 A. I -- I cannot provide you with a definitive

1 answer to that. I used "adhesion" in a much more
2 comparative way rather than on an absolute scale. So the
3 numbers that you are providing to me are not quite
4 meaningful. I have to put them into context. And I
5 don't have the opportunity to do that right now.

6 Q. (By Mr. Roeser) Okay. Now, let's turn back
7 to your declaration, which is Exhibit 1038 to this PGR
8 proceeding.

9 And we are shifting gears here, so if -- if
10 you need to take a break or anything, we've been going
11 about an hour.

12 THE DEPONENT: Yes, sir. That would be
13 excellent. I do appreciate that.

14 MR. ROESER: Let's go ten and jump back on
15 at -- are y'all Eastern Time Zone?

16 MR. KILGORE: Central.

17 MR. ROESER: Central. Okay. Jump back on
18 at 11:10.

19 THE DEPONENT: That works. Thank you.

20 (Recess taken, 10:00 a.m. to 10:11 a.m. MDT)

21 Q. (By Mr. Roeser) All right. Dr. Spontak,
22 you understand we are back from our break and you are
23 back on the record and you are still under oath?

24 A. Correct.

25 Q. During your -- during this break did you

1 discuss the substance of your testimony with counsel?

2 A. No. We talked about the weather. We talked
3 about soccer. We talked about Starlink. We -- but, yes,
4 Mark did tell me that I should avoid being professorial
5 in my answers.

6 Q. All right. And I don't need to know what
7 y'all talked about. I just want to make sure y'all
8 didn't discuss the substance of your testimony.

9 Okay. All right. Okay. Sorry. I have one
10 more question before we move on.

11 A. Yes.

12 Q. If the .65 mil LDPE tie layer provides
13 sufficient adhesion to the COC layer, it wouldn't -- the
14 COC layer would not easily delaminate or peel off,
15 correct?

16 A. That would be the purpose, correct. If you
17 have good adhesion, it mitigates delamination.

18 Q. Let's turn back to your third declaration,
19 Exhibit 1038. And I want to look at paragraph 114, and
20 that is on PDF page 46. And this -- just to orient you,
21 this is in the section of your declaration that discusses
22 your opinions regarding the combination of Riis, Wypych,
23 and Holzmuller rendering Substitute Claim 17 obvious.
24 And let me know when you are there.

25 A. And what paragraph number?

1 Q. It's 114.

2 A. Yes.

3 Q. And I have it pulled up on the screen as
4 well. Oh, no, I don't. Sorry.

5 A. No, you don't, yet.

6 Q. Apologies.

7 A. No worries.

8 Q. Okay. So you state that the .17 mil EAA
9 layer and the .65 LDPE layer fall outside the loading
10 ranges claimed in Substitute Claim 17, correct?

11 A. Yes.

12 Q. Okay. And then still within that same
13 section, go down to paragraph 117. And there you point
14 to Holzmuller's teaching of various ranges to modify Riis
15 to fall within those ranges, correct?

16 A. That is correct.

17 Q. All right. Same thing with paragraph 135,
18 which is PDF page 53. And this is with respect to your
19 opinions regarding the combination of Riis, Wypych, and
20 Holzmuller rendering Substitute Claim 18 obvious. Now --

21 A. That is correct.

22 Q. Okay. And, likewise, your opinion is that
23 the .17 mil EAA layer falls outside of the loading ranges
24 claimed in Substitute Claim 18, correct?

25 A. That is correct, yes.

1 Q. And then paragraph 137, you point to
2 Holzmuller's teachings to modify the EAA layer to fall
3 within the claimed ranges of revised Substitute Claim 18?

4 A. That is also correct.

5 Q. All right. Let's turn to Section 8 of your
6 third declaration, which is PDF page 23. And this is
7 your overview section of Holzmuller, if you see that.

8 A. Yes.

9 Q. Okay. All right. Let's look at paragraph
10 54, specifically the last sentence of paragraph 54. And
11 you can go ahead and read that to yourself and I'll ask
12 you some questions.

13 A. Yes.

14 Q. Okay. So you summarize Holzmuller as
15 recognizing that thicker intermediate layers drive up
16 costs and result in poor haptic or mechanical properties
17 of the laminate, correct?

18 A. They can, yes.

19 Q. What are some haptic or mechanical
20 properties of the laminate?

21 A. For example, the ability for them to bend --
22 that's a very important one -- without tearing or
23 delaminating; stretchability, can they be stretched a
24 little or, again, will they delaminate. Haptic simply
25 means that they're going to involve some kind of touching

1 or manip- -- mechanical manipulation using one's hands or
2 one's body parts.

3 Q. Would heat sealability be a haptic or
4 mechanical property?

5 A. I would consider that to be more of a
6 mechanical property than a haptic property.

7 Q. Okay. So heat sealability is a mechanical
8 property of the laminate?

9 A. It's -- heat sealability isn't really a
10 prop- -- well, it is a property, but I would say it's
11 probably closer to a mechanical property. It -- it
12 renders a mechanical response -- or a mechanical property
13 response, not so much -- not so much a haptic property,
14 in my opinion.

15 Q. So it's a mechanical rather than a haptic
16 property, in your opinion?

17 A. I would say -- that's to the best of my
18 knowledge. I would have to probably think a little bit
19 more deeply about that, but that's what I would say at
20 this moment, yes.

21 Q. Would barrier properties be a haptic or a
22 mechanical property?

23 A. Neither. Absolutely neither, because
24 barrier properties deal with penetrant diffusion through
25 a polymer and -- or through any material, actually, not

1 just a polymer. And so that does not come under the
2 category of haptic or mechanical.

3 Q. Would -- and I'm probably pronouncing this
4 wrong -- machinability, would that be a haptic or barrier
5 or -- sorry.

6 A. Machine -- you are right, it's
7 "machinability." And that comes closer to a mechanical
8 property.

9 Q. Okay.

10 MR. KILGORE: Randy, sorry, give me one
11 second. There's a little bit of talking over,
12 Dr. Spontak. Just make sure you give Randy adequate time
13 to ask his question before you answer.

14 THE DEPONENT: Thank you.

15 Q. (By Mr. Roeser) All right. So let's
16 actually look at Holzmuller, which is Exhibit 1034 in
17 this proceeding. I have it pulled up. If you want to
18 pull up the physical or --

19 A. I've got a physical version in front of me
20 right now.

21 Q. Okay. And I want to talk about how the
22 multilayered laminate in Holzmuller is produced. So if
23 we look at paragraph 11 of Holzmuller -- are you there?

24 A. Uh-huh.

25 Q. Okay. So Holzmuller discloses that the

1 aluminum layer is surrounded by intermediate layers and
2 is joined thereby to the oriented co-extruded protective
3 layer; is that correct?

4 A. That's what I've read, yes.

5 Q. All right. And if you go down to paragraph
6 14, the protective layer is co-extruded with the polymer
7 layer and the covered layers being extruded and joined
8 together in one operation, correct?

9 A. That's exactly what it says.

10 Q. And then after the cover layers are applied,
11 the co-extruded protective layer is stretched, especially
12 biaxially, so that after the stretching operation the
13 entire protective layer is oriented?

14 A. That is also written, yes.

15 Q. Okay. So this stretching, would that have
16 to occur prior to attaching the co-extruded protective
17 layer to the aluminum layer?

18 A. So this orientation would have to be
19 conducted, I would think, after the co-extrusion because
20 you wouldn't want to try to co-extrude an oriented
21 polymer.

22 Q. Why not?

23 A. You would -- depending on the co-extrusion
24 conditions, you could lose or compromise that
25 orientation, which, you know, is somewhat important in

1 this particular description.

2 Q. So it would destroy the orientation if you
3 co-extruded it?

4 A. I wouldn't say "destroy," but it certainly
5 would compromise the orientation, again, to an unknown
6 degree, depending on the conditions of the co-extrusion.
7 It could --

8 Q. If the --

9 A. I'm sorry. Go ahead.

10 Q. Go ahead.

11 A. I was just going to say, it could fully
12 eliminate the -- the orientation, but, again, that is
13 subject to the conditions under which the process occurs.

14 Q. At high temperatures, would it destroy the
15 orientation of the protective layer?

16 A. At high -- the higher the temperature, the
17 more the orientation would be lost.

18 Q. Now, if the protective layer is already
19 fixed to the aluminum layer, you couldn't really perform
20 that stretching, could you, because wouldn't the aluminum
21 prevent that stretching?

22 A. You would want to perform the stretching
23 without the aluminum attached because the aluminum would
24 not be able to withstand the -- the stretching, I believe
25 it's biaxial in this case, would not be able to withstand

1 that kind of stretching.

2 Q. Got it. So you'd have to perform the
3 biaxial stretching prior to attaching the co-extruded
4 protective layer to the aluminum?

5 A. That would be correct. Or you could
6 co-extrude the aluminum with the intermediate layers and
7 then add the oriented coating later in a tandem
8 extrusion.

9 Q. Got it. In any event, it would have to
10 be -- the stretching -- the biaxial stretching would have
11 to occur prior to the attachment to the aluminum?

12 A. Yes, I think that's a fair statement.

13 Q. Let's go back to paragraph -- or, sorry.
14 Let's go back to Exhibit 1038, your third declaration.
15 And let's go to paragraph 88, which is PDF page 34.

16 A. Okay. 88, yes, I am there.

17 Q. Okay. You say that POSITA would appreciate
18 Holzmuller's teaching that varying the thicknesses of
19 intermediate bonding layers would produce an additive
20 effect, correct?

21 A. That's correct.

22 Q. And then you cite to Holzmuller paragraph
23 20?

24 A. That is also correct.

25 Q. All right. Turning back to Holzmuller,

1 Exhibit 1034, let's go to paragraph 20. And let me know
2 when you are there.

3 A. Yes.

4 Q. So paragraph 20 of Holzmuller states that
5 it's possible to combine materials the positive
6 properties of which would have an additive effect,
7 correct?

8 A. Yes.

9 Q. Okay. Holzmuller paragraph 20, which you
10 cited to, doesn't talk about combining thicknesses, the
11 positive properties of which would have an additive
12 effect, does it?

13 A. It doesn't explicitly say "thicknesses," but
14 the material properties are -- can be dependent on the
15 film thickness. And so the way that I considered this
16 was, when you change the thickness of the layer, you are
17 effectively changing which material you are working with.
18 So the chemistry isn't changing but potentially the
19 properties are changing. So, to me, it's a -- it's a
20 different material because it's based on a different
21 thickness.

22 Q. So you are importing your understanding of
23 varying thicknesses into the disclosure of combining
24 materials to have the additive effect in Holzmuller?

25 MR. KILGORE: Objection, misstates

1 testimony.

2 A. Yes. I -- I'm basically saying that where
3 it says it is possible to combine materials the positive
4 properties of which have an additive effect, I am
5 pointing to that and saying that that also refers to
6 differences in the thicknesses of those materials.

7 Q. (By Mr. Roeser) But you would agree that
8 Holzmuller doesn't talk about thicknesses having an
9 additive effect in paragraph 20?

10 A. It doesn't explicitly say that, but,
11 again -- and if you look at the table just above it and
12 it points to all these different layer thicknesses, that
13 is, I think, a reasonable inference that, based on these
14 differences in thickness, we are getting different
15 material properties, and then these can be put together
16 in a variety of different ways to produce whatever end
17 properties you would want, or that were desirable.

18 Q. So, in your opinion, material properties are
19 tied to thickness properties?

20 A. I'm saying that -- well, in essence, the
21 thickness is going to have an effect on the overall
22 properties of the construct. So, yes, the materials that
23 are used, their thicknesses will dictate the overall
24 function of the construct.

25 Q. The materials aren't changing --

1 A. Chemically, they're not, but thicknesswise,
2 they are.

3 Q. So it's your opinion that this paragraph can
4 be read to include, change thicknesses to have an
5 additive effect?

6 A. Yes.

7 Q. And you are basing that on its juxtaposition
8 with this table which discusses different thicknesses for
9 different layers?

10 A. That is correct.

11 Q. Anything else that you are relying on to
12 import thicknesses into paragraph 20 of Holzmuller?

13 A. No. Just the -- the expectation that the
14 materials, even though chemically they don't change, the
15 fact that they have different thicknesses in this
16 particular application indicates that they can have
17 different properties. And so that's why I can say that
18 the different thicknesses essentially refer to different
19 materials.

20 Q. When you say different thicknesses can have
21 a change in the properties, what do you mean?

22 A. They can -- so depending on how thick the
23 materials are, that could have a substantial effect on
24 the mechanical properties, right? So that if they are
25 very thick, then they could have potentially better

1 mechanical robustness, but they might also now have
2 poorer machinability, they might come with higher costs,
3 et cetera. So every time we change the thickness, we
4 could potentially be changing the properties of the
5 entire construct.

6 Q. So the thicknesses can change the properties
7 of the entire construct, not that specific layer?

8 A. Well, of each. So by changing the thickness
9 of a layer, you can change the properties of that layer.
10 And remembering that this is a multilayered construct, we
11 can then start to change the overall properties of the
12 construct.

13 Q. Let's go back to your third declaration, so
14 Exhibit 1038.

15 A. Uh-huh.

16 Q. I want to look at your obviousness opinions,
17 which start at Section 9. And that starts at paragraph
18 58 and then it goes through paragraph 153.

19 A. Okay. I am with you.

20 Q. Okay. Does Section 9 contain all of your
21 obviousness opinions as they relate to the revised
22 substitute claims?

23 A. They do.

24 Q. And you don't opine that any of the revised
25 substitute claims are indefinite, correct?

1 A. All of my opinions focus on obviousness.

2 Q. Okay. And let's look at Section 9,
3 subsection F.

4 A. Yes.

5 Q. And that's paragraphs 58 through 81. So
6 with respect to revised Substitute Claims 14, 15, and 20
7 through 24, that section sets forth all of your
8 obviousness opinions with respect to those claims,
9 correct?

10 A. That is correct.

11 Q. And it's your opinion that the combination
12 of Riis and Wypych render Claim -- revised Substitute
13 Claims 14, 15, and 20 through 24 obvious, correct?

14 A. That is correct. And just as a side note,
15 if I inadvertently don't mention Wypych, it's -- it's
16 always there because it provides some of the physical
17 properties, like density, that would be necessary in my
18 analysis. So please keep that in mind. If I don't
19 mention Wypych explicitly, it's always kind of there in
20 the background.

21 Q. So although you didn't put forth Wypych in
22 some places in your obviousness analysis in your third
23 declaration, you are now saying that you are including
24 Wypych in those opinions?

25 A. Well, it -- it -- Wypych usually, for the

1 most part, combines with Riis. So if I say that I'm
2 using Riis, then Wypych usually comes along with that,
3 because I need the density values from Wypych to be able
4 to convert thicknesses to loadings.

5 Q. With respect to revised Substitute Claims
6 14, 15, and 20 through 24, other than the combination of
7 Riis and Wypych, you don't opine that any other prior
8 reference combination or any other prior-art reference
9 forms an obviousness basis, correct?

10 MR. KILGORE: Objection, form.

11 A. That is correct. Holzmuller comes in a
12 little bit later for other substitute claims, but these
13 are the ones that were used for Substitute Claims 14, 15,
14 and 20 through 24.

15 Q. (By Mr. Roeser) All right. So you are not
16 opining that Holzmuller, Tohara, Tatarka, or Rivers forms
17 an obviousness combination with respect to revised
18 Substitute Claims 14, 15, and 20 through 24, correct?

19 A. There's -- if you'll give me just a moment,
20 I want to make sure that I give you a correct statement.
21 So Holzmuller comes in with 16, 17, and 18. Thank you
22 for your patience. I'm still making my way through the
23 paper.

24 Q. Take your time.

25 A. Though Riis and Wypych also relate to -- to

1 Number 19, but that includes Rivers, so by themselves,
2 just Riis and Wypych, yes, those are only Claims --
3 Substitute Claims 14, 15, and 20 through 24.

4 Q. So no other prior-art references in the
5 combination that, in your opinion, renders Substitute
6 Claims 14, 15, and 20 through 24 obvious?

7 A. The others that were in my original
8 declaration were not included here, only -- I only used
9 Riis and Wypych.

10 Q. Okay. Let's turn to revised Substitute
11 Claim 16, which is paragraphs 82 through 110. Paragraphs
12 82 through 110 of your third declaration set forth all of
13 your obviousness opinions with respect to revised
14 Substitute Claim 16, correct?

15 A. Well, it starts on 82 and it goes to 110,
16 yes.

17 Q. So other than the opinions set forth in
18 those paragraphs, you don't have any other obviousness
19 opinions with respect to your revised Substitute Claim
20 16?

21 A. That is correct.

22 Q. And other than Riis, Wypych, and Holzmuller,
23 you do not include any other prior-art references in the
24 combination that you opine renders revised Substitute
25 Claim 16 obvious, correct?

1 A. That is correct.

2 Q. Let's go to paragraph 111. And paragraphs
3 111 through 130 in your third declaration set forth all
4 of your obviousness opinions with respect to revised
5 Substitute Claim 17, correct?

6 A. That is correct.

7 Q. And other than Riis, Wypych, and Holzmuller,
8 you do not opine that any other prior-art reference forms
9 the combination that renders revised Substitute Claim 17
10 obvious, correct?

11 A. That is correct.

12 Q. All right. Let's look at paragraph 131.
13 Paragraphs 131 through 150 in your third declaration set
14 forth all of your obviousness opinions with respect to
15 revised Substitute Claim 18, correct?

16 A. That is also correct.

17 Q. And other than Riis, Wypych, and Holzmuller,
18 you do not opine that any other prior-art reference forms
19 part of the obviousness combination that renders revised
20 Substitute Claim 18 obvious, correct?

21 A. Correct.

22 Q. And then paragraphs 151 through 153 --
23 paragraphs 151 through 153 of your third declaration set
24 forth all of your obviousness opinions with respect to
25 revised Substitute Claim 19, correct?

1 A. That is correct.

2 Q. And other than Riis, Wypych, and Rivers, you
3 do not opine that any other prior-art reference forms
4 part of the obviousness combination that renders revised
5 Substitute Claim 19 obvious, correct?

6 A. Correct.

7 MR. ROESER: All right. If we could take a
8 five-minute break, see if I have any other questions. We
9 might be close to done.

10 MR. KILGORE: Yeah, we'll do that. Thanks,
11 Randy.

12 (Recess taken, 10:42 a.m. to 10:48 a.m. MDT)

13 MR. ROESER: I have no further questions
14 today.

15 MR. KILGORE: All right. We'll do a very
16 short redirect, just a couple questions, if that's okay.

17 EXAMINATION

18 BY MR. KILGORE:

19 Q. All right. Dr. Spontak, can you -- let's go
20 to Exhibit 1004, Riis.

21 A. And should I pull this up on the computer as
22 well?

23 Q. No, the paper copy is fine.

24 A. Okay.

25 Q. Do you remember previously when counsel was

1 asking you about the LDPE layer being a tie layer or a
2 bulk layer?

3 A. Yes.

4 Q. Okay. Can we turn to paragraph 135 of Riis.
5 And you can briefly read that paragraph to familiarize
6 yourself.

7 (The deponent perused the document.)

8 A. Yes, I read it.

9 Q. Can you read the last sentence for me?

10 A. Certainly. "In some embodiments, a
11 polyolefin bulk layer can serve as an adhesive or tie
12 layer."

13 Q. And how does that inform your opinion as to
14 whether the LDPE layer of Riis Example 5 is a tie layer
15 or a bulk layer?

16 A. As I had pointed out previously, it can
17 serve as both. So it serves as a tie layer when it's --
18 when it's acting as an adhesive, and it's serving as a
19 so-called bulk layer when it is providing additional
20 properties such as mechanical properties or barrier
21 properties, et cetera.

22 Q. Okay. Thank you. So let's now go to
23 Exhibit 1034. So you can put Riis away and we'll go to
24 Exhibit 1034, which is Holzmuller.

25 A. Yes.

1 Q. And let's go to paragraph 23. Let me when
2 you are there. Excuse me. I'm sorry. Paragraph 20.

3 A. I'm there.

4 Q. Okay. And the fourth and fifth lines of
5 that paragraph say, "It is possible to combine materials
6 the positive properties of which," and it goes on after
7 that; do you see that?

8 A. Yes.

9 Q. So when it says "combine materials," does
10 combining materials include varying thicknesses?

11 A. It does.

12 MR. KILGORE: All right. No further
13 questions from us. We are done on our side.

14 MR. ROESER: Nothing further from me.

15 THE COURT REPORTER: Okay. Any instructions
16 on signature? And then can you tell me on the record, do
17 you want the same copies of the transcript order that you
18 had for Volume I?

19 MR. ROESER: I do not need video.

20 THE COURT REPORTER: No video. We don't
21 have a videographer today.

22 MR. ROESER: Good. Good. Just the
23 transcript and on an expedited basis, please.

24 THE COURT REPORTER: Sure. And what does
25 that mean to you? What day do you want it?

1 MR. ROESER: It's Friday. Tuesday.

2 THE COURT REPORTER: No problem.

3 And then, Mr. Kilgore, do you want the
4 transcript also?

5 MR. KILGORE: Same for us.

6 THE COURT REPORTER: And expedited?

7 MR. KILGORE: Yes, ma'am.

8 THE COURT REPORTER: Thank you. And you
9 will handle signature?

10 MR. KILGORE: Yes.

11 WHEREUPON, the within proceedings were
12 concluded at the approximate hour of 10:53 a.m. MDT on
13 the 15th day of March, 2024.

14 * * * * *

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25

1 I, RICHARD J. SPONTAK, Ph.D., do hereby
2 certify that I have read the above and foregoing
3 deposition and that the same is a true and accurate
4 transcription of my testimony, except for attached
5 amendments, if any.

6 Amendments attached () Yes () No

7

8

RICHARD J. SPONTAK, Ph.D.

9

10

11 The signature above of RICHARD J. SPONTAK,
12 Ph.D., was subscribed and sworn to before me in the
13 county of _____, state of North Carolina, this
14 _____ day of _____, 2024.

15

16

17

Notary Public
My commission expires

18

19

20

21

22

23

24

25 Huhtamaki Flexible Packaging 3/15/24 (mmo)

REPORTER'S CERTIFICATE

STATE OF COLORADO)
CITY AND COUNTY OF DENVER) ss.

I, MARIA M. ORTON, Registered Professional Reporter and Notary Public ID 20004018922, State of Colorado, do hereby certify that previous to the commencement of the examination, the said RICHARD J. SPONTAK, Ph.D., was duly requested by me remotely to testify to the truth in relation to the matters in controversy between the parties hereto; that the said deposition was taken in machine shorthand by me at the time and place aforesaid and was thereafter reduced to typewritten form; that the foregoing is a true transcript of the questions asked, testimony given, and proceedings had.

I further certify that I am not employed by, related to, nor of counsel for any of the parties herein, nor otherwise interested in the outcome of this litigation.

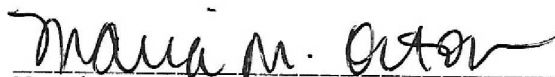
IN WITNESS WHEREOF, I have affixed my signature this 19 day of March, 2024.

My commission expires June 28, 2024.

XX Reading and signing was requested.

 Reading and signing was waived.

 Reading and signing is not required.



Maria M. Orton, RPR, Notary Public
(Notary ID 20004018922)
My commission expires: June 28, 2024

1 Errata Sheet

2

3 NAME OF CASE: HUHTAMAKI FLEXIBLE PACKAGING GERMANY GMBHY & KG vs ADAPA FLEXIBLES DENMARK SLAGE

4 DATE OF DEPOSITION: 03/15/2024

5 NAME OF WITNESS: Richard J. Spontak, Ph.D.

6 Reason Codes:

7 1. To clarify the record.

8 2. To conform to the facts.

9 3. To correct transcription errors.

10 Page ____ Line ____ Reason ____

11 From _____ to _____

12 Page ____ Line ____ Reason ____

13 From _____ to _____

14 Page ____ Line ____ Reason ____

15 From _____ to _____

16 Page ____ Line ____ Reason ____

17 From _____ to _____

18 Page ____ Line ____ Reason ____

19 From _____ to _____

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21 From _____ to _____

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18 Page ____ Line ____ Reason ____

19 From _____ to _____

20 Page ____ Line ____ Reason ____

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