

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

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POSCO CO. LTD,	)	
	)	
Petitioner,	)	Case No.
	)	IPR2025-00370
v.	)	
	)	U.S. Patent No.
ARCELORMITTAL	)	
	)	10,961,602
Patent Owner.	)	
	)	

DEPOSITION OF DR. MICHAEL MILES
Volume II

Taken on Thursday, March 26, 2026 9:59 a.m. MST
Location: DEPOSITION BY VIDEOCONFERENCE

Reported by:
HEIDI HUNTER, RPR, CSR

A P P E A R A N C E S:

FOR THE PETITIONER:

Jeremy J. Monaldo
Alexander Berg
San Kipark
FISH & RICHARDSON
Attorneys at Law
1000 Maine Avenue, SW, Suite 1000
Washington, DC 20024
Email: monaldo@fr.com

FOR THE PATENT OWNER:

Raymond LaMagna
Allen Kathur
GIBSON DUNN
Attorneys at Law
2001 Ross Avenue, Suite 2100
Dallas, TX 75201
Tel: 213.229.7101
Email: rlamagna@gibsondunn.com

ALSO PRESENT:

Rob Benimoff (Veritext Concierge)

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P R O C E E D I N G S

Whereupon,

MICHAEL MILES,

called as a witness, being first duly sworn, was
examined and testified as follows:

MR. LaMAGNA: I guess I'll just state, you
know, appearances for the record. I'm Raymond LaMagna
of Gibson Dunn on behalf of Patent Owner ArcelorMittal,
and I'm joined here by Allen Kathir, also of
Gibson Dunn.

MR. MONALDO: I'm Jeremy Monaldo of
Fish & Richardson on behalf of Petitioner POSCO, and I'm
joined by my colleagues, Sangki Park and Alexander Berg,
also with Fish & Richardson.

EXAMINATION

BY MR. LaMAGNA:

Q Thank you, Dr. Miles, for joining us again.
This is a continuation of your prior exhibit -- I mean
deposition, sorry.

You understand you are under oath just as if
you were testifying live in court; correct?

A Yes.

Q And what did you do to prepare for today's
deposition?

1 A I reviewed my rebuttal declaration and the
2 documents cited in the declaration.

3 Q About how much time did you spend reviewing
4 that material?

5 A About five hours.

6 Q And did you meet with counsel to prepare for
7 the deposition at all?

8 A Yeah, we met twice.

9 Q When did you meet?

10 A We met on Tuesday afternoon. Let's see.
11 Tuesday afternoon, Wednesday morning.

12 Q And about how long did you meet to prepare for
13 your deposition with counsel?

14 A So Tuesday afternoon, about 2.5 hours, and
15 Wednesday morning, about an hour.

16 Q And then is there anything else you did to
17 prepare for your deposition?

18 A I did some review on my own of the -- of my
19 declaration and some of the references.

20 Q Any particular references that you focused on?

21 A I looked at Takagi, Suehiro, Cornette. I
22 looked through Dr. Raabe's declaration a little bit. I
23 looked through the '602 Patent.

24 Q Now, you know, speaking of Dr. Raabe, I
25 understand you and he disagree on a couple of points.

1 Would that be fair to say?

2 A Yes.

3 Q But you don't question, in general,
4 Dr. Raabe's expertise in this field; do you?

5 A No.

6 Q Have you heard of Dr. Raabe prior to becoming
7 involved in this case?

8 A I had read a couple of his papers on TRIP
9 steels.

10 Q You would agree that Dr. Raabe is considered
11 to be a very highly respected, you know, scientist in
12 this and expert in this field of metallurgy; correct?

13 A Yes.

14 Q I think, you know, Dr. Raabe has published
15 extensively.

16 You would agree on that --

17 A Yes.

18 Q -- in this field?

19 Published in this field extensively?

20 A Yes.

21 Q I believe he has -- I don't know how many
22 articles he's written, on the order of hundreds, in
23 this -- in the field of metallurgy.

24 Would you agree?

25 A I think that's true. I don't know the number,

1 but he's published a lot of papers.

2 Q I think, according to Google Scholar,
3 Dr. Raabe has an H-index of around 190.

4 Does that sound about right?

5 A I don't know, but I'll take your word for it.

6 Q What does that indicate to you, an H-index of
7 190?

8 A H-index of a 190 means that he has a lot of
9 publications that have been cited quite a few times. In
10 other words, you can look at total citations, that's
11 one metric, but H-index indicates broader citation
12 rates.

13 Q And that's a fairly high or fairly remarkable
14 H-index, wouldn't you agree, to have an H-index as high
15 as 190?

16 A Yes.

17 Q That means that he has, you know --
18 approximately 190 articles that have been cited
19 190 times.

20 Is that what that -- how that --

21 A That's correct.

22 Q Okay. So you don't -- you are not challenging
23 his level of expertise or Dr. Raabe's understanding in
24 this field generally.

25 Is that fair to say?

1 A That's correct.

2 Q But you do disagree with him on some of the
3 conclusions that he draws; is that fair?

4 A Yes.

5 Q Okay. Let's pull up -- so we're going to look
6 today quite a bit at your declaration, which is Exhibit,
7 you know, 1075, I believe. It's been previously marked.
8 But for right now, let's pull up the '602 Patent, which
9 is Exhibit 1001.

10 A Okay.

11 Q And I think that we can -- so -- and just by
12 way of housekeeping here, you understand that there are
13 two IPRs here, one regarding the '602 Patent and one
14 regarding the '227 Patent; correct?

15 A Yes.

16 Q We've been over these patents, obviously,
17 before. And like we said in your last deposition, these
18 two patents share a specification.

19 Is that fair to say?

20 A Yes.

21 Q And the two patents have, you know, similar
22 claim sets, some different -- slightly different
23 limitations, but they share quite a few common
24 limitations.

25 Is that fair as well?

1 A Yes.

2 Q And for the purposes of the IPRs, the same
3 basic counts, the same base references and, you know,
4 secondary references are asserted against both of them,
5 setting aside a couple of the dependent claims; is that
6 fair?

7 A I think that's true.

8 Q So the two main base references here that we
9 have for both of these IPRs is the -- I think it's
10 Takagi and Suehiro; correct?

11 A Yes.

12 Q And for the purposes of forming an obviousness
13 combination of the two primary, secondary -- or the
14 two secondary references that are relied on would be
15 Cornette and the GMW reference; is that fair?

16 A Yes.

17 Q Okay. So for the sake of simplicity, so we
18 don't have to ask all of the questions twice, when we're
19 talking about these topics, the -- you understand the
20 discussion we're having here would apply equally to both
21 patents; is that fair?

22 A Yes.

23 Q Okay. I just don't want to have to show
24 two patents that have the identical thing.

25 MR. LaMAGNA: So if we scroll down here in

1 this Patent 2 exhibit -- well, let's just -- let's go
2 down to Figure 1. It's the same one that you're seeing
3 there, if you scroll a little bit further, if you can.

4 THE WITNESS: Okay.

5 MR. LaMAGNA: And so yeah, let's keep
6 scrolling a couple of pages down to the thing called
7 Figure 1, and just blow up that Figure 1 for a second.
8 There you go. Let's just take a look at the image part
9 of that.

10 Can you get in a little closer, just so we
11 can --

12 BY MR. LaMAGNA:

13 Q Okay. I'm sure you've seen this figure quite
14 a bit; correct?

15 A Yes.

16 Q So this is -- Figure 1 of the patents shows
17 four-phase layers in the aluminum alloy coating that is
18 on top of the steel substrate; correct?

19 A Yeah. We see four distinct layers.

20 Q Yeah. And these four-phase layers here are
21 labeled over to the right; is that correct?

22 A Uh-huh.

23 Q Now, assume for the sake of argument that we
24 did not have the labeling that was over to the right of
25 this.

1 As a person of skill in the art, simply
2 looking at the SEM image, you would be able to identify
3 that there are four-phase layers here in the aluminum
4 alloy coating; correct?

5 A I see four different layers. They have
6 different shadings, so yes, I see four different layers.

7 Q Now, what type of testing would you need to
8 use to identify the crystalline structure for any one of
9 these phase layers?

10 A If I was going to do the testing?

11 Q If you were going to do the testing.

12 A X-ray diffraction. EBSD is a little bit
13 different, but it can provide similar information --
14 actually provides more information on other things, but
15 you could use EBSD. You could do a line scan to get
16 some information. Line scan isn't going to give you a
17 crystalline structure. It's going to give you
18 essentially compositions.

19 Q Okay. When you say EBSD, just for the record,
20 that's Electron Backscattered Diffraction?

21 A Yes.

22 Q So in other words, just looking at this image,
23 a person of skill in the art would know that each of
24 these phase layers has a different crystalline
25 structure, but they would need to use X-ray diffraction

1 or EBSD on an actual sample in order to characterize
2 exactly what those respective crystalline structures
3 are.

4 Is that fair to say?

5 A So I think certainly the composition would
6 vary in these layers. I don't know if we could opine on
7 the crystalline structure, but there are tests that we
8 could use to investigate those, whatever microstructures
9 exist in those layers.

10 Q Okay. In other words, there would be -- at
11 different positions, you know, in the different layers
12 here, the different phase layers, there would be
13 potentially different crystalline structures, but we
14 wouldn't be able to identify them without using more
15 detailed testing; correct?

16 A Just by looking at it, that's correct.

17 Q Right. I mean, in other words, what I guess
18 I'm saying is that if we look at, for example, the
19 darker band that is labeled "intermediate layer," do you
20 see that?

21 A Uh-huh.

22 Q There would be -- in that darker phase layer
23 that is shown in the SEM, there would be some
24 crystalline structure present there, but in order to
25 characterize that and say what it is, we would have to

1 use X-ray diffraction or EBSD?

2 A So we don't know what kind of microstructure
3 we would be looking at. We have to use EBSD or XRD to
4 get quantitative results.

5 Q Now, if we wanted to determine the elemental
6 composition of one of these phase layers, you said to do
7 that we would have to use a line scan; is that correct?

8 A That would be a way of doing it, yes.

9 Q Okay. So assume for the -- hypothetically
10 that we're looking again at this sort of darker-shaded
11 phase layer that's labeled as an intermediate layer.

12 Do you see that layer?

13 A Uh-huh.

14 Q And assume for a moment that that's just a
15 homogenous layer.

16 In order to determine what elemental
17 composition is present in that layer, we would need to
18 use a line scan?

19 A You could do a line scan, but you might have
20 to do more than one line scan.

21 Q And why would that be?

22 A Well, because composition can vary a little
23 bit spatially in the layer. So maybe it's similar
24 compositions, but it can vary a little bit from left to
25 right.

1 Q Okay.

2 But I guess what I'm saying is: The tool that
3 you -- you have a -- let me restart this.

4 Assuming that you're dealing with material
5 that is largely homogeneous, my point is that the tool
6 that you would use to determine the composition would be
7 a line scan; correct?

8 A You could. You could use a line scan to
9 determine composition.

10 Q Okay. And then what I hear you saying is that
11 if you want to confirm that we have the same composition
12 consistently or with some consistency across the width
13 of the phase layer, we would use a few line scans to
14 confirm that; correct?

15 A You could do that.

16 Q Okay. Now, what we're looking at -- let me go
17 in a different direction for a second.

18 Here's my question: Do you know -- well,
19 strike that.

20 What are metallic glasses?

21 MR. MONALDO: Objection. Scope.

22 THE WITNESS: Metallic glasses are metals that
23 have amorphous structures.

24 BY MR. LaMAGNA:

25 Q And how are -- so when I hear metallic

1 glasses, that like, you know, glass-glass, like we think
2 of at home that we're putting soda in or something?

3 MR. MONALDO: Objection. Scope. Form.

4 THE WITNESS: Sorry. No.

5 BY MR. LaMAGNA:

6 Q Like, what is a metallic glass? Where does
7 that come up?

8 MR. MONALDO: Objection. Scope.

9 THE WITNESS: Metallic glasses have amorphous
10 microstructures.

11 BY MR. LaMAGNA:

12 Q Do you know what they're used for?

13 MR. MONALDO: Objection. Scope.

14 BY MR. LaMAGNA:

15 Q What industrial applications they arise in?

16 MR. MONALDO: Objection. Scope.

17 THE WITNESS: There are applications, you
18 know, that people that I know in my building are working
19 on, but I'm not working on metal glasses.

20 BY MR. LaMAGNA:

21 Q Have you ever had the opportunity to work on
22 or research metallic glasses?

23 MR. MONALDO: Objection. Scope.

24 THE WITNESS: I haven't worked on metallic
25 glasses, but they do have some high-strength properties

1 that can be desirable, so I think there are -- you know,
2 there are people that are working on those applications.

3 BY MR. LaMAGNA:

4 Q Okay. But then responding now for a moment to
5 your counsel's scope objections, let me ask a different
6 question.

7 The '602 or '227 Patents do not disclose or
8 claim metallic glasses; correct?

9 A Correct.

10 Q And production of metallic glass is not
11 covered by the '602 or '227 Patents; right?

12 A Correct. I mean, are you asking whether
13 there's some degree of order or disorder in the layer --
14 in the layers that are claimed in the '602 and
15 '227 Patents?

16 Q Well, let me ask it a different way.

17 None of the claim elements required by the
18 patents implicate metallic glasses?

19 A I don't -- that's correct.

20 Q Okay. So let's move on to a different
21 question I had.

22 Here's my question: At a high level, what is
23 a solution?

24 MR. MONALDO: Objection. Scope.

25

1 BY MR. LaMAGNA:

2 Q In the metallurgy and chemical sense, I don't
3 mean in the mathematical sense, what is a solution?

4 MR. MONALDO: Objection. Scope.

5 THE WITNESS: A solution would be where you
6 have, for example, in aluminum alloys, you can add
7 another element, and that element can reside in solution
8 within the aluminum, which might be the primary metal.

9 BY MR. LaMAGNA:

10 Q So I think one example that Dr. Raabe gave for
11 a solution, just a layperson example, was, you know,
12 coffee and cream or cream put into coffee.

13 Would you agree that cream put into coffee
14 forms what -- from -- at a generic level, one would
15 consider to be a liquid solution?

16 MR. MONALDO: Objection. Scope.

17 THE WITNESS: I guess that's true.

18 BY MR. LaMAGNA:

19 Q In other words --

20 A I was -- go ahead.

21 Q Sorry. The cream and the coffee are
22 together --

23 A They mix it together.

24 Q Mixed together, but they are not bound to each
25 other; correct?

1 MR. MONALDO: Objection. Scope.

2 THE WITNESS: I don't know for sure on the
3 cream and coffee example. But are they bound to each
4 other? I guess not if they retain some character
5 independent of each other.

6 BY MR. LaMAGNA:

7 Q Or like, for example, you know, salt water.
8 You know, you could put salt into water and dissolve it,
9 and then you would say that the salt -- you have a
10 saltwater solution.

11 Is that fair to say?

12 MR. MONALDO: Objection. Scope.

13 THE WITNESS: Yes.

14 BY MR. LaMAGNA:

15 Q But the sodium atoms and the water atoms are
16 not bounded to each other; correct?

17 MR. MONALDO: Objection. Scope.

18 THE WITNESS: I think that's correct.

19 BY MR. LaMAGNA:

20 Q Okay. And then turning now to sort of the
21 science involving the patents here, what is a solid
22 state solution or a solid solution?

23 MR. MONALDO: Objection. Scope.

24 THE WITNESS: It's what I describe with
25 aluminum having an alloy element in it, so aluminum with

1 a little bit of magnesium would be a solid state
2 solution.

3 BY MR. LaMAGNA:

4 Q So essentially, if you have -- you could have
5 a solid state solution where you have two metals that
6 are in solution with each other and in a solid state;
7 correct?

8 MR. MONALDO: Objection. Scope.

9 THE WITNESS: Yes.

10 BY MR. LaMAGNA:

11 Q And in that example, the two metals would not
12 have to be bound to each other; correct?

13 MR. MONALDO: Objection. Scope.

14 THE WITNESS: Well, they -- in the case of --
15 that I mentioned, you know, the magnesium atoms are sort
16 of randomly distributed on the same -- in the same
17 locations that an aluminum atom might normally be. So
18 there's -- are they bound to each other? There's some
19 amount of bonding, but it's -- but they're -- anyway,
20 that's the example that I think of.

21 BY MR. LaMAGNA:

22 Q Well, let's talk for a moment then about --
23 that's a good question about bonding.

24 So what different ways can atoms be bound to
25 each other?

1 MR. MONALDO: Objection. Scope.

2 THE WITNESS: You mean in terms of metallic
3 bond versus covalent bond?

4 BY MR. LaMAGNA:

5 Q Yes.

6 A Well, in metals, it's mainly metallic bonding.

7 Q And in metallic bonding, at a high level, like
8 just at a, you know, student teaching level, what is it
9 that is characterizing that bond? Like, what are they
10 sharing?

11 MR. MONALDO: Objection. Scope. Form.

12 THE WITNESS: They're sharing electrons.

13 BY MR. LaMAGNA:

14 Q And then what other types of bonds might
15 exist? Like, you said covalent or they're -- what other
16 forms of atomic bonds might exist?

17 MR. MONALDO: Objection. Scope.

18 THE WITNESS: Those are the main ones. There
19 are others. There's Van der Waals-type bonding, which
20 is weaker, but in a metal alloy, it's going to be
21 metallic bonding.

22 BY MR. LaMAGNA:

23 Q And how is metallic bonding different from,
24 say, ionic bonding, or is it a form of ionic bonding?

25 MR. MONALDO: Objection. Scope.

1 THE WITNESS: Ionic bonding is, I think, kind
2 of in between metallic and covalent. In metallic
3 bonding, you sort of have this electron cloud where the
4 electrons are free to sort of move and be shared between
5 atoms.

6 BY MR. LaMAGNA:

7 Q And how is that different from ionic bonding
8 or covalent bonding?

9 MR. MONALDO: Objection. Scope.

10 THE WITNESS: Covalent bonding is -- doesn't
11 have that same sharing. The bonds are stronger. Ionic
12 bonds are maybe not as strong as covalent bonds.

13 BY MR. LaMAGNA:

14 Q In ionic bonding, electrons are transferred
15 from one atom to the other.

16 Is that fair to say?

17 MR. MONALDO: Objection. Scope.

18 THE WITNESS: Yes.

19 BY MR. LaMAGNA:

20 Q And in covalent bonding, the atoms also share
21 at least some electrons; correct?

22 MR. MONALDO: Objection. Scope.

23 THE WITNESS: Yes.

24 BY MR. LaMAGNA:

25 Q And in metallic bonding, they also share

1 electrons?

2 MR. MONALDO: Objection. Scope.

3 BY MR. LaMAGNA:

4 Q Correct?

5 A Yes.

6 Q Whether it's ionic bonding, covalent bonding
7 or metallic bonding, you agree that in those type of
8 bondings, there's all some sort of atomic bonding
9 between the two atoms that are at issue; correct?

10 A Electron sharing, yeah.

11 MR. MONALDO: Objection. Scope.

12 BY MR. LaMAGNA:

13 Q So going back to the question that I had here
14 about solutions, where you have a solution like, say,
15 salt water, you don't necessarily have any sharing of
16 electrons between, say, the water atoms and molecules
17 and the sodium; correct?

18 MR. MONALDO: Objection. Scope.

19 THE WITNESS: I think that's correct.

20 BY MR. LaMAGNA:

21 Q So when a -- when you have a solid state
22 solution, it's -- also can be the case that there can be
23 different elements that are in that solution, but they
24 are not atomically joined, they're not sharing atoms.
25 I'm sorry. Let me strike that.

1 Where you have a solid state solution, it can
2 be the case that you have different elements that while
3 they're near each other, they are not sharing electrons,
4 they're not joined atomically.

5 Is that fair to say?

6 MR. MONALDO: Objection. Scope.

7 THE WITNESS: Well, I think there could be
8 some sharing, but maybe not as strong -- when you're in
9 solution, not as strong as when a compound is formed.
10 BY MR. LaMAGNA:

11 Q Fair enough. But in other words, there could
12 be, but sharing of electrons is not necessary when
13 you're looking at the broader sense of a solution, is
14 that -- the broader definition of a solution; correct?

15 MR. MONALDO: Objection. Scope. Relevance.

16 THE WITNESS: That may be correct, but I can't
17 say that that's always true in this, you know -- in the
18 case of like a solid state solution like we've described
19 with aluminum and an alloy element, like magnesium or
20 zinc or silicon.

21 BY MR. LaMAGNA:

22 Q Fair enough. So let me go the other
23 direction, just so we're not talking past each other.

24 It can be the case that where you have a
25 solution that involves different metals, that some of

1 those metals would form compounds and be sharing
2 electrons. Fair enough?

3 MR. MONALDO: Objection. Scope. Relevance.

4 THE WITNESS: Yes.

5 BY MR. LaMAGNA:

6 Q Okay. But that's not necessarily the case.

7 In other words, there can also be, you know,
8 different elements in a solid state solution where they
9 are not sharing electrons, they're not atomically bound
10 to each other?

11 MR. MONALDO: Objection. Scope. Relevance.

12 THE WITNESS: I wouldn't want to rule out some
13 sharing of electron. It may not be a super-strong bond
14 for an atom that's in solution, but there could be some
15 sharing of electrons.

16 BY MR. LaMAGNA:

17 Q Fair enough. But if there were a sharing of
18 electrons, then they would be forming a compound?

19 A Not necessarily, but the compound case is
20 going to be a stronger bonding situation.

21 Q I see. Okay. And so there could -- so I
22 guess then we have three different possible states. We
23 have state number one is not sharing electrons and not
24 bound. State Number 2 is some potential sharing, and
25 State Number 3 is sharing electrons and being atomically

1 bound.

2 Is that fair to say?

3 MR. MONALDO: Objection. Scope. Relevance.

4 We don't see this in his rebuttal declaration at all,
5 this whole line of questioning, so I don't know if you
6 could --

7 MR. LaMAGNA: I'll get there. Well, don't
8 worry. I'm --

9 THE WITNESS: That sounds reasonable.

10 BY MR. LaMAGNA:

11 Q Okay. All right. So we brought up the
12 concept of a compound.

13 What is a compound?

14 MR. MONALDO: Objection. Scope. Relevance.

15 THE WITNESS: A compound is a combination of
16 different atoms.

17 BY MR. LaMAGNA:

18 Q When you say compound, it's -- those atoms are
19 atomically joined in some way, they're sharing electrons
20 in some way.

21 Is that fair to say?

22 MR. MONALDO: Objection. Scope. Relevance.

23 THE WITNESS: Yes.

24 BY MR. LaMAGNA:

25 Q And what is -- so by -- in the nonmetallic

1 atoms, when we think of compounds, we think of
2 molecules, like an organic material; correct?

3 MR. MONALDO: Objection. Scope. Relevance.

4 THE WITNESS: Yes.

5 BY MR. LaMAGNA:

6 Q So water, H₂O, is an example of a compound?

7 MR. MONALDO: Objection. Scope. Relevance.

8 THE WITNESS: Yes.

9 BY MR. LaMAGNA:

10 Q And then what is an alloy?

11 MR. MONALDO: Objection. Scope. Relevance.

12 THE WITNESS: An alloy is not a pure metal.

13 It's a metal, typically, where you have maybe the
14 primary metal, and then you add smaller portions of
15 other metals to change the properties.

16 BY MR. LaMAGNA:

17 Q And in doing so, you can form either a solid
18 state solution or a metallic compound; correct?

19 MR. MONALDO: Objection. Scope. Relevance.

20 THE WITNESS: Well, you could have a solid
21 state solution, or you could have a heat treatment that
22 forms some kind of compounds. But you could also have
23 an interstitial solution.

24 BY MR. LaMAGNA:

25 Q And what is that? What is an interstitial

1 solution?

2 MR. MONALDO: Objection. Scope. Relevance.

3 THE WITNESS: That would be where the alloy
4 element, as in carbon, is much smaller than the primary
5 element, as in iron. So the carbon atoms fit in the
6 spaces between the iron atoms rather than residing on
7 the space where an iron atom might have been.

8 BY MR. LaMAGNA:

9 Q I see. So you have a larger compound, and
10 then in solution, basically, with that is a smaller
11 atom?

12 A So if you just --

13 MR. MONALDO: Objection. Scope. Relevance.

14 THE WITNESS: -- take plain carbon steel, it's
15 iron and it's a little bit of carbon. And the carbon in
16 its simplest form just resides in the spaces between the
17 atoms, the iron atoms.

18 BY MR. LaMAGNA:

19 Q So what is an ordered alloy?

20 MR. MONALDO: Objection. Scope. Relevance.

21 THE WITNESS: An alloy with order in atomic
22 arrangement.

23 BY MR. LaMAGNA:

24 Q And what do you mean by order?

25 MR. MONALDO: Objection. Scope. Relevance.

1 THE WITNESS: Just means regular repeating
2 arrangements of where atoms are located within the
3 lattice.

4 BY MR. LaMAGNA:

5 Q So is it fair to say that when you mean order
6 in the context of an alloy, you're talking about a
7 pattern to the arrangement or location of the atoms of
8 the different elements along the lattice?

9 MR. MONALDO: Objection. Scope. Relevance.

10 THE WITNESS: Yes, and that's a theoretical
11 concept. But you know, in practice, you tend to see
12 variations. But you might see, for the most part, that
13 arrangement of atoms in certain locations in the
14 lattice.

15 BY MR. LaMAGNA:

16 Q So I think you know, to use an analogy,
17 imagine that you have, you know, an arrangement of
18 chairs, and you have different atoms sitting in
19 different chair locations, and there would be a pattern
20 to the different elements of the different atoms in
21 those chairs?

22 MR. MONALDO: Objection. Scope. Relevance.
23 Ray, I mean, how is atoms sitting in chairs relevant to
24 the rebuttal declaration? It's supposed to be a
25 cross-examination of --

1 MR. LaMAGNA: It is.

2 MR. MONALDO: -- Dr. Miles' rebuttal
3 declaration. So...

4 MR. LaMAGNA: I know. I know.

5 THE WITNESS: You're talking about a regular
6 arrangement, a repeating arrangement, so that's
7 something that can happen.

8 BY MR. LaMAGNA:

9 Q Okay.

10 A That's what order would refer to.

11 Q Okay. And in the context of, you know, what
12 we're dealing with, you know, here with metals, for
13 example, just a very simple order would be, you know, if
14 the atoms were arranged iron, aluminum, iron, aluminum,
15 iron, aluminum or something like that?

16 MR. MONALDO: Objection. Scope. Relevance.

17 THE WITNESS: Yeah. I mean, that is an
18 example of something. That's not a specific example,
19 but you're basically describing one example of order.

20 BY MR. LaMAGNA:

21 Q And what is a disordered alloy?

22 MR. MONALDO: Objection. Scope. Relevance.

23 THE WITNESS: It's an alloy where the
24 arrangements of the atoms are more random.

25

1 BY MR. LaMAGNA:

2 Q In a disordered alloy, there is not a pattern
3 to the position of the different types of atoms in the
4 lattice?

5 A The pattern is --

6 MR. MONALDO: Objection. Relevance.

7 THE WITNESS: Sorry.

8 BY MR. LaMAGNA:

9 Q Sorry. You guys were talking at the same
10 time.

11 Can you repeat that, Dr. Miles?

12 A The pattern could be less well-defined. There
13 might be some semblance of order, but it might have also
14 an element of randomness in terms of the atomic
15 arrangements.

16 Q Let's talk about your understanding of the
17 idea of intermetallics for a moment.

18 You would agree that an intermetallic compound
19 could be joined into a simple three-atom compound, like
20 iron-aluminum-silicon; correct?

21 A Yes, and Takagi describes that ternary system
22 of intermetallics.

23 Q And when you say ternary, what do you mean by
24 that?

25 A Three elements.

1 Q Okay. So where we have iron, aluminum and
2 silicon joined, they form a ternary compound; correct?

3 A Yes.

4 Q And in that case, they are bound with a
5 metallic bond; correct?

6 A Yes. Although, the silicon might be slightly
7 different, but there's bonding between the
8 three elements.

9 Q In that instance, there would be some form of
10 atomic bond between those three elements; correct?

11 A Yes.

12 Q Now, in your view, an intermetallic can be
13 just a solid solution that contains more than one metal
14 or metalloid; correct?

15 A By the generic definition, that is the case.

16 Q And that's the definition that you are
17 applying in your analysis in this case; correct?

18 A That's the definition that I applied.

19 Q And so in that definition, the metal or
20 metalloid atoms that are in the solid solution do not
21 have to be atomically joined, but they can be; correct?

22 A I think that's correct, but I guess it's key
23 that they can be.

24 Q Right. In other words, they can be, but it's
25 not necessary; correct?

1 A In a solid solution.

2 It's possible if the bonding is different,
3 kind of like I described in the aluminum case, where the
4 bonding may not be as strong in the solid solution case.
5 But there certainly can be bonding, and it depends on
6 the atoms that are present.

7 Q So according to the construction that you're
8 applying, an intermetallic would include a solid
9 solution where more than one metal is present or
10 metallic compound where more than one metal is joined;
11 correct?

12 A Correct.

13 Q As we see here in Figure 1 of the '602 Patent
14 or Figure 1 of the '227 Patent, intermetallic compounds
15 can form into a phase layer; correct?

16 A So by phase layer, are you suggesting that the
17 layer is completely homogeneous, or when you say phase,
18 does that allow for some variation in composition and
19 structure, whatever that might be?

20 Q I assume we can give it some wiggle room. I
21 just mean that you're --

22 A Yeah.

23 Q Sorry. Go ahead.

24 A In the patent and in some of the prior art,
25 the coding that's formed during the hot-stamping process

1 forms intermetallics.

2 Q And those intermetallics can form into
3 specifically compounds that coalesce into a phase layer,
4 like we see here in Figure 1 of the patent; correct?

5 A So that is correct in the sense that the
6 intermetallic compounds can form, but if you look at
7 layer C, for example, the AL-rich intermetallic layer,
8 you could have compounds that are surrounded by
9 aluminum. In other words, the entire layer wouldn't
10 necessarily be an intermetallic compound, monolithic.
11 It could be compounds that are sort of situated in a --
12 in an aluminum matrix.

13 Q Okay. I mean, I guess my question is a little
14 bit different than that. I mean, I think what I hear
15 you saying is that there may not be homogeneity down to
16 the atom.

17 You know, is that fair to say?

18 A That's correct.

19 Q Okay. So I think that sometimes we've used
20 the word, I think from our prior deposition, is saying
21 that it's largely homogeneous.

22 Is that fair to say?

23 A I think we have.

24 Q Okay. So where you have -- going back to my
25 earlier question. Sorry.

1 As we see in Figure 1 of the patents, the
2 intermetallic compounds can form into a defined phase
3 layer, even though that phase layer may be just largely
4 homogeneous; correct?

5 A Correct.

6 Q And that is what we are seeing here in
7 Figure 1 of the patents, we are seeing an intermetallic
8 phase layer that is layer C, the lighter-colored layer;
9 correct?

10 A That -- yeah. It's labeled aluminum-rich
11 intermetallic layer.

12 Q Right. And so --

13 A But if we look -- I mean, if we think about
14 generally what's happening in this coating, as Takagi
15 refers to it, you know, we're creating a coating with
16 intermetallics. And in this case, they've chosen to
17 label layer C an aluminum-rich intermetallic layer.

18 Q Right. And I want -- I guess that's -- you
19 raise a good point. Let's distinguish between the
20 coating layer and what the patent is referring to as
21 layers.

22 I believe you pointed this out in your
23 declaration somewhere, that some of the prior art refers
24 to the coating layer; correct?

25 We don't really -- I don't want to necessarily

1 look at it. I just -- let me --

2 A Okay.

3 Q I'm just trying to -- we don't -- we can get
4 back to the more specific locations where this comes up
5 later.

6 A I'm just thinking of prior art where -- and
7 even really in the '602 Patent, where it's alluding to
8 the fact that the coating, which is composed of multiple
9 layers, is a coating that contains intermetallics.

10 Q Right. So in some instances, when someone
11 refers to, in the prior art, the coating layer, they are
12 talking about the aluminum alloy layer that sits above
13 the steel or sits on the steel substrate after
14 hot-stamping; correct?

15 A Right.

16 Q Okay. So one way of referring to the
17 intermetallic material here is to refer to the layer as
18 a whole, like all, you know, 25 or 30 or 35 microns of
19 it; correct?

20 A Correct.

21 Q Okay. And then in the '227 and '602 Patents,
22 they distinguish within that layer what are effectively
23 sublayers or strata; correct?

24 A Correct.

25 Q And that is what the claims -- strike that.

1 The strata or sublayers in the coating is what
2 the claims refer to as an interdiffusion layer,
3 intermediate layer, intermetallic layer and superficial
4 layer; correct?

5 A Correct.

6 Q And so these, you know, phase layers required
7 in the patent claims are essentially sublayers of the
8 overall aluminum alloy coating layer; correct?

9 A Correct.

10 Q Okay. So going back with that in mind, I want
11 to look here at Figure 1, and I want to look at the
12 lighter-colored material labeled C.

13 Do you see that lighter band of material?

14 A Yes.

15 Q And obviously, when we look at that, we see
16 some cracks; correct?

17 A It looks like there may be cracks.

18 Q And we see what appears to be some porosity in
19 there; correct? Some voids?

20 A Those -- I mean, I guess those could be voids.
21 I'm not sure.

22 Q So recognizing that this band is not -- you
23 know, it's only largely homogeneous; correct?

24 A Right.

25 Q So this band that we're looking at labeled C,

1 this is what would be understood to be an intermetallic
2 phase layer or maybe we should say sublayer inside of
3 this overall coating; correct?

4 A Yes.

5 Q Now, inside of this intermetallic phase layer
6 that we see labeled C here in Figure 1, do the metallic
7 compounds there have an ordered atomic distribution in
8 your view? Would they have an ordered atomic
9 distribution?

10 A I don't know, but I know what the composition
11 is based on the information in the patent and similar
12 information in the prior art. We know what those
13 average compositions are. We don't know what the
14 structure is.

15 Q Yeah. And I'm --

16 A You're asking me to guess what the structure
17 might be?

18 Q No, no. Let me rephrase that.

19 I know we don't know exactly what the
20 structure would be. What I'm trying to understand is
21 whether that structure is ordered or disordered.

22 Do you follow my question?

23 A Uh-huh. I don't know.

24 Q So --

25 A There could be varying levels of order and

1 disorder within that layer.

2 Q Okay. So let me ask it this way: When formed
3 into a phase layer, is there an ordered structure to the
4 distribution of the atoms in an intermetallic compound?

5 A There can be.

6 MR. MONALDO: Objection.

7 THE WITNESS: And -- but I don't know based on
8 the information I'm provided here. And this is called
9 an aluminum-rich intermetallic layer with a composition,
10 and the other layers have compositions for comparison.
11 So I can't really opine on what the structure might be
12 in that layer.

13 BY MR. LaMAGNA:

14 Q So it's fair to say that, to your
15 understanding, where intermetallic compounds form a
16 phase layer, they may do so according to an ordered
17 distribution, or there might be a disordered
18 distribution; correct?

19 A Correct.

20 Q Now, intermetallic compounds would have a
21 crystal structure; correct?

22 MR. MONALDO: Objection. Scope. Form.

23 THE WITNESS: So I mean, it depends on the
24 compound. There's so many different possible types of
25 compounds that form. We just don't know from the

1 information provided by the patent or really the prior
2 art.

3 BY MR. LaMAGNA:

4 Q Okay. So some intermediate in -- strike that.

5 In your view then, some intermetallic
6 compounds would have a crystal structure, but others may
7 not; is that fair?

8 A Yeah. I mean, according to a textbook
9 definition, that's fair.

10 Q And is it fair to say that some intermetallic
11 compounds would have an ordered crystal structure?

12 A Not referring specifically to this, because I
13 really can't tell from the information that's given.
14 But hypothetically could they? Yes.

15 Q And it's fair to say in your view that some
16 intermetallic compounds would have a disordered crystal
17 structure?

18 A Varying levels of order/disorder.

19 Q Because of that, when intermetallic compounds
20 form a phase layer, you can't determine whether or not
21 they would have an ordered crystal structure or a
22 disordered crystal structure or maybe not any crystal
23 structure; correct?

24 MR. MONALDO: Objection. Form.

25 THE WITNESS: I can't, unless I examine them

1 with some of the techniques you mentioned earlier.

2 BY MR. LaMAGNA:

3 Q Okay.

4 MR. MONALDO: We've been going about an hour.
5 I don't know if this would be a good chance for a break.

6 MR. LaMAGNA: Yeah. I'm going to close out
7 this section in a few minutes, if we can go just a
8 little longer. We should be able to just start in a
9 different direction.

10 MR. MONALDO: Okay.

11 MR. LaMAGNA: Okay?

12 BY MR. LaMAGNA:

13 Q What does it mean for a compound to have
14 defined stoichiometry?

15 A So stoichiometry is a ratio of the elements
16 present in the compound and stoichiometry is exact. So
17 as you said earlier, you know, aluminum, iron, aluminum,
18 iron, or if there's two irons for every aluminum, that
19 ratio is exact.

20 Q Okay. And so would you agree that some
21 intermetallic compounds have defined stoichiometry?

22 A You're asking me hypothetically if some
23 intermetallic compounds have a defined stoichiometry?

24 Q Yes.

25 A Yes. Hypothetically, some intermetallic

1 compounds have a defined stoichiometry.

2 Q And the flip side of that question, in your
3 view, some intermetallic compounds would not have a
4 defined stoichiometry; correct?

5 A Well, when you're -- when I said
6 stoichiometry, you know, I was mentioning that that's an
7 exact ratio. And so you're going to find in practice,
8 if you examine microstructure and composition locally,
9 you'll find that the stoichiometry that's sort of the
10 theoretical exact one is not respected. So there's
11 different levels of atomic ratios that you could find
12 that would be different than the exact stoichiometry.

13 Q So let me ask -- just closing this out, this
14 discussion out, Dr. Raabe proposed a couple of criteria
15 for defining intermetallics and also an intermetallic
16 layer, you know, intermetallics as a layer.

17 Do recall that?

18 A I do. But if you could bring it up quickly or
19 if you could tell me, because I have his document open,
20 if you just tell me where to go.

21 Q I think in paragraph 120, I believe, of his
22 document, why don't we go ahead and --

23 A I see it.

24 Q Well, we don't have to pull it up. I'll read
25 it to you.

1 A I've got it.

2 Q Make it simple.

3 A Yeah. You can read it. I've got it.

4 Q Yeah. He defines intermetallic layer as -- he
5 states that it would be a layer containing two or more
6 metallic or metalloid elements atomically joined, with
7 defined stoichiometry in an ordered crystal structure.

8 Do you see that?

9 A Yes.

10 Q Okay. So I just want to just -- here, just to
11 close this out, you and he are in agreement that the --
12 an intermetallic layer would contain two or more
13 metallic or metalloid elements; correct?

14 A So I would agree that that's a generic
15 textbook definition of intermetallic.

16 Q Okay. Where you disagree is that those
17 intermetallics don't necessarily have to be atomically
18 joined, like we discussed; correct?

19 A Well, I think there --

20 Q They can be. Let me rephrase that.

21 The metals can be atomically joined, but it
22 isn't necessary in your view; correct?

23 A I don't think there's an absolute total
24 absence of atomic joining, but I think there's different
25 levels of atomic joining that might be possible within

1 that definition.

2 Q Okay. And when we see this intermetallic
3 layer, you disagree that the metal atoms would be
4 arranged in an intermetallic compound with defined
5 stoichiometry; correct?

6 MR. MONALDO: Objection to form. Foundation.

7 THE WITNESS: I just don't know, given the
8 information provided in the patent or in the prior art.
9 I'm -- there, I'm focused mainly on the compositions,
10 which is actually pretty helpful information.

11 BY MR. LaMAGNA:

12 Q Okay. Fair enough. But you don't have a
13 basis to -- well, strike that.

14 You don't agree with Dr. Raabe that the
15 intermetallic compounds in an intermetallic layer would
16 have defined stoichiometry; correct?

17 A Are you -- you're talking specifically about
18 layer C?

19 Q That would be an example, yes.

20 A Because I'm not sure about layer C, but
21 certainly, there are intermetallic compounds that follow
22 the definition that he's provided.

23 Q But in your view, a layer would -- I'm sorry.
24 Strike that.

25 An intermetallic layer would not have to have

1 the metal atoms following a defined stoichiometry for
2 the intermetallic compounds; correct?

3 MR. MONALDO: Objection. Form.

4 THE WITNESS: For layer C? You're saying the
5 intermetallic layer. I assume you're talking about
6 layer C?

7 BY MR. LaMAGNA:

8 Q Yes. I'm talking about the context of an
9 intermetallic phase layer as called for in the patents.
10 They would not, in your view, be understood to
11 form according to defined stoichiometry; correct?

12 A They could.

13 MR. MONALDO: Objection. Form.

14 THE WITNESS: They could. We just don't know
15 based on the information that we have.

16 BY MR. LaMAGNA:

17 Q Okay. I guess my same question in terms of
18 the crystal structure, in your view, in the context of
19 the '602 and '227 Patent, the intermetallics in the
20 intermetallic layer wouldn't necessarily have an ordered
21 crystal structure; correct?

22 MR. MONALDO: Objection. Form.

23 THE WITNESS: Correct. They could, but we're
24 not sure.

25

1 BY MR. LaMAGNA:

2 Q Okay. Let me just check double check my
3 notes.

4 Sorry. So at a high level, Dr. Raabe has
5 provided a couple of criteria that he considers to be
6 necessary.

7 Whereas, your view is that those might be
8 present, but we can't be sure; is that fair?

9 MR. MONALDO: Objection.

10 THE WITNESS: In the context of what we're
11 given in the patent in the prior art, that's my view.

12 MR. LaMAGNA: Okay. Why don't we go ahead and
13 take a break and try, and we'll try to march in a
14 different direction. Take like 10 minutes.

15 Is that fair for Dr. Miles?

16 THE WITNESS: That works.

17 (Recess from 11:05 to 11:16.)

18 BY MR. LaMAGNA:

19 Q Okay. I'm going to turn to just going through
20 some of your supplemental -- I'm sorry, your rebuttal
21 declaration, which is Exhibit 1075.

22 Can we follow with that, Dr. Miles?

23 A Yes.

24 Q Let's go down to paragraph 11. We can
25 probably just blow this up a little bit.

1 You've got a -- let me put it this way, so we
2 don't slow this down: Do you want to be following along
3 on your own copy, Dr. Miles?

4 A I can, but I can also see yours quite well.

5 Q Okay. Yeah. We're not going to go anything
6 like super intricate with this, but if you want to pause
7 or you just need more time to find something on your own
8 version, that's fine, too.

9 A Okay.

10 Q Okay. Paragraph 11, you say: "If patent
11 owner's construction of intermetallic layer were
12 correct, a POSITA would expect to see references to
13 define stoichiometry or ordered crystal structure in the
14 specification."

15 A Yes.

16 Q Okay. So essentially, you're saying that the
17 words stoichiometry and ordered crystal structure do not
18 appear in the patent; correct?

19 A Correct.

20 Q And you understand that the words used to
21 define a term for claim construction need to appear in
22 the specification; is that correct?

23 MR. MONALDO: Objection. Form.

24 THE WITNESS: I guess so.

25

1 BY MR. LaMAGNA:

2 Q Now, the specification does refer to the
3 intermetallic layer as a phase; correct?

4 A Maybe we could take a look. I think, to your
5 prior question, I don't know that that's correct; right?
6 The claims kind of stand on their own.

7 Q Well, you are in paragraph 11 rejecting the
8 construction of intermetallic layer that Dr. Raabe
9 proposes; correct?

10 A Yes. I'm saying he's using a textbook
11 definition of intermetallic, and the terms that he's
12 using in the definition did not appear in the
13 specification. And so I'm focused more on what's
14 actually in the patent rather than sort of reading into
15 what I find in the patent, additional terms.

16 Q Fair enough. But that's why I'm saying is
17 that the reason here that you are rejecting Dr. Raabe's
18 construction for the term intermetallic layer is that he
19 uses words that do not appear in the patent; correct?

20 A Correct, correct.

21 Q And so to you, that matters for the purposes
22 of claim construction.

23 The fact that he's using words that are not in
24 the patent, in your view, means that his construction is
25 not appropriate or reliable; right?

1 A Well, I wouldn't say that it's not appropriate
2 and not reliable. But it perhaps reads into the things
3 that are in the patent more than we can use to sort of
4 understand what's going on, because the patent and the
5 prior art are quite similar in how they deal with the
6 layered structure and in their use of the term
7 intermetallic. And they don't use defined stoichiometry
8 or order crystal structure in their definitions or their
9 explanations. So --

10 Q But why is that a bad thing in your view?

11 MR. MONALDO: Objection. Form.

12 THE WITNESS: I'm not saying it's a bad thing.
13 I'm just saying that I don't know that it's helpful for
14 a person of ordinary skill looking at the patent or the
15 prior art and being able to use the information to
16 create a layered structure coating that has properties
17 that they desire to have for their products. I don't
18 think the intermetallic -- let's see. The defined
19 stoichiometry or order crystal structure helps them to
20 do that. And it's not necessary.

21 BY MR. LaMAGNA:

22 Q And it's not necessary in light of the broader
23 construction that you have taken, correct, that we
24 discussed earlier?

25 A Yeah. I think that's true and not necessary

1 based on the other information that's there in the
2 patent and in the prior art on composition. The
3 compositions are important for the steel and for the
4 coating, the pre-coating. And then the thermal history
5 that happens during hot-stamping is critical to
6 achieving the desired outcome.

7 But a term like define stoichiometry or order
8 structure, I don't know that it provides -- I don't
9 know -- I don't know that it's correct. It could be
10 applicable, but I don't know for sure, because I
11 haven't -- I don't have that information from the
12 patent. And it's not necessary for a person of ordinary
13 skill to be successful in applying the principles of the
14 patent or the prior art.

15 Q And so in your view, you can use the elemental
16 composition, for example, from a line scan to determine
17 whether or not the layer limitations of the patent
18 claims are satisfied; correct?

19 A You could use the line scan to determine the
20 compositions of the layers to see if they meet the
21 composition ranges that are cited, but for me, it really
22 starts with the composition of the base alloy, which is
23 the steel, and then the composition of the pre-coating.
24 Once you have those two things and then you apply the
25 appropriate thermal history that's described for the

1 hot-stamping process, then a natural outcome of that is
2 the layered structure that they observed as they
3 developed this hot-stamped product.

4 MR. LaMAGNA: Move to strike that as
5 non-responsive.

6 BY MR. LaMAGNA:

7 Q Let me go back to the question that I have,
8 which is the presence or lack thereof of these terms in
9 the specification.

10 Do you believe that the fact that these terms
11 that Dr. Raabe mentioned are present or not in the
12 specification matters for the purposes of claim
13 construction? Does it disqualify his construction that
14 these words are not in the specification?

15 MR. MONALDO: Objection. Asked and answered.

16 THE WITNESS: I'm not sure on the technical
17 points of whether that's appropriate. And to be clear,
18 I'm not saying that his definition doesn't have value or
19 validity in a general sense, but we don't see them in
20 the specification. And I don't think it's necessary for
21 them to be there. He's reading into what he reads in
22 the specification, these conditions of defined
23 stoichiometry and ordered crystal structure, and
24 certainly, his prerogative to do that.
25

1 BY MR. LaMAGNA:

2 Q So you say -- let's look at paragraph -- well,
3 let me ask it -- going back to my earlier question I
4 think we got sidetracked from.

5 The intermetallic layer that we see in the
6 patent and that is required in the claims is described
7 in the patent as a phase; correct?

8 A Yeah, I think so. Can we just --

9 Q Let's --

10 A -- get where it's described as a phase?

11 Q Let's look at an example. If we can go back
12 to Exhibit 1001 at column 12, line 52, so if we go down
13 a bunch.

14 A Okay.

15 Q You'll see the columns become numbered.

16 A Yep.

17 Q And we go down a few more pages to column 12,
18 and let's look at line 52.

19 A Okay.

20 Q We have to go down further on the page,
21 down -- there you go, down to the 52.

22 You see there it's -- it says: "The
23 intermetallic layer appearing as a pale phase"? Do you
24 see that?

25 A Yes.

1 Q And then if we scroll -- well, if we look up,
2 sorry, to just a little bit above that to line --
3 about -- I don't know, maybe 42, we see that we are
4 talking about the illustration in Figure 1 there;
5 correct?

6 A Illustrated at Figure 1?

7 Q Yes.

8 A Yes.

9 Q So the pale band of material in Figure 1, that
10 we looked at before, that is identified here as C is an
11 intermetallic layer that is described in the patent as a
12 phase; correct?

13 A It is described as a pale phase, yes.

14 Q Yes. And like we talked about earlier, by
15 phase, we would expect there to be some consistency or,
16 you know, largely homogeneous composition within that
17 band; correct?

18 A Yes.

19 Q Okay. So your point here is that the patent
20 does not state that the intermetallic phase has defined
21 stoichiometry or an ordered crystal structure; correct?

22 A Yes. I'm saying that that is not defined, and
23 I don't know if I'm out of turn saying I don't think
24 it's necessary.

25 Q Okay. Let me scroll up for a second, just

1 to -- let me just check my notes.

2 Let's go up to paragraph 8 in your report. I
3 guess paragraphs 8 and 9. This would be Exhibit 1075.

4 A Okay.

5 Q There we go. Maybe we could just make it a
6 little bit smaller or whatever, so we can see 8 and 9
7 there together.

8 One of the things that you point to is that
9 the claims recite requirements for mean compositions or
10 total -- or weight based on total weight, elemental
11 weight; correct?

12 A Uh-huh.

13 Q Now, those claim elements or limitations that
14 require separate mean compositions or separate elemental
15 weights, those are different limitations than the
16 limitation for the intermetallic layer; correct?

17 A I think so.

18 Q Okay.

19 A Yeah. We have -- all of those layers have
20 compositions.

21 Q Right. In other words, we are pointing here
22 to different limitations in the claim elements that are
23 distinct from the limitation that there be overall an
24 intermetallic layer; correct?

25 A Can you say that one more time? I'm just --

1 Q I think we already answered it. It's fine.

2 A Okay.

3 Q Let's go down to paragraph 18.

4 A Okay.

5 Q Now, you say here in paragraph 18 that a prior
6 declaration submitted on behalf of ArcelorMittal
7 contradicts Dr. Raabe's conclusion; correct?

8 A Yes.

9 Q Now, you cite Dr. DeArdo, who defined an
10 intermetallic layer as, to begin with, containing a
11 compound of two different metals; correct?

12 A Yes.

13 Q Now, you would agree that when Dr. Raabe
14 refers to an atomically bound metals or atomically
15 joined metals, that's effectively the same thing as
16 calling them a compound; isn't it?

17 A Yeah. In a sense, that's a similar thing. I
18 guess I was looking at Dr. DeArdo's definition as a
19 little bit closer to the one that I had -- that I had
20 used. I guess without using terms like defined
21 stoichiometry or ordered crystal structure.

22 Q I mean, but it's fair to say --

23 A But there is the word compound, so that does
24 imply some bonding.

25 Q Yeah. It's fair to say that Dr. DeArdo's

1 definition here is narrower than yours; correct? It's
2 more specific?

3 A A little bit narrower, I guess, because of the
4 word compound.

5 Q And also, Dr. DeArdo requires that these
6 compounds be in a matrix; correct?

7 A Well, I think he said they could be, and
8 perhaps, you know, if you're looking at the
9 aluminum-rich intermetallic layer, that could have been
10 what he was referring to, is that those compounds were
11 in, for example, an aluminum matrix.

12 Q Okay. So what I want to unpack here is -- let
13 me -- is first of all -- let me start over.

14 I want to understand your point, which is that
15 Dr. DeArdo's definition contradicts Dr. Raabe's. Not
16 it's different from, but contradicts.

17 Do you follow my question?

18 A Yeah.

19 Q So --

20 A So -- go ahead.

21 Q No, no. Go ahead. Sorry.

22 A It's different than Dr. Raabe's construction.
23 Perhaps it doesn't completely contradict it in the sense
24 that you -- your point that the word compound finds some
25 commonality there, but we don't have the more strict

1 requirement of, you know, defined stoichiometry and
2 ordered crystal structure that Dr. Raabe has used.

3 Q Correct. So Dr. DeArdo here has more
4 generally said that the compounds would be in a matrix.

5 Whereas, Dr. Raabe has said that that would be
6 with an ordered crystal structure and define
7 stoichiometry; correct? He's been more specific?

8 MR. MONALDO: Objection. Form.

9 THE WITNESS: Yes. And when -- you know, when
10 I say in a matrix here, if we go back and actually look
11 at what he said, I think he said it could be in a
12 matrix.

13 BY MR. LaMAGNA:

14 Q Okay. But the point I'm making is that
15 Dr. DeArdo's definition is more general, but it doesn't
16 conflict with, it's just broader, a little broader than,
17 or less -- let me rephrase that. Let me start over.

18 Dr. DeArdo's definition here is more -- is
19 discussed at a more general level? Whereas, Dr. Raabe's
20 discussion is at a more specific level; correct?

21 A So the way I view that is that Dr. Raabe's
22 construction is more strict, because it seems to leave
23 less leeway for levels of disorder that might exist in
24 an intermetallic material or layer. And Dr. DeArdo's is
25 a little more general and would seem to allow for a

1 broader class of material structures. I guess that
2 would be my point. I did say that, you know, the word
3 compound does, you know, reach a little bit of
4 commonality, you know, when you look at Dr. Raabe's
5 construction. But they are different, and I prefer
6 Dr. DeArdo's construction for that reason.

7 BY MR. LaMAGNA:

8 Q Okay. But if something were -- if an
9 intermetallic material were to satisfy Dr. Raabe's
10 construction, it would also satisfy Dr. DeArdo's, you
11 know, more general language; correct?

12 A Well, I don't know, because when he says it
13 could be in a matrix, then what you've got are little
14 islands of compounds that might be intermetallics
15 within, you know, an aluminum matrix. And the
16 arrangement of those compounds could be somewhat random.
17 So I don't know that it would automatically satisfy, but
18 there's definitely the possibility for some overlap.

19 Q I guess what I'm saying is that in -- well, in
20 Venn diagram terms, as I understand you to be describing
21 Dr. DeArdo's definition, it's just more generally stated
22 in broader, less specific language; correct?

23 A That's correct.

24 Q And in Venn diagram terms, Dr. Raabe's
25 discussion is at a more specific level that would

1 essentially fit inside of or be a part of --

2 A Part of --

3 Q Yeah, part of Dr. DeArdo's --

4 A Could fit partly in his definition.

5 Q Okay. So it's fair -- it's not that
6 Dr. DeArdo's definition conflicts with Dr. Raabe's
7 discussion, it's that they're talking at different
8 levels of specificity; correct?

9 A They are, and Dr. DeArdo didn't use, you know,
10 the stricter language that was used by Dr. Raabe.

11 Q I blame a combination of Dr. Raabe's years in
12 the field and being German. Let me ask it that way.

13 I mean, you agree that Dr. Raabe is a German
14 scientist; correct?

15 A Yes.

16 Q And you agree that Dr. Raabe has many decades
17 of experience in this field; correct?

18 A Yes.

19 Q And so it could be that Dr. Raabe is using
20 more specific language, given his, you know, experience
21 and shall we say non-American, German approach to
22 language? Is that fair to say?

23 MR. MONALDO: Objection. Calls for
24 speculation.

25 THE WITNESS: Yeah, I'm not sure, but

1 Dr. DeArdo, you know, had probably 50 years of
2 experience when he wrote this. So they both are -- not
3 that I'm young. I'm not young for sure, but...

4 BY MR. LaMAGNA:

5 Q But we can agree that Dr. DeArdo is not
6 German; is that fair?

7 A He's not German --

8 MR. MONALDO: Objection.

9 THE WITNESS: -- and he's --

10 MR. MONALDO: Relevance.

11 THE WITNESS: -- he's not young either. He's
12 been at it for a long time as a steel expert, but...

13 BY MR. LaMAGNA:

14 Q Let's go to the next paragraph, which is
15 paragraph 19, I think.

16 A Okay.

17 Q And the header here says that: "Patent
18 owner's intermetallic layer construction is inconsistent
19 with usage of that term in the art."

20 Do you see that?

21 A Yes.

22 Q And then let's -- yeah, we see here you say:
23 "I have reviewed the three textbooks cited by Dr. Raabe
24 to support his proposed construction of intermetallic
25 layer"; is that correct?

1 A Yes.

2 Q And this would be Exhibits 2037, 2038 and 39;
3 correct?

4 A Yes.

5 Q And you state that those textbooks do not
6 support Dr. Raabe's construction; correct?

7 A Well, he -- the general construction that he
8 brought out of those books was -- you know, the
9 construction that he came up with was a little bit
10 different than some of the things that he mentioned that
11 came out of the books, so I guess that's where the
12 inconsistency is.

13 Is it an unreasonable definition of an
14 intermetallic material? No. It's a -- it's generally a
15 textbook definition, but he -- in his prior deposition,
16 there was some discussion about some conflict between
17 some of the things that came out of the textbook and
18 where he ended up with his specific construction.

19 Q Okay. So --

20 A But I don't -- I mean, his definition would
21 be, you know, considered a textbook type of a
22 definition. The reason I don't think that definition
23 applies to the patent or the prior art is that any of
24 those authors could have used those definitions and they
25 didn't. They chose to focus on things like composition,

1 so I guess that's where my difference is. I'm not
2 saying that his definition is wrong. It's just not
3 something that a person of ordinary skill would need.
4 The fact that it's not there doesn't mean that a person
5 with ordinary skill would not be able to proceed with
6 the information to achieve the result they're looking
7 for.

8 Does that make sense?

9 Q Yeah. Let me just kind of go through that,
10 make sure I understand it correctly.

11 So you would agree that Dr. Raabe's
12 construction is a reasonable textbook-type definition of
13 intermetallic layer?

14 MR. MONALDO: Objection. Misstates prior
15 testimony.

16 THE WITNESS: It's -- it is a textbook type of
17 definition. It's a general, you know, generic textbook
18 type of definition.

19 BY MR. LaMAGNA:

20 Q And you would agree that Dr. Raabe's
21 definition of intermetallic layer is reasonable, but in
22 your view, it's not needed in this circumstance?

23 A It wasn't included and it's not needed.

24 Q Okay. So in other words, it's not --
25 Dr. Raabe's definition is not, in your view,

1 unreasonable or inaccurate? It's just not necessary, in
2 your view, in this case; correct?

3 MR. MONALDO: Objection. Misstates prior
4 testimony.

5 THE WITNESS: It's not necessary, and we
6 really don't know from what's in the patent or the prior
7 art what the actual microstructures are in the layers.
8 So I guess that's where I have a little bit of a
9 concern, is we're applying terms that make assumptions
10 of what's actually in those layers.

11 BY MR. LaMAGNA:

12 Q Okay. But I just -- let me -- let's go back
13 to reasons why, you know, or a reason why, in your view,
14 Dr. Raabe's definition is, you know, perhaps reasonable,
15 but unnecessary. Okay?

16 And first, in your view, you can just look at
17 the elemental composition in order to answer the
18 questions as to whether or not the intermetallic
19 requirement is satisfied; correct?

20 MR. MONALDO: Objection. Misstates prior
21 testimony.

22 THE WITNESS: I mean, I look at -- I look at
23 the compositions of every layer, including the -- what's
24 called the intermetallic layer.

25

1 BY MR. LaMAGNA:

2 Q Okay. But I guess my question is:
3 One criticism you have of Dr. Raabe's definition is that
4 it doesn't rely on just looking at the elemental
5 composition?

6 MR. MONALDO: Objection. Misstates prior
7 testimony.

8 THE WITNESS: So I'm -- I guess I'm saying
9 that the terms that he uses make assumptions about what
10 structures might be in the layers of the coating.

11 BY MR. LaMAGNA:

12 Q Okay. Well, let me ask going back to the
13 point that we said before. There isn't -- let's take
14 this out of, for a moment, the context of, you know, the
15 prior art and just looking at his definition.

16 His definition of intermetallic layer from a
17 scientific point of view, from a textbook point of view
18 is not wrong; correct?

19 MR. MONALDO: Objection. Form.

20 THE WITNESS: It is a -- it is a textbook type
21 of definition. Does it apply in the case of the patent?
22 We can't be sure about that.

23 BY MR. LaMAGNA:

24 Q Okay. But --

25 A I'm not saying that there's -- that it

1 couldn't, but we don't know. And so rather than
2 speculate, I think we have everything we need within the
3 patent as it is, in terms of the definitions and the
4 content, for somebody to follow the teachings.

5 Q But you're not saying that -- strike that.

6 It would be fair to say you are not saying
7 that Dr. Raabe got it wrong scientifically, that he made
8 a scientific error in describing intermetallic layers;
9 correct?

10 MR. MONALDO: Objection. Form.

11 THE WITNESS: So I don't think he got it wrong
12 in putting forth a textbook definition of
13 intermetallics, but I think he's making an assumption
14 when he applies it to the layers in the coating.

15 BY MR. LaMAGNA:

16 Q Okay. Let me go back to paragraph 19 for a
17 second here.

18 You state in -- you see the sentence, it
19 starts with the word "further"?

20 A Yeah.

21 Q You say: "A POSITA would not have looked to
22 these generalist textbooks to define intermetallic layer
23 in the specific of hot-stamping of coated steels.
24 Rather, a POSITA would have reviewed literature relating
25 specifically to hot-stamping"; is that correct?

1 A Yes.

2 Q Now, you yourself do not cite to any textbooks
3 on hot-stamping; correct?

4 A I cite not textbooks, no. I cite to prior
5 art.

6 Q Okay. And the prior art that you cite to does
7 not provide an express definition for intermetallic;
8 correct?

9 A Well --

10 Q Let me take -- let me take a step back before
11 I -- before -- so we are not talking past each other.

12 By express, I mean, you -- I understand in
13 your report -- we'll go to this paragraph later -- that
14 have you areas where you have found some prior art that
15 you believe is consistent in their handling of the -- of
16 intermetallics with your definition.

17 You follow what I'm saying?

18 A Yeah.

19 Q And that comes later on in your declaration.
20 We'll get to that.

21 But in none of those articles or pieces of
22 prior art does it ever say an intermetallic layer is and
23 then describe what that is; correct? The term is not
24 expressly defined in any of the -- in any of the
25 references?

1 A In that way, it isn't, but it has references
2 to the formation of intermetallics. The example that I
3 cited from Takagi, where he talks about the ternary
4 system or where they talk about it.

5 Q Yes, I understand that. I understand that
6 there's a couple of places in the prior art that you
7 cite later in your declaration that make reference to
8 intermetallics.

9 A Yes.

10 Q Correct?

11 A Yes.

12 Q Okay. But my point is that none of those
13 expressly define what an intermetallic layer is,
14 correct, expressly define it?

15 A Well, they provide compositions, so there is
16 some definition.

17 Q Correct. They provide some example
18 compositions for an intermetallic compound; correct?

19 A Yes.

20 Q But none of them expressly define an
21 intermetallic layer; correct?

22 A Well, they do -- I mean, Takagi does.

23 Q You believe that Takagi has an express
24 definition for an intermetallic layer?

25 A Well, in terms of the composition of the

1 layer, the average composition.

2 Q Okay. Well, we'll come back to that.

3 A Do they provide a generalized definition of
4 what intermetallics are? They don't. They provide
5 definitions in the context of their hot-stamping
6 process.

7 Q So one of the things that Takagi does is it
8 identifies example intermetallic compounds; correct?

9 A Yeah, I think so. Let's go to that.

10 Q Well, I'm -- we'll get there later. I
11 don't --

12 A Yeah.

13 Q -- want to get too --

14 A They have --

15 Q -- far off on a tangent?

16 A They do have -- they've got specific
17 compositions.

18 Q Okay. So Takagi identifies specific elemental
19 compositions, for example, intermetallic compounds, in
20 your view; correct?

21 A They do for the layers, yeah, for each layer.

22 Q All right. We'll come back to that. I don't
23 know that I would agree with that. But my point is that
24 it does identify a molecular -- I mean, sorry, not a --
25 the atomic -- strike that.

1 You would agree that, in your view, Takagi
2 identifies the atomic makeup of certain example
3 intermetallic compounds; correct?

4 A No. I think the atomic makeup that you're
5 talking about is sort of an exact ratio, and what he's
6 providing or what it is providing are, you know, mean
7 compositions --

8 Q Okay. Let's --

9 A -- from each layer. So yeah, you can back
10 into ratios, but from the mean compositions. But that's
11 not the same as a strict sort of stoichiometric ratio
12 that's more theoretical.

13 Q All right. So let me -- give me one second
14 here.

15 Let's pull up Exhibit 1016, and let's go to
16 page 5 of the PDF.

17 A Okay.

18 Q And as you were saying, using the line scan
19 and composition, in your view, this is where -- strike
20 that.

21 Here's my question: Is this where Takagi,
22 using a line scan and composition data, identifies the
23 relative intermetallics that you were testifying about?

24 A So we don't know the arrangement, but we know
25 the fractions of each element in the layer based on

1 this. It doesn't tell us about structure, but it tells
2 us the fractions of elements in each layer. And then
3 you know, the properties of each layer as provided by
4 the hardness test.

5 Q Got it. Okay. My point was just a simpler
6 point.

7 When you were testifying a minute ago about
8 Takagi having composition data --

9 A Yeah.

10 Q -- I'm sorry -- this is the data that you were
11 referring to, correct, Figure 4 of Takagi?

12 A Yes.

13 Q Okay. Let's put away Exhibit 1016 for a
14 second and go back to Exhibit 1020 -- I'm sorry, 1075,
15 which is your declaration on page -- paragraph 19.

16 A Okay.

17 Q So what I'm trying to understand is: If
18 Takagi is showing you different elemental ratios that
19 are in a given layer, why would a person of skill in the
20 art not turn to a textbook on intermetallics to
21 understand or define the properties of an intermetallic
22 layer?

23 MR. MONALDO: Objection. Form.

24 THE WITNESS: Why would they not do that?

25

1 BY MR. LaMAGNA:

2 Q Yeah. Well, let me take a step back. Let me
3 withdraw the question and just lead into it, so you see
4 where I'm going with this. Okay? So we're not
5 confusing each other.

6 You say here in paragraph 19 that a POSITA
7 would look to literature related to hot-stamping
8 specifically.

9 Do you see that?

10 A Yeah, yes.

11 Q And then if a POSITA wanted to define
12 intermetallic layer, they would look to hot-stamping
13 literature; correct?

14 A Yes.

15 Q That they wouldn't look -- to understand what
16 an intermetallic layer, that they would not look to
17 textbooks on intermetallics.

18 That's your opinion; correct?

19 A I think they would more likely look at
20 literature relating to hot-stamping, because it's the
21 application that they're interested in and the context,
22 which includes the base alloy and the pre-coating alloy.

23 Q You yourself did not review or look at any
24 textbooks for hot-stamping; correct?

25 A I don't -- yeah. I don't know how many

1 textbooks there are on hot-stamping, but there's a lot
2 of papers, a lot of literature. There's likely
3 textbooks that include hot-stamping as a process. I
4 teach the process in one of my classes, but literature
5 tends to be more detailed and up to date and relevant
6 for somebody perhaps who's trying to do something with
7 an industrial process.

8 Q Well, you would agree that the textbooks on --
9 cited by Dr. Raabe were all textbooks that were specific
10 to intermetallics; correct?

11 A Yes.

12 Q And you agree that those textbooks provided in
13 very detailed, if not exhaustive, discussion of many
14 different types of intermetallics, their properties and
15 attributes, et cetera; correct?

16 MR. MONALDO: Objection.

17 THE WITNESS: Yes. Oh, go ahead sorry.

18 MR. MONALDO: Objection. Form.

19 THE WITNESS: Yes.

20 BY MR. LaMAGNA:

21 Q I'm sorry.

22 I'm sorry. I don't think the court reporter
23 got your answer.

24 A Yes.

25 Q Okay. Let me just restate it, so we have it

1 on, you know. Sorry. When people are talking over each
2 other, the transcript gets muddled.

3 You agree that the textbook cited by Dr. Raabe
4 provide a very detailed, if not exhaustive, discussion
5 of different types of intermetallics and their
6 properties and characterizations and attributes;
7 correct?

8 MR. MONALDO: Same objection.

9 THE WITNESS: So I mean, it's a very --
10 they're very general. I don't -- I mean, the
11 second time you stated it, you said exhaustive. I don't
12 know if they're exhaustive, but they cover quite a bit
13 of ground.

14 BY MR. LaMAGNA:

15 Q Well, they are -- the textbook cited by
16 Dr. Raabe are -- provide a very detailed and lengthy
17 discussion of the different types of intermetallics and
18 their properties, characterizations and attributes;
19 correct?

20 A Yes.

21 MR. MONALDO: Objection. Form.

22 BY MR. LaMAGNA:

23 Q And sorry. I think the witness answered yes.

24 Dr. Miles, maybe give Jeremy a chance just to
25 object. I just want to make sure that we're not --

1 A Sorry. I'll delay.

2 MR. LaMAGNA: Yeah, it's okay. Or we could
3 just have a standing objection that all of my questions,
4 you know, have some sort of formal infirmity, which is
5 maybe the case, Jeremy.

6 BY MR. LaMAGNA:

7 Q So I guess what I'm trying to understand again
8 is: If we want to know more about how to characterize
9 an intermetallic layer, why is it improper to look at
10 textbooks that characterize intermetallics?

11 A I don't know that it's improper to do that. I
12 just don't think that would have been the inclination of
13 a person of ordinary skill working on development of
14 hot-stamping. I guess that's just my opinion, but I'm
15 not saying that it's improper. I just don't think that
16 would have been their inclination.

17 Q So if a person working on hot-stamping wanted
18 to understand interdiffusion, for example, is it your
19 view that they would turn to texts on interdiffusion in
20 the context of hot-stamping without reference to more
21 specific texts regarding interdiffusion just generally?

22 MR. MONALDO: Objection. Form.

23 THE WITNESS: I mean, a person of ordinary
24 skill is going to have an understanding of
25 interdiffusion before they arrive at this problem, but

1 wouldn't preclude them from going back and consulting a
2 reference. But it's a pretty standard topic in a
3 material science class, so they would be armed with that
4 as they consider what's happening in this hot-stamping
5 process.

6 BY MR. LaMAGNA:

7 Q But the knowledge that they would have of
8 interdiffusion coming into hot-stamping, that's
9 knowledge that they would have background, scientific
10 knowledge, that they learned not limited to the context
11 of hot-stamping; correct?

12 A Correct.

13 Q And likewise, the knowledge that a person
14 skilled in the art would have regarding intermetallics
15 or intermetallic layers would be knowledge that they
16 would have as a foundational basis of metallurgy outside
17 of the context of hot-stamping; correct?

18 A Yeah. I think interdiffusion is probably a
19 more common topic that people would have.
20 Intermetallics might be a little bit more narrow, but
21 they could have an understanding of the concept of
22 intermetallic prior to, you know, working on a
23 hot-stamping process. But --

24 Q So --

25 A I'm trying to understand how these more

1 specific terms would help a person of ordinary skill.

2 Q Well, I guess what I'm struggling with is the
3 sentence as it written, and maybe it was just written a
4 little bit too specifically. Your sentence says: "A
5 POSITA would not have looked at these generalist
6 textbooks." That's an absolute statement. And you say:
7 "Instead, they would have looked at literature regarding
8 hot-stamping."

9 Do you see that?

10 A Yeah, and perhaps that's a little bit too
11 strict there. But my view is that their inclination
12 would be to look at the literature. And perhaps it's a
13 little strong to say that they absolutely would not have
14 looked at these generalist textbooks, but I don't think
15 that's going to be that helpful compared to the more
16 specific information that's found in the relevant
17 literature. So perhaps I could soften that a little
18 bit, because you know, I guess I would preclude that
19 they might go back and look at one. But to me, that
20 wouldn't be their inclination.

21 Q So it would be fair to say that a person of
22 skill and the art trying to understand something like
23 intermetallics or, as an example, would look potentially
24 to both generalist, you know, metallurgical textbooks,
25 as well as hot-stamping-related literature; correct?

1 A That's possible. I think -- like I said, I
2 their inclination is going to be to look at the
3 hot-stamping literature. It doesn't mean that they
4 wouldn't or couldn't go back and look at a textbook for
5 some reason, but I'm not sure that that would be
6 something that would help a lot based on -- you know,
7 the literature on hot-stamping, there's quite a bit of
8 it. And it's specific to the process and the
9 application and, in that sense, is helpful.

10 Q Well, there's nothing -- strike that.

11 Hot-stamping here does not create
12 intermetallic compounds that are unique in
13 characterization to hot-stamping.

14 Is that fair to say?

15 A Well, the boron steel that is the substrate
16 for the coating is pretty unique to this particular
17 application, and so in that sense, it would be fairly
18 targeted to the hot-stamping process. I don't know of
19 other applications where you would use a boron steel and
20 an aluminum silicon coating outside of hot-stamping.
21 There could be. I'm just not aware of any.

22 Q Okay. But I guess what I'm trying to say is
23 the characterization of intermetallics, the -- is not
24 different for intermetallics formed during hot-stamping
25 than for intermetallics formed in other processes

1 outside of hot-stamping --

2 A Oh --

3 Q -- correct?

4 A -- like -- okay. So you're saying
5 characterization? The methods used to characterize,
6 like --

7 Q The attributes. Sorry.

8 The attributes of intermetallics that are
9 formed in hot-stamping, an intermetallic compound --
10 strike that.

11 Intermetallic compounds formed via
12 hot-stamping don't have special or unique attributes
13 from compounds, intermetallic compounds, that are formed
14 through other means; correct?

15 A Well, I would say that they do in the sense of
16 what I just stated. In terms of the materials that are
17 relevant for hot-stamping, I don't know of other
18 applications of boron steel with aluminum silicon
19 coating. So in that sense, I think they are kind of
20 unique to the process. When you said the word
21 characterization, to me, that says: How do you
22 characterize the material?

23 And that points to methods like XRD and EBSD
24 and line scan. Sorry about that.

25 MR. MONALDO: Okay. We've been going for

1 almost an hour. Is it a good time?

2 MR. LaMAGNA: Oh, we have? Just when we were
3 having fun. Yeah. Let's go ahead and take a break here
4 then, if you want.

5 (Recess from 12:13 to 12:22.)

6 BY MR. LaMAGNA:

7 Q Now, the one text that you cite for your
8 construction of intermetallic layer is Webster's
9 Dictionary; correct?

10 A Yes.

11 Q You would agree that Webster's Dictionary is
12 not a literature relating specifically to hot-stamping?

13 A True.

14 Q It's not even a general textbook in metallurgy
15 or in any science; correct?

16 A No. It's not a textbook. It's providing a
17 definition.

18 Q It's not a scientific dictionary; correct?

19 A Webster? No. It's not scientific per se, but
20 it has scientific definitions in it.

21 Q So if a POSITA would have reviewed literature
22 relating specifically to hot-stamping, in order to
23 inform their understanding of intermetallic layer, why
24 are you relying on a just general English language
25 dictionary, like Webster's, for your construction?

1 A Because that's a general definition of
2 intermetallic that I thought applied to the patent and
3 the literature, and it was -- it wasn't disputed before
4 as a definition for intermetallic.

5 Q Now, for the textbooks that Dr. Raabe cited,
6 you agree that those are authoritative, reliable texts
7 in metallurgy on the topic of intermetallics; correct?

8 A I wasn't familiar with those particular books,
9 but they appear to be credible sources of information.

10 Q Okay. You don't dispute that those textbooks
11 are, you know, reliable authoritative sources for
12 information regarding intermetallics; correct?

13 A I don't. I don't dispute that they write.

14 Q I'm sorry. Could you repeat that? I didn't
15 hear.

16 A Correct.

17 Q Okay.

18 A I don't dispute.

19 Q And without going through each of the authors,
20 you don't dispute that the authors of these texts are,
21 you know, knowledgeable experts in their field
22 concerning intermetallics; correct?

23 A I don't have any reason to dispute that.

24 Q Right. And you don't contend that you are
25 more knowledgeable concerning intermetallics than the

1 authors of these textbooks; correct?

2 A Correct.

3 Q All right. In other words, you are not
4 disputing that the textbooks that Dr. Raabe cites
5 accurately describe the science concerning
6 intermetallics?

7 A Right.

8 Q We have no reason to believe that these
9 textbooks misstate the properties or attributes or
10 characterization of intermetallics; correct?

11 A Correct. I just didn't know how -- whether a
12 POSITA would have a tendency to consult them, but I
13 don't dispute that they would be reliable sources of
14 information on intermetallics generally.

15 Q So if we go back to Exhibit 1075,
16 paragraph 19.

17 A Okay.

18 Q You say that these textbooks do not support
19 Dr. Raabe's construction and are inconsistent with it;
20 correct?

21 A Yes, I do say that, but that's more in regard
22 to his testimony, and perhaps if we go back to his
23 testimony when he was being asked about it, he said:
24 Well, these are kind of general terms from older books.

25 And he came up with a construction that

1 perhaps was a little bit different than what they --
2 what he had drawn from the books, but -- so that was
3 kind of the point there. We could review that portion
4 of his testimony, if you would like to.

5 Q Well, Dr. Raabe put forth his understanding of
6 intermetallic layer prior to his deposition; correct?

7 A That he had that understanding before the
8 deposition?

9 Q Yes.

10 A I assume he -- I assume that he did.

11 Q And like I said, I don't want to -- we can
12 call it up later if we need to. I don't -- but to
13 repeat, you agree with me that in Dr. Raabe's
14 declaration, in paragraph 120, he identifies his
15 understanding of intermetallic layer; correct?

16 A So I've got that here. Let me just read it.
17 Yes, that's how he defined it.

18 Q Okay. And Dr. Raabe's understanding of
19 intermetallic layer is a layer containing two or more
20 metallic or metalloid elements atomically joined with
21 a define stoichiometry in an ordered crystal structure?

22 A Yes. That's what he says, yeah.

23 Q Okay. And in paragraph 19 here that we're
24 looking at of Exhibit 1075, you state that these
25 textbooks do not support and are inconsistent with his

1 proposed construction; correct?

2 A Yes, but I was referring to his testimony that
3 the books are older and they use generic terms. And he
4 used more specific terms.

5 Q Okay. So --

6 A So I guess in that sense, yes. That's where,
7 I guess, I would say there's some inconsistency. But
8 those books aside, if you ask me whether his
9 constructor, his definition of an intermetallic is sort
10 of a standard generic definition, I would say yes.

11 Q Okay. So let me -- you believe that
12 Dr. Raabe's later testimony in what you just described
13 may not -- you don't -- strike that.

14 You don't agree with aspects of Dr. Raabe's
15 testimony, as you just stated; correct?

16 A Sorry. I'm not sure exactly what I just
17 stated.

18 Q Oh, let me -- sorry. Let me ask it a
19 different way.

20 It is not your position that the textbooks
21 Dr. Raabe cited are inconsistent with the definition of
22 intermetallic layer that Dr. Raabe offered in
23 paragraph 120 of his declaration; correct?

24 A That's where I thought there was some -- maybe
25 some minor inconsistency.

1 Q I guess what I want to --

2 A I'm trying to find his testimony. I thought I
3 had it.

4 Q Yeah. But I'm trying to focus, regrettably --
5 I'm sorry. I hate to do this to you, but I have to
6 like -- I get to ask the questions.

7 I want to focus on Dr. Raabe's statement in
8 paragraph 120 of his report that we just -- that I just
9 read into the record.

10 So do you have -- I know you're looking at
11 some documents there in front of you. Do you have --

12 A I'm looking at -- I'm trying to re-find 120.
13 Okay. I've got it.

14 Q Yeah. That would be, for the record,
15 Exhibit 2040 at paragraph 120.

16 A Okay.

17 Q Now, when you look at what he wrote in
18 paragraph 120, is it your view that the textbooks are
19 inconsistent with what he wrote?

20 A So what I wrote in paragraph 19 partly came
21 from his testimony, and I don't have it in front of me.
22 But I think I've already stated that this definition in
23 120 is what I would consider sort of a generic
24 textbook-type definition of intermetallic layer, so
25 if -- does that make sense?

1 Q Yeah.

2 A Perhaps my -- part of my discussion in
3 paragraph 19 wasn't referring just to his declaration,
4 but also to his testimony during his deposition, when he
5 was asked questions about the textbooks.

6 Q Okay. So it's fair to say that Dr. Raabe's
7 description of intermetallic layer, his proposed
8 construction in paragraph 120, is consistent with the
9 science that is described in the textbooks he cites;
10 correct?

11 A Again, I guess it may be. But I would have to
12 verify that, because my comments in paragraph 19 say
13 there's some inconsistency. And I believe that came out
14 during his deposition.

15 Q Okay.

16 A Now --

17 Q I just want to focus on -- for my question,
18 I'm just focusing on the words what he describes solely
19 in paragraph 120, not anything extra he said. Just
20 looking -- so let's just look at only paragraph 120 of
21 Exhibit 2040.

22 Are you following me?

23 A Yeah, but that's where I'm saying the
24 inconsistency came out in terms of him discussing the
25 generalist text -- some of the stuff in the generalist

1 textbooks, that he was asked about during his
2 deposition. And he said: Well, these are old
3 textbooks, and so forth.

4 And so that's where that word inconsistency
5 comes from. I suppose that the definition is probably
6 consistent with the textbooks generally, but we use the
7 term intermetallic layer as though we're talking about
8 the -- you know, the '602 Patent or other prior art
9 where layers are present. And so that's where I think
10 there's an assumption. If we just say an intermetallic
11 material is a material containing two or more, then I
12 would agree with that.

13 Q Okay. I guess let me just take a step back,
14 and I'm trying to divorce myself now of -- and I think
15 you answered this. Let me just be clear.

16 Setting aside paragraph 19 of your report, so
17 there's no -- we're not confused about whatever was
18 meant there, and setting aside anything Dr. Raabe said
19 in his declaration -- I'm sorry. I'm getting tired.
20 I'm sure you're tired. I apologize.

21 Setting aside what's in paragraph 19 in that
22 context and setting aside Dr. Raabe's testimony, are you
23 following me on that?

24 A Yeah.

25 Q Just looking at the language in paragraph 120

1 of Dr. Raabe's declaration, Exhibit 2040, that
2 definition he provides is consistent with the textbooks
3 he cites; correct?

4 Just --

5 MR. MONALDO: Objection. Asked and answered.

6 THE WITNESS: My only concern is putting a
7 layer, because a layer would then imply that we're
8 talking about the patent. If you're talking about a
9 general material, then it looks like a general textbook
10 definition to me that I've seen before.

11 BY MR. LaMAGNA:

12 Q Okay.

13 A I don't -- and I apologize, but in -- if
14 paragraph 19 was colored by -- partly by his testimony,
15 I don't have time to go back and sort of rereview the
16 textbooks to make sure. But it wouldn't surprise me. I
17 think it is a textbook type of definition.

18 Q Well, let's look at the textbooks a little
19 bit. Let's call up now -- let me look at Exhibit 2039.

20 MR. LaMAGNA: So let's put that up on the
21 screen. And I'm going to go --

22 THE CONCIERGE: Just one second.

23 MR. LaMAGNA: Yeah.

24 THE CONCIERGE: Can you folks see that?

25 MR. MONALDO: Yes.

1 MR. LaMAGNA: Hold on. Let me see it. So
2 yeah.

3 BY MR. LaMAGNA:

4 Q So this is Exhibit 2039, which is the
5 textbook: "Intermetallics" -- and I don't even want to
6 try to mispronounce the names.

7 This is one of the textbooks Dr. Raabe cites
8 to; correct?

9 A Yes.

10 Q Let's go down to page 52 of the PDF, which is
11 page 42 of the internal numbering.

12 A Page 42?

13 Q Yeah. It's --

14 THE CONCIERGE: Did I get that right?

15 MR. LaMAGNA: No. Page 52 of the bottom page
16 numbers, yeah. And see, there's a different page number
17 at the top. It's extra confusing, so yeah. And now, if
18 you can, just blow that up and let's look at the top
19 highlight. I've highlighted a sentence here on this.

20 BY MR. LaMAGNA:

21 Q So do you see that the author here, in
22 Exhibit 2039, on page 52 for the record, internally 42,
23 states: "Alloys and solid solutions should clearly be
24 distinguished from intermetallic compounds"?

25 A Yes.

1 Q Do you agree that that is a true statement?

2 A Yes, I think so, but an intermetallic compound
3 is an alloy.

4 Q But it also has unique properties that are
5 distinct from just alloys or solid solutions; correct?

6 A So they're, yeah, typically, a bit more
7 brittle, higher strength, and I think some of these
8 properties were touched on in the prior art.

9 Q Well, let's go down to the -- further down the
10 page.

11 A Okay.

12 Q I've highlighted -- just let's see if we can
13 get all that on -- the highlighted part on the page,
14 talking about further discussion of intermetallics.

15 It says: "In going from a disordered phase to
16 an ordered one, one observes negative enthalpy."

17 Do you see that?

18 A Yeah.

19 Q What is negative enthalpy?

20 A Formation of such. Let me just read the rest
21 of it: "Formation of such. An ordered arrangement is
22 also driven by a maximization of bonding energy and a
23 higher contribution to the lattice energy."

24 You know, when you have a transformation of
25 some kind, it is thermodynamically favored, and so the

1 negative enthalpy, I think, refers to that. And then
2 the last sentence: "The formation of such. An ordered
3 arrangement is also driven by maximization of bonding
4 energy and a higher contribution to the lattice energy."
5 I think those are thermodynamic concepts, in terms of
6 whether something is favored or not favored.

7 Q This states, does it not, that when
8 intermetallic material forms into a phase, it does so as
9 an ordered phase; correct?

10 A So it's describing that process that you're
11 talking about. It's describing going from a disordered
12 phase to an ordered one.

13 Q And the corresponding structure of an
14 intermetallic phase then shows -- and I'm quoting
15 here -- you know, a quote: "Stoichiometric ratio of the
16 elements"; correct?

17 A Yes, and again, that's -- that ratio is a
18 theoretical exact ratio that may or may not be perfectly
19 replicated in an actual material. But yes, that's what
20 it says.

21 Q Right. So a person skilled in the art would
22 understand that the -- that there may be minor -- you
23 know, in a phase, there may be some deviation.

24 There may not be to the atom homogeneity;
25 correct?

1 A And maybe slightly greater length scale than
2 the atom, but yes, on a small scale, there could be
3 deviations. And then when you look at something like a
4 mean composition, you get a picture of what that
5 material really has in terms of its potential
6 properties.

7 Q Right. So as Exhibit 2039 states, the
8 intermetallic phase would be an ordered phase with, you
9 know, mostly a defined composition, as in mostly a
10 stoichiometric ratio of elements; correct?

11 MR. MONALDO: Objection. Form.

12 THE WITNESS: Yeah. I'm -- I agree with
13 what -- you've read that, and I can see what the
14 definition is there, what they're stating.

15 BY MR. LaMAGNA:

16 Q Right. Because at the end of that sentence
17 here, it says: "We call this an intermetallic
18 compound"; correct?

19 A Yes.

20 Q So the attributes that I've highlighted here
21 are ones that this author here of Exhibit 2039 is using
22 to characterize an intermetallic compound; correct?

23 A Yes.

24 Q Let's set this one aside and go to
25 Exhibit 2038.

1 Exhibit 2038 is another one of the textbooks
2 that Dr. Raabe cited; correct?

3 A Yes.

4 Q And I think one of the -- let's go to page 11
5 of the PDF, which is page 1 of the internal page
6 numbering of the document.

7 Now, what I've highlighted here is the simple
8 definition from Exhibit 2038 of an intermetallic that
9 was identified during Dr. Raabe's deposition; correct?

10 A Yes.

11 Q And this states that intermetallics are
12 compounds; correct?

13 A Yes.

14 Q That means that there's, you know, some form
15 of atomic bond between -- or atomic joining between the
16 atoms; correct?

17 A Yes.

18 Q And it says that they have a crystal
19 structure; correct?

20 A Yes.

21 Q And it says that that crystal structure is
22 different from that of the elements that make up the
23 intermetallic; correct?

24 A Yes.

25 Q And it then says that: "Thus, intermetallic

1 phases and ordered alloys are included"; correct?

2 A Yes.

3 Q So there isn't anything here in this -- let me
4 take a step back.

5 We agree that Dr. Raabe's language is more
6 precise than what is stated here; correct?

7 For Exhibit 1 -- Exhibit 2040, paragraph 120,
8 the statement that Dr. Raabe makes there is --

9 A Yeah.

10 Q -- more specific than what we're looking at
11 here, on page 11 of Exhibit 2038; correct?

12 A A little, maybe a little more specific. And
13 then it also -- he doesn't say: Different from those of
14 the constituent metals.

15 Q Fair enough. Yeah. But they're not --

16 A Yeah.

17 Q The two definitions are not in conflict or
18 inconsistent with each other; correct?

19 MR. MONALDO: Objection. Form.

20 THE WITNESS: I mean, you're showing me an
21 instance where it appears to be compatible.

22 MR. LaMAGNA: Let's go down to page 15.

23 And we're going to need to go -- this is going
24 to have to fit on -- yeah, there you go. It goes up the
25 page a little bit.

1 BY MR. LaMAGNA:

2 Q Here, the author of -- on page 15, internal
3 page number 5, of Exhibit 2038, the author writes:
4 "Intermetallics form, because the strength of bonding
5 between the respective unlike atoms is larger than that
6 between like atoms"; correct?

7 A Yes.

8 Q And so when you have a simple metal compound,
9 say raw iron, it's -- the iron is going to be bound to
10 the iron -- two iron atoms are bound to each other;
11 right? Like atoms are bound to like atoms; correct?

12 A Yes.

13 Q And here, with intermetallics, when they
14 join -- and we have a little picture down at the
15 bottom -- there are bonds between unlike atoms; correct?

16 A Yes.

17 Q And that creates -- that is where the bonding
18 strength comes from; correct?

19 A Yes.

20 Q And that results in a pattern then of atomic
21 positioning in intermetallics; correct?

22 A Yeah. I mean, in the example you're showing,
23 yeah, that's correct.

24 Q And when you see that illustrated here on
25 Exhibit 10 -- I mean, sorry, 2038 on page 15; correct?

1 A Yes.

2 Q And so what we see here on Exhibit 2038 shows
3 that these intermetallics form ordered crystal
4 structures; correct?

5 MR. MONALDO: Objection. Form. Also, I'll
6 note I can't see the image on the --

7 MR. LaMAGNA: Sorry.

8 MR. MONALDO: Yeah, maybe that's -- yeah.

9 THE WITNESS: So the images that you're
10 showing show order in the arrangement of the atoms on
11 the lattice.

12 BY MR. LaMAGNA:

13 Q Let me continue reading from the exhibit.
14 Let's slide up a little bit, so that we can see. There
15 we go.

16 Exhibit 2038 at page 15, internal page 5,
17 says: "Accordingly, intermetallics form particular
18 crystal structures with ordered atom distributions,
19 where atoms are preferentially surrounded by unlike
20 atoms"; correct?

21 A Yes.

22 Q And you have no reason to believe that that
23 statement is inaccurate; correct?

24 A No. I think for a class of intermetallics,
25 they're showing some examples here that I don't have any

1 reason to believe that that's inaccurate.

2 Q And the statement here that: "Intermetallics
3 form particular crystal structures with ordered atom
4 distributions, where atoms are preferentially surrounded
5 by unlike atoms," that is consistent with Dr. Raabe's
6 statement that the metallic elements would be
7 "atomically joined with defined stoichiometry in an
8 ordered crystal structure"; correct?

9 A Yeah. I mean, his definition is more general
10 that this specific one where you have atoms
11 preferentially surrounded by unlike atoms, but that
12 definition could -- that example could fit into his
13 definition.

14 Q Right. So looking at a high level at his
15 definition, it identifies that the metals are:
16 Number 1, atomically joined, that that happens,
17 Number 2, with defined stoichiometry of the atoms, and
18 Number 3, in an ordered crystal structure.

19 You see that; correct?

20 A I do, but these examples --

21 Q I'm just --

22 A -- they're not necessarily the examples that
23 we would see for the material combinations in the
24 patent.

25 Q I understand --

1 A I don't dispute the general knowledge that
2 you're showing me here.

3 Q Okay. I understand that these are not the
4 same exact compounds. What I'm saying is: I just want
5 to make sure that we are in agreement on what Dr. Raabe
6 is saying --

7 A Okay.

8 Q -- in paragraph 120.

9 A Okay.

10 Q And Dr. Raabe has set forth three features of
11 intermetallics where you have two or more metals or
12 metalloids. And those are: Number one, that they're
13 atomically joined. Number 2, with defined
14 stoichiometry.

15 And Number 3, in an ordered crystal structure;
16 correct?

17 A Correct, with the caveat that the term layer
18 seems to imply that we're talking about the patent.

19 Q Yes, I understand that. He's defining this in
20 the context of trying to define an intermetallic layer;
21 correct?

22 A He is. He is projecting that definition on
23 the layer in the patent, and we really don't know what
24 the structure of those layers are.

25 Q Okay. I'm just trying then -- so with that

1 caveat stated --

2 A Yeah.

3 Q -- you agree that his definition for
4 intermetallic layer requires there to be -- that the
5 metals be: One, atomically joined. Two, with defined
6 stoichiometry.

7 And three, in an ordered crystal structure;
8 correct?

9 MR. MONALDO: Objection. Asked and answered.

10 THE WITNESS: That is his definition.

11 BY MR. LaMAGNA:

12 Q And here, on page 2038 -- I mean, sorry.
13 Strike that.

14 Here, in Exhibit 2038 on page 15, internal
15 page 5, of the text that Dr. Raabe cited for his
16 definition, those three features are present.

17 We have atomic bonding, we have ordered
18 crystal structure and we have ordered atom
19 distributions; correct?

20 MR. MONALDO: Objection. Form.

21 BY MR. LaMAGNA:

22 Q As in defined stoichiometry?

23 A You're just -- so you're just reading under
24 2.1 here, Intermetallics Form; is that right?

25 Q Yes.

1 A Can just repeat that question one more time?

2 Q Well, I'm looking for the three things that
3 Dr. Raabe identified in his claim construction in
4 paragraph 120, and I want to try to see if they're here
5 on this page of Exhibit 2038, page 5 of -- internal
6 page 5, page 15 of the PDF.

7 A And I think -- you know, I think I said that
8 they fit within the definition, but his definition is a
9 bit more general.

10 Q Okay. But you agree that the requirement of
11 being atomically joined is present here in Exhibit 2038;
12 correct?

13 MR. MONALDO: Objection. Misstates prior
14 testimony.

15 THE WITNESS: Preferentially, surrounded by
16 unlike atoms, that's what implied by preferentially
17 surrounded by unlike atoms. That's implied by the prior
18 document that we looked at, but like I said, the case
19 that you're stating here, I can see how it fits within
20 paragraph 120. And -- but paragraph 120 is a bit more
21 general than this specific case.

22 BY MR. LaMAGNA:

23 Q I understand that they're not matchy-matchy.

24 You agree here it says: "Intermetallics form
25 because of the strength of bonding between the

1 respective unlike atoms."

2 That is referring to atomically joined
3 elements --

4 A Yes.

5 Q -- correct?

6 A Yes.

7 Q Okay. And when it talks about, you know --
8 strike that.

9 We also have the result being ordered crystal
10 structure; correct?

11 MR. MONALDO: Objection. Form.

12 THE WITNESS: Ordered atomic distributions,
13 that's what it implies.

14 BY MR. LaMAGNA:

15 Q And we also have defined stoichiometry.

16 In fact, it's more particular in what it says
17 here about the stoichiometry; correct?

18 MR. MONALDO: Objection. Form.

19 THE WITNESS: That's where you're saying atoms
20 are preferentially surrounded. That would imply
21 stoichiometry.

22 BY MR. LaMAGNA:

23 Q Okay.

24 MR. MONALDO: Hey, it's about 1:00 p.m.

25 MR. LaMAGNA: Already?

1 MR. MONALDO: Would this be a good time to
2 break for lunch?

3 MR. LaMAGNA: Hold on one --

4 THE WITNESS: I mean, I thought we were going
5 to be done by 1:00 p.m.

6 MR. LaMAGNA: Sorry.

7 THE WITNESS: That's okay. I've got another
8 person to handle something.

9 MR. LaMAGNA: Let me just look through -- can
10 I go just quickly through a couple more of these quotes?
11 Just -- I think it will go faster, just to get it off --
12 get this out of the way, so we don't have to come back
13 to this?

14 THE WITNESS: Okay.

15 BY MR. LaMAGNA:

16 Q Let's go down to page 18, Exhibit 2038, which
17 is page 7 internally in the document.

18 Here, it states that the phase transition
19 for -- in the formation of an intermetallic phase
20 results in a SuperLatticeStructure; correct?

21 A The simplest case, the phase transition
22 results from an ordering reaction in the solid solution
23 lattice from which a superlattice structure is
24 established.

25 Okay.

1 Q And it goes on to state here that this results
2 in stronger bonding, because, right, we are bonding
3 between unlike atoms? Correct?

4 A Yes.

5 Q So this is, again, referring to the
6 stoichiometry that we discussed on page 15 of
7 Exhibit 10 -- 2038; correct?

8 MR. MONALDO: Objection. Form.

9 THE WITNESS: I mean, it implies -- what it's
10 implying is stoichiometry. But I think, you know, it
11 was a little clearer on the prior page, because it says
12 preferentially.

13 I don't think there's anything different here.

14 BY MR. LaMAGNA:

15 Q Okay. Let's look -- one last thing, and then
16 we'll break for lunch. Let's look at one more, page 23
17 of the PDF, which is internally page 12. And if we go
18 down to the bottom there, we say: "The main problem
19 with strong intermetallics is their brittleness, which
20 makes processing and application difficult or
21 impossible."

22 Do you see that?

23 A Yes.

24 Q You agree that that's a true statement;
25 correct?

1 A I agree that intermetallics can be brittle.

2 Q And on the right, it says: "Plastic
3 deformation is more difficult in intermetallics than in
4 metals and conventional metal out -- metals alloys
5 because of the stronger atomic bonding and the resulting
6 ordered atomic distribution, which gives rise to more
7 complex crystal structures."

8 Do you see that?

9 A Yes.

10 Q So again, like the quotes that we looked at
11 before in Exhibit 2038, this is indicating what
12 Dr. Raabe identified as defined stoichiometry in an
13 ordered crystal structure; correct?

14 MR. MONALDO: Objection. Form.

15 THE WITNESS: That's the implication from
16 reading these paragraphs.

17 BY MR. LaMAGNA:

18 Q Right. And I understand, of course,
19 Dr. Raabe, you know, perhaps being a German, has used
20 slightly different wording; correct?

21 A Well, I don't know about being a German. He
22 has used slightly different wording.

23 Q But the substance is consistent; correct?

24 MR. MONALDO: Objection. Form.

25 THE WITNESS: I think the examples that you're

1 showing here fit within his definition.

2 MR. LaMAGNA: Okay. Let me just -- let's --
3 did I promise lunch? Sorry. How long do you need --
4 well, let's go off the record.

5 (Recess from 1:03 to 1:33.)

6 BY MR. LaMAGNA:

7 Q Dr. Miles, again, thank you for your patience
8 and indulgence. I want to go back to Exhibit 2038 here
9 real quick, on page 23, internal page 12.

10 On the left there, you see it says: "The main
11 problem with strong intermetallics is their brittleness,
12 which makes processing and application difficult or
13 impossible"; correct?

14 A Yes.

15 Q Now, let's go down two pages to page 14
16 internally, which is page 25 of Exhibit 1038.

17 And Exhibit 1038, the authors write here:
18 "The processing of high-strength intermetallics is
19 difficult because of their brittleness and development
20 of the necessary processing techniques is a very
21 demanding task."

22 Than is an accurate statement; correct?

23 A I had -- my experience with intermetallics is
24 as a byproduct of a process, not something that I was
25 trying to create. So I can't really comment to that,

1 but no, I'm reading your quote here in the textbook. If
2 you're asking me my opinion, I'm not sure, but I can
3 relate to the paragraph here.

4 Q But you don't have any reason then to disagree
5 with the authors on this point; correct?

6 A I don't have a reason to disagree and -- no.

7 Q And let's close that exhibit. Let's open up
8 the next thing here.

9 Let's look at your paragraph in Exhibit 1075,
10 your reply declaration. Let's look at paragraph 28.

11 A Okay.

12 Q Now, in paragraph 28 of Exhibit 2075 -- I'm
13 sorry. Let me start over.

14 In paragraph 28 of Exhibit 1075, your reply
15 declaration, you cite Webster's Dictionary in support of
16 your construction of intermetallic layer; correct?

17 A Yes.

18 Q And specifically, you cite the definition of
19 intermetallic; correct?

20 A Yes.

21 Q So let's look at -- let's pull up Exhibit 1079
22 that you're citing.

23 A Okay.

24 MR. LaMAGNA: And this is going to be a little
25 bit tough. Let's go down two pages, I think, to the

1 definitions. And we need to sort of zero in on -- if
2 you can, blow up for us the definition of intermetallic.
3 It's kind of in the center column, middle of the page.

4 THE CONCIERGE: Which word again? I'm sorry.

5 MR. LaMAGNA: Intermetallic.

6 It is literally like in the middle of the page
7 there.

8 There you go. There it went. I saw it. Zero
9 in on that. Blow that up a little bit, if we can.

10 THE CONCIERGE: Give me one second. The Zoom
11 is blocking my --

12 BY MR. LaMAGNA:

13 Q Okay. I'm sorry, Dr. Miles. I was trying to
14 zero in on it, because it's small type.

15 A Yeah.

16 Q But if you -- do you have a copy of
17 Exhibit 1079 you can look at on your end?

18 A I think so. I caught that one quickly.

19 Q Okay. This is good enough. This is perfect.

20 A Okay.

21 Q Yeah. Let's take a look at this. So what
22 we're showing now is page 3 of Exhibit 1079.

23 Do you see that?

24 A Yep.

25 Q And this is where you cite the definition of

1 the word intermetallic; correct?

2 A Correct.

3 Q Now, you do not note in your declaration that
4 there is also a definition provided for an intermetallic
5 compound; correct?

6 A Correct.

7 Q Why didn't you cite or identify or note
8 Webster's definition of intermetallic compound?

9 A Not knowing the actual structure of the layers
10 in the patent, I went with a definition that was a
11 little more general.

12 Q You see that the definition that Webster's
13 provides for intermetallic compound describes
14 intermetallic compounds as having: "A characteristic
15 crystal structure and, usually, a definite composition."

16 Do you see that?

17 A Yes.

18 Q And you don't dispute -- well, let me ask it
19 this way: Do you disagree with that?

20 A No, but I went with the more general
21 definition, not knowing the structure. And Dr. DeArdo
22 talked about an intermetallic being a volume of material
23 that has intermetallics in it. So that would be kind of
24 what I'm looking at here. And if you look at the
25 layer C in the patent, that's kind of what I think you

1 have possibly, because they say aluminum-rich
2 intermetallic layer. So you possibly have some
3 compounds sort of randomly distributed within an
4 aluminum matrix, maybe something like that, but I chose
5 the more general definition, not having more information
6 to go on from the patent.

7 Q It also states here in the definition of
8 intermetallic compound that the intermetallic compounds
9 are distinguished from solid solutions.

10 Do you see that?

11 A Yes. Often distinguished from solid solution,
12 yeah.

13 Q So you would agree that intermetallic
14 compounds are not the same as solid solutions; correct?

15 A Correct.

16 And it says often; right? But with that
17 caveat, they're often distinguished from solid
18 solutions. There's perhaps cases where there's some
19 commonality.

20 Q Okay. Let's put away Exhibit 1075.

21 MR. MONALDO: Put away 1075 you said?

22 MR. LaMAGNA: No. I'm sorry. My bad. Let's
23 put away Exhibit 1079 and go back to Exhibit 1075.

24 MR. MONALDO: Okay.
25

1 BY MR. LaMAGNA:

2 Q And let's go to paragraph 27. It's just the
3 prior paragraph.

4 A Okay.

5 Q And this paragraph, I believe, addresses the
6 point that -- your point that Dr. Raabe's definition of
7 intermetallic layer is inconsistent, because it, in your
8 view, doesn't address amorphous intermetallic phases;
9 correct?

10 A Or the potential for amorphous phases.

11 Q Okay. And so let's go now to Exhibit 1039,
12 which we already looked at, and this is one of the
13 textbooks that Dr. Raabe relied on; correct?

14 A Yes.

15 Q A textbook specific to intermetallics;
16 correct?

17 A Yes.

18 MR. MONALDO: I'm sorry to interrupt. Was it
19 1039 or 2039?

20 MR. LaMAGNA: My bad. 2039. I'm sorry. So
21 let me rephrase that.

22 BY MR. LaMAGNA:

23 Q Exhibit 2039 is one of the textbooks that
24 Dr. Raabe referred to as -- in his claim construction or
25 support; correct?

1 A Yes.

2 Q Okay. And this Exhibit 2039 is a textbook
3 specifically on intermetallics; correct?

4 A Yes.

5 MR. LaMAGNA: Okay. And Rob, you may need to
6 mute your audio feed. Oh, there we go.

7 BY MR. LaMAGNA:

8 Q Okay. Now, we're going to go quite aways into
9 Exhibit 2039, down to page 275 in the PDF.

10 THE CONCIERGE: 275? Okay. 275 of the PDF,
11 which is 285 of the document?

12 MR. LaMAGNA: No, 275, up 10 pages.

13 THE CONCIERGE: Thank you.

14 BY MR. LaMAGNA:

15 Q Okay. So I want to show you page 275 of
16 Exhibit 1039, which is -- currently is page 265. Sorry.

17 MR. LaMAGNA: Up 10 more pages.

18 THE CONCIERGE: Okay.

19 MR. LaMAGNA: So on the upper numbers, it's
20 265, and on the numbers at the bottom of the pages --
21 there we go.

22 BY MR. LaMAGNA:

23 Q Apologies. Let me -- let me start over.

24 So I'm showing you here Exhibit 2039, page 275
25 of the document, which is internally numbered page 265,

1 a section on metallic glasses.

2 Do you see that?

3 A Yes.

4 MR. LaMAGNA: And then if we could just blow
5 that up and focus at least on that first paragraph a
6 little bit so that we can read it, is that possible?

7 BY MR. LaMAGNA:

8 Q So at the beginning of that paragraph, it
9 discusses the chapters we looked at above regarding
10 intermetallics.

11 Do you see that?

12 A Uh-huh.

13 Q And it goes on to say: "In these compounds,
14 one observes a discrete composition, where each atom has
15 well-defined near-neighbor coordination in the
16 respective structure."

17 Do you see that?

18 A Uh-huh.

19 Q And that is referring back to intermetallics
20 as we previously discussed regarding their, you know,
21 stoichiometric and ordered alignment; correct?

22 A Right.

23 Q And then the next sentence says: "This is not
24 the case in amorphous metals, which are also called
25 metallic glasses or glassy metals, since they exhibit

1 structural features similar to well-known oxide
2 glasses."

3 Do you see that?

4 A Yes.

5 Q So this is saying that the rules that we --
6 strike that.

7 This is confirming that the characterizations
8 that we previously discussed do not apply to metallic
9 glasses; correct?

10 MR. MONALDO: Objection. Form.

11 THE WITNESS: Yes.

12 BY MR. LaMAGNA:

13 Q And metallic glasses is another name for
14 amorphous metal; correct?

15 A Yeah. A metallic glass is an amorphous metal,
16 yeah.

17 Q And we already established earlier that the
18 '602 and '227 Patents are not about the formation of
19 metallic glasses; correct?

20 A Metallic -- they're not mentioned in the
21 patents.

22 Q Yeah. In other words, the six -- neither the
23 '602 nor the '227 Patent relate to amorphous metals;
24 correct?

25 A Not in the sense of being explicitly mentioned

1 in the patent. And I would just caveat that with, you
2 know, we don't know what the structure is in those
3 layers, but with that caveat, we don't see metallic
4 glasses mentioned in the patents.

5 Q Okay. Let me just check my notes here a
6 second.

7 We can go ahead and take down Exhibit 2039.

8 During the pendency of your testimony today,
9 have you had occasion to talk to your counsel about the
10 subject matter of your testimony?

11 A No. We have not talked or communicated.

12 Q Well, I promise that I had tried to shorten up
13 my outline to cover stuff we had already covered, since
14 we jumped ahead a lot. So I have no further questions
15 at this time. We can let you go, unless your counsel
16 disagrees.

17 MR. MONALDO: Can we take about a 10-minute
18 break, and I'll see if we have any redirect?

19 MR. LaMAGNA: Sure.

20 MR. MONALDO: Okay. Thanks.

21 (Recess from 1:50 to 1:59.)

22 EXAMINATION

23 BY MR. MONALDO:

24 Q So Dr. Miles, I would like to revisit
25 Dr. Raabe's construction of intermetallic layer with you

1 briefly.

2 THE WITNESS: Okay.

3 BY MR. LaMAGNA:

4 Q So you would agree with me that Dr. Raabe
5 requires an intermetallic layer to have a defined
6 stoichiometry and as having an ordered crystal
7 structure; correct?

8 A Correct.

9 Q And so for your understanding of Dr. Raabe's
10 construction is that for purposes of interpreting the
11 '602 Patent, a layer must a hundred percent of the time
12 have a defined stoichiometry and an ordered crystal
13 structure in order to be considered an intermetallic
14 layer; correct?

15 MR. LaMAGNA: Calls for a legal conclusion.

16 THE WITNESS: That's how I would read it.

17 BY MR. MONALDO:

18 Q So would you agree with Dr. Raabe's position
19 that for the purposes of interpreting the '602 Patent, a
20 layer must a hundred percent of the time have a defined
21 stoichiometry and an ordered crystal structure in order
22 to be considered an intermetallic layer?

23 MR. LaMAGNA: Same objection.

24 THE WITNESS: That's how I -- that's how I
25 read it.

1 BY MR. MONALDO:

2 Q But would you agree that that's required by
3 the '602 Patent?

4 A From his definition, yes.

5 MR. LaMAGNA: Calls for a legal conclusion.

6 BY MR. MONALDO:

7 Q So in your reading of the '602 Patent, does a
8 layer have to a hundred percent of the time have a
9 defined stoichiometry in your interpretation of an
10 intermetallic layer?

11 MR. LaMAGNA: Leading.

12 THE WITNESS: No.

13 No. There could be regions of various levels
14 of order and disorder in a layer.

15 BY MR. MONALDO:

16 Q Okay. So to be clear for the record, in your
17 opinion, does a layer have to have an order crystal
18 structure and a defined stoichiometry to be considered
19 an intermetallic layer --

20 A No.

21 Q -- in the context of the '602 Patent?

22 A No.

23 Q And your opinion is based on your review of
24 the '602 Patent specification, prior references you
25 cited and the textbook cited by Dr. Raabe?

1 A That's correct.

2 Q So during your earlier discussion with
3 Mr. LaMagna, you made a number of statements where you
4 refer to Dr. Raabe's definition as reasonable or
5 textbook.

6 Do you recall those statements?

7 A Yes.

8 Q So when you made those statements, did you
9 mean to imply that an intermetallic layer must have a
10 defined stoichiometry and an order crystal structure for
11 the purposes of understanding the '602 Patent?

12 MR. LaMAGNA: Leading.

13 THE WITNESS: No.

14 No. I said that those were general textbook
15 definitions of intermetallic.

16 BY MR. MONALDO:

17 Q So when you were testifying earlier, were you
18 saying that Dr. Raabe's definition lists requirements
19 for all intermetallic layers, or were you trying to say
20 that Dr. Raabe's definition just provides a reasonable
21 example of characteristics that might be an
22 intermetallic layer?

23 MR. LaMAGNA: Leading.

24 THE WITNESS: The latter.

25

1 BY MR. MONALDO:

2 Q That it --

3 A To confirm that it might be, yeah. I think
4 that -- and this is, I guess, what I discussed and tried
5 to put forth in my discussion, is that his textbook
6 definition is something that you can find and applies
7 to -- certainly to certain structures. But we don't
8 know what the structures are in the layers of the
9 '602 patent, and therefore, I didn't want to apply that
10 construction to the '602 Patent.

11 BY MR. MONALDO:

12 Q But your opinion is that the '602 Patent is
13 not limited to the definition provided by Dr. Raabe?

14 A Correct.

15 MR. MONALDO: No further questions.

16 EXAMINATION

17 BY MR. LaMAGNA:

18 Q I just have a couple of follow-up questions.

19 A Okay.

20 Q When we talked about something being
21 homogenous in metallurgy, you agree that that's
22 understood to be not homogeneous to the atom? We
23 effectively oppose it would understand that as being
24 largely homogeneous; correct?

25 MR. MONALDO: Objection. Scope.

1 THE WITNESS: So homogenous to the atom, I --
2 you know, there are going to be variations in
3 composition and structure as you go across, for example,
4 a material, and so that's why I really relied on mean
5 compositions as a way to characterize the layers.

6 BY MR. LaMAGNA:

7 Q So you agree that you relied on mean
8 compositions as a way to characterize the layers;
9 correct?

10 MR. MONALDO: Objection. Scope.

11 THE WITNESS: Yes.

12 BY MR. LaMAGNA:

13 Q Okay. And so in determining that you have an
14 intermetallic layer, rather than use Dr. Raabe's, you
15 know, definition, you believe that you should look to
16 the mean compositions; correct?

17 MR. MONALDO: Objection. Scope. Form.

18 THE WITNESS: Well, I looked at my general
19 construction for intermetallic and also rely on the
20 compositions provided in the patent and the prior art.

21 BY MR. LaMAGNA:

22 Q Okay. And so again, when somebody uses a term
23 like that there is a particular crystal structure or
24 there's a particular ordering or there's a particular
25 homogeneity in metallurgy, it's understood that those

1 words are not used as absolutes, that there is some
2 minor variation that would apply in a phase; correct?

3 MR. MONALDO: Objection. Scope. Form.

4 THE WITNESS: So I mean, if I'm applying the
5 construction of Dr. Raabe, you know, I don't know that
6 there's room for variation. His construction has a
7 fairly strict interpretation for me, and I guess that's
8 why I didn't prefer it over the one that I put forward.
9 Mean compositions are also things that allow us to
10 characterize a layer, and you know, that was -- that's
11 kind of how I look at it.

12 BY MR. LaMAGNA:

13 Q So if Dr. Raabe had written instead, as a
14 definition of intermetallic layer: A layer containing
15 two or more metallic or metalloid elements that are
16 largely atomically joined with defined stoichiometry in
17 an ordered crystal structure, you would agree with that?

18 MR. MONALDO: Objection. Form.

19 THE WITNESS: I don't know if that applies to
20 the layers that are described in the patent. That
21 certainly could apply to some intermetallic materials.

22 BY MR. LaMAGNA:

23 Q So you don't know whether an intermetallic
24 phase layer, as described in the patent, would be -- you
25 know, have the metals or metalloids therein largely

1 atomically joined with defined stoichiometry in an
2 ordered crystal structure?

3 MR. MONALDO: Objection. Misstates prior
4 testimony. Form.

5 THE WITNESS: You wouldn't know unless you
6 characterize those layers with the techniques that we
7 talked about earlier. And those techniques were not
8 used, but they existed. So apparently, the authors of
9 the patent and the authors of prior art documents didn't
10 feel the need to characterize the layers in that way.

11 BY MR. LaMAGNA:

12 Q Well, I guess what I'm getting at is: Your
13 counsel suggested that Dr. Raabe's definition needs to
14 be read as an atomic absolute, that every single atom in
15 the layer must be atomically joined with defined
16 stoichiometry in an ordered crystal structure; correct?

17 MR. MONALDO: Objection. Misstates prior
18 questioning and testimony.

19 THE WITNESS: That's what his construction
20 implies. It's a fairly strict interpretation of an
21 intermetallic.

22 BY MR. LaMAGNA:

23 Q Okay. To you, it implies that -- you're
24 reading that as requiring every single atom in that
25 layer to be an anatomically joined metal with defined

1 stoichiometry in an ordered crystal structure; correct?
2 That's how you're reading what Dr. Raabe wrote?

3 A I'm read -- I'm reading it that way or largely
4 that way. In other words, you know, if we look at what
5 Dr. DeArdo talked about as a possibility, which is, you
6 know, layer C in the '602 Patent could possibly be
7 intermetallic compounds in an aluminum matrix. And if
8 that's the case, they could well be sort of randomly
9 distributed within that matrix. Dr. Raabe's
10 interpretation doesn't -- in my mind, doesn't allow for
11 that possibility.

12 Q So you believe that the proper construction
13 needs to open up to solutions, solid metallic solutions,
14 that are not atomically joined, that lack defined
15 stoichiometry and don't have an ordered crystal
16 structure; correct?

17 A No, that's -- so a solid solution is different
18 than what I just described. I just described a volume
19 of material containing intermetallic compounds
20 surrounded by an aluminum matrix.

21 Q Well, would all of those intermetallic
22 compounds be part of a compound, or would they be in
23 solution in something else?

24 A So they're not going to be in solution in that
25 case. In solution would mean that the individual atoms

1 are in solution, but when you form compounds, you now
2 have the compounds as discrete compounds within what
3 might be described as an aluminum-rich matrix. So
4 that's where the strict definition of Dr. Raabe, to me,
5 would not include such a structure in that layer. And
6 we don't know the structures in the other layers either.

7 Q But you recognize that your construction does
8 not -- your construction is broad enough to encompass
9 material for which there is no defined stoichiometry at
10 all; correct?

11 A That's possible.

12 Q Okay. And your construction is broad enough
13 to cover material that lacks any ordered crystal
14 structure; correct?

15 MR. MONALDO: Objection. Scope.

16 THE WITNESS: So there could be areas like
17 that.

18 BY MR. LaMAGNA:

19 Q Okay. And so what I'm trying to understand
20 is: If we change Dr. Raabe's construction to clarify
21 that he's not talking at an atomic absolute for every
22 single atom, he's talking that largely or -- you know,
23 that these conditions would be met?

24 MR. MONALDO: Objection. Scope.
25

1 BY MR. LaMAGNA:

2 Q That addresses the concern your counsel
3 raised, but it doesn't -- you would agree that that
4 would then be an acceptable definition; correct?

5 MR. MONALDO: Objection. Scope. Form.
6 Unsupported hypothetical.

7 THE WITNESS: If -- I don't know. If you say
8 largely, I don't know how to quantify that, but it would
9 go closer in the direction. It would head in the
10 direction of something that might be more reasonable to
11 me, but you know, he --

12 BY MR. LaMAGNA:

13 Q So when somebody says -- when the word
14 homogenous is used and you agree that a person of skill
15 in the art would not read that as meaning down to the
16 atom, why would a person of skill in the art read
17 Dr. Raabe's definition as down to the atom?

18 MR. MONALDO: Objection. Scope.

19 THE WITNESS: Let's read his definition
20 one more time.

21 BY MR. LaMAGNA:

22 Q His definition is: "A layer containing two or
23 more metallic or metalloid elements atomically joined
24 with defined stoichiometry in an ordered crystal
25 structure."

1 A Yeah. So that definition would apply to the
2 compound in the aluminum matrix, but it wouldn't apply
3 to the entire layer. Does that make sense?

4 Q Got it. I think I now see where we're having
5 our misunderstanding.

6 In paragraph 120 of Dr. Raabe's declaration,
7 Exhibit 2040, he says: "A layer containing two or more
8 metallic or metalloid elements atomically joined with
9 defined stoichiometry in an ordered crystal structure."

10 Do you see that?

11 A Yeah.

12 Q He does not say: "A layer containing to the
13 atom only two or more metallic or metalloid elements
14 atomically joined with a defined stoichiometry and in an
15 ordered crystal structure."

16 Do you see that?

17 A But I interpret that as the layer containing
18 two or more metallic or metalloid elements atomically
19 joined. I don't see how we accommodate a different
20 definition other than the material in the layer.

21 Q Okay. I think I see our misunderstanding.

22 A As atomically joined with defined
23 stoichiometry in an ordered crystal structure.

24 Q Okay. So in your reading, the way you're
25 understanding what Dr. Raabe wrote here, is what --

1 you're reading this as a layer comprising two or more
2 metallic or metalloid elements atomically joined with
3 defined stoichiometry in an ordered crystal structure;
4 correct?

5 A To me -- yeah. To me, that's the same thing,
6 at least my reading of it.

7 Q Okay. I think I understand our -- why we're
8 disagreeing. Okay. All right. Thank you for your
9 patience. I have no -- well, let me ask it a different
10 way.

11 Would it be fair to say that what Dr. Raabe is
12 saying here, in your view, is that an intermetallic
13 layer is a layer consisting of and solely of two or more
14 metallic or metalloid elements atomically joined with
15 defined stoichiometry in an ordered crystal structure?

16 A Yes, and I -- those three different words, to
17 me, mean the same -- mean the same thing.

18 Q Okay. So can --

19 A Perhaps your meaning is different, but that's
20 how I read it.

21 Q Okay. So when you say those three different
22 words, you mean containing --

23 A Comprising.

24 Q -- comprising or consisting of?

25 A Right.

1 Q Okay. And so as your counsel directed you, it
2 is -- in your view, what Dr. Raabe is saying is that
3 this layer has what he is describing and only that to
4 the atom and nothing else; right?

5 A So yes. Yeah.

6 Q I can -- yeah.

7 A To the atom. I mean --

8 Q Sorry. Let's --

9 A -- but that's, essentially, the structure,
10 yeah. That's -- and so to me, that's a stricter
11 definition and what I might expect.

12 MR. LaMAGNA: Okay. Fair enough. And
13 unfortunately, the way this process works, you know, you
14 get the last word, and Dr. Raabe doesn't get to clarify.
15 But -- so we'll have to just let bygones be bygones I
16 guess. I have no further questions at this time, and we
17 can let the witness go if you would like, Jeremy.

18 MR. MONALDO: Yep. Thank you, Dr. Miles.
19 Thank you everyone.

20 THE WITNESS: Thank you.

21 MR. LaMAGNA: We can go off the record.

22 (Whereupon, the deposition was
23 concluded at 2:17 pm. this
24 date.)

25 * * * * *

CERTIFICATE OF REPORTER

STATE OF UTAH)

) SS:

COUNTY OF SALT LAKE)

I, Heidi Hunter, a duly commissioned and licensed court reporter, State of Utah, do hereby certify: That I reported the taking of the deposition of the witness, Dr. Michael Miles, commencing on Thursday, March 27, 2026, at 9:59 a.m.;

That prior to being examined, the witness was, by me, duly sworn to testify to the truth. That I thereafter transcribed my said shorthand notes into typewriting and that the typewritten Transcript of said deposition is a complete, true, and accurate transcription of said shorthand notes.

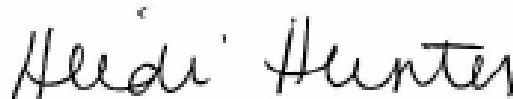
I further certify that I am in no way related to any of the parties, nor am I in any way interested in the outcome thereof.

() Review and signature was requested.

() Review and signature was waived.

(X) Review and signature was not requested.

IN WITNESS THEREOF, I have hereunto set my hand in my office in the County of Salt Lake, State of Utah, this 27th day of March, 2026.



Heidi Hunter, CSR, RPR

1 Arcelormittal v. Vinfast

2 Dr. Michael Miles (#7977996)

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24 Dr. Michael Miles Date

25 _____

1 Arcelormittal v. Vinfast

2 Dr. Michael Miles (#7977996)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Dr. Michael Miles, do hereby declare that I
5 have read the foregoing transcript, I have made any
6 corrections, additions, or changes I deemed necessary as
7 noted above to be appended hereto, and that the same is
8 a true, correct and complete transcript of the testimony
9 given by me.

10
11 _____
12 Dr. Michael Miles

_____ Date

13 *If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS

15 _____ DAY OF _____, 20____.

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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