UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of	
CERTAIN HIGH-STRENGTH ALUMINUM OR ALUMINUM ALLOY-COATED STEEL, AND AUTOMOTIVE PRODUCTS AND AUTOMOBILES CONTAINING SAME	**Inv. No. 337-TA-1402**

FINAL INITIAL DETERMINATION ON VIOLATION OF SECTION 337

Administrative Law Judge Monica Bhattacharyya

(July 18, 2025)

Appearances:

For Complainant ArcelorMittal:

Benjamin Hershkowitz, Allen Kathir, and Sung Bin Lee of Gibson, Dunn & Crutcher LLP in New York, NY; Mark N. Reiter, Ashbey N. Morgan, Julia G. Tabat and Monica Lin of Gibson, Dunn & Crutcher LLP in Dallas , TC; Brian Buroker of Gibson, Dunn & Crutcher LLP in Washington, DC; Raymond A. LaMagna of Gibson, Dunn & Crutcher LLP in Los Angeles, CA; Nathaniel R. Scharn of Gibson, Dunn & Crutcher LLP in Irvine, CA; Evan T. Kratzer of Gibson, Dunn & Crutcher LLP in Palo Alto, CA

For Respondents VinFast Auto Ltd., VinFast Auto, LLC, VinFast USA Distribution, LLC, Vingroup USA, LLC, and VinFast Trading and Production JSC:

Joseph V. Colaianni, Michael J. McKeon, Linhong Zhang, Sangki Park, April Sunyoung Park, Jack R. Wilson, Daniel Y Lee, Irene Hwang and John Thuermer of Fish & Richardson P.C. in Washington, D.C.; Brian P. Boyd and Ashley Bolt of Fish & Richardson P.C. in Atlanta, GA

Pursuant to the Notice of Investigation, ((EDIS Doc. ID 821906) (May 20, 2024); 89 Fed. Reg. 45922 (EDIS Doc. ID 822786 (May 24, 2024)), and Commission Rule 210.42, this is the administrative law judge's final initial determination on violation in the matter of *Certain High-Strength Aluminum or Aluminum Alloy-Coated Steel, and Automotive Products and Automobiles Containing Same,* Inv. No. 337-TA-1402, 19 C.F.R. § 210.42(b)(1).

It is the undersigned's final initial determination that there has not been a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain high-strength aluminum alloy-coated steel and automotive products and automobiles containing same by reason of infringement of claims 1-3, 5-10, 12, 20-22, 24-26 and 28 of U.S. Patent No. 10,961,602 or claims 1-2, 4-11, 13, 15-17, 22, and 24-25 of U.S. Patent No. 11,326,227.[1]

[1] Evidence and argument on infringement was only presented as to claims 1-3, 7-9, 20-22, 24 and 26 of U.S. Patent No. 10,961,602 ("the '602 patent") and claims 1, 2, 4, 5, 7-11, 13, 15-17, and 24 of U.S. Patent No. 11,326,227 ("the '227 patent") (collectively, "the Asserted Claims"). That is, no evidence or argument was presented for infringement of claims 5, 6, 10, 12, 25, or 28 of the '602 patent or claims 6, 22, or 25 of the '227 patent. Those claims were not, however, terminated or withdrawn from the investigation by Motion. The undersigned finds that ArcelorMittal has failed to meet its burden to show infringement of claims 5, 6, 10, 12, 25, or 28 of the '602 patent or claims 6, 22, or 25 of the '227 patent. The remaining claims at issue are discussed herein.

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The following abbreviations may be used in this Initial Determination:

Tr.	Hearing Transcript
Dep. Tr.	Deposition Transcript
JX	Joint Exhibit
CX	Complainant's exhibit
CPX	Complainant's physical exhibit
CDX	Complainant's demonstrative exhibit
RX	Respondents' exhibit
RPX	Respondents' physical exhibit
RDX	Respondents' demonstrative exhibit
CPHB	Complainant's pre-hearing brief (EDIS Doc. ID 841781)
CIB	Complainant's initial post-hearing brief (EDIS Doc. ID 846815)
CRB	Complainant's post-hearing reply brief (EDIS Doc. ID 848182)
RPHB	Respondents' pre-hearing brief (EDIS Doc. ID 842047)
RIB	Respondents' initial post-hearing brief (EDIS Doc. ID 846801)
RRB	Respondents' post-hearing reply brief (EDIS Doc. ID 848187)

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation in response to a complaint filed by Complainant ArcelorMittal ("ArcelorMittal" or "Complainant") on April 17, 2024 (EDIS Doc. ID 821906). *See* 89 Fed. Reg. 45922-23, EDIS Doc. ID 822786 (May 24, 2024) ("Notice of Investigation"). The Complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, by reason of infringement of certain claims of U.S. Patent Nos. 10,961,602 ("the '601 patent") and 11,326,227 ("the '227 patent"). *Id.* The Commission ordered institution of this investigation to determine "whether there is a violation of subsection (a)(1)(B) in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products. . . by reason of infringement of one or more of claims 1-3, 5-10, 12, 20-22, 24-26, and 28 of the '602 patent and claims 1, 2, 4-11, 13, 15-17, 22, 24, and 25 of the '227 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337." The investigation was instituted upon publication of the Notice of Investigation in the *Federal Register* on May 24, 2024. The Notice of Investigation named the following entities as Respondents: VinFast Auto Ltd., VinFast Auto, LLC, VinFast USA Distribution, LLC, Vingroup USA, LLC and VinFast Trading and Production JSC (collectively, "VinFast" or "Respondents"). *See* Notice of Investigation at 45923. The Office of Unfair Import Investigations is not a party to the investigation. *Id.*

On June 25, 2024, Respondents filed responses to the Complaint and Notice of Investigation disputing ArcelorMittal's allegations with respect to infringement and domestic industry and asserting certain affirmative defenses. EDIS Doc. IDs 824416 ("Response").

Pursuant to Order No. 6, the target date of this investigation was set to be October 23, 2025. Order No. 6, EDIS Doc. ID 824390 (June 25, 2024), *unreviewed by* Comm'n Notice, EDIS Doc. ID 826830 (July 23, 2024). The target date was extended to November 18, 2025 in Order No. 33. Order No. 33, EDIS Doc. ID 854218 (June 18, 2025), *unreviewed by* Comm'n Notice, EDIS Doc. ID 856050 (July 7, 2025).

An evidentiary hearing was held on March 3, 2025 to March 7, 2025. *Id.* The parties filed initial post-hearing briefs on March 25, 2025, and filed reply post-hearing briefs on April 8, 2025. On April 16, 2025, ArcelorMittal filed a motion to strike (Mot. Dkt. No. 1402-023) seeking to strike certain arguments in Respondents' reply post-hearing brief regarding invalidity. The motion is DENIED, for reasons discussed herein in more detail. *See infra* Parts VIII.B.2, VIII.C.2-3 .

As of the evidentiary hearing, the remaining claims at-issue in this investigation are, for purposes of infringement, claims 1-3, 7-9, 20-22, 24 and 26 of U.S. Patent No. 10,961,602 ("the '602 patent") and claims 1, 2, 4, 5, 7-11, 13, 15-17, and 24 of U.S. Patent No. 11,326,227 ("the '227 patent") (collectively, "the Asserted Claims"),[2] and for purposes of satisfaction of the domestic industry requirement, claims 1-4, 7-10, 18, 20-22, 24 and 26 of the '602 patent and claims 1, 2, 4, 5, 7, 9, 10, 13, 15-17, and 24 of the '227 patent (collectively, "the DI Claims").

[2] Evidence and argument on infringement was only presented as to claims 1-3, 7-9, 20-22, 24 and 26 of U.S. Patent No. 10,961,602 ("the '602 patent") and claims 1, 2, 4, 5, 7-11, 13, 15-17, and 24 of U.S. Patent No. 11,326,227 ("the '227 patent") (collectively, "the Asserted Claims"). That is, no evidence or argument was presented for infringement of claims 5, 6, 10, 12, 25 or 28 of the '602 patent or claims 6, 22, or 25 of the '227 patent. Those claims were not, however, terminated or withdrawn from the investigation by Motion. As mentioned above, the undersigned finds that ArcelorMittal has failed to meet its burden to show infringement of claims 5, 6, 10, 12, 25 or 28 of the '602 patent or claims 6, 22, or 25 of the '227 patent.

B. The Parties

1. Complainant

The Complainant is ArcelorMittal. Notice of Investigation at 45923. ArcelorMittal is a corporation organized and existing under the laws of the Grand Duchy of Luxembourg with a principal place of business at 24–26, Boulevard d'Avranches L-1160 Luxembourg, Grand Duchy of Luxembourg. Complaint ¶ 9. ArcelorMittal North America is a subsidiary of ArcelorMittal, with a North American headquarters located in Schererville, Indiana. Complaint ¶ 11. ArcelorMittal is the owner of the Asserted Patents by assignment. *See* Complaint ¶¶ 39, 40.

2. Respondents

Respondents are VinFast Auto Ltd., VinFast Auto, LLC, VinFast USA Distribution, LLC, Vingroup USA, LLC and VinFast Trading and Production JSC. *See* Notice of Investigation at 45923.

VinFast Auto Ltd. is a corporation organized under the laws of Vietnam with a principal place of business at Dinh Vu – Cat Hai Economic Zone Cat Hai Islands, Cat Hai Town, Cat Hai District Hai Phong City, Vietnam. *See* Complaint ¶ 12; Response ¶ 12. VinFast Auto Ltd. is the parent company of VinFast Auto, LLC, VinFast USA Distribution, LLC, Vingroup USA, LLC and VinFast Trading and Production JSC. *See* Response ¶ 13.

VinFast Auto, LLC is a corporation organized under the laws of Delaware with a principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles, California 90066. *See* Complaint ¶ 16; Response ¶ 16.

VinFast USA Distribution, LLC is a corporation organized under the laws of Delaware with a principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles, California 90066. *See* Complaint ¶ 20; Response ¶ 20.

Vingroup USA, LLC is a corporation organized under the laws of Delaware with a principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles, California 90066. *See* Complaint ¶ 24; Response ¶ 24.

VinFast Trading and Production JSC is a corporation organized under the laws of Vietnam with a principal place of business at Dinh Vu – Cat Hai Economic Zone Cat Hai Islands, Cat Hai Town, Cat Hai District Hai Phong City, Vietnam. *See* Complaint ¶ 28; Response ¶ 28.

C. Products at Issue

The products at issue are "high-strength aluminum or aluminum alloy-coated steel for use in automobiles, automobiles that include high-strength aluminum or aluminum alloy-coated steel and automotive products that include high-strength aluminum or aluminum alloy-coated steel. *See* Notice of Investigation at 45923.

1. Accused Products

ArcelorMittal identifies the VF8 and VF9 as accused products. The VF8 and VF9 are electric mid-size sport utility vehicles (SUVs) containing Al-coated steel parts alleged to infringe the Asserted Patents. *See* CIB at 14; RX-1245C; Tr. (Nguyen) at 732:21-24, 735:1-6; CDX-0003C (Fekete Slides) at 22-23. The VF8 contains [redacted] Al-coated steel parts alleged to infringe the Asserted Patents, while the VF9 contains [redacted] Al-coated steel parts alleged to infringe the Asserted Patents. *See* CIB at 14; RX-1245C.

2. Domestic Industry Products

For the domestic industry requirement, ArcelorMittal identifies two categories of domestic industry products, "DI Precursor Products" and "DI Direct Products." CIB at 15.

a. DI Precursor Products

ArcelorMittal identifies certain Al-coated steel products manufactured by ArcelorMittal licensees in the United States as "DI Precursor Products." USIBOR 1500, USIBOR 2000, DUCTIBOR 450, DUCTIBOR 500, and DUCTIBOR 1000 are the trade names for aluminum and silicon coated steel products manufactured by AM/NS Calvert in Calvert, AL. *See* Tr. (Thirion) at 85:20-22, 86:21-23, 87:3-8, 17-21; CDX-0007C (LeBlanc Slides) at 2. The thickness of the coating on the steel is identified by an "AS" designation of either AS150 or AS80; a designation of AS150 indicates a coating weight of 150 grams per square meter (or 75 grams per square meter per side) and a designation of AS80 indicates a coating weight of 80 grams per square meter (or 40 grams per square meter per side). Tr. (Krishnan) at 184:2-9; CIB at 15-16. USIBOR 1500 is available in both AS150 and AS80[3] coating weights, while USIBOR 2000, DUCTIBOR 450, DUCTIBOR 500, and DUCTIBOR 1000 are only available in AS150. Tr. (Krishnan) at 183:22-184:1; CIB at 15. ULTRALUME is the trade name for aluminum silicon coated steel manufactured by Cleveland-Cliffs, Inc. in Middletown, Ohio and Monroe, Michigan. ULTRALUME is available in a coating weight of AS60/60, indicating a coating weight of 60 grams per square meter per side, which ArcelorMittal's expert states is "equivalent to the AS150 product." Tr. (Fekete) at 468:11-17; RX-1279C (Chronister Dep. Tr.) at 83:10-22; CIB at 16.

b. DI Direct Products

The DI Precursor Products are heated and press-hardened in a process known as "hot-stamping" into automotive parts, such as door rings and support pillars, by third-party manufacturers, known as "Tier 1" hot stampers, to form the "DI Direct Products." CIB at 16; RIB at 4. ArcelorMittal relies on DI Direct Products manufactured by five Tier 1 manufacturers

[3] USIBOR 1500 with an AS80 coating weight is excluded from the alleged DI Precursor Products. *See* CIB at 16 ("Only products produced with the coating weight AS150 are DI Precursor Products.").

who were subpoenaed in this investigation: (1) Magna International of America, Inc. and its subsidiary, Cosma International of America, Inc. (together, "Magna"); (2) Topre American Corp. ("Topre"); (3) Gestamp North America, Inc. ("Gestamp"); (4) Cannon Automotive Solutions ("Cannon" or "Cleveland-Cliffs");[4] and (5) Simwon America Corp. ("Simwon").[5] *See* CIB at 17, 20-29, 48 ("ArcelorMittal does not now contend that parts from subpoenaed Tier 1s are representative of parts manufactured by non-subpoenaed Tier 1 hot stampers."). As discussed *infra*, the alleged DI Direct Products include four parts manufactured by Simwon, 72 parts manufactured by Magna, five parts manufactured by Topre, sixteen parts manufactured by Gestamp, and an unspecified number of parts manufactured by Cleveland Cliffs/Cannon. *See* CX-0341C (alleged Topre DI Direct Products, identified by those designated "AS150" coating); RX-1283C ((Simwon) Dep. Tr.) at 75:15-19 (testifying that the); CX-0349C (alleged Magna DI Direct Products, identified as those with "AlSi 150" in "Coating" column T); CX-0320C (alleged Gestamp DI Direct Products); CIB at 21-29; CRB at 11 n.4.

D. Witness Testimony

The parties presented testimonial evidence in this investigation in the form of live testimony and deposition designations.

[4] Cannon Automotive Solutions is a subsidiary of Cleveland-Cliffs. The parties refer to the DI Direct Products hot-stamped by Cannon as both "Cleveland-Cliffs" and "Cannon." *See* CIB at 28; RRB at 75.

[5] An additional two Tier 1 hot stampers, Multimatic Indiana Inc. ("Multimatic") and GNS Holland, Inc. ("GNS") were subpoenaed in the investigation. Pursuant to Order No. 19, ArcelorMittal was precluded from introducing evidence, testimony, or evidence as to three additional tested DI Direct Products manufactured by GNS and Multimatic, which were not identified in ArcelorMittal's technical domestic industry contentions until November 19, 2024, after the close of fact discovery. *See* Order No. 19, EDIS Doc. ID 841799 (Jan. 27, 2025). ArcelorMittal and Dr. Fekete made an offer of proof with respect to these three parts. CIB at 20 n.2; *see also* CIB at 177-78.

1. Fact Witnesses

ArcelorMittal presented live testimony from Jean-Luc Thirion, the CEO of global research and development at ArcelorMittal (Tr. at 75:1-5); Dr. Pascal Drillet, program manager for the development of press-hardened steel at ArcelorMittal (Tr. at 99:21-23, 100:8-15); Bala Krishnan, director of portfolios for automotive, energy and industry markets at ArcelorMittal (Tr. at 174:21-24, 176:4-6); Dr. Mark Atkinson, head of project management and global research and development, senior director of operations at ArcelorMittal's East Chicago facility, and leader of quality management process in global research and development (Tr. at 228:21-229:1, 229:24-230:4); Chris Richards, CEO of AM/NS Calvert (Tr. at 304:10-18); and Peter LeBlanc, chief marketing officer of ArcelorMittal (Tr. at 332:21-25). VinFast presented live testimony from Lan Anh Nguyen, CFO at VinFast Auto Ltd. and head of finance at VinFast Trading Production JSC. Tr. at 732:3-12.

2. Expert Witnesses

ArcelorMittal's first expert witness was James Malackowski, who was admitted as an expert in the assessment of economic prong of the domestic industry requirement under Section 337 of the Tariff Act of 1930, as amended, as well as certain issues related to bonding and remedies. Tr. at 357:1-427:16, 428:15-440:6 (expert qualification at 363:10-21). ArcelorMittal also called Dr. James Fekete, who was admitted as an expert in the field of material science, including the development of steels and the technology of the asserted patents. Tr. at 454:10-561:4, 587:4-729:20 (expert qualification at 460:4-12). ArcelorMittal's final expert witness was Dr. Dierk Raabe, who was admitted as an expert in technical expert in the field of metallurgy, material science, and the development of steels, including the fields of the '602 and '227 patents.

Tr. at 1022:23-1121:16, 1130:12-1185:22 (expert qualification at 1029:13-22). prong of the domestic industry requirement. Tr. at 733:1-864:18 (expert qualification at 735:11-18).

VinFast's first expert witness was Dr. John Bradley, who was admitted as an expert in the field of microscopy and preparation of samples for electromicroscopy. Tr. at 740:4-802:22 (expert qualification at 744:16-745:1). VinFast also called Dr. Stuart Brown, who was admitted as an expert in the field of hot forming of metals, including steel, and the subject matter of the '602 and '227 patents. Tr. at 803:16-853:21, 876:18-1021:21 (expert qualification at 810:7-15).

3. Deposition Designations

Certain designated deposition transcripts were received into evidence: [redacted], [redacted] at Topre (RX-1273C), Mr. Krishnan (RX-1274C), [redacted], [redacted] at Eagle Bend Manufacturing, Inc. (RX-1277C), [redacted], [redacted] at GNS (RX-1278C), [redacted], [redacted] at Cleveland-Cliffs (RX-1279C), [redacted], [redacted] at Multimatic (RX-1280C), Mr. Thirion (RX-1281C), Dr. Drillet (RX-1282C), [redacted], [redacted] at Simwon America (RX-1283C), Ronald Kefferstein, former Product Manager at ArcelorMittal (RX-1284C, CX-0011C), Dr. Atkinson (RX-1285C), [redacted], [redacted] at Gestamp (RX-1286C), Ms. Nguyen (CX-0016C), Haroldo Kavamura, Manager of the Frame Module at VinFast (CX-0017C), and Praveen Prakash, Supplier Quality Director at VinFast (CX-0019C).

II. STATUTORY AUTHORITY AND IMPORTATION

The Commission has statutory authority to investigate the alleged violation by VinFast because VinFast has imported, sold for importation, or sold after importation articles that are alleged to infringe a U.S. Patent. *Certain Liquid Transfer Devices with an Integral Vial Adapter*, Inv. No. 337-TA-1362, Comm'n Op., EDIS Doc. ID 827305 at 7-8 (July 26, 2024). The

Commission has statutory authority over the accused products based on their alleged importation, sale for importation, or sale after importation into the United States. *Id.* at 8. VinFast does not contest the Commission's statutory authority. *See generally* RRB; CIB at 29.

The statutory authority to issue a remedy requires a showing of importation, sale for importation, or sale after importation of articles that infringe. *Liquid Transfer Devices*, Comm'n Op. at 9-10. A complainant generally need only prove importation of a single accused product to satisfy the importation requirement. *Certain Chem. Mech. Planarization Slurries & Components Thereof*, Inv. No. 337-TA-1204, Comm'n Op., EDIS Doc. ID 759875 at 10 (Jan. 6, 2022). VinFast stipulated that it has imported at least one unit of each Accused Product. *See* EDIS Doc. ID 836421; EDIS Doc. ID 844266. The importation requirement therefore has been met.

III. LEGAL STANDARDS

A. Infringement

Section 337(a)(1)(B)(i) prohibits "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that—(i) infringe a valid and enforceable United States patent or a valid and enforceable United States copyright registered under title 17[.]" 19 U.S.C. § 1337(a)(1)(B)(i). The Commission has held that the word "infringe" in Section 337(a)(1)(B)(i) "derives its legal meaning from 35 U.S.C. § 271, the section of the Patent Act that defines patent infringement." *Certain Elec. Devices with Image Processing Sys., Components Thereof, & Associated Software*, Inv. No. 337-TA-724, Comm'n Op., EDIS Doc. ID 467105 at 13-14 (Dec. 21, 2011).

Infringement must be proven by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988). The preponderance

of the evidence standard "requires proving that infringement was more likely than not to have occurred." *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005).

1. Claim Construction

"An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996) (citation omitted). "[T]he construction of claims is simply a way of elaborating the normally terse claim language[] in order to understand and explain, but not to change, the scope of the claims." *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000) (alterations in original) (quoting *Scripps Clinic v. Genentech, Inc.*, 927 F.2d 1565, 1580 (Fed. Cir. 1991)). "[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). The words of a claim "'are generally given their ordinary and customary meaning,'" which is "the meaning that the term would have to a person of ordinary skill in art" as of the date that the patent application was filed. *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

2. Direct Infringement

A patent claim is directly infringed when a respondent "makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention" without consent of the patent owner. 35 U.S.C. § 271(a).

Literal infringement requires the patentee to prove that the accused device meets each and every limitation of the asserted claim(s). *Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004). "If even one limitation is missing or not met as claimed, there is no literal infringement." *Elkay Mfg. Co. v. EBCO Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) (internal quotation marks omitted). Literal infringement is a question of fact. *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1332 (Fed. Cir. 2008).

B. Invalidity

It is Respondents' burden to prove invalidity, and the burden of proof never shifts to the patentee to prove validity. *Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1380 (Fed. Cir. 2008). "Under the patent statutes, a patent enjoys a presumption of validity, *see* 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence[.]" *SRAM Corp. v. AD-II Eng'g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006); *see also Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 100-114 (2011) (upholding the "clear and convincing" standard for invalidity).

The clear and convincing evidence standard placed on the party asserting an invalidity defense requires a level of proof beyond the preponderance of the evidence. Although not susceptible to precise definition, "clear and convincing" evidence has been described as evidence that produces in the mind of the trier of fact "an abiding conviction that the truth of a factual contention is 'highly probable.'" *Price v. Symsek*, 988 F.2d 1187, 1191 (Fed. Cir. 1993) (quoting *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463 (Fed. Cir. 1988)).

1. Anticipation

Pursuant to pre-AIA 35 U.S.C. § 102, a patent claim is invalid as anticipated if:

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

35 U.S.C. §§ 102(a), (b) (2006).[6]

"A patent is invalid for anticipation if a single prior art reference discloses each and every limitation of the claimed invention. Moreover, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (citations omitted).

2. Obviousness

Pre-AIA section 103 of the Patent Act states, *inter alia*:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 , if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> ***
>
> (c)(1) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

35 U.S.C. § 103(a) (2006).

[6] The pre-AIA version of 35 U.S.C. § 102 is applicable to the Asserted Patents. *See* Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3(n)(1), 125 Stat. 284, 293 (Sept. 16, 2011).

"Obviousness is a question of law based on underlying questions of fact." *Scanner Techs.*, 528 F.3d at 1379. The underlying factual determinations include: "(1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness." *Id.* at 1380 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)). These factual determinations are often referred to as the "*Graham* factors."

A critical inquiry in determining the differences between the claimed invention and the prior art is whether there is a reason to combine the prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-21 (2007). In *KSR*, the Supreme Court rejected the Federal Circuit's rigid application of a "teaching-suggestion-motivation" test—while the Court stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does," it described a more flexible analysis:

> Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue . . . . As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

Id. at 418. Applying *KSR*, the Federal Circuit has held that, where a patent challenger contends that a patent is invalid for obviousness based on a combination of prior art references, "the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device . . .

and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007).

In addition to demonstrating that a reason exists to combine prior art references, the challenger must demonstrate that the combination of prior art references discloses all of the limitations of the claims. *See, e.g.*, *Velander v. Garner*, 348 F.3d 1359, 1363 (Fed. Cir. 2003) (explaining that a requirement for a finding of obviousness is that "all the elements of an invention are found in a combination of prior art references").

3. Indefiniteness

Under 35 U.S.C. § 112(b), "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention." 35 U.S.C. § 112(b). A claim term may be indefinite if, viewed in the light of the specification and the prosecution history, it fails to "inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Indefiniteness must be established by clear and convincing evidence. *See, e.g.*, *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017).

C. Domestic Industry

In patent-based proceedings under section 337, a complainant must establish that an industry "relating to the articles protected by the patent . . . exists or is in the process of being established" in the United States. 19 U.S.C. § 1337(a)(2). Under Commission precedent, the domestic industry requirement of section 337 consists of a "technical prong" and an "economic prong." *See, e.g.*, *Alloc, Inc. v. Intl Trade Comm'n,* 342 F.3d 1361, 1375 (Fed. Cir. 2003).

To meet the technical prong, the complainant must establish that it practices at least one claim of the asserted patent. *Certain Point of Sale Terminals & Components Thereof*, Inv. No. 337-TA-524, Order No. 40, EDIS Doc. ID 230409 at 17-18 (Apr. 11, 2005). "The test for satisfying the 'technical prong' of the industry requirement is essentially [the] same as that for infringement, *i.e.*, a comparison of domestic products to the asserted claims." *Alloc*, 342 F.3d at 1375.

With respect to the "economic prong," subsection (3) of Section 337(a) provides:

> For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or
>
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). Because the statutory criteria are listed in the disjunctive, satisfaction of any one of them is sufficient to meet the economic prong. *Lashify, Inc. v. Int'l Trade Comm'n*, 130 F.4th 948, 957–958 (Fed. Cir. 2025).

Expenditures may be counted toward satisfaction of the domestic industry requirement "so long as those investments pertain to the complainant's industry with respect to the articles protected by the asserted IP rights." *Certain Television Sets, Television Receivers, Television Tuners, & Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 68, 2015 WL 6755093, at *36 (Oct. 30, 2015); *accord, e.g., Certain Marine Sonar Imaging Devices, Including Downscan & Sidescan Devices, Prods. Containing the Same, & Components Thereof*, Inv. No. 337-TA-921, Comm'n Op., 2016 WL 10987364, at *40 (Jan. 6, 2016) ("Navico's allocation methodology reasonably approximates the warranty and technical customer support expenditures relating to

the LSS-1 product.") (*citing Certain Ground Fault Circuit Interrupters & Prods. Containing Same,* Inv. No. 337-TA-739, Comm'n Op. at 74-75, 79-81 (June 8, 2012)).

Whether a complainant satisfies the economic prong is not analyzed according to a rigid mathematical formula. *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op., EDIS Doc. ID 279161 at 39 (Aug. 1, 2007). The decision is made on a case-by-case basis and requires "an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace." *Id.* Although Section 337(a)(3) describes the economic activities as "significant" and "substantial," a complainant does not need to show any "minimum monetary expenditure," and a complainant does not "need to define or quantify the industry itself in absolute mathematical terms." *Certain Stringed Musical Instruments & Components Thereof*, Inv. No. 337-TA-586, Comm'n Op., EDIS Doc. ID 300615 at 26 (May 16, 2008). "A precise accounting [of the complainant's domestic investments] is not necessary, as most people do not document their daily affairs in contemplation of possible litigation." *Id.*

IV. THE ASSERTED PATENTS

The '602 patent (JX-0002) is entitled "Coated Steel Strips, Coated Stamped Products and Methods" and names as inventors Dr. Pascal Drillet, Mr. Dominique Spehner, and Mr. Ronald Kefferstein. '602 patent, cover. The patent issued on March 30, 2021 from an application filed on May 16, 2019, and through a series of continuations and divisional applications, claims priority to U.S. Appl. No. 12/447,777, filed on October 30, 2006. *Id.*

The '227 patent (JX-0001) shares the same title, inventors, and specification as the '602 patent, and claims priority to the same patent application filed on October 30, 2006. '227 patent, cover. The '227 patent issued on May 10, 2022 from an application filed on May 13, 2021. *Id.*

A. Ownership

The Asserted Patents are assigned to ArcelorMittal. *See* '602 patent, cover; '227 patent, cover. Respondents do not dispute that ArcelorMittal is the assignee and owner of the Asserted Patents. *See generally* RIB; RRB.

B. Specification

The Asserted Patents share a common specification and describe the use of "pre-coated steel strip[s]"—*i.e.*, a strip of base steel that has been provided with aluminum or aluminum alloy coating—that may be processed into shaped parts via hot stamping. '602 patent, Abstract. The specification describes and depicts—after hot-stamping—steel with "a special succession of coating layers on the parts, proceeding from the steel substrate outwards." These four layers are, starting closest to the base steel, identified as the "interdiffusion layer," the "intermediate layer," the "intermetallic layer," and the "superficial layer," and are depicted in Figure 1, above. '602 patent, 6:8-25, 52-2, Fig. 1. The specification also describes a non-practicing embodiment in Figure 2, left, which is identified as including only an "interdiffusion layer" and an "Al[uminum]-rich intermetallic layer." '602 patent, 3:57-61, Fig. 2. The specification describes

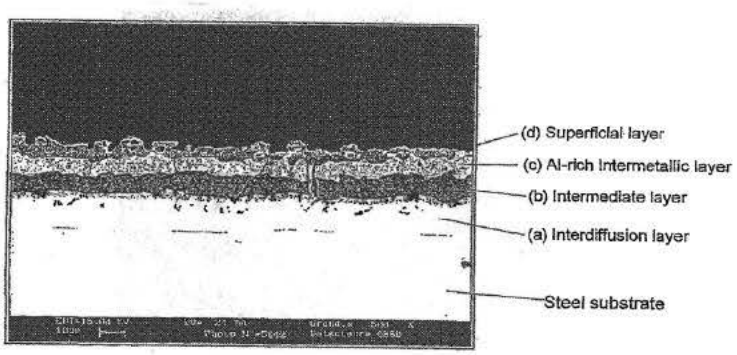


Fig. 1

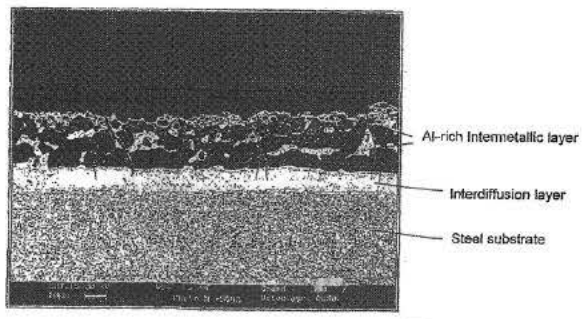


Fig.2

the Figure 2 embodiment as having inferior weldability as compared to the Figure 1 embodiment. *Id.*

C. Asserted Claims

ArcelorMittal asserts claims 1-3, 7-9, 20-22, 24 and 26 of the '602 patent and claims 1, 2, 4, 5, 7-11, 13, 15-17, and 24 of the '227 patent, and for purposes of satisfaction of the domestic industry requirement, claims 1-4, 7-10, 18, 20-22, 24 and 26 of the '602 patent and claims 1, 2, 4, 5, 7, 9, 10, 13, 15-17, and 24 of the '227 patent.

The relevant claims of the '602 patent are reproduced below (with claim limitation identifiers added in brackets). Certain claims are only relied upon for purposes of domestic industry; these claims are designated with an asterisk (*).

1. [1pre] A precoated steel product comprising:

[1a] a strip of base steel having a first side and a second side; and

[1b] a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

[1c] (a) an interdiffusion layer having a first mean iron composition,

[1d] (b) an intermediate layer having a second mean iron composition different from the first mean iron composition,

[1e] (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and

[1f] (d) a superficial layer having a fourth mean iron composition different from the third mean iron composition,

[1g] wherein the coating has a thickness greater than 30 micrometers.

2. The precoated steel product as recited in claim 1 wherein the layers (c) and (d) are quasi continuous by occupying at least 90% of a level corresponding to each of the layers (c) and (d) and wherein less than 10% of layer (c) is present at an extreme surface of the product.

3. The precoated steel product as recited in claim 1 wherein the base steel includes the following components by weight based on total weight: 0.15%<carbon<0.5%; 0.5%<manganese<3%; 0.1%<silicon<0.5%; 0.01%<chromium<1%; titanium<0.2%; aluminum<0.1%; phosphorus<0.1%; sulfur<0.05%; 0.0005%<boron<0.08%; and further comprises iron and impurities inherent in processing.

*4. The precoated steel product as recited in claim 1 wherein the base steel comprises the following components by weight based on total weight: 0.20%<carbon<0.5%; 0.8%<manganese<1.5%; 0.1%<silicon<0.35%; 0.01%<chromium<1%; titanium<0.1%; aluminum<0.1%; phosphorus<0.05%; sulfur<0.03%; 0.0005%<boron<0.01%; and further comprises iron and impurities inherent in processing.

7. The precoated steel product as recited in claim 1 wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42.

8. The precoated steel product as recited in claim 2 wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42.

9. The precoated steel product as recited in claim 1 wherein the layer (a) has a thickness less than 15 micrometers.

*10. The precoated steel product as recited in claim 1 wherein the layer (a) has a thickness less than 10 micrometers.

*18. The precoated steel product as recited in claim 1 wherein the interdiffusion layer has a thickness of from 1 micron to 15 microns.

20. The precoated steel product as recited in claim 1 wherein the fourth mean iron composition is lower than the third mean iron composition.

21. [21pre] A precoated steel product comprising:

[21a] a strip of base steel having a first side and a second side; and

[21b] a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

[21c] (a) an interdiffusion layer having a first mean iron composition,

[21d] (b) an intermediate layer having a second mean iron composition different from the first mean iron composition,

[21e] (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and

[21f] (d) a superficial layer having a fourth mean iron composition different from the first, second and third mean iron composition,

[21g] wherein the coating has a thickness greater than 30 micrometers.

22. The precoated steel product as recited in claim 21 wherein the fourth mean iron composition is lower than the third mean iron composition.

24. [24pre] A precoated steel product comprising:

[24a] a strip of base steel having a first side and a second side; and

[24b] a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

[24c] (a) an interdiffusion layer having a first mean aluminum composition,

[24d] (b) an intermediate layer having a second mean aluminum composition different from the first mean aluminum composition,

[24e] (c) an intermetallic layer having a third mean aluminum composition different from the first and second mean aluminum compositions, and

[24f] (d) a superficial layer having a fourth mean aluminum composition different from the first, second and third mean aluminum compositions, the second mean aluminum composition being greater than the third mean aluminum composition

[24g] wherein the coating has a thickness greater than 30 micrometers.

26. The precoated steel product as recited in claim 24 wherein the layer (a) has a thickness less than 15 micrometers.

'602 patent, cls. 1-4, 7-10, 18, 20-22, 24 and 26.

The asserted claims of the '227 patent are reproduced below (with claim limitation identifiers added in brackets). Certain claims are only relied upon for purposes of infringement; these claims are designated with a carat (^).

1. [1pre] A hot stamped coated steel product, which comprises:

[1a] (a) a strip of base steel having a first side and a second side; and

[1b] (b) a coating on at least one of said first side of said strip of base steel and said second side of said strip of base steel, wherein:

[1c] (i) said coating results from interdiffusion between said base steel and an aluminum or aluminum alloy pre-coating, and

[1d] (ii) wherein said coating comprises, proceeding from the base steel outwards:

[1e] (a) an Interdiffusion layer,

[1f] (b) an Intermediate layer,

[1g] (c) an Intermetallic layer, and

[1h] (d) a Superficial layer,

[1i] wherein layers (a), (b), (c), and (d) each have a different mean composition from one another,

[1j] wherein said coating of the hot stamped coated steel product has a thickness greater than 30 micrometers.

2. The hot stamped coated steel product according to claim 1, wherein said layer (a) has a thickness that is less than half of said thickness of the coating.

4. The hot stamped coated steel product according to claim 1, wherein said layer (a) has a thickness of 17 micrometers or less.

5. The hot stamped coated steel product according to claim 1, wherein said layer (a) has a thickness of 15 micrometers or less.

7. The hot stamped coated steel product according to claim 1, wherein the interdiffusion layer has a first mean iron composition, the intermediate layer has a second mean iron composition less than the first mean iron composition; wherein the intermetallic layer has a third mean iron composition, the third mean iron composition less than the first mean iron composition and greater than the second mean iron composition, and the superficial layer has a fourth mean iron composition, the fourth mean iron composition begin less than the third mean iron composition.

^8. The hot stamped coated steel product according to claim 1, wherein layer (a) has a thickness that is greater than a thickness of layer (b).

9. The hot stamped coated steel product according to claim 1, wherein layer (a) has a thickness that is greater than a thickness of layer (c).

10. The hot stamped coated steel product according to claim 1, wherein layer (a) has a thickness that is greater than a thickness of layer (d).

^11. The hot stamped coated steel product according to claim 1, wherein layer (a) has a thickness: that is greater than a thickness of layer (b); that is greater than a thickness of layer (c); and that is greater than a thickness of layer (d).

13. The hot stamped coated steel product according to claim 1, wherein layer (a) has a thickness that is more than twice a thickness of layer (c).

15. The hot stamped coated steel product according to claim 1, wherein the hot stamped coated steel product is fully martensitic.

16. The hot stamped coated steel product according to claim 1, wherein the base steel consists of the following components by weight based on total weight: 0.15%<carbon<0.5%; 0.5%<manganese<3%; 0.1%<silicon<0.5%; 0.01%<chromium<1%; titanium<0.2%; aluminum<0.1%; phosphorus<0.1%; sulfur<0.05%; 0.0005%<boron<0.08%; a remainder being iron and impurities inherent in processing.

17. The hot stamped coated steel product according to claim 1, wherein the base steel consists of the following components by weight based on total weight:0.15%<carbon<0.25%, 0.8%<manganese<1.8%, 0.10%<silicon<0.35%, 0.01%<chromium<0.5%, titanium<0.1%, aluminum<0.1%, phosphorus<0.1%, sulfur<0.05%, 0.002%<boron<0.005%, a remainder being iron and impurities inherent in processing.

24. The hot stamped coated steel product according to claim 1, wherein the hot stamped coated steel product has a mechanical strength in excess of 1000 MPa.

'227 patent, cls. 1, 2, 4, 5, 7-11, 13, 15-17, 24.

D. Level of Ordinary Skill in the Art

The parties have set forth similar levels of ordinary skill in the art. ArcelorMittal contends that one of ordinary skill in the art would possess "at least an undergraduate degree in materials science, manufacturing engineering, mechanical engineering, or equivalent knowledge, training, or experience, with at least two years of experience working on the development of steels." CIB at 30; Tr. (Fekete) at 508:13-22. Respondents contend that one of ordinary skill in the art would have had "at least an undergraduate degree in materials science, manufacturing engineering, mechanical engineering, or equivalent knowledge, training, or experience, with at least two years of experience working in metallurgy." RIB at 6-7; Tr. (Brown) at 806:13-24; RDX-0002C.4. The parties agree that the differences in their respective definitions does not impact any analysis. *See* CIB at 30, 112; RIB at 7.

For purposes of this investigation and the Asserted Patents, a person of ordinary skill in the art would have had at least an undergraduate degree in materials science, manufacturing engineering, mechanical engineering, or equivalent knowledge, training, or experience, with at least two years of experience working on the development of steels. Additional education may substitute for experience, and additional experience may substitute for education.

E. Claim Construction

With the exception of the "layer" terms, which Respondents contend are indefinite, *see*

infra Part VIII.G,[7] and "quasi continuous," which the parties agree should be construed as "occupying at least 90% of the level corresponding to the considered layer(s)," the parties agree that the claim terms take their plain and ordinary meanings. *See* CIB at 30-31; RIB at 6; EDIS Doc. ID 836248 (Joint Claim Construction Chart); CDX-0003C.90.[8]

V. INFRINGEMENT

ArcelorMittal contends that the Accused Products, the VF8 and VF9 vehicles, infringe claims 1-3, 7-9, 20-22, 24 and 26 of the '602 patent and claims 1, 2, 4, 5, 7-11, 13, 15-17, and 24 of the '227 patent. In support, ArcelorMittal tested 34 Al-coated parts, comprising 16 different types of parts, from two different VF8 vehicles. *See* CDX-0003C.23, 78; Tr. (Fekete) at 466:23-467:10, 502:17-503:6. For the reasons discussed below, the undersigned determines that all of the Asserted Claims are infringed by the VF8 and VF9 products.

A. Representativeness

ArcelorMittal, relying on VinFast documents and the testimony of Dr. Fekete, alleges the tested VF8 parts are representative of the VF9 parts. CIB at 32; CRB at 3-4; Tr. (Fekete) at 505:14-506:8 (testifying that the VF8 and VF9 parts are made out of the same materials and are manufactured to have the same mechanical properties and coating thicknesses). ArcelorMittal states that each of the parts is comprised of the same material, identified in internal VinFast documents as "[redacted]," which is an aluminum-silicon coated cold rolled steel that, after hot stamping, will conform to a VinFast material specification known as [redacted] and have a certain yield and tensile strength. *See* CIB at 14 (citing

[7] As discussed, *infra* Part VIII.G, the undersigned finds that Respondents have not proven that the "layer" terms—*i.e.*, interdiffusion layer, intermediate layer, intermetallic layer, and superficial layer—to be invalid as indefinite.

[8] Certain additional issues concerning the "plain and ordinary meaning" of the "layer" terms are discussed in Part V.B.1.d *infra*.

RX-1245C; RX-1258C; CX-0017C (Kavamura Dep. Tr.) at 45:12-46:10. ArcelorMittal also relies on VinFast witness testimony that the parts are manufactured in a way that they should "share the same characteristics." CRB at 3 (citing CX-0017C (Kavamura Dep. Tr.) at 76:4-16).

Respondents dispute whether the VF8 parts are representative of the VF9 parts. *See* RIB at 7-8, 120. Respondents argue that the hot stamping specification upon which ArcelorMittal relies "does not require the claimed 4-layers." RIB at 7; RRB at 2. Respondents assert that the control plans and use of the same material specification do not establish that the resulting parts all have the claimed 4-layer structure. RIB at 7. In addition, Respondents argue that the control plans for hot stamping individual VinFast parts identify different processing parameters for different parts—*e.g.*, heating temperature, heating time, and heating zones.[9] *See* RRB at 2-3 (citing CX-0315C.0002 (processing parameters for VF8 BIW30037022) and CX-0315C.0067 (processing parameters for VF9 BIW80005141)). Respondents also argue that the representativeness theory is contrary to the testimony of ArcelorMittal's invalidity expert, Dr. Raabe, and the testimony of named inventor Dr. Drillet that information about various processing parameters is necessary to predict whether the claimed 4-layer structure will be formed. RRB at 3-4 (citing Tr. (Raabe) at 1032:8-17, 1078:8-1079:22 and Tr. (Drillet) at 125:25-126:3).

[9] The undersigned does not consider this argument, as it was not preserved and is waived. In conjunction with Complainant's Motion *in Limine* No. 5, Respondents represented that they "do not plan to raise an affirmative argument that the VF9 is materially different than the VF8 but may argue ArcelorMittal fails to meet its burden on this point." *See* Order No. 30, EDIS Doc. ID 845119 (Mar. 6, 2025). In denying the Motion, the undersigned stated that Respondents "would be held to this representation" and that Respondents would be limited to the failure of proof arguments preserved in their pre-hearing brief. *Id.* The general failure of proof arguments preserved in Respondents' pre-hearing brief do not reference different processing parameters, and the specific, affirmative arguments presented for the first time in Respondents' reply post-hearing brief go beyond permissible elaboration of preserved arguments. *See* G.R. 13.1, 9.2.

Based on review of the submissions and the evidence of record, the undersigned finds that ArcelorMittal has met its burden on representativeness. A complainant may rely upon analysis of a representative product and "cannot simply assume that the [analyzed products] are representative of the [unanalyzed products]," but rather "must show by a preponderance of the evidence that the products its expert[] analyzed are indeed representative of unanalyzed products." *Certain LED Lighting Devices, LED Power Supplies, & Components Thereof*, Inv. No. 337-TA-1081, Comm'n Op., 2019 WL 7423547, at *7 (July 23, 2019) (quoting *Certain Semiconductor Devices, Semiconductor Device Packages, and Products Containing Same*, Inv. No. 337-TA-1010, Order No. 77 (Mar. 15, 2017), *not reviewed in relevant part*, EDIS Doc. ID 608676 (Apr. 14, 2017); *cf. L & W, Inc. v. Shertech, Inc.*, 471 F.3d 1311, 1317-18 (Fed. Cir. 2006).

Here, evidence provided at the hearing indicates that the analyzed parts in the VF8 and the unanalyzed parts in the VF9 are made from the same precursor material and hot-stamped according to the same specification. *See* Tr. (Fekete) at 505:25-506:8; CDX-0003C.82-86; CX-0315C (Control Plans); CX-0316C (Process Flow Diagrams); RX-01245C (identifying the accused parts as made out of the material "[redacted]"). Dr. Fekete testified that because "you're using the same specification, and you're controlling the process the same way . . . I would expect the parts – if the VF8 parts infringe, then I would expect the identical parts from the VF9 to infringe." Tr. (Fekete) at 505:25-506:8; *see also id.* at 505:14-21 (testifying that he reviewed the control plans and process flow diagrams for both the VF8 and the VF9 and that "they were identical in the places where it was important to determine whether they practiced the patent"). Dr. Fekete's testimony is unchallenged, as Respondents did not introduce any affirmative evidence or testimony regarding representativeness. Moreover, that

the technical documentation does not specify the formation of the claimed 4-layer structure does not undermine the showing of representativeness; ArcelorMittal does not have to independently prove infringement for the products alleged to be represented.

Based on Dr. Fekete's testimony, and the lack of persuasive countervailing evidence, the evidence shows by a preponderance that the analyzed VF8 parts, and thus the VF8, is representative of the unanalyzed VF9 parts, and thus the VF9.

B. The '602 Patent

ArcelorMittal contends that the VF8 and the VF9 infringe claims 1-3, 7-9, 20-22, 24 and 26 of the '602 patent.[10] CIB at 14, 18-20, 31-42; CDX-0003C.22. ArcelorMittal tested 34 Al-coated parts, comprising 16 different types of parts, from two different VF8 vehicles. *See* CDX-0003C.23, 78; Tr. (Fekete) at 466:23-467:10. Apart from the representativeness analysis discussed *supra*, the only limitations of the '602 patent in dispute are whether the Accused Products include the claimed "intermediate layer," "intermetallic layer," and "superficial layer." *See, e.g.*, RIB at 8-14; RRB at 4-6.

1. Claim 1

a. Claim Limitation [1pre]: A precoated steel product comprising:

The parties appear to agree that the preamble is limiting. *See* CIB at 37; RIB at 74. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the Accused Products are precoated steel products. *See* Tr. (Fekete) at 509:11-510:1, 514:25-515:18; CDX-0003C.92, 104;

[10] One tested part, BIW30009530 is not alleged to infringe claims 9 and 26 of the '602 patent. *See* CDX-0003C.127; CX-0094C; CIB at 41.

see also, e.g., CX-0099C; CX-0100C; CX-1258C (hot-stamping standard for "Hot-Formed Steels With Al-Si Coating").

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1pre] of the '602 patent.

b. Claim Limitation [1a]: a strip of base steel having a first side and a second side; and

Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the Accused Products include a strip of base steel with a first and second side. *See* Tr. (Fekete) at 510:2-16, 514:25-515:18; CDX-0003C.93, 104; *see also, e.g.*, CX-0315C; CX-0099C.

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1a] of the '602 patent.

c. Claim Limitation [1b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the Accused Products include a coating, and that the coating results from interdiffusion between the base steel and an aluminum or aluminum alloy pre-coating. *See* Tr. (Fekete) at 510:17-512:21, 514:25-515:18; CDX-0003C.94-98, 104; *see also, e.g.*, RX-1258C (describing the "coating of base material"); CX-0315C (identifying thickness of "diffusion layer" of coating); CX-0095C; CX-0096C; CX-0879C (exemplary line scan showing interdiffusion of aluminum and iron).

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1b] of the '602 patent.

d. Claim Limitations [1c]-[1f]: (a) an interdiffusion layer having a first mean iron composition, (b) an intermediate layer having a second mean iron composition different from the first mean iron composition, (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean iron composition different from the third mean iron composition,

Respondents do not dispute that the Accused Products meet Limitation [1c], "an interdiffusion layer having a first mean iron composition," but do dispute whether the Accused Products have the claimed "intermediate layer," "intermetallic layer," and "superficial layer" (Limitations [1d]-[1f]). *See* RIB at 8. ArcelorMittal, relying on Dr. Fekete, contends that Limitations [1c] – [1f] are met in the Accused Products.

The Parties' Positions

ArcelorMittal, relying on Dr. Fekete, contends that Limitations [1c] – [1f] are met in the Accused Products. CIB at 38. Dr. Fekete testified that line scans—measurements of the chemical composition in a cross-section of the coating, Tr. (Fekete) at 480:14-482:1—and spot energy-dispersive X-ray spectroscopy ("EDS") analysis—another measurement of the chemical composition at different points in the coating, *id.* at 482:2-19—confirmed that layer (a) has a "continuously changing composition, which indicated it's the result of interdiffusion." *Id.* at 512:3-7. As to each of the required layers, ArcelorMittal contends that Dr. Fekete testified that "SEM images, line scans, and spot EDS data collected in testing" show that each tested part of the Accused Products have the claimed four layers, and that each of the four layers have a different mean iron composition, "consistent with how layers are defined as having different

mean compositions." CIB at 38 (citing Tr. (Fekete) at 512:22-513:22, 481:8-482:1, 515:15-18; CDX-0003C.99-102 (citing CX-0879C, CX-0100C, CX-0095C)). ArcelorMittal contends that there is no requirement for layers to be "continuous" or "homogenous," and that the homogeneity requirement is contrary to the principles of interdiffusion. CIB at 32-33 (citing Tr. (Fekete) at 521:1-10; Tr. (Drillet) at 145:17-146:1); CRB at 5-6. ArcelorMittal states that any argument that Dr. Fekete relied on a single SEM image to determine whether the four-layer structure exists is contrary to the testing data and Dr. Fekete's testimony regarding line scans and spot EDS data, among others. CIB at 33; CRB at 4-5. ArcelorMittal also argues that there is no requirement to evaluate the four-layer structure across an entire part, as "[i]f a claim reads merely on a part of an accused device, that is enough for infringement." CIB at 34 (citing *SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1336 (Fed. Cir. 1999)). Moreover, ArcelorMittal argues, the sampling and testing protocols relied upon by Dr. Fekete are consistent with standard industry practice, including Respondents' own hot-stamper Simwon Changshu. CIB at 35 (citing Tr. (Fekete) at 519:3-520:15; CX-0730C.1, 3); CRB at 6. As to contrary evidence of infringement presented by Respondents, ArcelorMittal responds that Dr. Bradley tested only 4 of the 16 distinct VF8 parts considered by Dr. Fekete, and that Dr. Brown only evaluated 2 of the 16 distinct VF8 parts, and thus Dr. Fekete's analysis stands unrebutted for 14 parts of the VF8, rendering the VF8 an infringing product. CIB at 36.

Respondents first contend that the disputed "layer" terms are not infringed because they are indefinite.[11] *See* RIB at 8. Respondents also argue that ArcelorMittal has failed to meet its burden because the methodology used by Dr. Fekete—which Respondents contend is comparing

[11] As discussed *infra*, Part VIII.G, the undersigned finds that Respondents have not established by clear and convincing evidence that the "layer" terms are indefinite.

one SEM micrograph to Figure 1 or Figure 2 of the Asserted Patents—is unreliable. Relying on Dr. Brown, Respondents argue that "analysis based on one isolated image of a small region is insufficient to determine whether one or more of the claimed layers are present." RIB at 8 (citing Tr. (Brown) at 821:9-822:15, 823:8-20); RRB at 4-6. Respondents argue that the plain and ordinary meaning of "layer" requires that the claimed layer be "homogenous across an entire part," RIB at 8-9 (citing RX-1282C (Drillet Dep. Tr.) at 99:5-12), and that Dr. Fekete's analysis of "single SEM images of certain parts" is "insufficient to determine whether the claimed layer is present across the part." RIB at 9 (citing Tr. (Brown) at 821:9-822:15, 823:8-20). According to Respondents, images taken by their own expert, Dr. Bradley, show "pockets of lighter-shaded material that are scattered across a background of darker-shaded material without forming well-defined boundary." RIB at 9-10 (citing RDX-0002C.26, 35). Respondents contend that Dr. Fekete "did not spend any time at the hearing explaining to the ALJ where the four-layer structure is present in either ArcelorMittal's or Dr. Bradley's test results." RIB at 11. Respondents also argue that the infringement analysis and invalidity analysis are inconsistent, as the presence of horizontal cracks in a SEM micrograph of the VW Passat prior art reference was cited by Dr. Raabe as a reason the VW Passat may not meet the "layer" limitations, but that many of the SEM micrographs of the Accused Products have "significant horizontal cracks." RIB at 12-14 (citing SEM micrographs of Accused Products that Respondents contend show cracks). Respondents also renew the objection to Dr. Fekete's reliance on purported new data beyond that analyzed in his expert report, which was the subject of extensive argument at trial and Order No. 32. *See* RRB at 5-6.

In response, ArcelorMittal renews its argument that Respondents' non-infringement positions are based on an incorrect understanding that a layer must be "continuous and

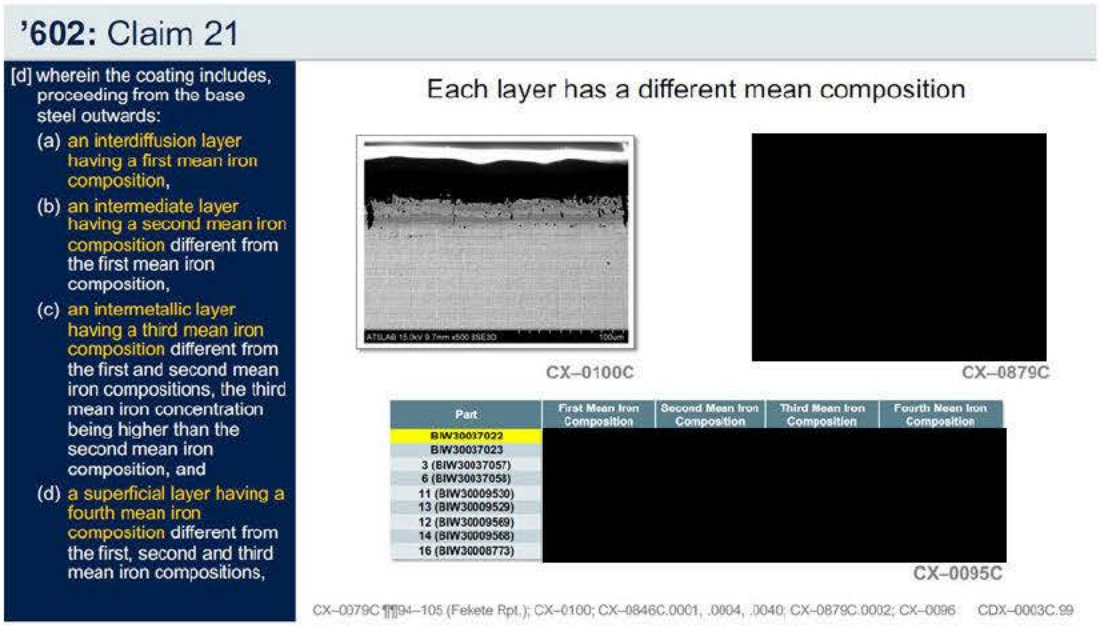
homogenous." ArcelorMittal states that Respondents' expert Dr. Brown acknowledged at the hearing that a layer did not have to be continuous, and argues that there is no requirement for continuity in the claims, specification, or prosecution history. CRB at 5-6 (citing Tr. (Brown) at 1014:12-1015:3, 993:2-6, 993:18-994:1). As to the allegations of inconsistency based on horizontal cracks, ArcelorMittal argues that it is attorney argument that is not supported by any expert testimony, and that, moreover, Respondents identify purported cracks in only 22 of the 34 tested parts, such that Dr. Fekete's analysis stands unrebutted—even by attorney argument—as to at least 12 parts. CRB at 8. Moreover, ArcelorMittal argues that other data relied upon by Dr. Fekete—such as line scan data—illustrates that the claimed four-layer structure was formed in the Accused Products regardless of the existence of alleged horizontal cracks. CRB at 10.

Determination

Upon review of the submissions and evidence record, the undersigned finds that ArcelorMittal has established by a preponderance of the evidence that the Accused Products meet Limitations [1c]-[1f].

First, as to Limitation [1c], the "interdiffusion layer," Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 8 (asserting only that "ArcelorMittal Failed to Establish That Accused Products Have the Claimed 'intermediate layer,' 'intermetallic layer,' and 'superficial layer.'"); RRB at 4 (same). In addition, the undisputed evidence demonstrates the existence of the claimed "interdiffusion layer" with a first mean iron composition. *See, e.g.*, Tr. (Fekete) at 512:3-7, 512:22-513:22, 514:25-515:18, 480:14-482:1, 482:2-19; CDX-0003C.99-102, 104 (citing CX-0100C (SEM micrographs); CX-0879C (Line Scans); CX-0095C (Spot EDS Iron Composition Results); CX-0096C).

As to the "intermetallic layer," "intermediate layer," and "superficial layer," Dr. Fekete testified that his analysis of the four-layer structure in the 34 parts he tested was based on analysis of SEM micrographs, line scans, and spot EDS data. Tr. (Fekete) at 512:22-514:15, 514:25-515:18, 719:11-720:22. For example. Dr. Fekete walked through the test results related to part BIW30037022 in detail, and identified an SEM micrograph, line scan, and spot EDS data identifying each of the four claimed layers and the corresponding mean iron composition:



CDX-0003C.99 (citing CX-0100C (SEM micrographs); CX-0879C (Line Scans); CX-0095C (Spot EDS Data); CDX-0003C.104. Dr. Fekete testified that based on his review of the same data for each of the 34 tested parts, each Accused Product included the claimed four-layer structure and required mean iron compositions. Tr. (Fekete) at 512:22-514:15, 719:11-720:22; CDX-0003C.104-05, 98-102.

Dr. Fekete also testified that testing of a single "coupon" of a hot-stamped part—rather than testing an entire part or completing a statistical sampling—is consistent with how parts are tested and certified for production in the industry:

> In order to know whether a part met all of the specification requirements in a process that was – you know, a production process that was running, you might take, you know, one or two samples per some unit of time, like, you know, once or twice per shift or once or twice per hour, depending on the part, and what you're trying to understand.

Tr. (Fekete) at 519:12-18. Dr. Fekete's testimony on this point is supported by other evidence of record, including testing reports for Respondents' own parts, which indicate that the "microstructure" and coating thicknesses of hot-stamped VinFast parts were evaluated by testing single coupons from two different part components. *See* CX-0730C.1, 3; Tr. (Fekete) at 519:19-520:12; CDX-0003C.116-17, 120.

Respondents raise three main challenges. First, Respondents argue that Dr. Fekete's analysis is unreliable because it is based on the comparison of a single SEM image (per part) to Figure 1 (which practices the claims) and Figure 2 (which does not practice the claims). Respondents argue this is insufficient to show infringement because the claimed layer must be homogenous and continuous across the entire part. *See* RIB at 8-9; RRB at 5. Second, Respondents argue that SEM images taken by Dr. Bradley of certain parts show non-homogenous and non-continuous layers. Third, Respondents argue that the presence of horizontal cracks in certain parts is—if the invalidity testimony of Dr. Raabe is credited—sufficient to find the claimed four-layer structure missing. Each of these arguments is addressed in turn.

Respondents' argument that Dr. Fekete relied on a single SEM micrograph to discern whether the Accused Products included the claimed layers—and that this methodology is insufficient—is closely related to an evidentiary objection that Respondents raised for the first

time at trial,[12] and which the parties spent significant time on the record arguing. *See* Tr. at 279:14-301:24, 440:8-452:15, 485:2-486:16, 489:16-24, 579:2-19. As the undersigned held in Order No. 32, testing data beyond the SEM micrographs called out in Dr. Fekete's report—including the line scan data and spot EDS data that are referenced in the report in his analysis of the four-layer structure—was within the scope of Dr. Fekete's expert report and analysis, which detailed an extensive testing protocol, the resulting types of test data, and specifically (and repeatedly) referenced by Bates number the testing data Dr. Fekete testified that he relied upon to analyze the claimed four-layer structure in each testing result exhibit appended to his report. *See* Order No. 32, EDIS Doc. ID 845239 (March 7, 2025); *see also, e.g.*, RDX-1146C.48-49 (excerpt of Dr. Fekete's Opening Report) at ¶ 69 (referencing "[t]esting of these parts has shown that the intermetallic layer (the third layer, counting out from the base steel) has a third mean iron composition, calculated as the average of three measurements of iron composition and confirmed by line scans of the coating" under the heading evaluating Limitation [1e]); Tr. (Fekete) at 726:5-728:17 (walking through lab test data summary exhibit CX-0846C and confirming he analyzed similar lab test results for every tested part). Respondents' argument that review of a single SEM image constituted the whole of Dr. Fekete's analysis is contradicted by Dr. Fekete's expert report and by his hearing testimony, and the undersigned declines to reconsider the evidentiary ruling of Order No. 32.

The undersigned also determines that the plain and ordinary meaning of the various layer terms does not require that the layer be "continuous and homogenous" across the entire part. The parties' dispute is essentially one of claim construction; although the parties agreed that—absent

[12] The exhibits to which Respondents objected were included on ArcelorMittal's exhibit list and were not the subject of a motion *in limine* or high priority objection. *See* Tr. (Resps. counsel) at 301:3-21.

indefiniteness—the "plain and ordinary meaning" governs, Respondents contend—relying primarily on deposition testimony of Dr. Drillet—that the "plain and ordinary meaning" of the term "layer" requires that "a 'layer' must be homogenous across an entire part." RIB at 8. The intrinsic evidence, however, does not support a construction of layer that would require continuity or homogeneity across the entire part.

First, there is no discussion in the patent of homogeneity of the coating after hot-stamping. *See* Tr. (Fekete) at 520:23-24 ("[Q]: Is there anything in the patent that talks about homogeneity of the layers after hot stamping? [A]: No, not after hot-stamping, no."); *see generally* '602 patent. As both parties' experts explained, the interdiffusion process that creates the claimed layers results in a layer that is necessarily non-homogenous. *See* Tr. (Brown) at 836:15-24 (discussing compositional profile at RDX-0002C.61 and describing interdiffusion as "aluminum and silicon moving in from the left, iron moving in from the right"); Tr. (Fekete) at 521:2-10 ("No, that layer is not homogenous. You can see in an example from one of our tests of the interdiffusion layer, layer (a) in this line scan, that the iron and aluminum contents are continuously changing from the interface with the steel to the beginning of layer (b). Clearly, not homogenous."). As to continuity, the specification and dependent claims expressly permit layers (c) and (d) that are "essentially" or "quasi" continuous. *See* '602 patent, 12:57-61, 6:53-56, cl. 2; *see also* Tr. (Brown) at 993:18-21 ("[Q]: There is no place in the patent specification that say that the required layers have to be continuous; correct? [A]: Agreed."). The "quasi" or "essentially" continuous layers (c) and (d)—which are within the scope of the patent—permit 10% of layer (c) to appear at the extreme surface of the part. '602 patent, 12:57-61, 6:53-56; *see also* Tr. (Fekete) at 521:11-17; Tr. (Brown) at 1014:12-1015:3 (testifying that based on a "better quality image" version of Figure 1 of the Asserted Patents, "there is a finger of layer (c)

intersecting the surface of layer (d), the superficial layer" and opining "I have to admit that you can have some small interruptions in a layer and still have it be considered a layer").[13]

Respondents' non-infringement contention based on a requirement of perfect continuity is, accordingly, not persuasive in view of the intrinsic evidence. *See* Tr. (Brown) at 992:23-993:1 ("[Q]: That could have been a 1 percent discontinuity, a 5 percent discontinuity, a 10 percent discontinuity. It was just a binary determination by you; correct? [A]: Correct."). Even if credited, the deposition testimony by Dr. Drillet is insufficient as a matter of law to overcome this intrinsic evidence. *See Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1347 (Fed. Cir. 2008) ("[A]n inventor understands the invention but may not understand the claims, which are typically drafted by the attorney prosecuting the patent application. As we have explained, 'it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO.'").

As to Respondents' argument that testing of a single sample coupon may not be relied upon to show infringement by a part, the undersigned finds Dr. Fekete's unrebutted testimony that this kind of evaluation is consistent with industry practice—including Respondents' own practice—to be persuasive and to support a finding of infringement by a preponderance of the evidence. *See* CX-0730C.1, 3; Tr. (Fekete) at 519:19-520:12; CDX-0003C.116-17, 120; *see also Certain Magnetic Data Storage & Tapes & Cartridges Containing the Same (II)*, Inv. No. 337-TA-1076, ID, EDIS Doc. ID 662081 at 29 (Nov. 19, 2019) ("The law also does not require that

[13] Other extrinsic evidence, including the testimony of both parties' experts, supports the determination that perfect continuity or homogeneity is not required. For example, Dr. Brown, Respondents' technical expert, testified that voids, bubbles, and vertical cracks may be naturally occurring as part of the formation of the microstructure. *See, e.g.*, Tr. (Brown) at 990:4-991:1.

Fujifilm measure the diameter and density of every particle along the entirety of the tape to satisfy its burden.") *affirmed by* Comm'n Op., EDIS Doc. ID 679042 at 18 (June 20, 2019).[14] While evidence that some portion of an accused product does not meet the limitation may demonstrate that a challenger has failed to adduce preponderant evidence of infringement,[15] here, Respondents presented expert testimony specifically challenging Dr. Fekete's infringement analysis for only two parts (out of 34 total tested parts, constituting 16 unique parts, *see* Part V.A) of the Accused Products: BIW30009358 and BIW30009359.[16] It is well established that a claim need not "read on the entirety of an accused device in order to infringe"; rather, "[i]f a claim reads merely on a part of an accused device, that is enough for infringement." *SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1336 (Fed. Cir. 1999). Here, Dr. Fekete's infringement analysis for these limitations is unchallenged for 32 tested parts (constituting 14 unique parts). In these circumstances, the undersigned finds that ArcelorMittal has established infringement by a preponderance of the evidence.

[14] Respondents do not address this evidence, or Dr. Fekete's testimony regarding industry practice, or point to contrary evidence. *See generally* RIB; RRB.

[15] *See Pfizer Inc. v. Teva Pharms. U.S.A., Inc.*, 882 F. Supp. 2d 643, 714 (D. Del. 2012), *aff'd sub nom. Pfizer Inc. v. Teva Pharms. USA, Inc.*, 555 F. App'x 961 (Fed. Cir. 2014) ("[W]hile the plaintiffs are correct that a patentee does not have to demonstrate that a defendant's product will infringe every time to establish infringement, this standard does not remove from the plaintiffs their burden to prove that the defendants' proposed products will more likely than not infringe . . . ."); *Orexigen Therapeutics, Inc. v. Actavis Lab'ys FL, Inc.*, 282 F. Supp. 3d 793, 816 (D. Del. 2017), *not reviewed in relevant part sub nom. Nalpropion Pharms., Inc. v. Actavis Lab'ys FL, Inc.*, 934 F.3d 1344 (Fed. Cir. 2019) ("While it is certainly true that some of the tablets fall slightly outside of the claimed range for the two hour dissolution data, I disagree that this has any relevance to the question of whether Defendant's product infringes. Defendant does not appear to dispute that some of the tablets it tested fall squarely within the claimed dissolution profile . . . . '[A]an accused product that sometimes, but not always, embodies a claimed method nonetheless infringes.' *Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp.*, 55 F.3d 615, 622–23 (Fed. Cir. 1995). Plaintiff has adduced sufficient evidence to prove by a preponderance of the evidence that at least some of Defendant's tablets will meet the claimed dissolution profile.").

[16] Dr. Bradley imaged two additional parts, BIW30009530 and BIW30009529, *see* RDX-0004C.36, but Dr. Brown did not address those parts or images, or provide any testimony as to whether those parts were infringing or non-infringing. *See* RDX-0002C.35-36; Tr. (Brown) at 824:12-825:3.

Finally, as to the existence of horizontal cracks in certain parts,[17] *see* RIB at 11-14, the arguments are unsupported, as Respondents did not present or elicit any expert testimony on the existence of horizontal cracks in these images, or the impact that may have on the existence (or not) of the claimed layers. *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence."); *cf. Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005) (holding that defendants cannot create a dispute of fact on an issue requiring technical analysis based solely on attorney argument). Moreover, the undersigned finds that other evidence in the record—including Dr. Fekete's testimony and the chemical compositional data from the spot EDS and line scans—demonstrates by a preponderance that the claimed layers of Limitation [1c]-[1f] are present in the Accused Products.

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitations [1c]-[1f] of the '602 patent.

e. Claim Limitation [1g]: wherein the coating has a thickness greater than 30 micrometers.

Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the Accused Products include a coating, and that the coating has a thickness of greater than 30 micrometers. *See* Tr. (Fekete) at 514:16-24, 514:25-515:18; CDX-0003C.103, 104; *see also, e.g.*, CX-0094C (thickness measurement data); CX-0315C (control plans specifying a total coating thickness of [redacted] micrometers).

[17] Respondents' counsel did not allege cracks in at least parts BIW30008773 and BIW30008760. *See* RIB at 11-14.

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 1 of the '602 patent is infringed by the Accused Products.

2. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein the layers (c) and (d) are quasi continuous by occupying at least 90% of a level corresponding to each of the layers (c) and (d) and wherein less than 10% of layer (c) is present at an extreme surface of the product." '602 patent, cl. 2. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the Accused Products include a coating wherein layers (c) and (d) are quasi-continuous. *See* Tr. (Fekete) at 534:14-535:22; CDX-0003C.158; *see also, e.g.*, CX-0100C (micrographs).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 2 of the '602 patent is infringed by the Accused Products.

3. Claim 3

Claim 3 depends from claim 1, and requires in addition "wherein the base steel includes the following components by weight based on total weight: 0.15%<carbon<0.5%; 0.5%<manganese<3%; 0.1%<silicon<0.5%; 0.01%<chromium<1%; titanium<0.2%; aluminum<0.1%; phosphorus<0.1%; sulfur<0.05%; 0.0005%<boron<0.08%; and further comprises iron and impurities inherent in processing." '602 patent, cl. 3. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the base steel in the Accused Products includes the

recited components by weight percentages. *See* Tr. (Fekete) at 527:9-533:21; CDX-0003C.135-155; *see also, e.g.*, CX-0315C (control plans identifying chemical composition by weight percentage); CX-0316C (process flow diagrams identifying same); CX-0093C (chemical composition testing data); RX-1258C (hot-stamping specification identifying chemical composition by weight percentage).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 3 of the '602 patent is infringed by the Accused Products.

4. Claim 7

Claim 7 depends from claim 1, and requires in addition "wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42." '602 patent, cl. 7. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that the base steel in the Accused Products meets the recited weight ratio of titanium to nitrogen. *See* Tr. (Fekete) at 533:22-534:8; CDX-0003C.156; *see also, e.g.*, CX-0093C (chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 7 of the '602 patent is infringed by the Accused Products.

5. Claim 8

Claim 8 depends from claim 2, and requires in addition "wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42." '602 patent, cl. 8. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 2 is infringed by the Accused Products, and ArcelorMittal has shown that the additional limitation of claim 7—which is identical to the additional limitation of claim 8—is infringed by the Accused Products.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 8 of the '602 patent is infringed by the Accused Products.

6. Claim 9

Claim 9 depends from claim 1, and requires in addition "wherein the layer (a) has a thickness less than 15 micrometers." '602 patent, cl. 9. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14; RRB at 2-6. In addition, the undisputed evidence demonstrates that, with the exception of one sample (identified as 11 (BIW30009530)[18]), layer (a) has a thickness of less than 15 micrometers. *See* Tr. (Fekete) at 533:22-534:8; CDX-0003C.127; *see also, e.g.*, CX-0094C (thickness testing data); CX-0315C (control plans specifying that the [redacted] should have a thickness of less than [redacted] micrometers).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 9 of the '602 patent is infringed by the Accused Products.

7. Claim 20

Claim 20 depends from claim 1, and requires in addition "wherein the fourth mean iron composition is lower than the third mean iron composition." '602 patent, cl. 20. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14; RRB at 2-6. In addition,

[18] Other samples of the same part (identified as 345114.15 and 345114.16) satisfied the limitation. *See* CDX-0003C.127 (excerpting CX-0094C (Thickness data)). Moreover, the samples and tested parts are all from the VF8 Accused Product, and each of the other samples from the VF8 Accused Product have been shown to infringe this claim. Accordingly, the evidence shows by a preponderance that the Accused Products (e.g., the VF8 and VF9 vehicles) as a whole infringe this claim. The same logic applies to the other asserted claims where certain tested parts, but not all tested parts, met the claimed limitations. *See* claim 26 of the '602 patent and claims 2, 4, 5, 8, 11, 13 of the '227 patent; CIB at 41 (claim 26 of the '602 patent met by 33 of 34 tested parts); *id.* at 115 (claims 4 and 5 of the '227 patent infringed for same reasons as claims 9 and 26 of the '602 patent); *id.* at 115-116 (claim 8 of the '227 patent met by 28 tested parts, claim 11 of the '227 patent met by 28 tested parts, claim 13 of the '227 patent met by 29 tested parts).

the undisputed evidence demonstrates that the fourth mean iron composition in the Accused Products is lower than the third mean iron composition. *See* Tr. (Fekete) at 590:17-591:3; CDX-0003C.125; *see also, e.g.*, CX-0095C (chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 20 of the '602 patent is infringed by the Accused Products.

8. Claim 21

a. Claim Limitation [21pre]: A precoated steel product comprising:

ArcelorMittal asserts that the Accused Products satisfy Limitation [21pre] for the same reasons as Limitation [1pre]. CIB at 37-40; Tr. (Fekete) at 509:11-510:1, 514:25-515:18: CDX-0003C.104. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitation [1pre], the undersigned finds that the Accused Products satisfy Limitation [21pre]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [21pre] of the '602 patent.

b. Claim Limitation [21a]: a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the Accused Products satisfy Limitation [21a] for the same reasons as Limitation [1a]. CIB at 37-40; Tr. (Fekete) at 510:2-16, 514:25-515:18; CDX-0003C.104. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitation [1a], the undersigned finds that the Accused Products satisfy Limitation [21a]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [21a] of the '602 patent.

c. Claim Limitation [21b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the Accused Products satisfy Limitation [21b] for the same reasons as Limitation [1b]. CIB at 37-40; Tr. (Fekete) at 510:17-512:21, 514:25-515:18; CDX-0003C.104. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitation [1b], the undersigned finds that the Accused Products satisfy Limitation [21b]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [21b] of the '602 patent.

d. Claim Limitations [21c]-[21f]: (a) an interdiffusion layer having a first mean iron composition, (b) an intermediate layer having a second mean iron composition different from the first mean iron composition, (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean iron composition different from the first, second, and third mean iron composition,

The parties dispute this limitation. ArcelorMittal asserts that the Accused Products satisfy Limitations [21c]-[21f] for the same reasons as Limitations [1c]-[1f]. CIB at 38; Tr. (Fekete) at 514:25-515:18; CDX-0003C.104.

Respondents do not dispute that Limitation [21c] is met by the Accused Products, but dispute that ArcelorMittal met its burden to show infringement of Limitations [21d]-[21f] of the Accused Products for same reasons as Limitations [1d]-[1f]. *See* RIB at 7-14; RRB at 2-6.

For all the reasons discussed above with respect to Limitations [1c]-[1f], the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the Accused Products meet Limitations [21c]-[21f].

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitations [21c]-[21f] of the '602 patent.

e. Claim Limitation [21g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the Accused Products satisfy Limitation [21g] for the same reasons as Limitation [1g]. CIB at 37-40; Tr. (Fekete) at 514:16-24, 514:25-515:18; CDX-0003C.104. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the Accused Products satisfy Limitation [21g]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [21g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 21 of the '602 patent is infringed by the Accused Products.

9. Claim 22

Claim 20 depends from claim 21, and requires in addition "wherein the fourth mean iron composition is lower than the third mean iron composition." '602 patent, cl. 22. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 21 is infringed by the Accused Products, and ArcelorMittal has shown that the additional limitation of claim 20—which is identical to the additional limitation of claim 22—is infringed by the Accused Products.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 22 of the '602 patent is infringed by the Accused Products.

10. Claim 24

a. Claim Limitation [24pre]: A precoated steel product comprising:

ArcelorMittal asserts that the Accused Products satisfy Limitation [24pre] for the same reasons as Limitations [1pre] and [21pre]. CIB at 37-40; Tr. (Fekete) at 509:11-510:1, 514:25-517:9; CDX-0003C.106. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitations [1pre] and [21pre], the undersigned finds that the Accused Products satisfy Limitation [24pre]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [24pre] of the '602 patent.

b. Claim Limitation [24a]: a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the Accused Products satisfy Limitation [24a] for the same reasons as Limitations [1a] and [21a]. CIB at 37-40; Tr. (Fekete) at 510:2-16, 514:25-517:9; CDX-0003C.106. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitations [1a] and [21a], the undersigned finds that the Accused Products satisfy Limitation [24a]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [24a] of the '602 patent.

c. Claim Limitation [24b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the Accused Products satisfy Limitation [24b] for the same reasons as Limitations [1b] and [21b]. CIB at 37-40; Tr. (Fekete) at 510:17-512:21, 514:25-

517:9; CDX-0003C.106. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitations [1b] and [21b], the undersigned finds that the Accused Products satisfy Limitation [24b]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [24b] of the '602 patent.

d. Claim Limitations [24c]-[24f]: (a) an interdiffusion layer having a first mean aluminum composition, (b) an intermediate layer having a second mean aluminum composition different from the first mean aluminum composition, (c) an intermetallic layer having a third mean aluminum composition different from the first and second mean aluminum compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean aluminum composition different from the first, second, and third mean aluminum composition, the second mean aluminum composition being greater than the third mean aluminum composition

The only difference between Limitations [24c]-[24f] and Limitations [1c]-[1f] is the specification of a mean aluminum composition for each of the claimed layers, rather than a mean iron composition. *See* Tr. (Fekete) at 515:19-517:9; CDX-0003C.106. ArcelorMittal asserts that the Accused Products satisfy Limitations [24c]-[24f] for the same reasons as Limitations [1c]-[1f], with the exception of reliance on mean aluminum composition data gathered through spot EDS analysis. CIB at 38-40; Tr. (Fekete) at 514:25-517:9; CDX-0003C.106-09 (citing CX-0096C (Spot EDS data)).

Respondents do not dispute that Limitation [24c] is met by the Accused Products, but dispute that ArcelorMittal met its burden to show infringement of Limitations [24d]-[24f] of the Accused Products for same reasons as Limitations [1d]-[1f]. *See* RIB at 7-14; RRB at 2-6.

Respondents do not separately dispute that the mean aluminum composition requirements of claim 24 are satisfied. *Id.*

For all the reasons discussed above with respect to Limitations [1c]-[1f], the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the Accused Products include each of the claimed layers of Limitations [24c]-[24f]. Additionally, the undersigned finds that the undisputed evidence of record demonstrates that each of the claimed layers has a respective mean aluminum composition, that each of the first, second, third, and fourth mean aluminum compositions are different from each other, and that the second mean aluminum composition is greater than the third. *See, e.g.*, Tr. (Fekete) at 515:25-517:4; CDX-0003C.107-109 (citing CX-0096C (Spot EDS data)).

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitations [24c]-[24f] of the '602 patent.

e. Claim Limitation [24g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the Accused Products satisfy Limitation [24g] for the same reasons as Limitations [1g] and [21g]. CIB at 37-40; Tr. (Fekete) at 514:16-24, 514:25-517:9; CDX-0003C.106. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14; RRB at 2-6. For the same reasons as discussed above with respect to Limitations [1g] and [21g], the undersigned finds that the Accused Products satisfy Limitation [24g]. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [24g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 24 of the '602 patent is infringed by the Accused Products.

11. Claim 26

Claim 26 depends from claim 24, and requires in addition "wherein the layer (a) has a thickness less than 15 micrometers." '602 patent, cl. 26. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 24 is infringed by the Accused Products, and ArcelorMittal has shown that the additional limitation of claim 9—which is identical to the additional limitation of claim 26—is infringed by the Accused Products.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 26 of the '602 patent is infringed by the Accused Products.

C. The '227 Patent

ArcelorMittal contends that the VF8 and the VF9 infringe claims 1, 2, 4, 5, 7-11, 13, 15-17 and 24 of the '227 patent.[19] CIB at 14, 18-20, 31-42; CDX-0003C.22. ArcelorMittal tested 34 Al-coated parts, comprising 16 different types of parts, from two different VF8 vehicles. *See* CDX-0003C.23, 78; Tr. (Fekete) at 466:23-467:10. The only limitations of the '227 patent in dispute are whether the Accused Products include the claimed "intermediate layer," "intermetallic layer," and "superficial layer." *See, e.g.*, RIB at 7-14, 120; RRB at 2-6, 67.

1. Claim 1

a. Claim Limitation [1pre]: A hot stamped coated steel product, which comprises:

The parties appear to agree that the preamble is limiting. *See* CIB at 113; RIB at 122. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that the Accused Products are hot

[19] Certain tested parts are not alleged to infringe claims 2, 4, 5, 8, 11, and 13 of the '227 patent. *See* CIB at 113-117.

stamped coated steel products. *See* Tr. (Fekete) at 517:12-518:6; CDX-0003C.111-12; *see also, e.g.*, CX-1258C [redacted] for "Hot-Formed Steels With Al-Si Coating").

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1pre] of the '227 patent.

b. Claim Limitation [1a]: (a) a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the Accused Products satisfy Limitation [1a] of the '227 patent for the same reasons as Limitations [1a], [21a], and [24a] of the '602 patent. CIB at 113, 37-40; Tr. (Fekete) at 510:2-16, 517:12-519:1; CDX-0003C.111, 93. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14, 120; RRB at 2-6, 67. For the same reasons as discussed above with respect to Limitations [1a], [21a], and [24a] of the '602 patent, the undersigned finds that the Accused Products satisfy Limitation [1a] of the '227 patent. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1a] of the '227 patent.

c. Claim Limitation [1b]: (b) a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein (i) said coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and (ii) wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the Accused Products satisfy Limitation [1b] of the '227 patent for the same reasons as Limitations [1b], [21b], and [24b] of the '602 patent. *See* CIB at 114, 37-40; Tr. (Fekete) at 510:17-512:21, 517:12-519:1; CDX-0003C.94-98, 111. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14, 120; RRB at 2-6, 67. For the same reasons as discussed above with respect to Limitations [1b], [21b], and [24b] of the '602 patent, the undersigned finds that the Accused Products satisfy Limitation [1b] of the '227

patent. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1b] of the '227 patent.

d. Claim Limitations [1c]-[1f]: (a) an Interdiffusion layer, (b) an Intermediate layer, (c) an Intermetallic layer, (d) a Superficial layer, wherein layers (a), (b), (c), and (d) each have a different mean composition from one another

The only difference between Limitations [1c]-[1f] of the '227 patent and Limitations [21c]-[21f] of the '602 patent is that the '227 patent specifies that each of the layers has a different mean composition from each other. *See* Tr. (Fekete) at 517:12-18; CDX-0003C.111. ArcelorMittal asserts that the Accused Products satisfy Limitations [1c]-[1f] of the '227 patent for the same reasons as Limitations [1c]-[1f] of the '602 patent, with the exception of reliance on spot EDS data showing different mean compositions for iron, aluminum, and silicon. CIB at 113-14, 37-40; Tr. (Fekete) at 514:25-517:9; CDX-0003C.113 (citing CX-0096C, CX-0095C, CX-0097C (Spot EDS data)).

Respondents do not dispute that Limitation [1c] is met by the Accused Products, but dispute that ArcelorMittal met its burden to show infringement of Limitations [24d]-[24f] of the '227 patent by the Accused Products for same reasons as Limitations [1d]-[1f] of the '602 patent. *See* RIB at 120, 7-14; RRB at 67, 2-6.

For all the reasons discussed above with respect to Limitations [1c]-[1f] of the '602 patent, the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the Accused Products include each of the claimed layers of Limitations [1c]-[1f] of the '227 patent. Additionally, the undersigned finds that the undisputed evidence of record demonstrates that each of the claimed layers has a different mean composition from each other. *See, e.g.*, Tr. (Fekete) at 515:25-517:4, 518:7-519:2; CDX-0003C.113 (citing CX-0096C, CX-0095C, CX-0097C (Spot EDS data)).

Accordingly, ArcelorMittal has shown that the Accused Products meet Limitations [1c]-[1f] of the '227 patent.

e. Claim Limitation [1g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the Accused Products satisfy Limitation [1g] of the '227 patent for the same reasons as Limitations [1g], [21g], and [24g] of the '602 patent. *See* CIB at 114, 37-40; Tr. (Fekete) at 514:16-24, 517:12-519:1; CDX-0003C.103, 111. Respondents do not dispute that this limitation is met by the Accused Products. *See* RIB at 7-14, 120; RRB at 2-6, 67. For the same reasons as discussed above with respect to Limitations [1g], [21g], and [24g] of the '602 patent, the undersigned finds that the Accused Products satisfy Limitation [1g] of the '227 patent. Accordingly, ArcelorMittal has shown that the Accused Products meet Limitation [1g] of the '227 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 1 of the '227 patent is infringed by the Accused Products.

2. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness that is less than half of said thickness of the coating." '227 patent, cl. 2. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that, with the exception of one sample (identified as 11 (BIW30009530)[20]), layer (a) has a thickness

[20] Other samples of the same part (identified as 345114.15 and 345114.16) satisfied the limitation. *See* CDX-0003C.129 (excerpting CX-0094C (Thickness data)).

that is less than half of the thickness of the coating. *See* Tr. (Fekete) at 523:13-525:6; CDX-0003C.128-129; *see also, e.g.*, CX-0094C (Thickness data); *see also* CX-0315C (control plans specifying that the [redacted] should have a thickness of less than [redacted] micrometers and the total coating thickness should be [redacted] micrometers).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 2 of the '227 patent is infringed by the Accused Products.

3. Claim 4

Claim 4 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness of 17 micrometers or less." '227 patent, cl. 4. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that, with the exception of one sample (identified as 11 (BIW30009530)[21]), layer (a) has a thickness that is less than 17 micrometers. *See* Tr. (Fekete) at 523:13-524:18; CDX-0003C.127; *see also, e.g.*, CX-0094C (Thickness data); *see also* CX-0315C (control plans specifying that the [redacted] should have a thickness of less than [redacted] micrometers).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 4 of the '227 patent is infringed by the Accused Products.

4. Claim 5

Claim 5 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness of 15 micrometers or less." '227 patent, cl. 5. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products.

[21] Other samples of the same part (identified as 345114.15 and 345114.16) satisfied the limitation. *See* CDX-0003C.127 (excerpting CX-0094C (Thickness data)).

Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that, with the exception of one sample (identified as 11 (BIW30009530)[22]), layer (a) has a thickness that is less than 15 micrometers. *See* Tr. (Fekete) at 523:13-524:18; CDX-0003C.127; *see also, e.g.*, CX-0094C (Thickness data); *see also* CX-0315C (control plans specifying that the [redacted] should have a thickness of less than [redacted] micrometers).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 5 of the '227 patent is infringed by the Accused Products.

5. Claim 7

Claim 7 depends from claim 1, and requires in addition "wherein the interdifffusion layer has a first mean iron composition, the intermediate layer has a second mean iron composition less than the first mean iron composition; wherein the intermetallic layer has a third mean iron composition, the third mean iron composition less than the first mean iron composition and greater than the second mean iron composition, and the superficial layer has a fourth mean iron composition, the fourth mean iron composition begin [sic] less than the third mean iron composition." '227 patent, cl. 7. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that each of the claimed layers meets the requirements for the relationships of the mean iron compositions identified in the claims. *See* Tr. (Fekete) at 522:5-3; CDX-0003C.122-25; *see also, e.g.*, CX-0095C (Spot EDS data).

[22] Other samples of the same part (identified as 345114.15 and 345114.16) satisfied the limitation. *See* CDX-0003C.127 (excerpting CX-0094C (Thickness data)).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 7 of the '227 patent is infringed by the Accused Products.

6. Claim 8

Claim 8 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is greater than a thickness of layer (b)." '227 patent, cl. 8. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that with the exception of six samples (identified as 17 (BIW30008141), 20 (BIW30008760), 21 (BIW30008759), 345114.3 (BIW30008760), 345114.15 (BIW30009530), and 345114.20 (BIW30009569)[23]), layer (a) has a thickness that is greater than the thickness of layer (b). *See* Tr. (Fekete) at 524:19-525:17; CDX-0003C.130; CX-0094C (Thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 8 of the '227 patent is infringed by the Accused Products.

7. Claim 9

Claim 9 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is greater than a thickness of layer (c)." '227 patent, cl. 9. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that layer (a) has a thickness

[23] Other samples of the BIW30008760 part (identified as 345114.4), the BIW30009569 (identified as 345114.19 and 12 (BIW30009569)), the BIW30008759 part (identified as 345114.1 and 345114.2), and the BIW30009530 part (identified as 345114.16 and 11 (BIW30009530)) satisfied this limitation. *See* CDX-0003C.130 (excerpting CX-0094C (Thickness data)).

that is greater than the thickness of layer (c). *See* Tr. (Fekete) at 525:18-24; CDX-0003C.131; CX-0094C (Thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 9 of the '227 patent is infringed by the Accused Products.

8. Claim 10

Claim 10 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is greater than a thickness of layer (d)." '227 patent, cl. 10. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that layer (a) has a thickness that is greater than the thickness of layer (d). *See* Tr. (Fekete) at 526:8-15; CDX-0003C.133; CX-0094C (Thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 10 of the '227 patent is infringed by the Accused Products.

9. Claim 11

Claim 11 depends from claim 1, and requires in addition "wherein layer (a) has a thickness: that is greater than a thickness of layer (b); that is greater than a thickness of layer (c); and that is greater than a thickness of layer (d)." '227 patent, cl. 11. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that—with the exception of the same samples that were not shown to meet the additional limitation of claim

8, *see supra*—layer (a) in the Accused Products meets the thickness relationship limitations. *See* Tr. (Fekete) at 526:16-527:1; CDX-0003C.134; CX-0094C (Thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 11 of the '227 patent is infringed by the Accused Products.

10. Claim 13

Claim 13 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is more than twice a thickness of layer (c)." '227 patent, cl. 13. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates that—with the exception of certain samples (identified as 345114.7 (BIW30009236), 345114.18 (BIW30009568), 345114.19 (BIW30009569), 6 (BIW30037058), and 20 (BIW30008760) [24]), layer (a) in the Accused Products is more than twice as thick as layer (c). *See* Tr. (Fekete) at 525:25-526:7; CDX-0003C.132; CX-0094C (Thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 13 of the '227 patent is infringed by the Accused Products.

11. Claim 15

Claim 15 depends from claim 1, and requires in addition "wherein the hot stamped coated steel product is fully martensitic." '227 patent, cl. 15. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120;

[24] Other samples of the BIW30009236 part (identified as 345114.8 and 19 (BIW30009236)), the BIW30009569 part (identified as 12 (BIW30009569)), and the BIW30009568 part (identified as 345114.17 and 14 (BIW30009568) satisfied this limitation. *See* CDX-0003C.132 (excerpting CX-0094C (Thickness data)).

RRB at 2-6, 67. In addition, the undisputed evidence demonstrates the hot stamped coated steel product has a fully martensitic—typified by a "needlelike structure"—structure. *See* Tr. (Fekete) at 535:23-536:12; CDX-0003C.160; CX-0101C (Surface SEM micrographs).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 15 of the '227 patent is infringed by the Accused Products.

12. Claim 16

Claim 16 depends from claim 1, and requires in addition "wherein the base steel consists of the following components by weight based on total weight: 0.15%<carbon<0.5%; Q.5%<manganese<3%; 0.1 %<silicon<0.5%; 0.01 %<chromium<l %; titanium<0.2%; aluminum<0.1%; phosphorus<0.l %; sulfur<0.05%; 0.0005%<boron<0.08%; a remainder being iron and impurities inherent in processing." '227 patent, cl. 16. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates the base steel in the Accused Products has the claimed composition. *See* Tr. (Fekete) at 527:12-533:21; CDX-0003C.135-55; CX-0093C (Base Steel Composition data); RX-01258C (base steel specification); CX-0315C (control plans); CX-0316C (process flow).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 16 of the '227 patent is infringed by the Accused Products.

13. Claim 17

Claim 17 depends from claim 1, and requires in addition "wherein the base steel consists of the following components by weight based on total weight: wherein the base steel consists of the following components by weight based on total weight: 0.l5%<carbon<0.25%,

0.8%<manganese<l .8%, 0.10%<silicon<0.35%, 0.01 %<chromium<0.5%, titanium<0.l %, aluminum<0.l %, phosphorus<0.l %, sulfur<0.05%, 0.002%<boron<0.005%, a remainder being iron and impurities inherent in processing." '227 patent, cl. 17. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates the base steel in the Accused Products has the claimed composition. *See* Tr. (Fekete) at 527:12-533:21; CDX-0003C.135-55; CX-0093C (Base Steel Composition data); RX-1258C (base steel specification); CX-0315C (control plans); CX-0316C (process flow).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 17 of the '227 patent is infringed by the Accused Products.

14. Claim 24

Claim 24 depends from claim 1, and requires in addition "wherein the hot stamped coated steel product has a mechanical strength in excess of 1000 MPa." '227 patent, cl. 24. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is infringed by the Accused Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 7-14, 120; RRB at 2-6, 67. In addition, the undisputed evidence demonstrates the base steel in the Accused Products has the claimed mechanical strength. *See* Tr. (Fekete) at 536:13-22; CDX-0003C.161-63; RX-1258C (identifying a required tensile strength of 1300 to 1700 MPa); CX-0315C (same); CX-0316C (same); CX-0098C (Rockwell hardness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 24 of the '227 patent is infringed by the Accused Products.

VI. DOMESTIC INDUSTRY – TECHNICAL PRONG

ArcelorMittal contends that the DI Direct Products practice claims 1-4, 7-10, 18, 20-22, 24 and 26 of the '602 patent and claims 1, 2, 4, 5, 7, 9, 10, 13, 15-17, and 24 of the '227 patent.

A. Representativeness

Over the course of the investigation, ArcelorMittal obtained and tested 16 total hot-stamped parts from five different Tier 1 hot-stampers: Simwon, Magna, Topre, Gestamp, and Cleveland-Cliffs/Cannon.[25] *See* CIB at 20-21. Of the 16 tested parts, ArcelorMittal contends that 12 were shown to practice the Asserted Claims and are thus DI Direct Products, while 4—all hot-stamped by Magna—do not practice the claims. *See* CIB at 21, 46 (referencing practice of the patents by 12 parts); *see also supra* Part I.C.2 (defining "DI Direct Products").[26] One of the non-practicing parts—a Kia B-Pillar hot-stamped by Magna—is not made from a DI Precursor Product, and is not alleged to practice the patents because it does not meet the coating thickness limitations in each of the independent claims. *See* CIB at 46 n.7 (citing Tr. (Fekete) at 544:5-13). The other three parts—all Ford parts hot-stamped by [redacted]—are not alleged to practice the patents because Dr. Fekete determined they lacked the claimed four-layer structure (and thus are not included as "DI Direct Products"). *See* Tr. (Fekete) at 544:14-17. The 12 tested DI Direct

[25] An additional three parts, manufactured by Multimatic and GNS, were tested, but excluded by Order No. 19. *See* Order No. 19, EDIS Doc. ID 841799 (Jan. 27, 2025).

[26] Unlike the Accused Products, which are the vehicles themselves (which contain hot-stamped parts), the DI Direct Products are themselves individual parts of a vehicle (such as, for example, a door ring or A-pillar). As discussed *infra*, the alleged DI Direct Products include four parts manufactured by Simwon, 72 parts manufactured by Magna, five parts manufactured by Topre, sixteen parts manufactured by Gestamp, and an unspecified number of parts manufactured by Cleveland Cliffs/Cannon. *See* CX-0341C (alleged Gestamp DI Direct Products, identified by those designated "AS150" coating); RX-1283C ([redacted] (Simwon) Dep. Tr.) at 75:15-19 (testifying that [redacted]; CX-0349C (alleged Magna DI Direct Products, identified as those with "AlSi 150" in "Coating" column T); CX-0320C (alleged Gestamp DI Direct Products); CIB at 21-29; CRB at 11 n.4.

Products (which consist of 10 unique parts[27]) asserted by ArcelorMittal to practice the patents are as follows:

Part Description	Hot-Stamper
[redacted]	Magna
[redacted]	Magna
Toyota Reinforcement	Topre
[redacted]	Simwon
[redacted]	Simwon
[redacted]	Simwon
[redacted]	Simwon
[redacted]	Gestamp
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon

See CIB at 20-21; CDX-0003C.171.

[27] The four Volkswagen tested products include duplicates of two unique parts.

Although ArcelorMittal states that it is not making a representativeness argument, *see* CRB at 11, ArcelorMittal contends that all asserted DI Direct Products—both tested and untested—manufactured by the same hot-stamper from a DI Precursor Product practice the patents.[28] *See* CIB at 46; CRB at 13 ("[A]dditional untested parts made by the subpoenaed Tier 1 manufacturers would practice the Asserted Patents."). ArcelorMittal relies on testimony from the hot-stampers that although specific processing parameters may be adjusted, the hot stamping process is essentially the same for all asserted DI Direct Products. CIB at 47 (citing RX-1273C ([redacted] (Topre) Dep. Tr.) at 118:12-119:9; RX-1283C ([redacted] (Simwon) Dep. Tr.) at 68:21-23; RX-1277C ([redacted] (Magna) at 171:22-172:2; RX-1286C ([redacted] (Gestamp) Dep. Tr.) at 18:11-19:17). ArcelorMittal also notes that with respect to Simwon, [redacted]. *See* CIB at 47, 155 (citing RX-1283C ([redacted] (Simwon) Dep. Tr.) at 13-16).

Respondents argue that ArcelorMittal failed to meet its burden to establish representativeness. RIB at 14. Respondents first argue that ArcelorMittal has failed to identify which tested product is representative of the untested products. RIB at 14-15. Respondents also argue that ArcelorMittal and Dr. Fekete failed to consider how differences in processing parameters for different hot-stamped parts—which Respondents contend the parties' experts agree impact the formation of the claimed four-layer structure—impact the representativeness analysis. RIB at 15-17. Respondents also argue that the representativeness theory is contradicted by ArcelorMittal's own testing of the DI Direct Products because three out of the six tested

[28] ArcelorMittal abandoned its earlier contention that the tested DI Direct Products are representative of hot-stamped parts produced by non-subpoenaed manufacturers. *See* CIB at 48 ("ArcelorMittal does not now contend that parts from subpoenaed Tier 1s are representative of parts manufactured by non-subpoenaed Tier 1 hot stampers.").

parts[29] manufactured by Magna did not demonstrate the claimed four-layer structure. *See* RIB at 17-18 (referencing the three tested Ford parts manufactured by Magna). Respondents also argue that reliance on certain customer specifications does not show representativeness, including because at least one of the specifications specifically permits a three-layer "seas" and "islands" structure rather than the claimed four-layer structure. RIB at 18 (citing CX-0719C.0016). Likewise, Respondents argue that the recitation of certain desirable material properties in customer specifications does not indicate the presence of the claimed four-layer structure because while the presence of the claimed four-layer structure may be sufficient to achieve the material properties, the evidence establishes that there are other ways to achieve the same properties, including in the prior art. RIB at 19 (citing Tr. (Fekete) at 697:8-12).

In response, ArcelorMittal argues that Respondents have not countered the testimony from the hot-stampers that they use the same hot stamping process for each part they manufacture. CRB at 12-23.

Although ArcelorMittal argues that it is not making a "representativeness" argument, the undersigned disagrees. ArcelorMittal may not have used the word "representative"; however, ArcelorMittal is arguing that tested, analyzed parts may be used to demonstrate practice of the Asserted Patents by untested, unanalyzed parts (with the exception of parts manufactured by Simwon, as discussed *infra*). *See* CRB at 12 ("ArcelorMittal contends that the preponderance of the evidence—namely, deposition testimony from the subpoenaed Tier 1 manufacturers and results showing that the vast majority of tested parts practice the Asserted Patents—demonstrates that these Tier 1 manufacturers hot stamp Al alloy-coated steel parts that practice the patents,

[29] As discussed above, a fourth Magna part, the Kia B-Pillar—is not alleged to infringe because it is not made from a DI Precursor Product and does not meet the thickness limitations, although it does include the claimed four-layer structure. *See* Tr. (Fekete) at 549:19-24.

including both tested and non-tested parts."). This is a representativeness argument: *i.e.*, an argument that analysis of certain products may be reasonably extrapolated to unanalyzed products. As such, ArcelorMittal bears the burden to show "by a preponderance of the evidence that the products its expert[] analyzed are indeed representative of unanalyzed products." *Certain LED Lighting Devices, LED Power Supplies, & Components Thereof*, Inv. No. 337-TA-1081, Comm'n Op., 2019 WL 7423547, at *7 (July 23, 2019) (quoting *Certain Semiconductor Devices, Semiconductor Device Packages, and Products Containing Same*, Inv. No. 337-TA-1010, Order No. 77 (Mar. 15, 2017), *not reviewed in relevant part*, EDIS Doc. ID 608676 (Apr. 14, 2017)).

As to parts manufactured by Simwon, because [redacted] are the only asserted Simwon DI Direct Products, there is no representativeness issue;[30] that is, ArcelorMittal tested and presented evidence as to each different DI Direct Product that Simwon hot stamps. There are thus no unanalyzed Simwon DI Direct Products. *See* RX-1283C ([redacted] (Simwon) Dep. Tr.) at 75:15-19 ("[Q]: Okay. Thank you. I think you testified earlier that the

[30] To the extent Respondents argue that testing of a part is not sufficiently representative of other, identical parts (*e.g.*, that the tested [redacted] is not representative of an untested [redacted] manufactured by Simwon), the undersigned finds that argument unpersuasive. Evidence adduced at the hearing established that hot-stamping process parameters may vary for different parts, not for the same parts. *See, e.g.*, RX-1277C ([redacted] (Magna) Dep. Tr.) at 171:10-172:2 (testifying that "[p]arameters are dependent on the part, primarily due to the mass of each of the parts and, because it takes more mass to heat up a larger part or a thicker part than it does to heat up a smaller thinner part." and "there are always variations depending on ***part-specific requirements***.") (emphasis added); *see also Magnetic Tapes (II)*, EDIS Doc. ID 662081 at 30 ("Evidence that the accused tapes were uniform before selecting a random sample for testing, evidence that uniformity of each tape is to be expected, and the absence of contrary evidence, is sufficient in this circumstance to satisfy Fujifilm's burden to show that the accused tapes more likely than not have properties that are substantively similar to the measured portions of the tapes."); *Ecolab, Inc. v. Amerikem Lab'ys, Inc.*, 98 F. Supp. 2d 569, 583 (D.N.J. 2000) (where accused products were made "in accordance with a standard production method," tested samples were sufficiently "representative" to support summary judgement of infringement), *vacated on other grounds in Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358 (Fed. Cir. 2001).

only products hot-stamped at the facility on Murphy Parkway are [redacted]; is that correct? [A]: Yes."), 16:7-10.[31]

As to the parts manufactured by Magna, however, the undersigned finds that ArcelorMittal has not met its burden to show that the two tested parts shown to practice the Asserted Patents are representative of untested DI Direct Products manufactured by Magna, or that the two tested parts constitute evidence of practice of the Asserted Patents by untested Magna parts. ArcelorMittal obtained and tested five parts manufactured by Magna from DI Precursor Products.[32] Three of the five tested parts—a majority of the tested parts manufactured by Magna—did not include the claimed four-layer structure and are not alleged to practice the Asserted Patents. *See* Tr. (Fekete) at 544:14-17. Although Dr. Fekete testified these were likely manufacturing anomalies, these "manufacturing anomalies" in a majority of the tested parts cast significant doubt on the consistency of Magna's hot stamping process between parts, and thus whether the results of the tested parts may be extrapolated to untested parts. *See* Tr. (Fekete) at 544:14-25.[33] Moreover, the evidence shows that Magna hot stamps 72 different DI Direct Products, *see* CRB at 11 n.4 (citing CX-0349C), including parts for [redacted]. CX-0349C

[31] As the undersigned held in Order No. 32, testing results and opinions related to all four [redacted] was within the scope of Dr. Fekete's report and testimony. Order No. 32 noted that Dr. Fekete's testimony regarding exhibits CX-0870C to CX-0872C was permissible "provided it was consistent with the level of detail provided" in his report, and permitted Respondents to raise objections to testimony or demonstratives related to these—among other exhibits—that were not addressed by Order No. 32. Respondents did not identify any additional testimony or opinions they sought to strike in response to Order No. 32. *See* Order No. 32, EDIS Doc. ID 845239 (March 7, 2025).

[32] A sixth part, a Kia B-pillar, was obtained and tested, but was not manufactured out of a DI Precursor Product and is not alleged to infringe. *See* Tr. (Fekete) at 544:5-13.

[33] Dr. Fekete testified that his view that the Ford parts were the result of a manufacturing anomaly was supported by his review of a Ford materials specification, but that specification was not timely produced, and was not—by agreement of the parties—submitted into evidence. *See* Tr. (Fekete) at 548:1-549:16; CDX-0003C.185. The undersigned accords Dr. Fekete's second-hand testimony on the content of the Ford specification little weight.

at lns. 42, 48. At the hearing, however, Dr. Fekete unambiguously testified that he did not know whether Mercedes-Benz parts would practice the Asserted Patents based on his analysis:

> [Q]: With respect to Mercedes-Benz, you've already testified, because you didn't do any testing, you don't have the OEM spec, you don't know whether the parts going into the Mercedes-Benz practice the patents; correct?
>
> [A]: Correct.

Tr. (Fekete) at 16-20.[34] In these circumstances and on this record—where a majority of the analyzed parts do not practice the Asserted Patents and where ArcelorMittal's expert testified that he did not know whether certain untested parts would practice the Asserted Patents based on his analysis—the undersigned cannot find that ArcelorMittal has met its burden. The only DI Direct Products from Magna that will be considered are the tested [redacted] and the tested [redacted]

As to parts manufactured by Topre, the undersigned finds that ArcelorMittal has met its burden to establish representativeness. The evidence shows that Topre hot stamps five DI Direct Products, three for Toyota and two for Nissan. *See* CRB at 11 n.4 (citing CX-0341C). The Topre representative, [redacted] testified repeatedly that [redacted] and that the different parameters are modified "slightly" "based on the thickness, and the coating and the size of the product," but that all the modifications are within "the same process window" and that "temperature in the furnace is not typically modified a tremendous amount" because "that's not one of the parameters that we move a whole lot." RX-1273C ([redacted] (Topre) Dep. Tr.) at 118:12-119:23, 120:3-5 ("[Q]: Does Topre America hot stamp anything other than USIBOR

[34] ArcelorMittal did not parse the list of alleged Magna DI Direct Products to identify which parts would be expected to be the same as the two tested, practicing parts (*e.g.*, because they are manufactured according to the same OEM material specification). *See generally* CIB, CRB.

1500? [A]: No."). Respondents do not identify persuasive contrary evidence for Topre, and on this record, in view of [redacted] testimony and the lack of persuasive contrary evidence, the undersigned finds that ArcelorMittal has adduced preponderant evidence that the tested Toyota Reinforcement part is representative of the other Topre DI Direct Products.

As to parts manufactured by Gestamp, the undersigned finds that ArcelorMittal has met its burden. Gestamp hot stamps sixteen DI Direct Products. *See* CIB at 26 (citing CX-0320C). Gestamp uses "the same type of hot-stamping process" in all of its facilities. *See* CX-0320C.2-3. The Gestamp representative, [redacted], testified that the process is generally the same for all hot-stamped parts, except for "tweak[s]." RX-1286C ([redacted] (Gestamp) Dep. Tr.) at 19:9-17 ("[Q]: Does that mean that this process is generally the same for all the parts in Table 1? [A]: Yes."), 19:25-20:11. [redacted] also testified that Gestamp has procedures in place to ensure that all the parts it manufactures are consistent with that process. *Id.* at 20:24-21:11. Respondents do not identify persuasive contrary evidence for Gestamp, and on this record, in view of [redacted] testimony and the lack of persuasive contrary evidence, the undersigned finds that ArcelorMittal has adduced preponderant evidence that the tested [redacted] part is representative of the other Gestamp DI Direct Products.

Finally, as to parts manufactured by Cannon (also referred to as Cleveland-Cliffs), the undersigned finds that ArcelorMittal has failed to meet its burden to show the four tested Volkswagen parts are representative of—or constitute a preponderance of the evidence of the practice of—other DI Direct Products manufactured by Cannon. ArcelorMittal has pointed to no testimony or documents from Cannon—as opposed to other hot-stampers—indicating that their process windows or hot stamping processes are similar between parts; nor has ArcelorMittal adduced evidence of what other hot-stamped parts are manufactured by Cannon. *See* CIB at 47

(identifying testimony for Topre, Simwon, Magna, and Gestamp, but not Cannon); CRB at 11 n.4 (identifying lists of products for Topre, Magna, and Gestamp, but not Cannon). ArcelorMittal has not identified evidence regarding the identity of the OEMs of any untested DI Direct Products manufactured by Cannon, and has not identified evidence of what specifications those untested DI Direct Products may comply with. On this record, ArcelorMittal has not shown by a preponderance of the evidence that the tested DI Direct Products manufactured by Cannon are representative of the (unknown and unidentified) untested DI Direct Products.

Accordingly, ArcelorMittal has shown, by a preponderance of the evidence, that the tested DI Direct Products from Topre and Gestamp are representative of untested DI Direct Products manufactured by Topre and Gestamp. ArcelorMittal has not shown, by a preponderance of the evidence, that the tested DI Direct Products are representative of any untested products manufactured by Magna or Cannon. And, for Simwon, ArcelorMittal has shown that the tested DI Direct Products are the only DI Direct Products manufactured (and thus no representativeness analysis is needed). Given these findings, the only DI Direct Products for which the following limitation-by-limitation analysis applies are the twelve tested DI Direct Products, as well as the untested Topre and Gestamp DI Direct Parts found to be represented (collectively, "the Represented DI Direct Products").

B. The '602 Patent

ArcelorMittal contends that the DI Direct Products practice claims 1-4, 7-10, 18, 20-22, 24 and 26 of the '602 patent.[35] CIB at 42-54; CDX-0003C.187. ArcelorMittal tested 16 Al-coated parts, 12 of which are asserted to practice the limitations of the '602 patent. *See* CDX-

[35] Certain parts are not alleged to practice claims 3, 4, 7, 8, and 10. The specific parts are identified in the discussion of each section.

0003C.170-71; Tr. (Fekete) at 544:11-23. Apart from the issues regarding representativeness, the only limitations of the '602 patent in dispute are whether the tested DI Direct Products include the claimed "intermediate layer," "intermetallic layer," and "superficial layer." *See, e.g.*, RIB at 20-31; RRB at 6-8. For the reasons discussed below, the undersigned determines that all of the Represented DI Direct Products practice claims 1, 2, 7, 9, 18, 20-22, 24, and 26 of the '602 patent, and that certain of the DI Direct Products practice claims 3, 4, 7, 8 and 10 of the '602 patent.

1. Claim 1

a. Claim Limitation [1pre]: A precoated steel product comprising:

The parties appear to agree that the preamble is limiting. *See* CIB at 48; RIB at 74. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the tested DI Direct Products are precoated steel products. *See* Tr. (Fekete) at 551:2-7, 556:13-557:4; CDX-0003C.189, 201; *see also, e.g.*, CX-0108C; CX-0109C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1pre] of the '602 patent.

b. Claim Limitation [1a]: a strip of base steel having a first side and a second side; and

Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the tested DI Direct Products include a strip of base steel with a first and second side. *See* Tr. (Fekete) at 551:8-

552:5, 556:13-557:4; CDX-0003C.190-91, 201; *see also, e.g.*, CX-0108C; CX-0109C; CX-0114C; CX-0870C; CX-0871C; CX-0872C; CX-0337C; CX-0411C; CX-0448C.

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1a] of the '602 patent.

c. Claim Limitation [1b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the tested DI Direct Products include a coating, and that the coating results from interdiffusion between the base steel and an aluminum or aluminum alloy pre-coating. *See* Tr. (Fekete) at 552:6-553:10, 556:13-557:4; CDX-0003C.192, 201; *see also, e.g.*, CX-0108C; CX-0109C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1b] of the '602 patent.

d. Claim Limitations [1c]-[1f]: (a) an interdiffusion layer having a first mean iron composition, (b) an intermediate layer having a second mean iron composition different from the first mean iron composition, (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean iron composition different from the third mean iron composition,

Respondents do not dispute that the DI Direct Products meet Limitation [1c], "an interdiffusion layer having a first mean iron composition," but do dispute whether the DI Direct have the claimed "intermediate layer," "intermetallic layer," and "superficial layer." *See* RIB at

20. ArcelorMittal, relying on Dr. Fekete, contends that all of Limitations [1c] – [1f] are met in the DI Direct Products.

The Parties' Positions

ArcelorMittal, relying on Dr. Fekete, contends that Limitations [1c] – [1f] are met by the DI Direct Products. CIB at 49-50. Dr. Fekete testified that line scans, spot EDS analysis, and SEM micrographs demonstrate the layers and the compositions of the layers. Tr. (Fekete) at 553:11-555:22, 556:13-25. As to each of the required layers, ArcelorMittal contends that Dr. Fekete testified that "SEM images, line scans, and spot EDS data together" show that each of the 12 tested DI Direct Products have the claimed four layers, and that each of the four layers have a different mean iron composition, "consistent with how Dr. Fekete explained the patents define layers as having different mean compositions." CIB at 49 (citing Tr. (Fekete) at 553:11-554:18, 481:8-482:1, 557:1-4; CDX-0003C.195). As with infringement, ArcelorMittal contends that there is no requirement for layers to be "continuous" or "homogenous." CIB at 43-45. Similarly, ArcelorMittal repeats its opposition to Respondents' argument that Dr. Fekete relied on a single SEM image to determine whether the four-layer structure exists. CIB at 42. ArcelorMittal argues that Dr. Brown's testimony that SEM images relied upon by Dr. Fekete did not show continuous layers is irrelevant because it is based on an improper and unsupported claim construction and an overly stringent "any discontinuity" analysis that Dr. Brown himself repudiated during the hearing. CIB at 43. ArcelorMittal also contends that SEM images created by Dr. Bradley do not render the DI Direct Products non-practicing, as "[i]f a claim reads merely on a part of an accused device, that is enough for infringement." CIB at 45 (citing *SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1336 (Fed. Cir. 1999)). Finally, ArcelorMittal states that Dr.

Bradley and Dr. Brown did not analyze (and thus did not provide contrary opinions) as to three of the four [redacted] manufactured by Simwon. CIB at 46.

Respondents first contend that the disputed "layer" terms are not practiced because they are indefinite.[36] *See* RIB at 20. Respondents also repeat their argument that ArcelorMittal has failed to meet its burden because the methodology used by Dr. Fekete—which Respondents contend is comparing SEM micrographs to Figure 1 or Figure 2 of the Asserted Patents—is unreliable. RIB at 20; RRB at 7. Respondents also renew their argument that the plain and ordinary meaning of "layer" requires that the claimed layer be "homogenous across an entire part." RIB at 20-21 (citing CX-0719C.16 (Honda OEM Specification)); RRB at 8. Respondents also identify testimony by Dr. Brown that the SEM images relied upon by Dr. Fekete show "separate islands of phases" rather than continuous layers, a contention Respondents argue is supported by a Honda specification. *See* RIB at 22-26 (citing Tr. (Brown) at 912:11-19, 912:20-25, 913:1-10, 918:7-21, 918:7-919:7). Respondents also contend that SEM images taken by Dr. Bradley show non-continuous phases in the DI Direct Products rather than layers. RIB at 26-28. (citing RDX-0002C.199-202). Respondents also (as they did with respect to infringement) argue that the technical prong analysis and invalidity analysis are inconsistent, as the presence of horizontal cracks in an SEM micrograph of the VW Passat prior art reference was cited by Dr. Raabe as a reason the VW Passat may not meet the "layer" limitations, but that many of the SEM micrographs of the DI Direct Products have "significant horizontal cracks." RIB at 28-31 (citing SEM micrographs of DI Direct Products that Respondents contend show cracks).

[36] As discussed *infra*, Part VIII.G, the undersigned finds that Respondents have not established by clear and convincing evidence that the "layer" terms are indefinite.

In response, ArcelorMittal renews its argument that a part need not be "continuous and homogeneous." CRB at 13-14. ArcelorMittal also argues that the Honda specification supports the construction of layers as non-homogenous and non-continuous, as it identifies the "sea" and "island" portions as part of "plating layers." CRB at 15 (citing CX-0719C.16). As to the allegations of inconsistency based on horizontal cracks, ArcelorMittal again argues that it is unsupported attorney argument that is not supported by any expert testimony, and that, moreover, Respondents identify purported cracks in only 5 of the 12 tested parts, such that Dr. Fekete's analysis stands unrebutted—even by attorney argument—as to at least 7 parts. CRB at 16. Moreover, ArcelorMittal argues that other data relied upon by Dr. Fekete—such as line scan data—illustrates that the claimed four-layer structure was formed in the DI Direct Products regardless of the existence of alleged horizontal cracks. CRB at 17-18.

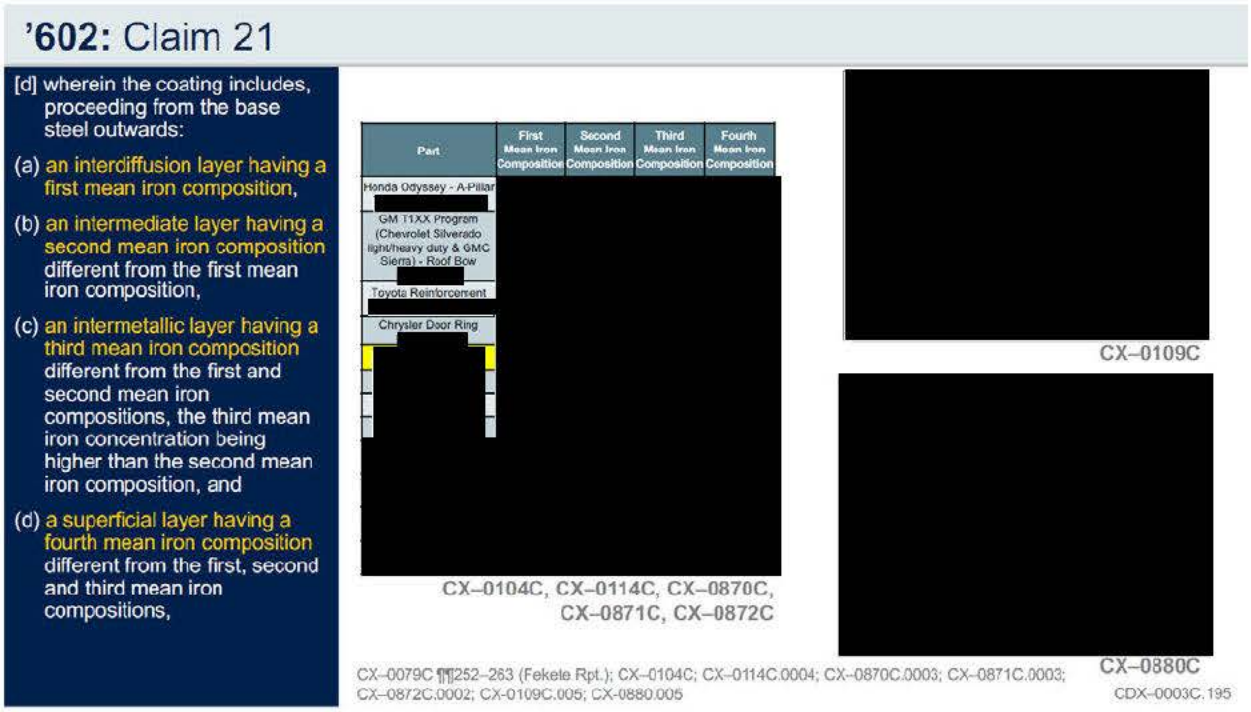
Determination

Upon review of the submissions and evidence record, the undersigned finds that ArcelorMittal has established by a preponderance of the evidence that the tested DI Direct Products meet Limitations [1c]-[1f].

First, as to Limitation [1c], the "interdiffusion layer," Respondents do not dispute that this limitation is met by the tested DI Direct Products. *See* RIB at 20 (asserting only that "ArcelorMittal Failed to Establish That DI Direct Products Have the Claimed 'intermediate layer,' 'intermetallic layer,' and 'superficial layer.'"); RRB at 7 (same). In addition, the undisputed evidence demonstrates the existence of the claimed "interdiffusion layer" with a first mean iron composition. *See, e.g.*, Tr. (Fekete) at 552:18-553:10, 553:11-555:2, 556:13-557:4; CDX-0003C.193-98; CX-0880C (Line Scans); CX-0719C (identifying a "diffusion layer" thickness); CX-0104C (Mean Iron Compositions); CX-0109C (SEM micrographs); CX-0114C

(Volkswagen Part Testing Results); CX-0870C ([redacted] Testing Results); CX-0871C ([redacted] Testing Results); CX-0872C ([redacted] Testing Results).

As to the "intermetallic layer," "intermediate layer," and "superficial layer," Dr. Fekete testified that his analysis of the four-layer structure in the 12 parts he tested was based on analysis of SEM micrographs, line scans, and spot EDS data. Tr. (Fekete) at 553:122-554:2, 719:11-720:22. For example. Dr. Fekete walked through the test results related to [redacted] 1 in detail, and identified an SEM micrograph, line scan, and spot EDS data identifying each of the four claimed layers and the corresponding mean iron composition:



CDX-0003C.195 (citing CX-0109C (SEM micrographs); CX-0880C (Line Scans); CX-104C, CX-0105C, CX-0870C (Spot EDS Data); CX-0871C; CX-0872C (Testing Results)). Dr. Fekete testified that based on his review of the same data for each of the 12 tested DI Direct Products, each DI Direct Product included the claimed four-layer structure and corresponding mean iron composition. Tr. (Fekete) at 553:11-555:22, 719:11-720:22; CDX-0003C.195-98.

Many of Respondents' arguments are repetitive of those addressed in infringement. First, and for the same reasons as discussed in the context of infringement, the undersigned finds Respondents' contention that Dr. Fekete's analysis was unreliable because it relied upon a single SEM image to be unpersuasive and contrary to the evidence of record. *See supra* Part V.B.1.d; RIB at 20-21. Second, and for the same reasons as discussed in the context of infringement, the undersigned does not find that the "plain and ordinary" meaning of "layer" requires a layer be continuous and homogenous across the entire part, or that establishing infringement requires a showing that the layer is completely continuous across an entire part.[37] *See supra* Part V.B.1.d; RRB at 8. Third, Respondents' allegations of the presence of horizontal cracks in certain parts is—as with similar arguments as to the Accused Products—unsupported by expert testimony or other competent evidence. *See supra* Part V.B.1.d; RIB at 29-31.

Specific to the DI Direct Products, Respondents argue that Dr. Brown provided testimony that certain of the SEM images that Dr. Fekete relied upon did not show the claimed "layers." RIB at 22-26. Dr. Brown testified that SEM micrographs considered by Dr. Fekete of six of the 12 tested DI Direct products (the [redacted] (Magna), Toyota Reinforcement (Topre), [redacted] (Gestamp), [redacted] (Cannon), [redacted] (Cannon), and [redacted] (Cannon)) had "missing material" or demonstrated islands or isolated phases rather than continuous layers. *See* Tr. (Brown) at 912:4-19, 915:14-18, 918:6-919:7; RDX-0002C.193-98. The undersigned does not find this testimony persuasive because Dr. Brown testified that he conducted this analysis by

[37] The undersigned accords little weight to the Honda OEM specification, which both ArcelorMittal and Respondents contend supports their position with respect to the meaning of "layer." *See* RRB at 8; CRB at 15. The Honda OEM specification is extrinsic evidence, and as discussed *supra* Part V.B.1.d, the intrinsic evidence is sufficiently clear as to the plain and ordinary meaning of the term "layer."

looking for *any* discontinuity in SEM micrographs, Tr. (Brown) at 992:16-993:1. As discussed *supra* Part V.B.1.d, and as acknowledged by Dr. Brown at the hearing, Tr. (Brown) at 1014:24-1015:3, the Asserted Patents expressly permit some discontinuity (e.g., that they be "quasi-continuous") in the claimed layers. *See also* '602 patent, cl. 2, 12:57-61, 6:53-56. Because Dr. Brown was applying an understanding of the term "layer" that is contradicted by the specification, the undersigned accords his testimony little weight. *Cf. PIN/NIP, Inc. v. Platte Chem. Co.*, 304 F.3d 1235, 1246 (Fed. Cir. 2002) (expert testimony provided under incorrect claim construction did not constitute substantial evidence of infringement). Further, Dr. Brown did not address the other evidence relied upon by Dr. Fekete to demonstrate the existence of the claimed layers, including line scans and spot EDS analysis. Additionally, Dr. Brown did not identify a lack of layers in Dr. Fekete's SEM micrographs of six of the tested DI Direct Products.

Dr. Brown also, separately, testified that for seven of the 12 tested DI Direct Products (the [redacted] (Magna), the [redacted] (Magna), the Toyota Reinforcement (Topre), the [redacted] (Gestamp), [redacted] 1 (Simwon), [redacted] (Cannon), and [redacted] (Cannon)), images taken by Dr. Bradley indicated "isolated phases" rather than continuous layers. Tr. (Brown) at 919:8-920:8. Again, Dr. Brown's analysis is unpersuasive because he testified that his analysis was based on a requirement that a layer be fully continuous, and because he did not address the additional evidence Dr. Fekete relied upon to show the existence of the claimed layers, namely the line

scans or spot EDS analysis. *See, e.g.*, Tr. (Brown) at 974:17-975:2 (confirming he did not receive or rely upon line scan or elemental composition test data from Dr. Bradley).[38]

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that the Represented DI Direct Products meet Limitations [1c]-[1f] of the '602 patent.

e. Claim Limitation [1g]: wherein the coating has a thickness greater than 30 micrometers.

Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the tested DI Direct Products include a coating, and that the coating has a thickness of greater than 30 micrometers. *See* Tr. (Fekete) at 555:23-556:12, 556:13-557:4; CDX-0003C.199-200; *see also, e.g.*, CX-0326C (identifying a coating thickness of 30-50 microns for the [redacted] (Gestamp)); CX-0412C (identifying a coating thickness of 30-50 microns for the [redacted] (Simwon); CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (test results including thickness measurements).

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 1 of the '602 patent is practiced by the Represented DI Direct Products.

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[38] The undersigned also notes that Respondents have not challenged ArcelorMittal and Dr. Fekete's analysis—either through critique of SEM images relied upon by Dr. Fekete or through presentation of images taken by Dr. Bradley—for three of the four [redacted] manufactured by Simwon. Although Respondents argued that Dr. Fekete "did not rely on a single SEM" for these products, RRB at 8 n.2, as the undersigned held in Order No. 32, the lab report summary exhibits cited by document name (rather than Bates number) were within the scope of Dr. Fekete's expert report. Respondents did not identify any testimony from Dr. Fekete that was outside the scope of his expert report in response to Order No. 32. *See* Order No. 32, EDIS Doc. ID 845239 (March 7, 2025). Accordingly, ArcelorMittal and Dr. Fekete's showing that three of the four tested [redacted] practice the Asserted Patents is unrebutted.

2. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein the layers (c) and (d) are quasi continuous by occupying at least 90% of a level corresponding to each of the layers (c) and (d) and wherein less than 10% of layer (c) is present at an extreme surface of the product." '602 patent, cl. 2. Respondents do not separately dispute that this added limitation is met.[39] *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the tested DI Direct Products include a coating, wherein layers (c) and (d) are quasi-continuous. *See* Tr. (Fekete) at 602:8-21; CDX-0003C.242; *see also, e.g.*, CX-109C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including SEM micrographs).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 2 of the '602 patent is practiced by the Represented DI Direct Products.

3. Claim 3

Claim 3 depends from claim 1, and requires in addition "wherein the base steel includes the following components by weight based on total weight: 0.15%<carbon<0.5%; 0.5%<manganese<3%; 0.1%<silicon<0.5%; 0.01%<chromium<1%; titanium<0.2%; aluminum<0.1%; phosphorus<0.1%; sulfur<0.05%; 0.0005%<boron<0.08%; and further comprises iron and impurities inherent in processing." '602 patent, cl. 3. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the base steel in nine of the tested DI Direct Products (identified at CDX-0003C.228) include the recited components by weight percentages. *See* Tr.

[39] Dr. Brown provided testimony that based on SEM images provided by Dr. Bradley, the [redacted] 1 (Simwon) product and Toyota Reinforcement (Topre) would not practice claim 2. *See* Tr. (Brown) at 920:23-18; RDX-0002C.204-05. Respondents do not cite that portion of Dr. Brown's testimony or separately address the practice of claim 2 in their post-hearing briefing; accordingly, that contention is deemed abandoned. G.R. 13.1.

(Fekete) at 595:18-601:9; CDX-0003C.228-238; *see also, e.g.*, CX-0102C; CX-0114C; CX-0870C; CX-0871C; CX-0872C (chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 3 of the '602 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

4. Claim 4

Claim 4 depends from claim 1, and requires in addition "wherein the base steel comprises the following components by weight based on total weight: 0.20%<carbon<0.5%; 0.8%<manganese<1.5%; 0.1%<silicon<0.35%; 0.01%<chromium<1%; titanium<0.1%; aluminum<0.1%; phosphorus<0.05%; sulfur<0.03%; 0.0005%<boron<0.01%; and further comprises iron and impurities inherent in processing." '602 patent, cl. 4. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the base steel in nine of the tested DI Direct Products (identified at CDX-0003C.228) include the recited components by weight percentages. *See* Tr. (Fekete) at 595:18-601:9; CDX-0003C.228-238; *see also, e.g.*, CX-0102C; CX-0114C; CX-0870C; CX-0871C; CX-0872C (chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 4 of the '602 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

5. Claim 7

Claim 7 depends from claim 1, and requires in addition "wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42." '602 patent, cl. 7. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the base steel in nine of the tested DI Direct Products (identified at CDX-0003C.239) meets the recited weight ratio of titanium to nitrogen. *See* Tr.

(Fekete) at 601:14-602:7; CDX-0003C.239-40; *see also, e.g.*, CX-0102C; CX-0114C; CX-0870C; CX-0871C; CX-0872C (chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 7 of the '602 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

6. Claim 8

Claim 8 depends from claim 2, and requires in addition "wherein a ratio of titanium to nitrogen in the base steel in weight % is in excess of 3.42." '602 patent, cl. 8. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 2 is practiced by the Represented DI Direct Products, and ArcelorMittal has shown that the additional limitation of claim 7—which is identical to the additional limitation of claim 8—is practiced by nine of the tested DI Direct Products (identified at CDX-0003C.239).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 8 of the '602 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

7. Claim 9

Claim 9 depends from claim 1, and requires in addition "wherein the layer (a) has a thickness less than 15 micrometers." '602 patent, cl. 9. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that in the tested DI Direct Products, layer (a) has a thickness of less than 15 micrometers. *See* Tr. (Fekete) at 591:15-592:15; CDX-0003C.218-19; *see also, e.g.*, CX-0326C (Gestamp specification specifying a diffusion layer thickness of [redacted]); CX-0719C (Honda specification specifying a diffusion layer thickness of [redacted]); CX-0374C (Magna specification specifying a diffusion layer thickness of [redacted]); CX-

0448C, CX-0455C, CX-0458C (Cannon specifications specifying a diffusion layer thickness of [redacted]); CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including thickness measurements).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 9 of the '602 patent is practiced by the Represented DI Direct Products.

8. Claim 10

Claim 10 depends from claim 1, and requires in addition "wherein the layer (a) has a thickness less than 10 micrometers." '602 patent, cl. 10. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that in four of the tested DI Direct Products (identified at CDX-0003C.221), layer (a) has a thickness of less than 10 micrometers. *See* Tr. (Fekete) at 592:16-593:18; CDX-0003C.221; *see also, e.g.*, CX-0719C (Honda specification specifying a diffusion layer thickness of [redacted]); CX-0374C (Magna specification specifying a diffusion layer thickness of [redacted]); CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including thickness measurements).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 10 of the '602 patent is practiced by the four DI Direct Products identified by ArcelorMittal.

9. Claim 18

Claim 18 depends from claim 1, and requires in addition "wherein the interdiffusion layer has a thickness of from 1 micron to 15 microns." '602 patent, cl. 18. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that in the tested DI Direct Products, the interdiffusion layer has a thickness of between 1 and 15 micrometers. *See* 591:15-592:15; CDX-0003C.218-19;

see also, e.g., CX-0326C (Gestamp specification specifying a diffusion layer thickness of [redacted]); CX-0719C (Honda specification specifying a diffusion layer thickness of [redacted]); CX-0374C (Magna specification specifying a diffusion layer thickness of [redacted]); CX-0448C, CX-0455C, CX-0458C (Cannon specifications specifying a diffusion layer thickness of [redacted]; CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including thickness measurements).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 18 of the '602 patent is practiced by the Represented DI Direct Products.

10. Claim 20

Claim 20 depends from claim 1, and requires in addition "wherein the fourth mean iron composition is lower than the third mean iron composition." '602 patent, cl. 20. Respondents do not separately dispute that this added limitation is met. *See* RIB at 20-31; RRB at 6-8. In addition, the undisputed evidence demonstrates that the fourth mean iron composition in the tested DI Direct Products is lower than the third mean iron composition. *See* Tr. (Fekete) at 590:17-591:3; CDX-0003C.216; *see also, e.g.*, CX-0104C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing data including chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 20 of the '602 patent is practiced by the Represented DI Direct Products.

11. Claim 21

a. Claim Limitation [21pre]: A precoated steel product comprising:

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [21pre] for the same reasons as Limitation [1pre]. CIB at 48; Tr. (Fekete) at 556:13-557:4; CDX-0003C.201. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-

31; RRB at 6-8. For the same reasons as discussed above with respect to Limitation [1pre], the undersigned finds that the tested DI Direct Products satisfy Limitation [21pre]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [21pre] of the '602 patent.

b. Claim Limitation [21a]: a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [21a] for the same reasons as Limitation [1a]. CIB at 42-54; Tr. (Fekete) at 551:8-552:5, 556:13-557:4; CDX-0003C.190-91, 201. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitation [1a], the undersigned finds that the tested DI Direct Products satisfy Limitation [21a]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [21a] of the '602 patent.

c. Claim Limitation [21b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [21b] for the same reasons as Limitation [1b]. CIB at 42-54; Tr. (Fekete) at 552:6-553:10, 556:13-557:4; CDX-0003C.192, 201. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitation [1b], the undersigned finds that the tested DI Direct Products satisfy Limitation [21b]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [21b] of the '602 patent.

d. Claim Limitations [21c]-[21f]: (a) an interdiffusion layer having a first mean iron composition, (b) an intermediate layer having a second mean iron composition different from the first mean iron composition, (c) an intermetallic layer having a third mean iron composition different from the first and second mean iron compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean iron composition different from the first, second, and third mean iron composition,

The parties dispute this limitation. ArcelorMittal asserts that the DI Direct Products satisfy Limitations [21c]-[21f] for the same reasons as Limitations [1c]-[1f]. CIB at 49-50; Tr. (Fekete) at 552:18-553:10, 553:11-555:2, 556:13-557:4; CDX-0003C.193-98, 201.

Respondents do not dispute that Limitation [21c] is met by the DI Direct Products, but dispute that ArcelorMittal met its burden to show practice of Limitations [21d]-[21f] of the DI Direct Products for same reasons as Limitations [1d]-[1f]. *See* RIB at 20-31; RRB at 6-8.

For all the reasons discussed above with respect to Limitations [1c]-[1f], the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the tested DI Direct Products meet Limitations [21c]-[21f].

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitations [21c]-[21f] of the '602 patent.

e. Claim Limitation [21g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [21g] for the same reasons as Limitation [1g]. CIB at 49-50; Tr. (Fekete) at 555:23-556:12, 556:13-557:4; CDX-0003C.199-200, 201. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the tested DI Direct Products satisfy Limitation [21g].

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [21g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 21 of the '602 patent is practiced by the Represented DI Direct Products.

12. Claim 22

Claim 20 depends from claim 21, and requires in addition "wherein the fourth mean iron composition is lower than the third mean iron composition." '602 patent, cl. 22. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 21 is practiced by the tested DI Direct Products, and ArcelorMittal has shown that the additional limitation of claim 20—which is identical to the additional limitation of claim 22—is practiced by the tested DI Direct Products.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 22 of the '602 patent is practiced by the Represented DI Direct Products.

13. Claim 24

a. Claim Limitation [24pre]: A precoated steel product comprising:

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [24pre] for the same reasons as Limitations [1pre] and [21pre]. CIB at 48-50; Tr. (Fekete) at 557:4-558:14; CDX-0003C.203. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitations [1pre] and [21pre], the undersigned finds that the tested DI Direct Products satisfy Limitation [24pre]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [24pre] of the '602 patent.

b. Claim Limitation [24a]: a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [24a] for the same reasons as Limitations [1a] and [21a]. CIB at 49-50; Tr. (Fekete) at 551:8-552:5, 557:4-558:14; CDX-0003C.190-91, 203. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitations [1a] and [21a], the undersigned finds that the tested DI Direct Products satisfy Limitation [24a]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [24a] of the '602 patent.

c. Claim Limitation [24b]: a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein the coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [24b] for the same reasons as Limitations [1b] and [21b]. CIB at 37-40; Tr. (Fekete) at 552:6-553:10, 557:4-558:14; CDX-0003C.192, 203. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitations [1b] and [21b], the undersigned finds that the tested DI Direct Products satisfy Limitation [24b]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [24b] of the '602 patent.

d. Claim Limitations [24c]-[24f]: (a) an interdiffusion layer having a first mean aluminum composition, (b) an intermediate layer having a second mean aluminum composition different from the first mean aluminum composition, (c) an intermetallic layer having a third mean aluminum composition different from the first and second mean aluminum compositions, the third mean iron composition being higher than the second mean iron composition; and (d) a superficial layer having a fourth mean aluminum composition different from the first, second, and third mean aluminum composition, the second mean aluminum composition being greater than the third mean aluminum composition

The only difference between Limitations [24c]-[24f] and Limitations [1c]-[1f] is the specification of a mean aluminum composition for each of the claimed layers, rather than a mean iron composition. *See* Tr. (Fekete) at 515:19-517:9, 557:5-11; CDX-0003C.203. ArcelorMittal asserts that the DI Direct Products satisfy Limitations [24c]-[24f] for the same reasons as Limitations [1c]-[1f], with the exception of reliance on mean aluminum composition data gathered through spot EDS analysis. CIB at 49-50; Tr. (Fekete) at 557:5-558:14; CDX-0003C.204-206 (citing CX-0105C, CX-0114C, CX-0870C, CX-0871C, CX-0872C).

Respondents do not dispute that Limitation [24c] is met by the DI Direct Products, but dispute that ArcelorMittal met its burden to show practice of Limitations [24d]-[24f] of the DI Direct Products for same reasons as Limitations [1d]-[1f]. *See* RIB at 20-31; RRB at 6-8. Respondents do not separately dispute that the mean aluminum composition requirements of claim 24 are satisfied. *Id.*

For all the reasons discussed above with respect to Limitations [1c]-[1f], the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the tested DI Direct Products include each of the claimed layers of Limitations [24c]-[24f]. Additionally, the undersigned finds that the undisputed evidence of record demonstrates that each of the claimed

layers has a respective mean aluminum composition, that each of the first, second, third, and fourth mean aluminum compositions are different from each other, and that the second mean aluminum composition is greater than the third. *See, e.g.*, Tr. (Fekete) at 557:12-558:14; CDX-0003C.204-206 (and exhibits cited therein).

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitations [24c]-[24f] of the '602 patent.

e. Claim Limitation [24g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [24g] for the same reasons as Limitations [1g] and [21g]. CIB at 49-50; Tr. (Fekete) at 555:23-556:12, 557:5-558:14; CDX-0003C.199-200, 203. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. For the same reasons as discussed above with respect to Limitations [1g] and [21g], the undersigned finds that the tested DI Direct Products satisfy Limitation [24g]. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [24g] of the '602 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 24 of the '602 patent is practiced by the Represented DI Direct Products.

14. Claim 26

Claim 26 depends from claim 24, and requires in addition "wherein the layer (a) has a thickness less than 15 micrometers." '602 patent, cl. 26. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 20-31; RRB at 6-8. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 24 is practiced by the tested DI Direct Products, and ArcelorMittal has shown that the additional limitation of claim

9—which is identical to the additional limitation of claim 26—is practiced by the tested DI Direct Products.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 26 of the '602 patent is practiced by the Represented DI Direct Products.

C. The '227 Patent

ArcelorMittal contends that the DI Direct Products practice claims 1, 2, 4, 5, 7, 9, 10, 13, 15-17 and 24 of the '227 patent.[40] CIB at 117-22; CDX-0003C.187. ArcelorMittal tested 16 Al-coated parts, 12 of which are asserted to practice the limitations of the '227 patent. *See* CDX-0003C.170-71; Tr. (Fekete) at 544:11-23. Apart from the issues regarding representativeness, the only limitations of the'227 patent in dispute are whether the tested DI Direct Products include the claimed "intermediate layer," "intermetallic layer," and "superficial layer." *See, e.g.*, RIB at 20-31, 120; RRB at 6-8, 67-68. For the reasons discussed below, the undersigned determines that all of the Represented DI Direct Products practice claims 1, 2, 4, 5, 7, 9, and 15 of the '227 patent, and that certain of the DI Direct Products practice claims 10, 13, 16, 17 and 24 of the '227 patent.

1. Claim 1

a. Claim Limitation [1pre]: A hot stamped coated steel product, which comprises:

The parties appear to agree that the preamble is limiting. *See* CIB at 118; RIB at 122. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that the tested DI Direct Products are hot stamped coated steel products. *See* Tr. (Fekete) at 558:23-559:24; CDX-0003C.209; *see*

[40] Certain parts are not alleged to practice claims 10, 13, 16, 17, and 24. The specific parts are identified in the discussion of each section

also, e.g., CX-0108C (Product Photos); CX-0109C (SEM Micrographs); CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including photographs and SEM micrographs).

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1pre] of the '227 patent.

b. Claim Limitation [1a]: (a) a strip of base steel having a first side and a second side; and

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [1a] of the '227 patent for the same reasons as Limitations [1a], [21a], and [24a] of the '602 patent. CIB at 118; Tr. (Fekete) at 558:23-559:24; CDX-0003C.208, 190-91. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 120; RRB at 67. For the same reasons as discussed above with respect to Limitations [1a], [21a], and [24a] of the '602 patent, the undersigned finds that the tested DI Direct Products satisfy Limitation [1a] of the '227 patent. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1a] of the '227 patent.

c. Claim Limitation [1b]: (b) a coating on at least one of the first side of the strip of base steel and the second side of the strip of base steel, wherein (i) said coating results from interdiffusion between the base steel, and an aluminum or aluminum alloy pre-coating, and (ii) wherein the coating includes, proceeding from the base steel outwards:

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [1b] of the '227 patent for the same reasons as Limitations [1b], [21b], and [24b] of the '602 patent. *See* CIB at 118; Tr. (Fekete) at 552:6-553:10, 558:23-559:24; CDX-0003C.192, 208. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 120; RRB at 67. For the same reasons as discussed above with respect to Limitations [1b], [21b], and [24b] of the '602 patent, the undersigned finds that the tested DI Direct Products satisfy Limitation [1b] of the

'227 patent. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1b] of the '227 patent.

d. Claim Limitations [1c]-[1f]: (a) an Interdiffusion layer, (b) an Intermediate layer, (c) an Intermetallic layer, (d) a Superficial layer, wherein layers (a), (b), (c), and (d) each have a different mean composition from one another

The only difference between Limitations [1c]-[1f] of the '227 patent and Limitations [21c]-[21f] of the '602 patent is that the '227 patent specifies that each of the layers has a different mean composition from each other. *See* Tr. (Fekete) at 517:12-18, 558:23-559:4; CDX-0003C.208. ArcelorMittal asserts that the DI Direct Products satisfy Limitations [1c]-[1f] of the '227 patent for the same reasons as Limitations [21c]-[21f] of the '602 patent, with the exception of reliance on spot EDS data showing different mean compositions for iron, aluminum, and silicon. CIB at 119; Tr. (Fekete) at 559:11-20; CDX-0003C.210 (citing CX-0104C, CX-0105C, CX-0106C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including spot EDS data)).

Respondents do not dispute that Limitation [1c] is met by the DI Direct Products, but dispute that ArcelorMittal met its burden to show practice of Limitations [1d]-[1f] of the '227 patent by the DI Direct Products for same reasons as Limitations [1d]-[1f] of the '602 patent. *See* RIB at 120; RRB at 67.

For all the reasons discussed above with respect to Limitations [1c]-[1f] of the '602 patent, the undersigned finds that the ArcelorMittal has shown, by a preponderance of the evidence, that the tested DI Direct Products include each of the claimed layers of Limitations [1c]-[1f] of the '227 patent. Additionally, the undersigned finds that the undisputed evidence of record demonstrates that each of the claimed layers has a different mean composition from each other. *See, e.g.*, Tr. (Fekete) at 559:11-20; CDX-0003C.210 (citing CX-0104C, CX-0105C, CX-

0106C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including spot EDS data)).

Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitations [1c]-[1f] of the '227 patent.

e. Claim Limitation [1g]: wherein the coating has a thickness greater than 30 micrometers.

ArcelorMittal asserts that the DI Direct Products satisfy Limitation [1g] of the '227 patent for the same reasons as Limitations [1g], [21g], and [24g] of the '602 patent. *See* CIB at 119; Tr. (Fekete) at 558:23-559:4; CDX-0003C.208. Respondents do not dispute that this limitation is met by the DI Direct Products. *See* RIB at 120; RRB at 67. For the same reasons as discussed above with respect to Limitations [1g], [21g], and [24g] of the '602 patent, the undersigned finds that the tested DI Direct Products satisfy Limitation [1g] of the '227 patent. Accordingly, ArcelorMittal has shown that the Represented DI Direct Products meet Limitation [1g] of the '227 patent.

* * *

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 1 of the '227 patent is practiced by the Represented DI Direct Products.

2. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness that is less than half of said thickness of the coating." '227 patent, cl. 2. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that in the tested DI Direct Products, layer (a) has a thickness that is less than half of the thickness of the

coating. *See* Tr. (Fekete) at 593:19-594:8; CDX-0003C.223; *see also, e.g.*, CX-0103C (Thickness data); CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing data including thickness data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 2 of the '227 patent is practiced by the Represented DI Direct Products.

3. Claim 4

Claim 4 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness of 17 micrometers or less." '227 patent, cl. 4. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that in the tested DI Direct Products, layer (a) has a thickness that is less than 17 micrometers. *See* Tr. (Fekete) at 591:14-592:15; CDX-0003C.218-19; *see also, e.g.*, CX-0326C (Gestamp specification specifying a diffusion layer thickness of [redacted]); CX-0719C (Honda specification specifying a diffusion layer thickness of [redacted]); CX-0374C (Magna specification specifying a diffusion layer thickness of [redacted]); CX-0448C, CX-0455C, CX-0458C (Cannon specifications specifying a diffusion layer thickness of [redacted]); CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including thickness measurements).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 4 of the '227 patent is practiced by the Represented DI Direct Products.

4. Claim 5

Claim 5 depends from claim 1, and requires in addition "wherein said layer (a) has a thickness of 15 micrometers or less." '227 patent, cl. 5. As discussed above, ArcelorMittal has

shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that in the tested DI Direct Products, layer (a) has a thickness that is less than 15 micrometers. *See* Tr. (Fekete) at 523:13-524:18; 591:14-592:15; CDX-0003C.218-19; *see also, e.g.*, CX-0326C (Gestamp specification specifying a diffusion layer thickness of [redacted]); CX-0719C (Honda specification specifying a diffusion layer thickness of [redacted]); CX-0374C (Magna specification specifying a diffusion layer thickness of [redacted]); CX-0448C, CX-0455C, CX-0458C (Cannon specifications specifying a diffusion layer thickness of [redacted]); CX-0103C, CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including thickness measurements).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 5 of the '227 patent is practiced by the Represented DI Direct Products.

5. Claim 7

Claim 7 depends from claim 1, and requires in addition "wherein the interdifffusion layer has a first mean iron composition, the intermediate layer has a second mean iron composition less than the first mean iron composition; wherein the intermetallic layer has a third mean iron composition, the third mean iron composition less than the first mean iron composition and greater than the second mean iron composition, and the superficial layer has a fourth mean iron composition, the fourth mean iron composition begin [sic] less than the third mean iron composition." '227 patent, cl. 7. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at

67. In addition, the undisputed evidence demonstrates that each of the claimed layers meets the requirements for the relationships of the mean iron compositions identified in the claims. *See* Tr. (Fekete) at 589:2-590:16; CDX-0003C.213-215; *see also, e.g.*, CX-0104C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 7 of the '227 patent is practiced by the Represented DI Direct Products.

6. Claim 9

Claim 9 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is greater than a thickness of layer (c)." '227 patent, cl. 9. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that layer (a) has a thickness that is greater than the thickness of layer (c). *See* Tr. (Fekete) at 594:9-18; CDX-0003C.224; CX-0103C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 9 of the '227 patent is practiced by the Represented DI Direct Products.

7. Claim 10

Claim 10 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is greater than a thickness of layer (d)." '227 patent, cl. 10. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that in nine of the tested DI Direct Products (identified at CDX-0003C.226), layer (a) has a thickness that is

greater than the thickness of layer (d). *See* Tr. (Fekete) at 595:9-12; CDX-0003C.226; CX-0103C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 10 of the '227 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

8. Claim 13

Claim 13 depends from claim 1, and requires in addition "wherein layer (a) has a thickness that is more than twice a thickness of layer (c)." '227 patent, cl. 13. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates that in eleven of the tested DI Direct Products (all products except the Toyota Reinforcement (Topre)), layer (a) in the DI Direct Products is more than twice as thick as layer (c). *See* Tr. (Fekete) at 594:19-595:3; CDX-0003C.225; CX-0103C; CX-0114C; CX-0870C; CX-0871C; CX-0872C.

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 13 of the '227 patent is practiced by the eleven DI Direct Products identified by ArcelorMittal.

9. Claim 15

Claim 15 depends from claim 1, and requires in addition "wherein the hot stamped coated steel product is fully martensitic." '227 patent, cl. 15. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates the hot stamped coated steel product has a fully martensitic—typified by a "needlelike pattern"—structure. *See* Tr. (Fekete) at 602:22-603:18; CDX-0003C.244-45; CX-0110C (Surface SEM micrographs); CX-0114C, CX-

0870C, CX-0871C, CX-0872C (testing results including surface SEM micrographs); CX-0455C, CX-0458C (Cannon specification specifying martensite structure).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 15 of the '227 patent is practiced by the Represented DI Direct Products.

10. Claim 16

Claim 16 depends from claim 1, and requires in addition "wherein the base steel consists of the following components by weight based on total weight: 0.15%<carbon<0.5%; Q.5%<manganese<3%; 0.1 %<silicon<0.5%; 0.01 %<chromium<l %; titanium<0.2%; aluminum<0.1%; phosphorus<0.l %; sulfur<0.05%; 0.0005%<boron<0.08%; a remainder being iron and impurities inherent in processing." '227 patent, cl. 16. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB 120; RRB at 67. In addition, the undisputed evidence demonstrates the base steel in nine of the DI Direct Products (identified at CDX-0003C.236) has the claimed composition. *See* Tr. (Fekete) at 595:18-601:9; CDX-0003C.228-238; *see also, e.g.*, CX-0102C (chemical composition data); CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 16 of the '227 patent is practiced by the nine DI Direct Products identified by ArcelorMittal.

11. Claim 17

Claim 17 depends from claim 1, and requires in addition "wherein the base steel consists of the following components by weight based on total weight: wherein the base steel consists of the following components by weight based on total weight: 0.l5%<carbon<0.25%,

0.8%<manganese<l .8%, 0.10%<silicon<0.35%, 0.01 %<chromium<0.5%, titanium<0.l %, aluminum<0.l %, phosphorus<0.l %, sulfur<0.05%, 0.002%<boron<0.005%, a remainder being iron and impurities inherent in processing." '227 patent, cl. 17. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates the base steel in seven of the tested DI Direct Products (identified at CDX-0003C.236, 228)[41] has the claimed composition. *See* Tr. (Fekete) at 595:18-601:13; CDX-0003C.228-38; CX-0102C (chemical composition data); CX-0114C, CX-0870C, CX-0871C, CX-0872C (testing results including chemical composition testing data).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 17 of the '227 patent is practiced by the seven DI Direct Products identified by ArcelorMittal.

12. Claim 24

Claim 24 depends from claim 1, and requires in addition "wherein the hot stamped coated steel product has a mechanical strength in excess of 1000 MPa." '227 patent, cl. 24. As discussed above, ArcelorMittal has shown by a preponderance of the evidence that claim 1 is practiced by the tested DI Direct Products. Respondents do not separately dispute that this added limitation is met. *See* RIB at 120; RRB at 67. In addition, the undisputed evidence demonstrates the steel in ten of the tested DI Direct Products has the claimed mechanical strength. *See* Tr. (Fekete) at 603:19-604:18; CDX-0003C.247-248; CX-0407C, CX-0410C (Simwon specification identifying tensile strength of [redacted]); CX-0455C (Cannon specifications identifying tensile

[41] The [redacted] (Gestamp) and [redacted] 1 (Simwon) were not shown to practice claim 17. *See* CDX-0003C.228, .236.

strength of [redacted]); CX-0326C (Gestamp specification identifying tensile strength of [redacted]); CX-0107C (Rockwell Hardness test results); CX-0114C, CX-0870C (test results including Rockwell Hardness).

Accordingly, ArcelorMittal has shown by a preponderance of the evidence that claim 24 of the '227 patent is practiced by the ten DI Direct Products identified by ArcelorMittal.

VII. DOMESTIC INDUSTRY – ECONOMIC PRONG

As discussed in Part VI above, the evidence shows by a preponderance that the Represented DI Direct Products all practice at least certain claims of the Asserted Patents. These Represented DI Direct Products include the following 12 tested DI Direct Products (which consist of 10 unique parts) hot-stamped by Magna, Topre, Simwon, Gestamp, and Cleveland-Cliffs/Cannon:

Part Description	Hot-Stamper
[redacted]	Magna
[redacted]	Magna
Toyota Reinforcement	Topre
[redacted] 1	Simwon
[redacted] 2	Simwon
[redacted] 3	Simwon
[redacted] 4	Simwon

[redacted]	Gestamp
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon
[redacted]	Cleveland-Cliffs/Cannon

See CIB at 20-21; CDX-0003C.171.[42]

In addition, the Represented DI Direct Products include the untested DI Direct Products produced by Topre and Gestamp (products for which representativeness by the tested DI Direct Products was sufficiently shown),[43] but do not include the untested DI Direct Products of Magna or Cleveland-Cliffs/Cannon (products for which representativeness by the tested DI Direct Products was not sufficiently shown). *See* Part VI.A *supra*. All of the asserted DI Direct Products of Simwon were tested and thus there are no untested DI Direct Products manufactured by Simwon. *Id.*

To demonstrate that the economic prong of the domestic industry requirement has been met, ArcelorMittal relies on (1) ArcelorMittal's, its licensees', and other authorized parties' investments in plant and equipment and labor and capital for the manufacture of the DI Precursor

[42] Certain tested products (from Magna) did not meet the limitations of the Asserted Patents and thus were not included by ArcelorMittal as DI Direct Products.

[43] Also as discussed in Part VI.A, there are five asserted DI Direct Products manufactured by Topre (one of which was tested) and sixteen asserted DI Direct Products manufactured by Gestamp (one of which was tested).

Products[44] and the manufacture of the DI Direct Products under 19 U.S.C. 1337(a)(3)(A) and (B); and (2) ArcelorMittal's investment in engineering, research, and development (ER&D) under 19 U.S.C. 1337(a)(3)(C). *See* CIB at 129, 166. ArcelorMittal's expert, Mr. Malackowski testified that there is a domestic industry in investments made in the DI Precursor Products and the DI Direct Products, and that those investments are significant from both a qualitative and quantitative perspective.[45] Tr. (Malackowski) at 427:1-14; CDX-0002C.59. Respondents did not present any expert testimony related to the economic prong of the domestic industry requirement. However, Respondents present failure of proof arguments based on, *inter alia*, disputes regarding whether appropriate allocations were applied, the sufficiency of evidence tying the DI Precursor Products to the DI Direct Products, and waiver.

The discussion below addresses the asserted investments in: (A) the DI Precursor Products by ArcelorMittal's Calvert facility; (B) the DI Direct Products by authorized Tier 1 hot stampers; and (C) ER&D investments by ArcelorMittal. It then addresses whether the evidence shows that the properly allocated investments are significant or substantial. As discussed below, while there are issues with certain of the allocations presented by ArcelorMittal, the evidence shows the existence of a domestic industry with respect to at least the Simwon DI Direct Products.

[44] As previously discussed, the "DI Precursor Products" are certain Al-coated steel products manufactured by ArcelorMittal licensees in the United States that are not themselves alleged to practice the Asserted Patents. These products are branded as USIBOR and DUCTIBOR (by AM/NS Calvert) and Ultralume (by Cleveland-Cliffs). *See supra* Part I.C.2. The DI Precursor Products can be heated and press-hardened via "hot-stamping" into the DI Direct Products—*i.e.*, automotive parts, such as door rings and support pillars—by Tier 1 hot stampers. *See id.*

[45] Mr. Malackowski was admitted as an expert in the assessment of economic prong of the domestic industry requirement under Section 337 of the Tariff Act of 1930, as amended, as well as certain issues related to bonding and remedies. Tr. at 363:10-21.

A. Domestic Investments in the DI Precursor Products

With respect to domestic investments in the DI Precursor Products, ArcelorMittal presented evidence concerning investments in a steel processing facility it operates in Calvert, Alabama, through a joint venture with Nippon Steel ("AM/NS Calvert" or "Calvert"). *See* Tr. (Richards)[46] at 304:13-21; CX-0777.[47]

1. General Description of Calvert Operations

The evidence shows that Calvert manufactures certain DI Precursor Products—including USIBOR and DUCTIBOR with a coating weight of AS150—and is authorized to use the Asserted Patents through a license agreement with ArcelorMittal. *See* Tr. (LeBlanc)[48] at 338:19-340:22; CDX-0007C.5; CX-0031C at .41, .69, .50, .65; Tr. (Richards) at 306:5-10. While Calvert is a joint venture, "[t]he operating arm . . . is controlled by ArcelorMittal" and USIBOR and DUCTIBOR are considered ArcelorMittal products that are marketed and sold by ArcelorMittal. *See* Tr. (Richards) at 307:1-22; Tr. (LeBlanc) at 339:19-21; CX-0820.106. Calvert employs about [redacted] full-time team members in the U.S. and engages around [redacted] contractors. *See* Tr. (Richards) at 324:4-5, 324:11-18. Mr. Richards testified that Calvert is one of the top employers in the Mobile region and USIBOR and DUCTIBOR are the most profitable products at Calvert. *See* Tr. (Richards) at 327:3-18, 309:11-15, 324:1-14; Tr. (Malackowski) at 377:3-16, 374:4-14; CDX-0002C.16; CX-0806.3-4. The evidence also shows that Calvert indirectly supports other

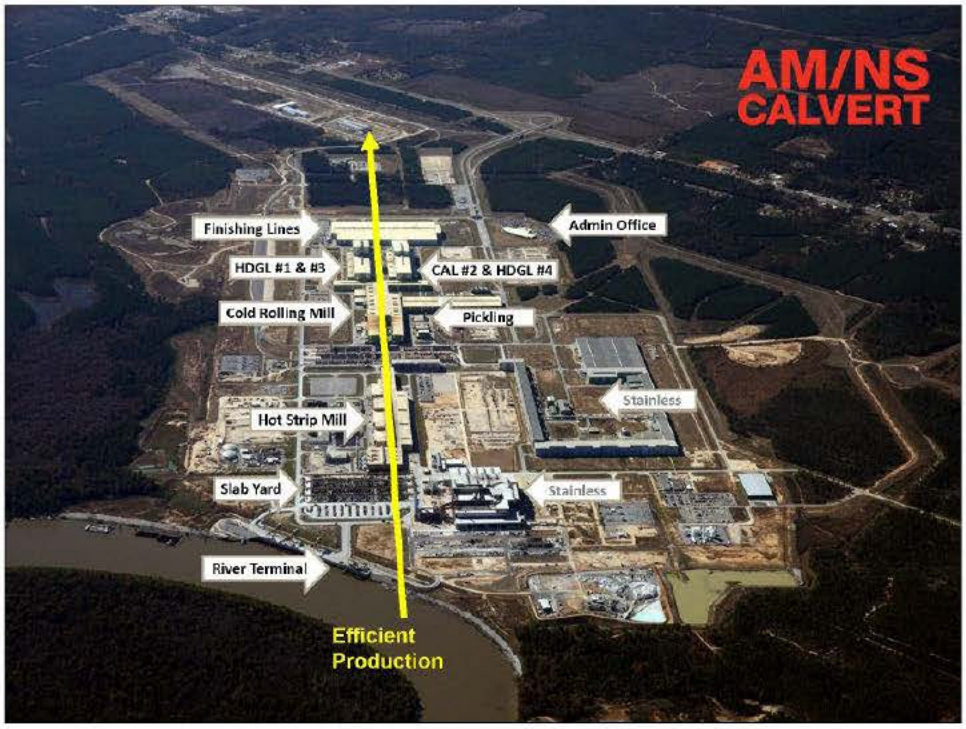
[46] Mr. Chris Richards is currently CEO of the Calvert facility. Tr. (Richards) at 304:10-18.

[47] ArcelorMittal also presented evidence regarding an asserted DI Precursor Product, ULTRALUME, manufactured at another facility, Cleveland-Cliffs. *See* CIB at 140-142. However, because there was no quantification of investments in this facility that could be sufficiently linked to products shown to practice the Asserted Patents, this ID does not discuss this evidence. *See* CIB at 141 ("[T]he Tested DI Products in this case are primarily made from the USIBOR and DUCTIBOR DI Precursor Products with a coating weight of AS150 . . . Accordingly, Mr. Malackowski did not quantify the investments in ULTRALUME attributable to any DI Direct Products tested by Dr. Fekete.").

[48] Mr. Peter LeBlanc is the chief marketing officer for ArcelorMittal. Tr. (LeBlanc) at 332:23-25.

jobs in the local economy outside of Calvert, such as at the Alabama State Port Authority and for staff for barges that serve the Calvert facility, and is important to the local market and economy. *See* Tr. (Richards) at 311:9-312:23; CX-0664C.11-13; Tr. (Malackowski) at 377:3-16, 414:17-415:2; CDX-0002C.16; CX-0806.3-4.

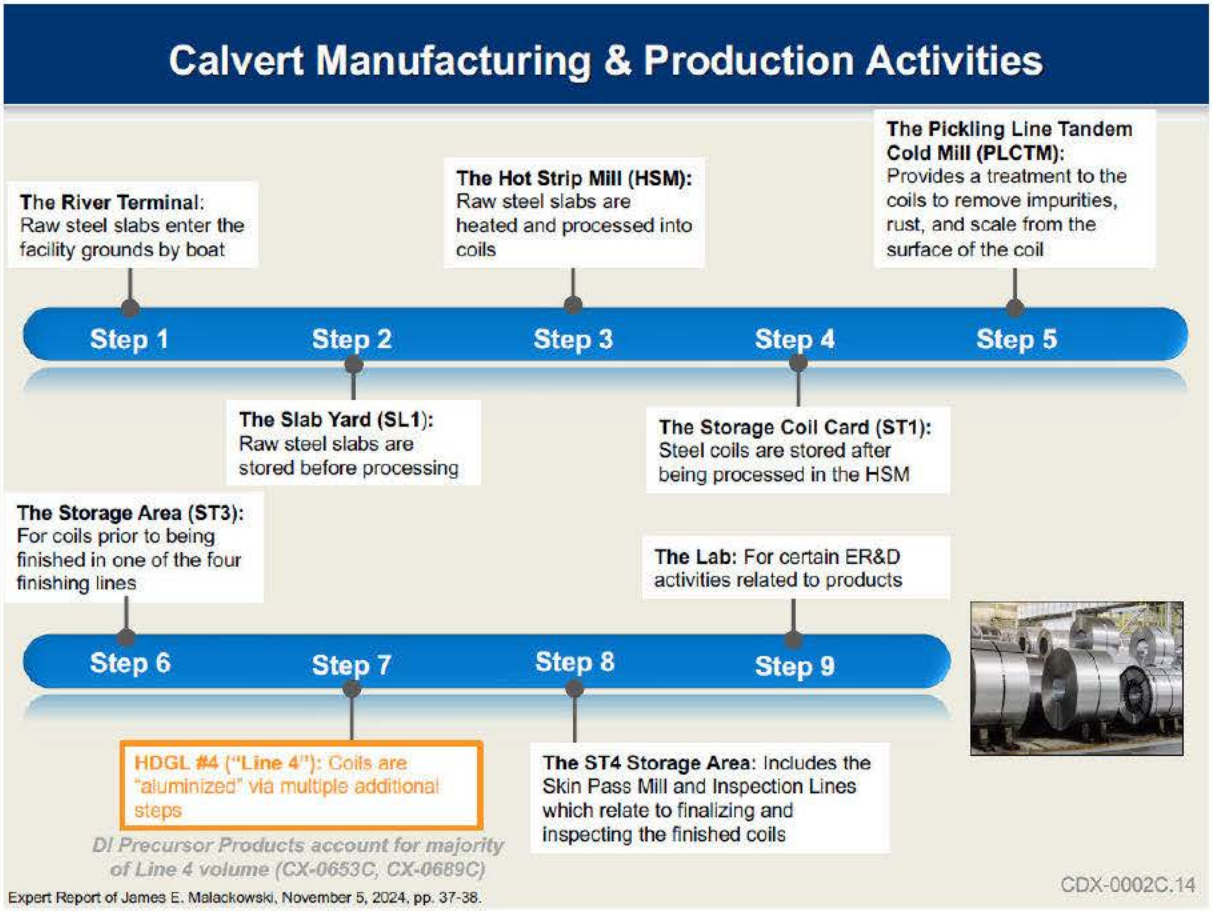
The evidence further shows that the Calvert facility is designed for the processing of steel slabs, and includes a river terminal, hot strip mill (HSM), cold rolling mill (CRM), hot-dip galvanizing lines (HDGL), a rail yard, and supporting infrastructure. *See* Tr. (Richards) at 307:25-308:24, 320:15-323:8; CDX-0006C.2; CX-0785; CX-0657C.



CX-0664C.1.

The evidence also shows that raw steel slabs are processed at Calvert, including those that become the asserted DI Precursor Products; they enter the Calvert facility either by rail or at the river terminal by boat. *See* Tr. (Richards) at 308:2-12, 309:16-313:14, 320:23-321:13; CX-0664C.0005-22; Tr. (Malackowski) at 374:15-375:8; CDX-0002C.14. Mr. Malackowski's

demonstrative (reproduced below), depicts the manufacturing process at the Calvert facility "starting from the river terminal, going through the storage facilities, the various mills, and then ending up in the final storage facility with the aluminized part."



CDX-0002C.14; Tr. (Malackowski) at 375:2-8.

The evidence shows that the HSM is about [redacted] square feet and heats and processes all the raw steel slabs at Calvert (including the DI Precursor Products) to transform them into coils of steel. *See* CX-0664C.21-22; Tr. (Richards) at 313:7-314:17, 320:23-321:8; CDX-0006C.2; CX-0126C; CX-0129C. Then, the coils are stored in the first storage coil yard (ST1, which is about [redacted] square feet); certain coils (including coils that become the DI Precursor Products) then move to the Cold Roll Mill (CRM) building (about [redacted] square feet). *See* Tr.

(Richards) at 314:18-23, 321:14-322:3; CX-0664C.24-25; CDX-0006C.2; CX-0126C; CX-0129C; Tr. (Malackowski) at 374:15-375:8; CDX-0002C.14. The CRM houses two lines – the Continuous Pickling Line (CPL) and Pickling Line Tandem Cold Mill (PLTCM), each occupying about [redacted] of the building. *See* Tr. (Richards) at 314:18-315:25, 321:14-322:3; CX-0664C.24-25; CDX-0006C.2; Tr. (Malackowski) at 374:15-375:8; CDX-0002C.14. The DI Precursor Products are processed by the PLTCM (*i.e.*, the pickle process), which uses specialized equipment to clean the surface of the coils with acid. *See* Tr. (Richards) at 314:18-315:25; CX-0664C.24-25. Subsequently, the DI Precursor Products are kept at a different storage area (ST3, about [redacted] square feet), before being finished on one of Calvert's four finishing lines—specifically, HDGL 4 or "Line 4." *See* Tr. (Richards) at 316:1-318:14, 322:5-17; CX-0664C.30, .38, .40; CDX-0006C.2; CX-0126C; CX-0129C; Tr. (Malackowski) at 375:2-376:12; CDX-0002C.14-15; CX-0652C. Lines 1 and 3, which are unrelated to the DI Precursor Products, are housed in one building, while a separate building ("building 2") houses Line 2 ("CAL2") and Line 4, with each line occupying about half of the building's square footage (about [redacted] square feet). *See* CX-0664C.1; CDX-0006C.2; Tr. (Richards) at 316:1-16, 322:5-17; CX-0126C; CX-0129C; Tr. (Malackowski) at 375:2-376:12; CDX-0002C.14-15.

The evidence shows that Line 4 is an important step in the process of manufacturing the DI Precursor Products. *See* Tr. (Malackowski) at 375:9-14; CDX-0002C.14. Line 4 is primarily used for creating USIBOR and DUCTIBOR, the "aluminized press-hardened steels" (including USIBOR 1500, which is the "primary grade" for the line). *See* Tr. (Richards) at 316:1-317:6; *see also* CX-0156C (between 2018 and 2024, USIBOR 1500 was [redacted] of Calvert DI Precursor Product production in tons). At Line 4, the coils that become the DI Precursor Products are: (1) welded together to ensure uniformity of the final material; (2) coated with the aluminum

silicon coating in a bath of a molten metal in a coating pot; (3) sent through a set of air knives, which take the excess coating off to achieve the desired customer coating weight; and (4) sampled for any testing requirements, then rolled back into a coil form. *See* Tr. (Richards) at 317:7-318:14; CX-0664C.0040; Tr. (Malackowski) at 375:2-376:12; CDX-0002C.14-15. After completing their finishing at Line 4, the DI Precursor Products are stored in the ST4 Storage Area (about [redacted] square feet), before being shipped to customers. *See* Tr. (Richards) at 322:18-21; CDX-0006C.2; CX-0126C; CX-0129C. The Calvert facility also includes a Lab (about [redacted] square feet) that perform activities like "testing and investigation" and an Admin Building (about [redacted] square feet) that houses support personnel for the DI Precursor Products. *See* Tr. (Richards) at 322:22-323:8; CDX-0006C.2; CX-0126C; CX-0129C.

After the coils are manufactured, ArcelorMittal sells the DI Precursor Products to automotive customers (including GM, Honda, Toyota, [redacted] Fiat Chrysler Automotive (FCA), and Volkswagen), and Calvert ships the DI Precursor Products to Tier 1 entities for hot stamping, including Simwon. *See* Tr. (Richards) at 319:25-320:8; Tr. (LeBlanc) at 334:24-336:13, 337:10-338:18, 339:8-340:22; CX-0664C.0002-03; Tr. (Malackowski) at 377:17-378:23; CDX-0002C.17. The evidence indicates that [redacted] DI Precursor Products produced at Calvert use the AS150 coating weight and [redacted]%) of the USIBOR and DUCTIBOR shipped from Calvert to U.S. hot stampers have a coating weight of AS150. *See* Tr. (Richards) at 317:22-318:7, 323:10-25; CX-0689C; Tr. (Malackowski) at 371:7-17; CDX-0002C.9-10.

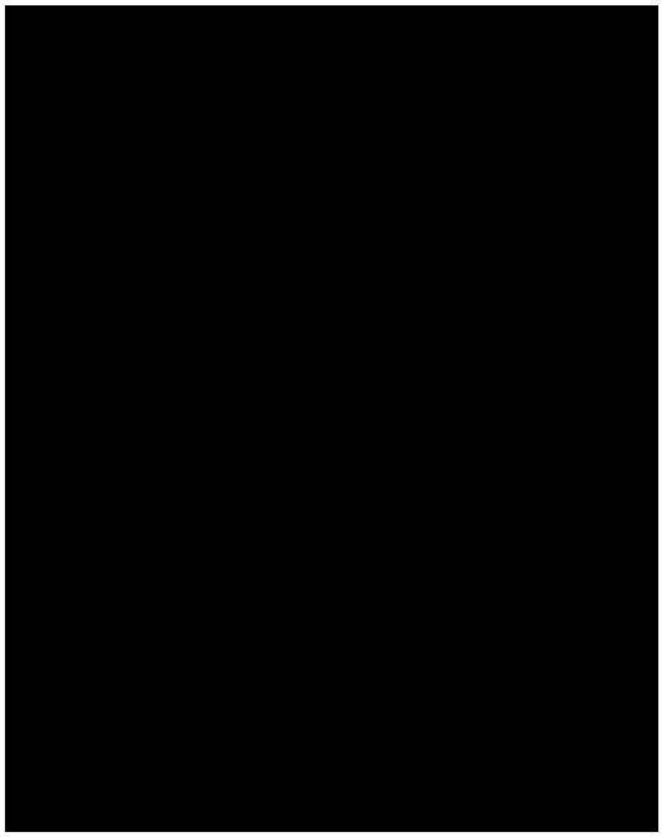
2. Quantification of Calvert Investments

a. The Parties' Arguments

ArcelorMittal presents various alternative allocation methods to quantify cognizable plant and equipment and labor and capital investments associated with the activities discussed above at the Calvert facility.

At trial, Mr. Malackowski presented analyses as to the investments at Calvert relating specifically to USIBOR and DUCTIBOR with a coating weight of AS150.[49] For plant and equipment, he performed this allocation based on two methods: one "top-down" approach derived from summary accounting records ("Method 1") showing total Calvert investments of [redacted] and allocated downwards (with both "low" and "high" estimates) to focus on the DI Precursor Products; and a "bottom-up" approach utilizing a company asset ledger ("Method 2") showing total fixed assets of [redacted]. *See* Tr. (Malackowski) at 385:25-389:8 and CDX-0002C.30-31. For labor investments, he calculated direct and indirect labor that he determined was "directly related to the production" of the DI Precursor Products, and excluding investments such as "overheads, marketing, office-type staff." *See id*. at 389:9-390:25; CDX-0002C.32. For capital investments, he performed a "low" and "high" allocation (depending on whether the disproportionate costs of aluminum are taken into account). *See* Tr. (Malackowski) at 391:1-392:9; CDX-0002C.33. The following demonstrative shows his conclusions:

[49] *See* Tr. (Malackowski) at 368:16-23 (his analysis of "DI precursor product" is focused on "Usibor and Ductibor" with "one specific coating weight of AS150").



Tr. (Malackowski) at 392:10-393:6; CDX-0002C.34 (citing supporting evidence). According to these calculations, total investments allocable to the DI Precursor Products are [redacted]. *See* CIB at 138 (totaling plant/equipment, labor, and capital investments set forth in CDX-0002C.34 and highlighted in green).

Mr. Malackowski provided a further alternative analysis allocating the investments specifically to DI Precursor Products that were supplied to six hot-stampers who provided products tested by ArcelorMittal in this investigation (*i.e.*, Magna, Topre, Simwon, Gestamp, Multimatic, and GNS).[50] *See* Tr. (Malackowski) at 393:7-394:14; CDX-0002C.35. Because these

[50] Pursuant to Order No. 19, ArcelorMittal was precluded from introducing evidence, testimony, or evidence as to the DI Direct Products manufactured by GNS and Multimatic, which were not identified in ArcelorMittal's technical domestic industry contentions until November 19, 2024, after the close of fact discovery. *See* Order No. 19, EDIS Doc. ID 841799 (Jan. 27, 2025). ArcelorMittal and Dr. Fekete made

hot-stampers represent about [redacted]% of the total throughput of Calvert, this alternative allocation is "[redacted]." *See id.* Mr. Malackowski's alternative allocation specific to these six subpoenaed hot stampers is shown below:

[redacted]

CDX-0002C.35 (citing supporting evidence). The alternative allocation presents total investments of [redacted] allocable to these six subpoenaed hot-stampers. *See* CIB at 139 (providing calculation of total of green highlighted figures).

In addition, Mr. Malackowski presented testimony showing a further allocation of the DI Precursor Product investments to specific parts that had been tested in this investigation by the

an offer of proof as to technical domestic industry with respect to these three parts. CIB at 20 n.2; CIB at 177-78. Additionally, Mr. Malackowski testified that these calculations did not include Cannon/Cleveland-Cliffs because he did not have the information available at the time of his report. Tr. (Malackowski) at 393:23-394:7.

six subpoenaed hot stampers. This testimony was based on CX-0122C (an exhibit to his expert report) that, *inter alia*, showed certain available data regarding relative portions of sales attributable to the six hot-stampers whose products were subpoenaed (*see* CX-0122C, "Hot Stamper %" column), as well as data showing sales percentages of tested DI Direct Products of Magna, Topre, and Simwon (relative to those entities' total sales) (*see id.* "Tested Part % of Hot Stamper Sales" column):



CX-0122C; Tr. (Malackowski) at 422:3-427:25. Mr. Malackowski testified that the purpose of this analysis was to quantify the DI Precursor Product needed to make specific tested DI Direct Products. *Id.* at 425:21-426:3; *see also id.* at 422:21-423:4 (testifying that "Tested Part" column shows "how significant that part was to the hot-stamper" and whether it was "just a given part or was it a percentage of their production"); *id.* at 423:6-12 (testifying that "Hot Stamped %" column shows "all of the parts that were tested" and that he "allocated or spread them to come up with the total pie of the tested parts" and that "we're focused just on the hot-stamper population of tested parts"); *id.* at 424:10-19 (testifying that [redacted] allocable to the tested parts).

In its post-hearing briefing, ArcelorMittal set forth three allocation approaches. First, under the "DI Precursor Product Apportionment Method," ArcelorMittal presented calculations substantially similar to those presented by Mr. Malackowski in CDX-0002C.34-35. *See* CIB at 138-39.

Second, under the "Tested DI Direct Products" approach, ArcelorMittal presented a methodology whereby the DI Precursor Product investments would be further allocated to precursor products used to make the Tested DI Direct Products by Magna, Simwon, and Topre using data derived from CX-0122C. *See* CIB at 137, 140.[51] These calculations are similar to those presented by Mr. Malackowski in CX-0122C, with certain adjustments particularly for Simwon (discussed further *infra*).[52] ArcelorMittal submits that the investments in labor and capital under the Tested DI Direct Products Allocation Method for Magna, Simwon, and Topre are as shown the table below:

[51] ArcelorMittal did not present any further downward allocations for Gestamp or Cannon, presumably because of the lack of sufficient data in CX-0122C. The allocations for Multimatic and GNS are not considered here because the undersigned struck ArcelorMittal's technical domestic industry contentions as to the DI Direct Products manufactured by GNS and Multimatic. *See* Order No. 19, EDIS Doc. ID 841799 (Jan. 27, 2025).

[52] For Magna and Topre, these figures were obtained by multiplying the result of the DI Precursor Product Apportionment method by the "hot stamper's share of Calvert's 'total pie'" obtained from column 5 of CX-0122C (reproduced above) and by the percentage figure in column 4 of CX-0122C. This reflects the same methodology used by Mr. Malackowski in CX-0122C. For Simwon, ArcelorMittal argues [redacted]. *See* CIB at 137 n. 24-30, 32. ArcelorMittal also notes, in connection with Simwon, that CX-0122C does not account for the fact that there are 4 tested [redacted] and thus under CX-0122C's approach, the proper allocation factor would be [redacted]. *See* CIB at 137 n.29.

[redacted]

CIB at 140.

Third, under what it characterizes as the "*Magnetic Data Storage Tapes* Method," ArcelorMittal contended that "the entirety of the investments in plant and equipment necessary to manufacture the Tested DI Direct Products and associated DI Precursor Products" would be cognizable, thus leading to a substantially larger plant and equipment figure than that presented by Mr. Malackowski. *See* CIB at 135-136 (contending that [redacted] million in plant and equipment is cognizable); *id.* at 126; CDX-0002C.31.

In rebuttal, Respondents make multiple arguments. With respect to the DI Precursor Product Apportionment method, Respondents argue that there is no evidence that hot stamping necessarily transforms the DI Precursor Products into patent-practicing products and that, as to USIBOR 1500, the evidence of record shows that hot stamping does not always produce a patent-practicing product. RIB at 148. According to Respondents, it is therefore improper to include all DI Precursor Product investments as cognizable investments. *Id.* Rather "[d]isaggregation of investments in precursors that are not incorporated into practicing products is necessary to prevent incorporation of investments in unrelated or unprotected products." *Id.* at 152; *see also* RRB at 88-89. Respondents also argue that there is insufficient evidence that precursor products made at Calvert are used by the hot-stampers to make the DI Direct Products,

and that it is improper to attribute Calvert investments to products that were not produced using Calvert precursor product. *See* RIB at 153-156.

With respect to the Tested DI Direct Products allocation, Respondents argue that Mr. Malackowski "did not separate the investments between sub-prongs (A) and (B), as the Commission requires," and that "[a]pproximately 40% of the amounts Mr. Malackowski estimated pertained to sub-prong (A) and the remaining 60% was included under sub-prong (B)." RIB at 161. Respondents also argue that the [redacted] million figure used in CX-0122C was based on "all DI Precursor Products," not just investments for the subpoenaed hot stampers, and thus "Mr. Malackowski's estimates are about three times too high, if he is estimating amounts specific to the six subpoenaed hot stampers." *Id.* Respondents argue that using the reduced "total of [redacted] million in investments in Calvert," "reduces Mr. Malackowski's estimates for investments in the tested products by 64% from [redacted] million to [redacted] million (i.e. less than [redacted] million for plant and equipment and less than [redacted] million for labor and capital)"). *Id.* at 161-62. Respondents further argue that the allocations are unreliable because certain shipments manufactured in Canada have been included. *Id.* (citing Tr. (Malackowski) at 368:24-369:12); RRB at 87. Respondents also argue that ArcelorMittal provides new calculations that were not preserved, are incorrect, and should be precluded. *See* RRB at 85-87, 89-90.

With respect to the *Magnetic Data Storage Tapes* approach, Respondents argue that that opinion, properly read, does not support ArcelorMittal's approach under the factual circumstances here and that, in addition, the argument is waived and should be precluded. *See* RRB at 78-82, 84.

b. Discussion

Upon review of the parties' arguments and submissions, the evidence of record shows, by a preponderance, that there have at least been cognizable investments of approximately [redacted] million in plant and equipment, and [redacted] million in labor and capital, attributable to Calvert's sales of the DI Precursor Products to Simwon for production of the Simwon DI Direct Products.[53] These calculations are based on Mr. Malackowski's "Tested DI Direct Products" approach in CX-0122C (*i.e.*, an approach designed to downward allocate the DI Precursor Products investments specifically to Tested DI Direct Products), with certain modifications based on the evidence presented at trial and certain of Respondents' arguments.[54]

As shown in CX-0122C, Mr. Malackowski attributed [redacted] in Calvert DI Precursor Product investments to Simwon based on a [redacted]. *See* CX-0122C. Based on the evidence that all [redacted], it is reasonable to use

[53] The evidence shows that the Simwon DI Direct Products are comprised of USIBOR 1500 and DUCTIBOR 1000 with a coating weight of AS150 manufactured by AM/NS Calvert. *See* CIB at 15-16, 25-26; CX-0663C (ArcelorMittal sales data at Tab "data 2", lns. 102, 773); CX-0402C (mill certificates produced by Simwon); Tr. (Krishnan) at 181:20-184:9; CX-0561.0007; RX-1283C ([redacted] (Simwon) Dep. Tr.) at 14:22-25 ("[Q]: Okay. And do you know from who Simwon buys the material, the steel that is used to make those four frames? [A]: It is from ArcelorMittal.").

[54] The undersigned agrees with Respondents that the record in this investigation does not support attributing Calvert's investment in equipment of [redacted] to the Asserted Patents (the "*Magnetic Tapes Storage*" approach). *See generally* RRB at 78-82. While such an approach may be appropriate under certain circumstances, here even Complainant's expert did not endorse such an approach, further weighing against its adoption as a reasonable approach here. *See* Tr. (Malackowski) at 388:14-389:2 (reducing [redacted] figure for his analysis); CDX-0002C.31. The undersigned also agrees with Respondents that the evidence does not support attributing all investments in USIBOR and DUCTIBOR with an AS150 rating (*i.e.*, investments in all "DI Precursor Products") to the Asserted Patents given the lack of evidence that hot-stamping such products will practice the Asserted Patents as a matter of course, and thus these products have not been shown as "tailored for use" (CRB at 66) in patent-practicing articles. *See supra* Part VI.A. Accordingly, neither of these approaches sufficiently provides an allocation to the Represented DI Direct Products shown to practice the Asserted Patents. *See* discussion *supra*; Part VI.A *supra*.

the sales percentage figure for [redacted]. *See generally* CX-238C.1 (cited in CDX-0002C.46) (showing percentage of [redacted]); Part VI.A *supra* (discussing testing of all Simwon DI Direct Products); Order No. 19.[55]

Respondents also raise the persuasive point that because the hot-stamper percentages in the "Hot Stamper %" column of CX-0122C pertain solely to the total "pie" among the subpoenaed hot-stampers, the proper "Calvert DI Investment" in CX-0122C should total [redacted] (*i.e.*, the total DI Precursor Product investment "pie" for the hot-stampers, not the total "pie" for all DI Precursor Products). *See* RIB at 161-162; *see also* RRB at 86.[56] Respondents also properly note that the investments should be sub-divided into plant and equipment, and labor and capital. *See* RIB at 161. This breakdown is readily shown by the DI Precursor Product figures presented by Mr. Malackowski. *See* CDX-0002C.35.[57]

Accordingly, the CX-0122C calculations for Simwon, adjusted to account for the [redacted], as well as to use the proper DI Precursor Product figures identified by Respondents, show the following:

[55] Given that the [redacted] sales percentage (for [redacted]) was disclosed in Mr. Malackowski's report, and that it is simply [redacted]), this percentage was fairly disclosed. *See* CX-0238C; CX-0239C; CDX-0002C.46 (citing these exhibits).

[56] The two different "total pie" figures were presented by Mr. Malackowski in his DI Precursor Product calculations. *See* discussion *supra*; CDX-0002C.34 (showing total DI Precursor Product Investments); CDX-0002C.35 (showing total DI Precursor Product Investments allocated to the subpoenad hot stampers).

[57] The breakdown of the appropriate [redacted] figure is shown in CDX-0002C.35, reproduced above. This breakdown is readily available, as it was performed by Respondents in their own briefing. *See* RIB at 161 (noting that about 40% of investments relate to sub-prong (A) and 60% to sub-prong (B)). Similarly, the adjustment based on reducing the "Calvert DI Investment" figure to [redacted] was readily performed by Respondents. *See* RIB at 161-62.

Simwon America	Tested Part % of Hot Stamper Sales[58]	Hot Stamper % of AS150 Purchases ('18-'23)[59]	Allocation Factor[60]	Calvert DI Investment[61]	Calvert DI Investments Attributable to Tested Part[62]
Plant and Equipment	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Labor and Capital	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TOTAL				[redacted]	[redacted]

The record evidence thus shows that ArcelorMittal's licensee at Calvert has invested approximately [redacted] in plant and equipment, and [redacted] in labor and capital in the U.S. related to the DI Precursor Products used for Simwon's DI Direct Products.[63, 64]

[58] Tested Part % for all [redacted] as discussed *supra*.

[59] *See* CX-0122C (percentage for Simwon America).

[60] Calculated as Tested Part % times % of Hot Stamper Sales. *See* CX-0122C, note [6]. The undersigned notes that ArcelorMittal proposed a larger allocation percentage for [redacted] because [redacted]." *See* CIB at 137 n.29. While this volume-based approach appears plausible, it differs from the revenue-based approach advocated by ArcelorMittal's expert, and it does not appear that Respondents had an adequate opportunity to address it.

[61] *See* CDX-0002C.35; Tr. (Malackowski) at 393:7-394:14; discussion *supra*.

[62] Calculated as Allocation Factor times Calvert DI Investment. *See* CX-0122C, note [8].

[63] A similar calculation could potentially be performed for the Topre and Magna tested parts but is unnecessary to show the existence of a domestic industry. *See* CX-0122C; discussion *infra* as to Simwon DI Direct Product investments and significance.

[64] Respondents did not present any expert testimony disputing the approach set forth in CX-0122C. Moreover, while they contend that Mr. Malackowski's calculations are unreliable "because they include shipments of alleged DI Precursor Parts manufactured in Canada" (RIB at 162, citing Malackowski testimony), the transcript testimony cited indicates that this amount is fairly small. *See* Tr. (Malackowski) at 368:24-369:12 ("it affects the calculation about a million-and-a-half over a billion"). Complainant need not provide a "precise accounting" of their expenditures so long as their allocations are reasonable under the circumstances. *See Certain Movable Barrier Operator Systems and Components Thereof* ("*Movable Barrier*"), Inv. No. 337-TA-1118, Comm'n Op., EDIS Doc. ID 730303 at 28 (Jan. 12, 2021). Respondents' argument that ArcelorMittal waived the right to present a theory based on CX-0122C is rejected. Respondents' counsel initially objected to testimony about Exhibit CX-0122C, but later stated

B. Domestic Investments by Tier 1 Hot Stampers

With respect to domestic investments by Tier 1 Hot Stampers (i.e., the "DI Direct Product Investments") authorized to use the Asserted Patents, Mr. Malackowski presented evidence regarding the plant and equipment investments (where available) and labor and capital investments in the United States relating to hot stamping the DI Direct Products by Cannon/Cleveland-Cliffs, Magna, Gestamp, Simwon, and Topre.[65] *See* Tr. (Malackowski) at 397:16-398:18; *id.* at 404:19-405:16; CDX-0002C.47; Tr. (LeBlanc) at 342:20-23 (Tier 1 hot stampers are authorized to use ArcelorMittal's patents if the obtain material from a licensed provider such as AM/NS Calvert or Cleveland-Cliffs). Mr. Malackowski testified that he allocated the total investments specifically to hot-stamping AS150 aluminized steel (*i.e.*, the DI Precursor Products) by each of the hot stampers. *See* Tr. (Malackowski) at 397:16-399:5 (testifying that his calculations included an allocation to AS150 aluminized steel). In addition, for Simwon and Topre, Mr. Malackowski allocated investments to specific tested parts. *See* Tr. (Malackowski) at 405:17-406:7 (testifying that further allocations to specific tested products can be made if you know "the quantity of that part overall for that facility"); CDX-0002C.48.

In their briefing, ArcelorMittal provides calculations under the "DI Precursor Product Apportion[ment] Method" for Cannon/Cleveland-Cliffs, Magna, Gestamp, Simwon, and Topre that reflects the calculations provided by Mr. Malackowski. *See* CIB at 144 (Cannon/Cleveland-Cliffs), *id.* at 149 (Magna); *id.* at 154 (Gestamp); *id.* at 158 (Simwon); *id.* at 161-162 (Topre). In

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that there is "[n]o objection so long as [Mr. Malackowski] lays a foundation and he intends to rely on this as part of his report – or opinion." *See* Tr. (Respondents' counsel) at 420:21-422:1; *see also* Part VII.D.1 *infra*.

[65] Mr. Malackowski also presented evidence of investments by GNS and Multimatic but, as discussed supra, there has been no showing that the technical prong of the domestic industry requirement was met for the products from these hot stampers. *See* Part VI, *supra*.

addition, for Magna, Simwon, and Topre, ArcelorMittal presents calculations further allocating this number to specific tested products (the "Tested DI Direct Product Allocation Method"). *See* CIB at 147-149 (Magna); *id.* at 158 (noting that for Simwon, "[redacted]" and thus "it is not necessary to perform separate analysis using the [redacted]"); *id.* at 160, 162 (Topre).[66] With respect to Simwon and Topre, these calculations reflect the testimony provided by Mr. Malackowski at the hearing (broken down into plant and equipment, and labor and capital). *See* CIB at 158; CDX-0002C.48.

In opposition, Respondents argue that it is incorrect to assume that all products made from the DI Precursor Products practice the asserted patents because of failures in ArcelorMittal's representativeness analysis. RIB at 159-160. Respondents also argue that it is incorrect to assume that all hot-stamped products by Magna were produced using steel from ArcelorMittal (RIB at 165), that the figures used for Gestamp and Topre are unreliable (*id.* at 166-167, 168), and that Simwon's corporate witness had inadequate knowledge (*id.* at 167). Respondents further argue that the DI Tested Product Allocation for Magna is waived and, in addition, is unreliable with respect to the "Eagle Bend" calculations (RRB at 94); is mislabeled and waived as to Gestamp (*id.* at 94-95); is waived as to Simwon (*id.* at 95); and is waived and incorrect as to Topre based on computations that include mismatched years (*id.* at 95-96).

[66] ArcelorMittal also presents arguments under the "*Magnetic Storage Tapes Allocation*" method as applied to plant and equipment investments. For the reasons discussed above, including that ArcelorMittal's expert advocated further allocation, this allocation method is rejected under the circumstances here.

For the reasons set forth below, the undersigned finds that the evidence shows investments relating to Simwon DI Direct Products that practice the Asserted Patents of at least [redacted] in plant and equipment and [redacted] in labor and capital.

The evidence shows that Simwon operates a facility in [redacted]. *See* RX-1283C ([redacted] (Simwon) Dep. Tr.) at 19:11-21:2, 28:10-18, 43:21-24, 44:19-24; CX-0403C; CX-0404C; Tr. (Malackowski) at 371:18-372:19; CDX-0002C.11. Between [redacted], the evidence shows that Simwon employs about [redacted] people [redacted]. *See* RX-1283C ([redacted] (Simwon) Dep. Tr.) at 42:20-43:7, 45:8-10, 80:7-10; CX-0232C; CX-0234C. The evidence shows that Simwon obtains steel for the [redacted] from ArcelorMittal. *See* CIB at 25, 154; RX-1283C ([redacted] (Simwon) Dep. Tr.) at 14:22-25; CX-0402C., .56; CX-0663. The evidence also shows that Simwon [redacted].[67] *See* CX-0242C; RX-1283C ([redacted] (Simwon) Dep. Tr.) at 13:3-24, 14:3-15:3, 15:8-16:14, 28:10-18, 75:15-19; CX-0401C; CIB at 155.

Accordingly, the evidence shows that all products hot stamped by Simwon at the [redacted] are [redacted]. Thus, Mr.

[67] ArcelorMittal submits that at the time of his report, Mr. Malackowski had testing data for only [redacted]. *See* CIB at 156 n.35. As previously noted, the undersigned held in Order No. 32 that testing results and opinions related to [redacted] was within the scope of Dr. Fekete's report and testimony. Order No. 32 noted that Dr. Fekete's testimony regarding exhibits CX-0870C to CX-0872C was permissible "provided it was consistent with the level of detail provided" in his report and permitted Respondents to raise objections to testimony or demonstratives related to these—among other exhibits—that were not addressed by Order No. 32. Respondents did not identify any additional testimony. *See* Order No. 32, EDIS Doc. ID 845239 (Mar. 7, 2025).

Malackowski's calculations of plant and equipment, and labor and capital, attributable to [redacted] are all cognizable domestic industry investments. These allocated investments are [redacted] in plant; [redacted] in equipment; [redacted] in labor; and [redacted] in capital. *See* Tr. (Malackowski) at 404:19-405:16 CDX-0002C.47.[68] This totals [redacted] in plant and equipment and [redacted] in labor and capital (which together total [redacted]). *See* Tr. (Malackowski) at 404:19-405:16; CDX-0002C.47; CX-0118C (cited in RRB at 95).[69]

With respect to Tier 1 hot stampers Cannon/Cleveland-Cliffs, Magna, and Gestamp, the undersigned agrees with Respondents that the evidence is insufficient to attribute all hot-stamped DI Precursor Product investments to the Asserted Patents. As to Cannon/Cleveland-Cliffs and Magna, the evidence fails to show that the tested DI Direct Products are representative of all hot stamped products by that hot-stamper using a DI Precursor Product. *See* Part VI.A *supra*.

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[68] Respondents did not raise any persuasive objections to Mr. Malackowski's allocation of total Simwon investments in hot-stamping the DI Direct Products which, as discussed above, for Simwon are [redacted]. Respondents argue that Simwon's corporate witness could only testify about the [redacted] (RIB at 167). However, Mr. Malackowski's allocations were based on the [redacted] *See* CDX-0002C.46; CX-0227C to CX-0244C; *see also* RX-1283C ([redacted] (Simwon) Dep. Tr.) at 85:9-86:2. Any uncertainties expressed by the corporate witness do not render Mr. Malackowski's opinions unreliable, including given the lack of any countervailing expert opinion presented by Respondents and Mr. Malackowski's reliance on business records. *See, e.g.*, RX-1283C ([redacted] (Simwon) Dep. Tr.) at 56:4-16.

[69] Mr. Malackowski's "tested part" allocation on CDX-0002C.48 utilized only [redacted] *See* CDX-0002C.48. His total for [redacted] is approximately [redacted] of the total investments relating to DI Precursor Products at Simwon as shown on CDX-0002C.47. As discussed above, all [redacted] have been shown to practice the Asserted Patents. To the extent Respondents argue waiver (*see* RRB at 95), this is rejected. Indeed it is undisputed that the figures set forth above and in CDX-0002C.47 were previously disclosed. *See* RRB at 95 (citing CX-0118C for evidence of previous disclosures); CX-0118C (providing same figures as set forth in CDX-0002C.47). In addition, Respondents' objection to Mr. Malackowski's demonstrative – *i.e.*, CDX-0002C.48, showing the calculations for [redacted]—was overruled. *See* Tr. at 355:2-10 (the undersigned finding that the calculations for Simwon were fairly supported by the schedules to the expert report).

Therefore, a further allocation to tested DI Direct Products is necessary. While ArcelorMittal seeks to provide this type of further allocation for Magna (*see* CIB at 147-149) these calculations are not sufficiently explained and appear to use different percentages than those provided in CX-0122C by Complainant's expert. *Compare* CX-0122C (Tested Part % of Hot Stamper Sales column) with CIB at 148 (showing allocation percentages).[70]

C. ArcelorMittal's ER&D Investments

ArcelorMittal contends that its investments in engineering, research, and development (ER&D) are cognizable and show a domestic industry under Section 337(a)(3)(C). *See* CIB at 125, 162, 165; CRB at 60. ArcelorMittal states that "ArcelorMitta's U.S. research is based in East Chicago, Indiana, and . . . focuses on 'developing new products, and enhancing existing products, and then providing the support for the [steel] mills to be able to manufacture the products that are being deployed.'" CIB at 163 (quoting Atkinson testimony). In support, ArcelorMittal cites testimony from Mr. Atkinson, Mr. Krishnan, and Mr. Malackowski regarding ArcelorMittal's ER&D activities. *See id*. at 163-65. Mr. Malackowski testified that ArcelorMittal invested [redacted] in ER&D investment related to the DI Products. *See* CIB at 165 (citing Tr. (Malackowski) at 385:14-17 and CDX-0002C.28); *see also* CRB at 60-62.

Respondents argue, in opposition, that ArcelorMittal does not "allocate the alleged investments to articles that practice the Asserted Patents." RIB at 170. According to Respondents, Mr. Malackowski "makes no attempt to perform an allocation to show the portion

[70] With respect to Topre (an entity for which representativeness was found), Mr. Malackowski's calculations may support further cognizable DI Direct Product investments. *See* CDX-0002C.47-48 (providing allocation to tested Topre product). It is unnecessary to reach this issue, however, because the investments are significant based on Simwon alone.

of the alleged labor/equipment investments specifically attributable to the DI Precursor Products that are hot stamped into practicing products." *Id.* Respondents also argue that "no basis exists for concluding that ER&D attributable to Usibor, Ductibor, and PHS (Press Hardened Steel) has a nexus to the asserted patent." *Id.* at 172; *see also* RRB at 96-98.

Based on the record evidence, it does not appear that ArcelorMittal has sufficiently shown that the claimed R&D investments all relate to articles that practice the patent and show a nexus to the asserted patents. *See* 19 U.S.C. §1337(a)(3)(C) (requiring substantial investment in "its exploitation"); *Certain Electronic Candle Prods. and Components Thereof*, Inv. No. 337-TA-1195, Comm'n Op., 2022 WL 5241198, at *12-13 (Oct. 4, 2022) ("the Federal Circuit has interpreted 'its' to mean the patent (or other enumerated IP right in subsections 337(a)(1)(B)-(E))") (citing *Interdigital Commc'ns, LLC v. Int'l Trade Comm'n*, 707 F.3d 1295 (Fed. Cir. 2013)).[71] To establish nexus, "the complainant must show the connection between its investments and the patented invention that it is exploiting." *Electronic Candle Prods.*, 2022 WL 5241198, at *13.

As discussed *supra* regarding the technical prong of the domestic industry requirement, the evidence is insufficient to show that hot-stamping the asserted DI Precursor Products will produce patent-practicing articles as a matter of course. Moreover, to be cognizable under Section 337(a)(3)(C), the research and development activities must show a nexus to the asserted patent. Here, Mr. Malackowski testified that ArcelorMittal's research and development activities are focused on "things like weldability, corrosion performance, paint adhesion, cost reductions" of the DI Precursor Products. Tr. (Malackowski) at 382:2-4. However, without more detail, it is

[71] ArcelorMittal has only asserted R&D investments under Section 337(a)(3)(C). *See* CIB at 125, 162, 165; CRB at 60.

unclear whether ArcelorMittal's R&D efforts directed to these characteristics are connected to features of the Asserted Patents, particularly given that hot-stamping the DI Precursor Products has not been shown to necessarily lead to practice of the asserted patents. *See* Part VI.A *supra*; *cf. Certain Integrated Circuit Chips and Prods. Containing the Same,* Inv. No. 337-TA-859, Comm'n Op., 2014 WL 12796437, at *29 (finding insufficient evidence of nexus where goal of patent was "faster communication" and asserted research activities were "directed to achievement of the same goal in other unrelated manners").

However, regardless of whether ArcelorMittal's ER&D investments are cognizable, the record shows significant investments in plant and equipment, and labor and capital, with respect to articles practicing the patent (in particular, the Simwon DI Direct Products) for the reasons discussed below.

D. Significance

1. Respondents' Motion to Strike

As a preliminary matter, Respondents have filed a motion to strike portions of Mr. Malackowski's hearing testimony related to two allegedly new "significance" opinions.[72] RIB at 173. Respondents argue that Mr. Malackowski offered two new theories for the first time at the hearing that: "(1) the [redacted] to [redacted] dollar investments from Topre and Simwon to hot-stamp 'DI Direct Products' is significant"; and "(2) that Calvert's [redacted] investment in the production of precursors allegedly attributable to only tested parts is significant." *Id.* (citing Tr. (Malackowski) at 405:17-412:9[73], 424:8-425:19). Respondents assert that these significance theories were not disclosed in ArcelorMittal's prehearing brief and that Mr. Malackowski did not

[72] The undersigned gave the Respondents permission to file a motion to strike on this issue. Tr. at 406:12-412:7, 424:20-425:18.

[73] Respondents refer to "405:17-4:12-9" but this appears to be a typo. *See* RIB at 173.

previously present them in his expert report or deposition. *Id*. at 174-75. Thus, Respondents argue that ArcelorMittal waived these arguments.

In addition, Respondents argue that Mr. Malackowski's deposition testimony regarding Exhibit 3.2.0 (CX-0122C) does not constitute an opinion that his [redacted] assessment is "significant" for purposes of domestic industry. *Id*. at 175. Respondents contend that in Exhibit 3.2.0, he uses Calvert's total alleged investment in DI Precursor Products as a baseline rather than the share of Calvert's investments attributable to the subpoenaed hot-stampers. *Id*. at 175-76. Then, when asked about that exhibit at his deposition, Respondents assert that he "shifted his opinion," stating that it represented the minimum level of investment that would be needed to manufacture only the tested products. *Id*. Respondents also contend that he disparaged his Exhibit 3.2.0 analysis repeatedly. *Id*. at 176-77.

In opposition, ArcelorMittal argues that Respondents were only given leave to move to strike Mr. Malackowski's opinion on the significance point. CRB at 91-92. ArcelorMittal therefore contends that the actual quantifications are not at issue. *Id*. at 92. With respect to striking Mr. Malackowski's significance opinions regarding the investments (1) at Calvert and (2) at Simwon and Topre, after being allocated to certain Tested DI Direct Products, ArcelorMittal argues that it is "largely irrelevant in view of the multiple significance opinions Mr. Malackowski offered that are independent of quantifying the investments and the fact that—with or without expert testimony—the significance of the investments in question is readily apparent." *Id*.

As for the Calvert investments, ArcelorMittal asserts that Mr. Malackowski's opinion regarding the significance of the [redacted] figure in CX-0122C was disclosed in his expert

report, at his deposition, and in ArcelorMittal's prehearing brief. *Id*. at 92-93 (citing CX-0081C[74] at 9-10; CX-0122C; CX-0015C (Malackowski Dep. Tr.) at 92:17-94:23, 95:3-96:18, 165:2-166:15). In addition, ArcelorMittal contends that Respondents never objected to or sought to strike Mr. Malackowski's analysis at his deposition and his deposition testimony and expert report were cited in ArcelorMittal's prehearing brief, which Respondents also did not object to. *Id*. at 94. With respect to Respondents' contention that Mr. Malackowski "shifted his opinion" and purportedly "disparaged" exhibit CX-0122C, ArcelorMittal argues that Respondents was free to cross examine him on that issue at the evidentiary hearing. *Id*. at 95.

As to Simwon and Topre, ArcelorMittal disputes Respondents' argument that there is no support for this allegedly new opinion. *Id*. ArcelorMittal submits that Mr. Malackowski stated in his expert report that his alternative analysis for the domestic investments in the DI Direct Products tested by Dr. Fekete still showed significance. *Id*. at 95-96 (citing CX-0081C at 9-10, §§ 10.2-10.7, CX-0122C). Moreover, ArcelorMittal contends that Respondents neglected to ask Mr. Malackowski about the schedules to his expert report allocating Simwon's and Topre's investments in the tested direct products. *Id*. at 96.

Having reviewed the parties' submissions and record evidence, Respondents' motion to strike is DENIED.

[74] CX-0081C is a reference to Mr. Malackowski's expert report, which was not admitted into evidence at the hearing (although many of the attached schedules were, e.g., CX-0122C), but was attached (in an excerpted format) to ArcelorMittal's reply post-hearing brief. *See* EDIS Doc. ID 849343 Ex. 2. Mr. Malackowski's full expert report may be located at Mot. Dkt. No. 1402-019, Attachment 3 (CX-0081C). ArcelorMittal also attached excerpts of Mr. Malackowski's deposition transcript to its reply post-hearing brief, which it refers to as CX-0015, but which was not admitted into evidence but is considered with respect to the disclosure issues raised by the motion to strike. *See* EDIS Doc. ID 849343 Ex. 1.

As to Mr. Malackowski's opinion that Calvert's investments in the DI Precursor Products attributable to only Tested DI Direct Products are significant, Mr. Malackowski's expert report states:

> Finally, to the extent the Commission finds that only the DI Precursor Products sold to the Six Tier 1 Hot Stampers and made into hot stamped parts (i.e., DI Direct Products) tested by Dr. Fekete and Dr. Baskin are relevant for the economic DI analysis, I provide an alternative analysis for the domestic investments in the DI Direct Products. Correspondingly, AM/NS Calvert's investments in the DI Precursor Products would be reduced.

Mot. Dkt. No. 1402-019 Attachment 3 (CX-0081C) (Malackowski Report) at 9 (citing Exhibit 3.2.1)[75]; *see also id*. at 160 ("Additionally, to the extent the Commission only considers those parts that were specifically tested to provide a basis for the economic DI analysis, I have also included those calculations within my Exhibits."). He states that Exhibit 3.2.0 includes "calculations within the Exhibits to this report quantifying the cognizable investments made by Calvert that are attributable only to the DI Precursor Products sold to hot stampers that were subpoenaed and discussed in this report."[76, 77] *See id*. at 160 n.902. In addition, he states that "[t]he investments described above are significant on both an absolute basis and when put into context." *Id*. at 9. Further, at his deposition, Mr. Malackowski discussed Exhibit 3.2.0 to his expert report and testified that the analysis was done "to consider whether or not if you looked at

[75] While footnote 36 of Mr. Malackowski's expert report cites to Exhibit 3.2.1, this appears to be a typographical error that should refer to Exhibit 3.2.0 (CX-0122C) as there is no Exhibit 3.2.1 appended to the expert report. *See* Mot. Dkt. No. 1402-019 Attachment 3 (CX-0081C) (Malackowski Report) at 10 n.36; CRB at 93.

[76] Exhibit CX-0122C was introduced at the evidentiary hearing during Mr. Malackowski's examination where he testified that it was Exhibit 3.2 from his expert report. *See* Tr. (Malackowski) at 422:3-9; CX-0122C.

[77] Respondents' counsel initially objected to Exhibit CX-0122C, but later stated that there is "[n]o objection so long as [Mr. Malackowski] lays a foundation and he intends to rely on this as part of his report – or opinion." *See* Tr. (Respondents' counsel) at 420:21-422:1.

only six parts, if there would still be a ***meaningful*** investment required." *See* CRB Ex. CX-0015C (Malackowski Dep. Tr. Excerpts) at 88:4-96:18 (emphasis added). He further stated that it is "understated" but "supports the general conclusion." *See id.* at 93:3-9. ArcelorMittal's prehearing brief states that "even limiting the economic domestic industry analysis to the dozen or so parts tested in this Investigation 'wouldn't change the conclusion' that there are significant investments in plant and equipment and labor and capital required to create such products." CPHB at 196. The undersigned therefore finds that Mr. Malackowski's opinion that Calvert's investments in the DI Precursor Products attributable to only Tested DI Direct Products are significant was adequately disclosed and the motion to strike is DENIED as to this issue.

With respect to Mr. Malackowski's opinion that the investments by Topre and Simwon to hot-stamp the tested DI Direct Products are significant, the undersigned finds that this opinion was also fairly disclosed and should not be stricken. Mr. Malackowski's expert report specifically indicated that, to the extent only the DI Precursor Products "sold to the Six Tier 1 hot Stampers and made into hot stamped parts (i.e., DI Direct Products) tested by Dr. Fekete and Dr. Baskin are relevant for the economic DI analysis," he has set forth an analysis for investments "in the DI Direct Products" and follows this sentence with the statement that "[t]he investments described above are significant on both an absolute basis and when put into context." Mot. Dkt. No. 1402-019 Attachment 3 (CX-0081C) (Malackowski Report) at 9 (citing footnote 35, which refers to hot stamper investments); *see also id.* at Exhibits 12.1.1, 12.2.1, 12.2.0, 12.3.0, 12.3.1, 12.4.0, 12.4.1, 12.5.0, 12.6.0, 12.6.0, 12.6.1, 12.7.1 (exhibits showing allocations of Simwon investments to single or multiple [redacted] including [redacted] allocations); *id.* at 13.1.1, 13.2.1, 13.3.1, 13.3.1, 13.4.1, 13.6.1, 13.7.1 (exhibits showing allocation of Topre investments to tested products including [redacted] allocation). And as noted above, Complainant's

prehearing brief indicates that an allocation to tested products remains an asserted theory. *See* CPHB at 196 (stating that "even limiting the economic domestic industry analysis to the dozen or so parts tested in this investigation" would not change the conclusion that there are significant investments). Accordingly, Respondents' motion to strike testimony is DENIED as to the significance opinion relating to Simwon and Topre investments as well.[78]

2. Assessment of Significance

The parties dispute whether the evidence sufficiently supports a finding that cognizable investments under Section 337(a)(3)(A) and (b) are significant. ArcelorMittal argues that the investments are quantitatively significant and qualitatively significant, including because the underlying activities are critical to the DI Products, because these activities add value to the DI Products, and because the products have high profit margins. *See* CIB at 166-175; CRB at 58-60, 86-91. Respondents argue that significance has not been shown based on asserted waiver of arguments that Tier 1 hot stamper investments are independently significant or substantial (RIB at 174-177), based on an argument that "cognizable investments of only [redacted] amounts to rounding errors in the context of ArcelorMittal's overall business" (RIB at 171), and based on the argument that "ArcelorMittal's global operations dwarf the alleged domestic industry investments" (RIB at 172). *See also* RRB at 98 (arguing that ArcelorMittal "has no reliable, timely disclosed figures upon which to argue significance").

[78] The undersigned notes that, as held at the hearing, the quantification of Simwon's and Topre's investments as provided in Mr. Malackowski's demonstrative – *i.e.*, CDX-0002C.48 – was fairly supported. *See* Tr. at 355:2-10 (the undersigned finding that the data and calculations for Simwon and Topre were fairly supported by the schedules to the expert report); *see also* Tr. at 269:3-279:9 (argument on objection). In addition, the undersigned notes that the record evidence supports a finding of significance even if Mr. Malackowski's statement that the Simwon and Topre investment figures themselves are "significant" (Tr. at 406:11) is disregarded, given the other evidence of record showing significance. *See* discussion *infra*.