[redacted]

H WUNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

Before The Honorable Monica Bhattacharyya
Administrative Law Judge

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

[redacted] **COMPLAINANT'S PRE-HEARING BRIEF**

ArcelorMittal Ex. 2010
Posco Co. LTD. v. ArcelorMittal
IPR2025-00371

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TABLE OF ABBREVIATIONS

Abbreviation	Description
’227	U.S. Patent No. 11,326,227
’602	U.S. Patent No. 10,961,602
Al-coated steel	Aluminum or aluminum alloy coated steel
Asserted Patents	U.S. Patent Nos. 10,961,602 and 11,326,227
ATS	Applied Technical Services, LLC
[redacted]	[redacted]
Cornette	Cornette et al., “High Strength Steels for Automotive Safety Parts,” SAE Technical Paper Series 2001-01-0078 (2001)
[redacted]	[redacted]
	Cold rolling mill
DI Direct Products	Hot stamped DI Precuror Products that practice the Asserted Patents
DI Precursor Products	Al-coated steel products manufactured by Calvert and [redacted]
Engels	Engels et al., “Controlling and monitoring of the Hot-Stamping Process of Boron-Alloyed Heat-Treated Steels” (2006)
ER&D	Engineering, research, and development
[redacted]	[redacted]
GMW14400	GMW14400 Material Specification
[redacted]	[redacted]
Hein	Hein et al., “Hot Stamping of USIBOR 1500 P: Part and Process Analysis Based on Numerical Simulation” (2006)
[redacted]	Hot strip mill
Lachmann	Carsten Lachmann, “Developments of High-Strength Sheet Steel Qualities and Joining Technology Aspects for Use in Automobiles” (2005)
Laurent	U.S. Patent No. 6,296,805
[redacted]	[redacted]
Maki	Japanese Patent Publication No. JP/2004/244704
[redacted]	[redacted]
Nishibata US	U.S. Patent Publication No. 2006/0185774
Nishibata WO	International Publication No. 2004/106573
OEMs	Original equipment manufacturers
Passat 1049	2006 Volkswagen Passat VIN# WVWAK73C66P041049
POSITA	Person of ordinary skill in the art
Secat	Secat, Inc.
[redacted]	[redacted]
SGS	Société Générale de Surveillance SA

[redacted]

Suehiro II	Suehiro et al., "Properties of Aluminum-Coated Steels for Hot-Forming" (2003)
Takagi	U.S. Patent Application Publication No. 2004/0009366
[redacted]	[redacted]
Vaissiere	Vaissiere et al., "Development of Pre-Coated Boron Steel for Applications on PSA Peugeot Citroën and RENAULT Bodies in White," SAE Technical Paper Series 2002-01-2048, reprinted from the Proceedings of the 2002 SAE International Body Engineering Conference and Automotive & Transportation Technology Conference (2002)
VinFast Accused Products	The VF 8 and VF 9 models, as well as other imported VinFast models that use Al-coated steel parts similar to those in the VF 8 and VF 9

[redacted]

I. INTRODUCTION[1]

For decades, the automotive industry has debated: steel or aluminum? Steel is inexpensive and strong, which has made all-steel car bodies an industry standard for almost a century. But rising gas prices in the 1970s led to demand for fuel-efficient cars made of a lighter metal—aluminum. Aluminum, unlike steel, is also rust resistant. Given these and other benefits, the steel industry has innovated ways to combine Al-based coatings with automotive steel to produce thinner, stronger steel products that can compete in the automotive industry.

Complainant ArcelorMittal pioneered the use of Al-coated steel to shape parts for the automotive industry. Heating and press-hardening the Al-coated steel through die quenching in a process called "hot stamping" resulted in a high-strength steel. The car parts formed were also thin, light, and rust-resistant, resulting in a product that incorporated the advantages of both metals.

But further improvement was required. ArcelorMittal identified additional challenges for automobile frames and other steel automotive products, like manufacturing inefficiencies and cost, as well as a need for improved weldability, variable strength and reliability. For example, improved weldability would allow durable steel welds with a high mechanical resistance to be achieved in a wide range of operating conditions. To address these issues, ArcelorMittal invested substantial time and money, including through its personnel and facilities in the United States, to research, develop, and commercialize a new generation of Al-coated steel for use in automotive products.

The Asserted Patents describe and claim this novel, high-strength Al-coated steel that provides the strength, weldability, and reliability required for high-stress automotive uses. The

[1] On January 24, 2025, at approximately 11 a.m. ET, Complainant received an e-mail from VinFast, which stated: "To streamline the issues in this Investigation, VinFast will not advance its lack of written description theories. VinFast will also not advance the indefiniteness theory for the term 'level.' We will also not advance obviousness combinations involving Nishibata WO or Nishibata US." 1/24/2025 VinFast E-mail. Because Complainant received this notice hours before the deadline, Complainant is unable to revise this brief accordingly. However, the sections of Complainant's pre-hearing brief related solely to VinFast's withdrawn arguments, including Sections III.F.3.a.iv, III.F.3.a.vii, III.F.3.b.iii, III.F.3.c.v, III.F.3.d.v, III.F.3.d.vi, III.F.3.f.v, III.F.5, III.F.6.b, IV.F.1.b.iii, and IV.F.3, need not be reviewed.

[redacted]

Asserted Patents claim a steel product containing a coating that has a thickness of greater than 30 μm and includes four layers that are created by using particular parameters to hot stamp the Al-coated steel. The four-layer, hot-stamped steel product makes it possible to obtain a substantial resistance to shocks, fatigue, abrasion, and wear while retaining a good resistance to corrosion as well as a good capacity for welding and painting. ArcelorMittal's inventive high-strength Al-coated steel has facilitated substantial safety improvements in the automotive industry. Consequently, as documents and ArcelorMittal's testing of 15 separate automobile parts show, the Asserted Patents are widely practiced by "Tier 1" hot stampers to supply the patented steel product to OEMs, *e.g.*, [redacted]. Although ArcelorMittal's inventive steel is widely used in and has improved the safety of automobiles, including the growing electric vehicle market to ensure that vehicle bodies are strong enough to safely hold heavy batteries.

Recognizing the importance of ArcelorMittal's solution, VinFast turned to high-strength Al-coated steel covered by the claims of the Asserted Patents. Despite knowledge of ArcelorMittal's patents (CX-0049), VinFast has not sought a license. Instead, as VinFast's own documents and ArcelorMittal's testing of 34 VinFast parts shows, VinFast's Accused Products, including multiple parts of the imported VF 8 and VF 9 automobiles, infringe the Asserted Patents.

Faced with overwhelming evidence of a violation of § 337, VinFast raises a number of deeply flawed arguments. VinFast resorts to non-infringement and technical domestic industry arguments that rely on a claim construction divorced from the intrinsic evidence and contradicted by its expert Dr. Brown's own analysis. VinFast urges invalidity by relying on prior art already considered by the Patent Office and theories that are either legally or procedurally foreclosed. VinFast's entire theory of no domestic industry relies on its argument that the tested domestic industry parts are not representative, but even under such a theory ArcelorMittal's and its licensees' investments are economically significant. And VinFast failed to provide any argument for why a limited exclusion order, cease and desist order, and 100% bond should not issue.

Accordingly, for the reasons set forth below and as will be demonstrated at the hearing, ArcelorMittal respectfully requests that the ALJ find a violation by VinFast.

[redacted]

A. Procedural History

On April 17, 2024, ArcelorMittal filed its Complaint against the VinFast Respondents, asserting a violation of subsection (b) of § 1337 of the Tariff Act of 1930, based on VinFast's importation of certain high-strength, aluminum-coated or aluminum-alloy-coated steel components that infringe certain claims of ArcelorMittal's '602 and '227 patents and that are incorporated into VinFast vehicles. EDIS Doc. ID 818840. The Commission instituted the Investigation on May 20, 2024, to investigate a § 337 violation based on VinFast's importation, sale for importation, or sale after importation of "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." EDIS Doc ID. No. 821906 at 2. The parties agreed that no *Markman* hearing was necessary, and the procedural schedule was so amended. EDIS Doc ID No. 833516 (Joint Motion to Amend Procedural Schedule); EDIS Doc ID. No. 833518 (Joint Status Report regarding *Markman* hearing); EDIS Doc ID. No. 833599 (Order No. 11 Amending Procedural Schedule).

Fact discovery concluded on November 15, 2024, and expert discovery concluded on December 23, 2024. EDIS Doc ID. No. 825908 at 3 (Order No. 7 setting Procedural Schedule); *see also* EDIS Doc ID No. 838425 (Order No. 15 amending Procedural Schedule to extend certain deadlines relating to testing of certain third-party domestic industry products). The pre-hearing conference is set for February 28, 2025, and the evidentiary hearing will take place March 3–7, 2025. *Id.*; EDIS Doc ID No. 825908 at 4. The Initial Determination is due to be issued by June 23, 2025, and the target date for completion of the investigation is October 23, 2025. *Id.*

B. The Parties

1. Complainant ArcelorMittal

In 2007 Mittal Steel and Arcelor completed a merger to create ArcelorMittal, which is one of the world's leading steel and mining companies. ArcelorMittal is a public limited company organized under the laws of Grand Duchy of Luxembourg, with its principal place of business at 24–26, Boulevard d'Avranches L-1160 Luxembourg. CX-0058; CX-0059. ArcelorMittal

[redacted]

operates in the United States through its subsidiary ArcelorMittal North America, headquartered in Schererville, Indiana. CX-0062. ArcelorMittal North America has 17 locations in the United States for research and development, steel manufacturing and finishing, sales, and regulatory affairs, among others, including the Global R&D Facility in East Chicago, Indiana. *Id.* ArcelorMittal North America currently has more than [redacted] full-time employees in the United States, Canada, and Mexico. *See* CX-0785.

In 2023, approximately [redacted]. CX-0820 at 3. ArcelorMittal manufactures and supplies steel products for many industries including the automotive sector. CX-0059. ArcelorMittal devotes significant resources and research and development efforts to creating new steels, steel solutions, and steel-making processes as it relates to automobile parts. CX-0061.

2. The VinFast Respondents

The VinFast Respondents are in the business of design, manufacture, and sale of electric vehicles, e-scooters and e-buses. CX-0931 at 41.

Respondent VinFast Auto Ltd. is a corporation organized under the laws of Vietnam, with its principal place of business at Dinh Vu – Cat Hai Economic Zone Cat Hai Islands, Cat Hai Town, Cat Hai District Hai Phong City, Vietnam. CX-0050. VinFast Auto Ltd. is the parent company of Respondents VinFast Auto, LLC; VinFast USA Distribution, LLC; Vingroup USA, LLC; and VinFast Trading and Production JSC. *Id.*

Respondent VinFast Auto, LLC is a corporation organized under the laws of Delaware, with its principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles, California 90066. CX-0051.

Respondent VinFast USA Distribution, LLC is a corporation organized under the laws of Delaware, with its principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles, California 90066. CX-0052.

Respondent Vingroup USA, LLC is a corporation organized under the laws of Delaware, with its principal place of business at 12777 West Jefferson Boulevard, Suite A-101, Los Angeles,

[redacted]

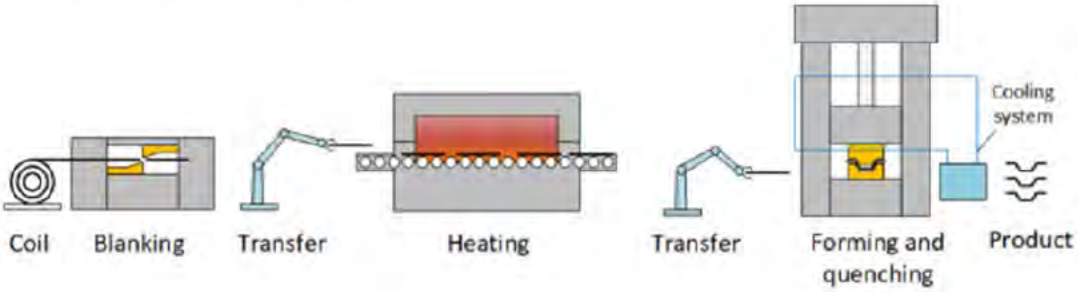
California 90066. CX-0053.

Respondent VinFast Trading and Production JSC is a corporation organized under the laws of Vietnam, with its principal place of business at Dinh Vu – Cat Hai Economic Zone Cat Hai Islands, Cat Hai Town, Cat Hai District Hai Phong City, Vietnam. CX-0050.

C. Overview of the Technology

This Investigation concerns high-strength aluminum or aluminum alloy-coated steel products, for use in automobiles, and automotive products containing said high-strength aluminum or aluminum alloy-coated steel.

These articles are created in the following manner. First, steel sheets are "hot-dipped" into an aluminum or aluminum alloy bath (*i.e.*, pre-coated) and formed into coils for further processing. These coils are then "hot stamped," as illustrated in the below figure. The pre-coated steel sheet is fed into a press and trimmed into "blanks," which are loaded (via a roller) and heated in a furnace, and the heated blanks are transferred to a hot stamping press, where they are pressed and cooled. Finally, the hot-stamped component is unloaded from the press for finishing. Aluminum-coated steel combines the benefits of steel (*e.g.*, cost, strength) and aluminum (*e.g.*, weight, rust resistance). CX-0054; CX-0055; CX-0056.



The aluminum-coated steel product claimed in the Asserted Patents provides the strength, weldability, and reliability required for high-stress automotive uses. ArcelorMittal's Al-coated steel product has facilitated substantial safety and other capacity improvements in the automotive industry. JX-0002 at 2:29–31, 14:59–15:15, 11:32–39; CX-0057.

D. The Patents at Issue

ArcelorMittal asserts two related patents against Respondents: U.S. Patent Nos. 10,961,602

[redacted]

and 11,326,227.[2] The patents, titled "Coated Steel Strips, Coated Stamped Products and Methods," list Pascal Drillet, Dominique Spehner, and Ronald Kefferstein as inventors.

The '602 Patent issued on March 30, 2021. The '602 Patent was filed on May 16, 2019, as U.S. Appl. No. 16/413,799, which is a continuation of U.S. Appl. No. 15/606,770, which is a continuation of U.S. Appl. No. 13/621,015, which is a division of U.S. Appl. No. 12/447,777, filed on October 30, 2006.

The '227 Patent issued on May 10, 2022. The '227 Patent was filed on May 13, 2021, as U.S. Appl. No. 17/319,306, which is a continuation of U.S. Appl. No. 16/413,825, which is also a continuation of U.S. Appl. No. 15/606,770.

The Asserted Patents relate to "pre-coated steel strips"—*i.e.*, a strip of base steel and an aluminum or aluminum alloy pre-coating (*i.e.*, before hot stamping) thickness ranging between 20–33 μm—which may then be processed into shaped parts via hot-stamping. JX-0002 at Abstract, 1:37–40, 5:64–6:1. According to the Asserted Patents, conventional fabrication of automotive parts by hot-stamping pre-coated steels involves four main steps: pre-coating steel sheets by hot dipping them, trimming sheets to obtain blanks, heating the blanks in a furnace, and hot forming and rapid cooling (*i.e.*, quenching) of the part. *Id.* at 1:41–49. Prior art fabrication processes suffered from issues such as fouling of the furnace roller resulting from excess metallic deposits from pre-coating. *Id.* at 1:56–2:2. While the parts obtained through heating and rapid cooling "display very high mechanical resistance and may be used for structural applications," since they are frequently welded together in automotive structures, the process further requires that the weld quality not be affected. *Id.* at 2:3–23. The Asserted Patents address these issues, including "a need for coated steels which may be used to prepare shaped parts by a stamping process which are suitable for welding." *Id.* at 2:27–34.

The Asserted Patents describe "a special succession of coating layers on the parts, proceeding from the steel substrate outwards," which results in "particularly good weldability of

[2] Because the Asserted Patents share a specification, citations to the Asserted Patents' specification refer to the '602 Patent specification, unless otherwise noted.

[redacted]

aluminized and hot stamped parts." *Id.* at 2:60–63. Those successive coating layers consist of the "(a) Interdiffusion layer, (b) Intermediate layer, (c) Intermetallic layer, and (d) Superficial layer." *Id.* at 6:8–25. As an example, Figure 1 shows a coated part obtained after the hot-stamping process described therein, covered by a coating consisting of the four layers over the steel substrate:

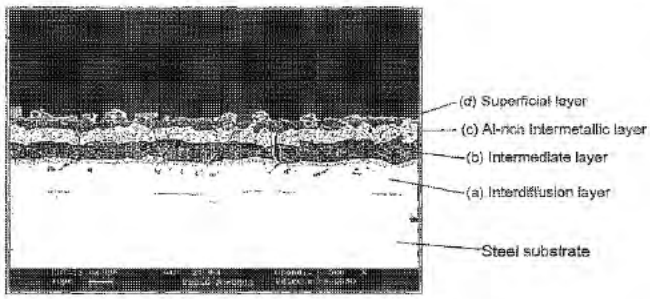


Fig. 1 10μm

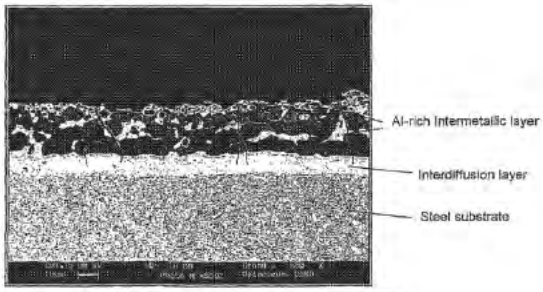


Fig.2 10μm

In contrast, Figure 2 shows a steel substrate coated with only the interdiffusion and intermetallic layers, unlike the four-layer structure of Figure 1. This two-layer coating yields inferior weldability. *Id.* at 3:57–61.

The Asserted Patents describe fabrication parameters to achieve the four-layer structure, *e.g.*, Figure 1, which is obtained "when aluminum- or aluminum alloy pre-coated steel sheets, whose thickness range from, e.g., 0.7 to 3 mm, are heated for 3 to 13 minutes . . . in a furnace heated to a temperature of 880 to 940° C." *Id.* at 6:63–7:3; Fig. 7. The Asserted Patents further describe a heating rate Vc in a precise range and explain that control of the heating rate Vc is a key factor because it "controls directly the nature and the morphology of the alloyed layers which are formed." *Id.* at 7:12–21. The "'heating rate' reflects the temperature rise which is experienced by the pre-coated steel upon being located in the preheated furnace." *Id.* The Asserted Patents additionally describe the conditions preferred to obtain the desired coating thickness through hot-stamping. *E.g., id.* at 5:9–32, 10:46–11:39.

The Asserted Patents explain that it is preferrable if the hot stamped steel has certain characteristics. For example, if the intermetallic and superficial layers are "essentially continuous (i.e.: occupying at least 90% of the level corresponding to the considered layer)," and less than

[redacted]

10% of the intermetallic layer is present at the extreme surface, then the steel will have high weldability. *Id.* at 6:52–56. Further, the Asserted Patents describe the inventors' discovery that "a fully martensitic structure is linked to the amount of deformation in the hot forming operation." *Id.* at 10:65–67. Accordingly, the Asserted Patents disclose that cooling the hot stamped part at sufficiently high cooling rates[3] results in a "fully martensitic" state—a hard and brittle microstructural phase associated with "superior mechanic resistance" and other benefits. *Id.* at 13:30–50. Fig. 4 illustrates the fully martensitic microstructure obtained after cooling at an optimal rate of 60° C/s, in contrast to Fig. 3 showing "partial bainitic or ferritic" (*i.e.*, less hard than fully martensitic) transformation obtained at a lower cooling rate of 30° C/s.

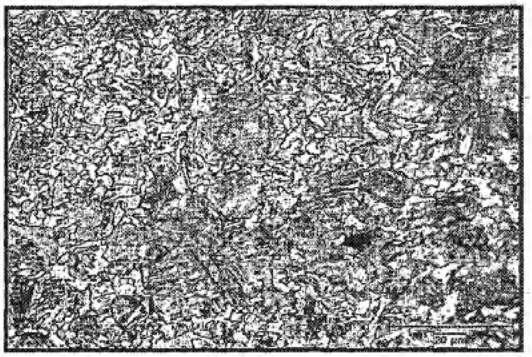


Fig. 3 10μm

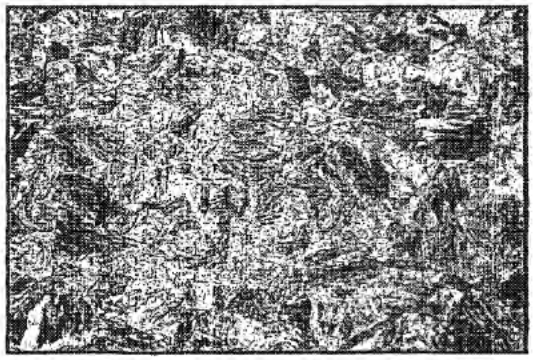


Fig. 4 10 μm

Accordingly, the Asserted Claims recite a hot stamped coated steel product or a precoated steel product that comprises (1) a strip of base steel having a first side and a second side, and (2) 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, where the coating results from interdiffusion between the base steel and an aluminum or aluminum alloy pre-coating; where the coating includes: (a) an interdiffusion layer, (b) an intermediate layer, (c) an intermetallic layer, and (d) a superficial layer; and where the coating has a thickness greater than 30 μm. *Id.* at Cls. 1, 21, 24; JX-0001 at Cl. 1. In some claims, the interdiffusion, intermediate, intermetallic, and superficial layer each have a different mean

[3] In the context relevant herein, "cooling rate" refers to the "mean rate between the exit of the heated blank from the furnace, down to 400° C." *Id.* at 11:14–16.

[redacted]

composition from one another. JX-0001 at Cls. 1–25. In other claims, certain of the four layers have different mean iron compositions. JX-0002 at Cls. 1–30. And in other claims, the four layers have different mean aluminum compositions. *Id.* at Cls. 24–30.

E. The Products at Issue

1. VinFast's Accused Products

VinFast has imported into and sold within the United States the VF 8 and the VF 9, which are electric mid-size sports utility vehicles (SUVs). The VF 8 contains [redacted] Al-coated steel parts, and the VF 9 contains [redacted] Al-coated steel parts. CX-0312.

VinFast sources each of the [redacted] Al-coated steel parts from either [redacted] or [redacted] CX-0312; CX-0019 at 61:12–19. Each of these parts is comprised of a material that VinFast refers to as [redacted] *See* CX-0312. That term refers to [redacted] CX-0307; CX-0017 45:20–46:5. Both [redacted] and [redacted] have [redacted] CX-0019 at 99:14–100:4, 114:16–115:18.

2. The Domestic Industry Products

The Domestic Industry Products in this Investigation are high-strength Al-alloy coated steel developed by ArcelorMittal and produced by ArcelorMittal, its licensees and sub-licensees and intended for use in automobiles. The DI Products include two categories—DI Precursor Products and DI Direct Products.

a) The DI Precursor Products

DI Precursor Products are Al-coated steel products manufactured by ArcelorMittal's licensees in the United States: AM/NS Calvert and [redacted] Inc. CX-0076; CX-0077. The DI Precursor Products produced by ArcelorMittal are branded as USIBOR and DUCTIBOR "press hardened steels." CX-0079 ¶¶ 41, 42; CX-0006 at 111:20–23. The USIBOR and DUCTIBOR families include base steel products of deferring tensile strengths, fracture strains,

[redacted]

and coating weight, each thus suitable for a different structural and safety component of a car body. They are sold under the trade names USIBOR 1500,[4] USIBOR 2000, DUCTIBOR 450, DUCTIBOR 500, and DUCTIBOR 1000 ([redacted] sells equivalent products under the trade name [redacted]). CX-0079 ¶¶ 41, 42; CX-0081 at 23–30. The DI Precursor Products are produced at varying coating weights, including AS 80 and AS 150. CX-0006 at 81:17–82:10. "AS 150" refers to an aluminum-silicone coating that is nominally 150 g/m^2 between the two sides of the base steel, and "AS 80" refers to an aluminum-silicone coating that is nominally 80 g/m^2 between the two sides of the base steel. *E.g.,* CX-0581 at AM-ITC-0093898; CX-0079 ¶¶ 41, 42.

The AS 150 coating has a thickness range of 20 to 33 µm, while AS 80 has a thickness range of 13 to 20 µm. CX-0581 at AM-ITC-0093890. AS 150 is the standard coating used in the automotive industry, and the vast majority of the DI Precursor Products (including [redacted]) include a coating weight of AS 150. CX-0008 at 39:5–8; CX-0689; CX-0663; CX-0112; CX-0719 at [redacted]; CX-0447 at [redacted]; CX-0025 at 127:8–17; CX-0638 at AM-ITC-0095444; CX-0349; CX-0079 ¶ 43. According to the Asserted Patents, a homogenous pre-coating thickness range of 20–33 µm provides benefits including "favorable layer disposal," reduced fouling of rollers, better paintability, and improved corrosion resistance. *See* JX-0002 at 7:36–40; *see id.* at 5:9–63; CX-0079 ¶ 42.

b) The DI Direct Products

DI Precursor Products are processed via hot-stamping (*i.e.*, heated and press-hardened) into DI Direct Products according to ArcelorMittal recommendations and customer specifications. CX-0079 ¶ 44; CX-0006 at 49:16–20. The DI Direct Products are automotive products used to form an automobile's steel frame, including door rings, bumper beams, door reinforcements, floor and roof reinforcements, among others, as illustrated below. CX-0042 at 3–5.

[4] Initially, Arcelor differentiated between uncoated and precoated Usibor 1500 with a "P" (e.g., Usibor 1500 and Usibor 1500P). Over time, Arcelor referred to precoated Usibor 1500 with and without the "P."

[redacted]

The DI Direct Products are manufactured by "Tier 1" manufacturers (and in some instances, the automotive manufactures themselves), who are licensed or otherwise authorized to practice the Asserted Patents. *Id.*; CX-0042 at 13; CX-0008 at 38:6–23. The Tier 1 manufacturers include [redacted] (including its subsidiaries that perform hot-stamping). CX-0079 ¶¶ 44–45; *see e.g.*, CX-0349.

F. ArcelorMittal's Testing of VinFast and DI Products

To analyze whether the Accused Products and the DI Direct Products practice the Asserted Patents, ArcelorMittal's experts Dr. James Fekete and Dr. Donald Baskin developed a testing protocol that laboratories contracted by ArcelorMittal could use to perform testing on sample Accused Products and DI Direct Products. *See* CX-0092. As Dr. Fekete will testify, he consulted with Dr. Baskin on the different steps of the protocol before Dr. Baskin drafted the protocol, the two coordinated in each step of the protocol's development, and Dr. Fekete approved of the protocol before testing began. CX-0079 ¶¶ 48–51. VinFast does not challenge the testing protocol that Drs. Fekete and Baskin developed. *See* CX-0085; CX-0086.

Dr. Baskin coordinated the testing of the parts by working with three accredited testing labs—ATS; SGS; and Secat. *See* CX-0079 ¶ 49; *see also* CX-0825; CX-0823; CX-0821. Additionally, because Secat did not have the equipment to perform spark atomic emission spectroscopy to determine the chemical composition of the steel substrate, ArcelorMittal asked Secat to subcontract out that work to IMR Test Labs, another accredited lab. *See* CX-0824.

To help evaluate whether the VinFast Products infringe the Asserted Patents, Dr. Baskin

[redacted]

coordinated the testing of 34 sample VinFast VF 8 parts. These parts came from two sources. First, VinFast produced to ArcelorMittal the below [redacted] VF 8 parts.

Part Code	Description	Lab	Lab's Part Reference No.
[redacted]	[redacted]	SGS	345114.11, 345114.12
		SGS	345114.9, 345114.10
		SGS	345114.15, 345114.16
		SGS	345114.19, 345114.20
		SGS	345114.13, 345114.14
		SGS	345114.17, 345114.18
		SGS	345114.5, 345114.6
		SGS	345114.7, 345114.8
		SGS	345114.3, 345114.4
		SGS	345114.1, 345114.2
		ATS	[redacted]
		ATS	[redacted]

Second, Mr. Scott Pachy, the Project Manager at Special Projects Inc., removed 12 parts from a VinFast VF 8 purchased by ArcelorMittal. As Dr. Fekete will testify, he identified parts from the VF 8 for testing from a list of hot stamped steel parts produced by VinFast, and observed Mr. Pachy appropriately remove the identified parts. *See* CX-0079 ¶ 53; CX-0312. The following parts were removed from the VF 8 and tested:

Part Code	Description	Lab	Lab's Part Reference No.
[redacted]		ATS	3
		ATS	6
		ATS	11
		ATS	13
		ATS	12
		ATS	14
		ATS	16
		ATS	17
		ATS	18
		ATS	19
		ATS	20
		ATS	21

The test results for the VinFast parts are found at CX-0826–59 and CX-0879, and physical samples that were tested are found at CPX-0001–34. *See also* Appx. ¶¶ 1–10.

To help evaluate whether the DI Direct Products practice the Asserted Patents, Dr. Baskin coordinated the testing of 19 parts[5] that were produced to ArcelorMittal by its Tier 1 hot stamping

[5] ArcelorMittal did not test 3 parts produced by Tier 1 hot stampers. First, ArcelorMittal did not test a [redacted] part received from [redacted] because those parts were sent from a [redacted] facility in [redacted], indicating they are not part of the domestic

[redacted]

partners or otherwise purchased according to instructions provided by the Tier 1 hot stamping partners. The following parts were tested:

Description	Lab	Part Number (and Lab Ref. No.)
[redacted]	ATS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	Secat	[redacted]
[redacted]	SGS	[redacted]
[redacted]	SGS	[redacted]
[redacted]	ATS	[redacted]
[redacted]	ATS	N/A
[redacted]	SGS	[redacted]
[redacted]	Secat	[redacted]
[redacted]	Secat	[redacted]
[redacted]	SGS	[redacted]
[redacted]	SGS	[redacted]

The test results for the DI Direct Products are found at CX-0860–78 and CX-0880 and physical samples that were tested are found at CPX-0035–53. *See also* Appx. ¶¶ 11–20.

II. JURISDICTION

Complainant ArcelorMittal, as the owner of all right, title, and interest in the Asserted Patents, has statutory standing to bring this Investigation. 19 C.F.R. § 210.12(a)(7); CX-0029; CX-0030; *Matrix Organic Light-Emitting Diode Display Panels and Modules for Mobile Devices, and Components Thereof*, Inv. No. 337-TA-1351, Comm'n Op., 2024 WL 2271608, at *7–8 (May 15, 2024).

The Commission has subject matter jurisdiction over this Investigation because ArcelorMittal filed a complaint alleging a Section 337 violation. 19 U.S.C. § 1337(a)(l)(B); *see Amgen, Inc. v. U.S. Int'l Trade Comm'n*, 902 F.2d 1532, 1535–37 (Fed. Cir. 1990). The

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industry. *See* CX-1127; CX-1128. Second, ArcelorMittal tested only one of the two door rings received from [redacted] ArcelorMittal believed that the door rings provided by [redacted] were from the same vehicle until December 4 when [redacted] clarified in deposition that was not the case. *See* CX-0028 at 30:24–31:13, 31:19–23. At that point, it was too late to add new testing results to the Investigation, thus the second door ring was not tested.

Commission has personal jurisdiction over Respondents by virtue of their participation in this Investigation. *E.g., Certain Microfluidic Devices*, Inv. No. 337-TA-1068, ID, 2018 WL 5279172, at *16 (Sept. 20, 2018); *Certain Windshield Wiper Devices and Components Thereof*, Inv. No. 337-TA-881, ID at 5 (May 8, 2014) (unreviewed in relevant-part). The Commission has *in rem* jurisdiction over the Accused Products by virtue of their importation into the United States by Respondents. 19 U.S.C. § 1337(a)(1)(B); *Certain Microfluidic Devices*, 2018 WL 5279172, at *16 (a single instance of importation is sufficient for *in rem* jurisdiction). Respondents stipulated that at least one unit of each of the Accused Products has been imported into the United States or will be imported by the close of evidence in this case, by or on behalf of Respondents, within the meaning of 19 U.S.C. § 1337(a)(1)(B). CX-0822 at 2. Respondents further stipulated that as of September 18, 2024, (i) the inventories of the Accused Products were maintained in the United States by or on behalf of Respondents and third-party dealerships; (ii) they have offered for sale and/or sold at least one of each Accused Product to customers in the United States; and (iii) they have offered for sale and/or sold at least one of each Accused Product to third-party dealers in the United States. *Id.* at 3.

III. THE '602 PATENT

A. Claim Construction

1. Level of Ordinary Skill in the Art

Complainant contends that a POSITA as of the priority date of the Asserted Patents would have at least an undergraduate degree in materials science, manufacturing engineering, mechanical engineering, or equivalent knowledge, training, or experience, with a least two years of experience working on the development of steels. CX-0079 ¶¶ 38–39; CX-0082 ¶¶ 43–44. Respondents contend that a POSITA would have the equivalent educational background but at least two years of experience working in metallurgy. CX-0086 ¶¶ 68–69. The parties agree that the analysis is the same under either definition. CX-0082 ¶ 46; CX-0086 ¶ 70; CX-0085 ¶ 30.

2. Agreed Constructions

The parties' agreed constructions apply as set forth below and in the Joint Claim

[redacted]

Construction Chart:

Pat. No.	Claim Term	Construction
'602 Patent: Cls. 1, 18, 21, 24	interdiffusion layer	Plain and ordinary
'602 Patent: Cls. 1, 12, 21, 24, 28	intermediate layer	Plain and ordinary
'602 Patent: Cls. 1, 21, 24	intermetallic layer	Plain and ordinary
'602 Patent: Cls. 1, 21, 24	superficial layer	Plain and ordinary
'602 Patent: Cl. 2	level	Plain and ordinary
'602 Patent: Cls. 1, 20-22	mean iron composition	Plain and ordinary
'602 Patent: Cls. 24, 25	mean aluminum composition	Plain and ordinary
'602 Patent: Cl. 2	quasi continuous	Occupying at least 90% of the level corresponding to the considered layer(s)

CX-0091. As set forth in Section III.F.6, the claim terms "layer" and "level" are not indefinite.

B. Infringement

The VinFast Accused Products infringe claims 1–3, 7–9, 20–22, 24, 26 of the '602 Patent. VinFast produced documentation confirming that each of the parts listed for the VF 8 and VF 9 are made from [redacted] *E.g.*, CX-0312; CX-0019 at 61:12–19. As the evidence will show, "[redacted] refers to [redacted] *E.g.*, CX-0307; CX-0019 at 45:20-46:5; 99:14-100:4, 114:16-115:18. The evidence will show that VinFast's suppliers have [redacted] *E.g.*, CX-0315, CX-0316; CX-0317; CX-0307; CX-0019 at 99:14-100:4, 114:16-115:18; CX-0017 at 76:4-7. Accordingly, as Dr. Fekete will testify, the tested VF 8 parts are sufficient to show infringement of the VF 9 parts made from the same base material.

Dr. Brown asserts that "[w]ithout any testing for VF 9," Dr. Fekete failed to establish the VF 9 infringes. This assertion ignores not only that [redacted]

[redacted] as discussed above, but also that the documentation provided to VinFast's suppliers ensures the produced parts meet VinFast's standards. Additionally, early in this Investigation, ArcelorMittal requested VinFast produce parts for the VF 9. During a meet and confer, counsel for VinFast represented that [redacted] *See* CX-1129. Consistent with that representation, VinFast failed to produce any VF 9 parts for testing.

Accordingly, as explained on an element-by-element basis below, test results and documents produced in this Investigation establish the VinFast Accused Products infringe.

1. Claim 1

a) 1[pre] A precoated steel product comprising:

The VF 8 and VF 9 each contain parts that infringe element 1[pre]. CX-0079 ¶ 57. The VF 8 and VF 9 are made of the base material "[redacted] *E.g.,* CX-0079 ¶ 57; CX-0312; CX-0307 [redacted] CX-0017 at 45:12-46:14. As Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are steel products that were coated prior to hot stamping. *E.g.,* Appx. ¶¶ 1, 2. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 each contain parts that infringe element 1[a]. CX-0079 ¶ 58. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a strip of base steel having a first and second side. *E.g.,* Appx. ¶¶ 1, 2. Control plans also explain that the parts are formed from "mill sheets" that have a "dimension" that is substantially longer than the thickness of the base steel. *E.g.,* CX-0315; CX-0017 at 76:4–7. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

c) 1[b] a coating on at least one of the first side of the strip of base steel and

[redacted]

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:

The VF 8 and VF 9 each contain parts that infringe element 1[b]. CX-0079 ¶¶ 59–60. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise 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. *E.g.,* Appx. ¶ 2. Additionally, [redacted] *E.g.,* CX-0315; CX-0017 at 76:4–7.

The evidence will further show that this coating results from interdiffusion, *i.e,.* the exchange of atoms between the base steel and an aluminum or aluminum alloy pre-coating. The VF 8 and VF 9 are made of the base material "[redacted] *E.g.,* CX-0079 ¶ 57; CX-0312; CX-0307 [redacted] CX-0017 at 45:12-46:14. As Dr. Fekete will testify, the varying iron and aluminum compositions in the coating layers confirm that interdiffusion has occurred between the base steel and the aluminum pre-coating. *E.g.,* Appx. ¶¶ 3, 4, 10. [redacted] *E.g.,* CX-0315. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 each contain parts that infringe element 1[c]. CX-0079 ¶¶ 61–63. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, an interdiffusion layer having a first mean iron composition. *E.g.,* Appx. ¶¶ 2, 3, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 61; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The first mean iron composition was calculated as the average of three measurements of iron composition from the same coupon. *E.g.,* Appx. ¶¶ 3, 10. [redacted]

[redacted] *E.g.,* CX-0315. VinFast only disputes whether the VinFast Accused Products' interdiffusion region is a "layer." As explained, VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 each contain parts that infringe element 1[d]. CX-0079 ¶¶ 64–66. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, an intermediate layer having a second mean iron composition different from the first mean iron composition. *E.g.,* Appx. ¶¶ 2, 3, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 64; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The second mean iron composition was calculated as the average of three measurements of iron composition. *E.g.,* Appx. ¶¶ 3, 10. VinFast only disputes whether the VinFast Accused Products' intermediate region is a "layer." As explained, VinFast is wrong. *See* Sections III.C.1 and III.C.2.

f) 1[e] (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

The VF 8 and VF 9 each contain parts that infringe element 1[e]. CX-0079 ¶¶ 67–69. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, 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. *E.g.,* Appx. ¶¶ 2, 3, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 67; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The third mean iron composition was calculated as the average of three measurements of iron composition and is both different from the first mean iron composition of the interdiffusion layer and the second mean iron

[redacted]

composition of the intermediate layer and is higher than the second mean iron composition. *E.g.,* Appx. ¶¶ 3, 10. VinFast only disputes whether the VinFast Accused Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 each contain parts that infringe element 1[f]. CX-0079 ¶¶ 70–71. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, a superficial layer having a fourth mean iron composition different from the third mean iron composition. *E.g.,* Appx. ¶¶ 2, 3, 10. The fourth mean iron composition was calculated as the average of three measurements of iron composition and is different from the third mean iron composition of the intermetallic layer. *E.g.*, *id.* A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 70; JX-0002 at Fig. 1; CX-0010 at 110:3-23. VinFast only disputes whether the VinFast Accused Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

h) 1[g] wherein the coating has a thickness greater than 30 µm.

The VF 8 and VF 9 each contain parts that infringe element 1[g]. CX-0079 ¶ 72. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that has a thickness greater than 30 µm. *E.g.,* Appx. ¶ 6. [redacted] *E.g.,* CX-0315; CX-0017 at 76:4-7. VinFast disputes that the VinFast Accused Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Sections III.C.1 and III.C.2.

2. Claim 2

a) [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.

[redacted]

The VF 8 and VF 9 each contain parts that infringe claim 2. CX-0079 ¶¶ 73–74. As the evidence will show and as Dr. Fekete will testify, a comparison of the SEM micrographs to Figure 1 of the Asserted Patents confirms a four-layer structure. *E.g.,* CX-0079 ¶ 73; JX-0002 at Fig. 1; CX-0010 at 110:3-23. Testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts confirm that the coating has four layers. *E.g.,* Appx. ¶¶ 2, 10. Dr. Fekete will also testify that the coloring of the intermetallic layers (layer (c)) and superficial layers (layer (d)) in the SEM micrographs shows that each occupies at least 90% of the level to which each layer corresponds, meaning that each layer is quasi continuous. *E.g.,* CX-0079 ¶ 74; Appx. ¶ 2. Dr. Fekete will testify that for each part tested, less than 10% of layer (c) is present at the extreme surface furthest away from the base steel. *E.g., id.* VinFast disputes that the VinFast Accused Products satisfy claim 2. VinFast is wrong. *See* Section III.C.4.

3. Claim 3

a) 3[a] 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%;

The VF 8 and VF 9 each contain parts that infringe element 3[a]. CX-0079 ¶ 75. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts contain parts wherein the base steel includes the following components by weight based on total weight: 0.15%<carbon<0.5%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0017 at 76:4-7; CX-0315, CX-0316. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

b) 3[b] 0.5%<manganese<3%;

The VF 8 and VF 9 each contain parts that infringe element 3[b]. CX-0079 ¶ 76. As the

[redacted]

evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: 0.5%<manganese<3%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

c) 3[c] 0.1%<silicon<0.5%;

The VF 8 and VF 9 each contain parts that infringe element 3[c]. CX-0079 ¶ 77. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: 0.1%<silicon<0.5%. *E.g.*, Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

d) 3[d] 0.01%<chromium<1%;

The VF 8 and VF 9 each contain parts that infringe element 3[d]. CX-0079 ¶ 78. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: 0.01%<chromium<1%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from [redacted]

[redacted] *E.g.*, CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.*, CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

e) 3[e] titanium<0.2%;

The VF 8 and VF 9 each contain parts that infringe element 3[e]. CX-0079 ¶ 79. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: titanium<0.2%. *E.g.*, Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.*, CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.*, CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

f) 3[f] aluminum<0.1%;

The VF 8 and VF 9 each contain parts that infringe element 3[f]. CX-0079 ¶ 80. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: aluminum<0.1%. *E.g.*, Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.*, CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.*, CX-0315; CX-0316; CX-

[redacted]

0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

g) 3[g] phosphorus<0.1%;

The VF 8 and VF 9 each contain parts that infringe element 3[g]. CX-0079 ¶ 81. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: phosphorus<0.1%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted]. *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

h) 3[h] sulfur<0.05%;

The VF 8 and VF 9 each contain parts that infringe element 3[h]. CX-0079 ¶ 82. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following components by weight based on total weight: sulfur<0.05%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

i) 3[i] 0.0005%<boron<0.08%;

The VF 8 and VF 9 each contain parts that infringe element 3[i]. CX-0079 ¶ 83. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are parts wherein the base steel includes the following

components by weight based on total weight: 0.0005%<boron<0.08%. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

j) 3[j] and further comprises iron and impurities inherent in processing.

The VF 8 and VF 9 each contain parts that infringe element 3[j]. CX-0079 ¶ 84. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts contain parts wherein the base steel includes iron and impurities inherent in processing. *E.g.,* Appx. ¶ 7. Dr. Fekete will testify that the specification for parts made from "[redacted] *E.g.,* CX-0312; CX-0017 at 45:12-46:14. [redacted] *E.g.,* CX-0315; CX-0316; CX-0017 at 76:4-7, 79:6-11. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

4. Claim 7

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

The VF 8 and VF 9 each contain parts that infringe claim 7. CX-0079 ¶ 85. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation shows that the base steel includes a ratio of titanium to nitrogen in weight [redacted] in excess of 3.42. *E.g., id.*; Appx. ¶ 7. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

5. Claim 8

a) [8] The precoated steel product as recited in claim 2 wherein a ratio of

[redacted]

titanium to nitrogen in the base steel in weight [redacted] is in excess of 3.42.

The VF 8 and VF 9 infringe this claim for the same reason as '602 Patent claim 7. *See* Section III.B.4; *see also* CX-0079 ¶ 86; Appx. ¶ 7. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

6. Claim 9

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

The VF 8 and VF 9 each contain parts that infringe claim 9. CX-0079 ¶ 87. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation show that, with one exception out of the twenty-four tested parts, the thickness of the interdiffusion layer (layer (a)) of the coating is less than 15 µm. *E.g., id.*, Appx. ¶ 6. Dr. Fekete will also testify that

[redacted] *E.g.,* CX-0315; CX-0017 at 76:4-7. VinFast disputes that the VinFast Accused Products' layer (a) has a thickness less than 15 µm. VinFast is wrong. *See* Section III.C.5.

7. Claim 20

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

The VF 8 and VF 9 each contain parts that infringe claim 20. CX-0079 ¶¶ 88–89. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts are precoated steel products wherein the fourth mean iron composition is lower than the third mean iron composition. *E.g.,* Appx. ¶¶ 2, 3, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 88; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The fourth mean iron composition was calculated as the average of three measurements of iron composition and is lower than the third mean iron composition of the intermetallic layer. *E.g.,* Appx. ¶¶ 3, 10. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

8. Claim 21

a) 21[pre] A precoated steel product comprising:

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation

[redacted]

1[pre]. *See* Section III.B.1.a; *see also* CX-0079 ¶ 90; CX-0312; CX-0307 [redacted] CX-0017 at 45:12-46:14; Appx. ¶¶ 1, 2. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[a]. *See* Section III.B.1.b; *see also* CX-0079 ¶ 91; Appx. ¶¶ 1, 2; CX-0315; CX-0017 at 76:4–7. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

c) 21[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 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:

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[b]. *See* Section III.B.1.c; *see also* CX-0079 ¶¶ 92–93; CX-0315; CX-0017 at 45:12-46:14, 76:4–7; CX-0312; CX-0307 [redacted] Appx. ¶¶ 2, 3, 4, 10. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[c]. *See* Section III.B.1.d; *see also* CX-0079 ¶¶ 94–96; Appx. ¶¶ 2, 3, 10; JX-0002 at Fig. 1; CX-0010 at 110:3-23; CX-0315. VinFast only disputes whether the VinFast Accused Products' interdiffusion region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[d]. *See* Section III.B.1.e; *see also* CX-0079 ¶¶ 97–99; Appx. ¶¶ 2, 3, 10; JX-0002 at Fig. 1; CX-0010 at 110:3-23; VinFast only disputes whether the VinFast Accused Products' intermediate region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

[redacted]

mean iron composition being higher than the second mean iron composition, and

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[e]. *See* Section III.B.1.f; *see also* CX-0079 ¶¶ 100–102; Appx. ¶¶ 2, 3, 10; JX-0002 at Fig. 1; CX-0010 at 110:3-23. VinFast only disputes whether the VinFast Accused Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 each contain parts that infringe element 21[f]. CX-0079 ¶¶ 103–104. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, a superficial layer having a fourth mean iron composition different from the first, second and third mean iron compositions. *E.g.*, *id.*; Appx. ¶¶ 2, 3, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g.*, *id.*; JX-0002 Fig. 1; CX-0010 at 110:3-23. The fourth mean iron composition was calculated as the average of three measurements of iron composition and is different from the first, second and third mean iron compositions. *Id.* VinFast only disputes whether the VinFast Accused Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

h) 21[g] wherein the coating has a thickness greater than 30 µm.

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[g]. *See* Section III.B.1.h; CX-0079 ¶ 106; Appx. ¶ 6; CX-0315; CX-0017 at 76:4-7. VinFast disputes that the VinFast Accused Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Section III.C.3.

9. Claim 22

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

The VF 8 and VF 9 infringe this claim for the same reason as '602 Patent claim 20. *See* Section III.B.7; *see also* CX-0079 ¶¶ 107–108; Appx. ¶¶ 2, 3, 10; JX-0002 at Fig. 1; CX-0010 at 110:3-23. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

[redacted]

10. Claim 24

a) 24[pre] A precoated steel product comprising:

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[pre]. *See* Section III.B.1.a; *see also* CX-0079 ¶ 109; CX-0312; CX-0307; CX-0017 at 45:12-46:14; Appx. ¶¶ 1, 2. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[a]. *See* Section III.B.1.b; *see also* CX-0079 ¶ 110; Appx. ¶¶ 1, 2; CX-0315; CX-0017 at 76:4–7. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

c) 24[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 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:

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[b]. *See* Section III.B.1.c; *see also* CX-0079 ¶¶ 111–112; Appx. ¶¶ 2, 3, 4, 10; CX-0100 (Fekete Rpt. Ex. L); CX-0315; CX-0017 at 76:4–7; CX-0312; CX-0307; CX-0017 at 45:12-46:14. VinFast does not dispute the VF 8 and VF 9 satisfy this limitation.

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

The VF 8 and VF 9 each contain parts that infringe element 24[c]. CX-0079 ¶¶ 113–115. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, an interdiffusion layer having a first mean aluminum composition. *E.g.,* Appx. ¶¶ 2, 4, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 61; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The first mean aluminum composition was calculated as the average of three measurements of aluminum composition. *E.g.,* Appx. ¶¶ 4, 10. [redacted] *E.g.,* CX-0315. VinFast only disputes

[redacted]

whether the VinFast Accused Products' interdiffusion region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 each contain parts that infringe element 24[d]. CX-0079 ¶¶ 116–118. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, an intermediate layer having a second mean aluminum composition different from the first mean aluminum composition. *E.g.,* Appx. ¶¶ 2, 4, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 116; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The second mean aluminum composition was calculated as the average of three measurements of aluminum composition. *E.g.,* Appx. ¶¶ 4, 10. VinFast only disputes whether the VinFast Accused Products' intermediate region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

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

The VF 8 and VF 9 each contain parts that infringe element 24[e]. CX-0079 ¶¶ 119–121. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, an intermetallic layer having a third mean aluminum composition different from the first and second mean aluminum compositions. *E.g.,* Appx. ¶¶ 2, 4, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 119; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The third mean aluminum composition was calculated as the average of three measurements of aluminum composition and is different from the first and second mean aluminum compositions. *E.g.,* Appx. ¶¶ 4, 10. VinFast only disputes whether the VinFast Accused Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

[redacted]

g) 24[f] (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,

The VF 8 and VF 9 each contain parts that infringe element 24[f]. CX-0079 ¶¶ 122–124. As the evidence will show and as Dr. Fekete will testify, testing results collected during this Investigation demonstrate that the VF 8 and VF 9 parts comprise a coating that includes, proceeding from the base steel outwards, 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. *E.g.,* Appx. ¶¶ 2, 4, 10. A comparison of the SEM micrographs to Figure 1 of the Asserted Patents also confirms a four-layer structure. *E.g., id.*; CX-0079 ¶ 122; JX-0002 at Fig. 1; CX-0010 at 110:3-23. The fourth mean aluminum composition was calculated as the average of three measurements of aluminum composition and is both different from the first mean aluminum composition of the interdiffusion layer, the second mean aluminum composition of the intermediate layer, and the third mean aluminum composition of the intermetallic layer and is greater than the third mean aluminum composition of the intermetallic layer. *E.g.,* Appx. ¶¶ 4, 10. VinFast only disputes whether the VinFast Accused Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.C.1 and III.C.2.

h) 24[g] wherein the coating has a thickness greater than 30 µm.

The VF 8 and VF 9 infringe this limitation for the same reason as '602 Patent limitation 1[g]. *See* Section III.B.h; *see also* CX-0079 ¶ 125; Appx. ¶ 6; CX-0315; CX-0017 at 76:4-7. VinFast disputes that the VinFast Accused Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Section III.C.3.

11. Claim 26

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

The VF 8 and VF 9 infringe this claim for the same reason as '602 Patent claim 9. *See* Section III.B.6; *see also* CX-0079 ¶ 126; Appx. ¶ 6; CX-0315; CX-0017 at 76:4-7. VinFast

[redacted]

disputes that the VinFast Accused Products' layer (a) has a thickness less than 15 μm. VinFast is wrong. *See* Sections III.C.3 and III.C.5.

C. Dr. Brown's Opinions on Infringement

As explained above, Dr. Brown does not challenge that the VinFast Accused Products meet nearly all claim limitations. For the limitations that he does dispute, his opinions are based on an improper claim construction and an erroneous analysis of the evidence.

1. Dr. Brown's Opinions Depend on an Improper Meaning of "Layer"

Dr. Brown contends that under the "plain and ordinary" meaning of "layer," the claimed layers must be fully continuous and homogeneous across the entire part. *E.g.,* CX-0085 ¶¶ 38, 48 (arguing that a layer "must be continuous and homogeneous"). Dr. Brown confirmed in deposition that this was the basis of his opinions concerning noninfringement. *E.g.,* CX-0020 at 130:12–132:22. Through this proposed construction, Dr. Brown improperly attempts to add three requirements to the ordinary meaning of "layer": (1) it must be fully continuous; (2) it must be fully homogeneous; and (3) the continuity and homogeneity must exist across the entire part. *Id.* As discussed below, this construction is not only untethered from the intrinsic and extrinsic record but contrary to the basic tenets of claim construction and Dr. Brown's invalidity opinions.

a) Dr. Brown Provides No Intrinsic Support for His Construction

Dr. Brown does not cite to any intrinsic evidence in support of his proposed construction. *E.g.,* CX-0085 ¶¶ 37–46. The Federal Circuit has repeatedly held that the starting point for determining the plain and ordinary meaning of a claim term is the intrinsic record, including the claims, specification, and prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005); *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Without any intrinsic support, Dr. Brown's attempt to import requirements outside of the specification into the plain meaning of "layer" should be rejected. *E.g., Asyst Techs., Inc. v. Emtrak, Inc.*, 402 F.3d 1188, 1193 (Fed. Cir. 2005) (rejecting a claim construction not based on any intrinsic evidence); *Bennett Regulator Guards, Inc. v. Atl. Gas Light Co.*, 825 F. App'x 773, 777–79 (Fed. Cir. 2020) (same).

[redacted]

Because he cannot cite to any intrinsic evidence, Dr. Brown relies on out-of-context statements from the deposition of Dr. Pascal Drillet, a named inventor on the Asserted Patents. Every deposition citation he relies on is unrelated to the specification or figures in the patents, but rather to images not from the Asserted Patents. CX-0085 ¶¶ 37–38; CX-0010 at 99:5–100:6 (discussing Fig. 22 from Exhibit 4 (RX-0019) at AM-ITC-0014507), 76:23–77:24 (discussing figure titled "SEM Microstructures in BSE Mode" from Exhibit 3 (RX-0010) at AM-ITC-0012168). Dr. Drillet was never asked to compare these external images to the claim language. *See id.* And while Dr. Brown argues that these statements support importing the requirements that a claimed layer be continuous and homogeneous across the entire part, the deposition questions related to the top two layers in the external images, the relationship between those layers, and how to distinguish a layer from a band of material. *E.g., id.* at 99:5–100:6 (questioning whether "a band of intermetallic compound" is a layer or a phase), 100:16–24 (question relates to the surface or top layer and whether it is a phase or a layer), 76:23–77:24 (question relates to "the aluminum enrichment area"). Dr. Brown's deposition citations thus do not support his proposed construction. Moreover, even if the citations concerned the Asserted Patents, inventor testimony is not a substitute for intrinsic support. *Convolve, Inc. v. Compaq Comput. Corp.*, 812 F.3d 1313, 1319 (Fed. Cir. 2016) (inventor declaration "not enough to overcome the language of the claims and the disclosures in the specification"); *see also Roton Barrier, Inc. v. Stanley Works*, 79 F.3d 1112, 1126 (Fed. Cir. 1996) ("We have previously stated that an inventor's 'after-the-fact testimony is of little weight compared to the clear import of the patent disclosure itself.'").

b) Dr. Brown's Construction Is Contrary to the Intrinsic Record

Dr. Brown's proposed construction runs counter to the intrinsic record. As the evidence will show, and as Dr. Fekete will testify, the claims do not require the layer to be continuous and homogenous across the entire part.

The claim language contains no requirement that the layers have to be continuous and homogeneous across the entire part. *Phillips*, 415 F.3d at 1314 ("[C]laims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of

a claim term."). Claim 2 of the '602 Patent, which depends from claim 1, makes explicit that layers can be "quasi continuous" and thus do not have to be continuous across the entire part. JX-0002 at Claim 2. A construction that would require layers to be "continuous" would render claim 2 meaningless, a disfavored result. *Intell. Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1378 (Fed. Cir. 2018); *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1362 (Fed. Cir. 2008).

This understanding is further supported by the specification and prosecution history. For example, with respect to the intermetallic layer (c) and the superficial layer (d), the specification provides that:

> Layers (c) and (d) are quasi-continuous, i.e. occupying at least 90% of the level corresponding to the considered layer. In particular, layer (c) does not reach the extreme surface except very exceptionally. Anyway, this layer (c) occupies less than 10% of the extreme surface.

JX-0002 at 12:57–60. This makes clear that some part of layer (c) can occupy a portion of the level corresponding to layer (d), which directly contradicts Dr. Brown's proposed construction requiring the claimed layers be continuous and homogenous across the entire part. Other portions of the specification confirm this understanding as the patents explain that "[t]he inventors have discovered that high weldability is especially obtained when layers (c) and (d) are ***essentially*** continuous (i.e.: occupying at least 90% of the level corresponding to the considered layer) and when less than 10% of layer (c) is present at the extreme surface of the part." *Id.* at 6:52–56. Dr. Brown's attempt to apply a new construction to the term "layer" is thus contrary to the intrinsic evidence and should be rejected. *UltimatePointer, L.L.C. v. Nintendo Co.*, 816 F.3d 816, 823–24 (Fed. Cir. 2016) (rejecting construction "divorced" from the intrinsic evidence).

Dr. Brown's proposed claim construction is also contradicted by his own invalidity opinions. With respect to invalidity, Dr. Brown agrees that the Asserted Patents make clear that a layer does not need to be fully continuous or homogeneous. For example, Dr. Brown states that "according to the '602 Patent, 'layer' itself does not need to be continuous." *E.g.,* CX-0086 ¶ 1099. With respect to homogeneity, in his invalidity report, Dr. Brown states that Figure 1 of the

[redacted]

patent—which is a preferred embodiment of the claimed invention (*see* JX-0002 at 3:54–55)—discloses only "an apparent degree of homogeneity." *Id.* ¶ 1082. Dr. Brown's inconsistent positions with respect to noninfringement and invalidity illustrate how contrived his proposed construction of "layer" is.

c) Dr. Brown's Construction Would Improperly Exclude Figure 1

Dr. Brown testified that under his proposed construction, Figure 1 of the Asserted Patents would not satisfy the Asserted Claims because the superficial layer is not continuous, despite Figure 1 being described as a preferred embodiment of the patented invention. JX-0002 at 3:54–55. Specifically, Dr. Brown was asked to draw a circle around the region of Figure 1 where the "aluminum-rich intermetallic area is projecting up to interrupt the superficial layer" and circled in blue the area below:

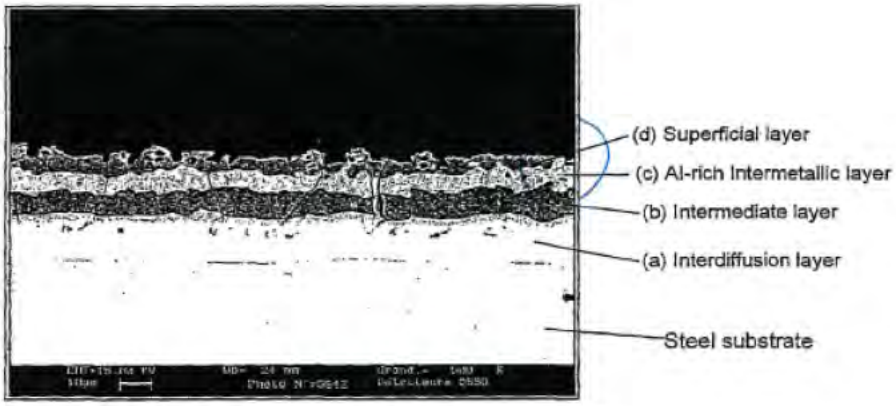

Fig. 1 10μm

CX-0020 at 81:23–83:19; *see also* CX-0461 (Brown Dep. Ex. 106 – '227 Patent) at Fig. 1. Dr. Brown conceded in his deposition that the superficial layer of Figure 1, the preferred embodiment, would not be a "layer" under his construction and therefore would not meet the claim requirements if the intermetallic layer came to the surface in that circled area. CX-0020 at 81:23–83:19. As the evidence will show, the intermetallic material does indeed come to the surface in the circled area. CX-0683 at AM-ITC-0102174 (higher resolution version of Figure 1 showing that intermetallic material comes to surface in area of interest). Dr. Brown's construction excludes a preferred

[redacted]

embodiment, a result "which is rarely, if ever correct and would require highly persuasive evidentiary support." *Kaufman v. Microsoft Corp.*, 34 F.4th 1360, 1372 (Fed. Cir. 2022).

d) Dr. Fekete's Opinions Are Not Based on a Single SEM Image

Dr. Brown disputes Dr. Fekete's conclusion that the VinFast Accused Products infringe because Dr. Brown contends that "an identification of a single SEM image is insufficient as to whether an Accused Product has any of the claimed layers." *E.g.,* CX-0085 ¶¶ 37, 39. Dr. Brown admitted in deposition that this criticism is based on his (mis)understanding that a "layer" must be "continuous," which is improper for the reasons discussed above. CX-0020 at 130:12–132:6. Regardless, Dr. Fekete does not rely on a single SEM image. As Dr. Fekete will testify, his opinions are based on his review of the testing data collected, which included significantly more than just SEM images, as well as the VinFast-produced specifications and process documents for the vehicle parts. *E.g.,* CX-0826–0859, CX-0879 (testing data for VinFast parts); CX-0307–0310, CX-0315–0317 (VinFast specifications and process documents); *E.g.,* CX-0079 ¶ 16.

Dr. Brown also cites to Dr. Drillet's deposition to support his opinion that an analysis based on one isolated image without more information "is insufficient to determine whether one or more of the claimed layers is present." *E.g.,* CX-0085 ¶ 37. At his deposition, Dr. Drillet was shown a single image with no further information and asked to analyze it on the spot during his deposition. *E.g.,* CX-0010 at 99:5–100:6 (discussing Fig. 22 from Exhibit 4 at AM-ITC-0014507). In that context, Dr. Drillet responded he could not offer analysis based on that single image. The two scenarios are not comparable, and the testing data and other information that Dr. Fekete will discuss (as explained above) shows that the Accused Products have the claimed four layers; Dr. Fekete relied on more than a single image.

e) There Is No Requirement that the Layer Be the Same Across the Entire Part

Dr. Brown also contends that the VinFast Accused Products do not infringe because "the same part can have different coating morphology" and that "appearance of the coating in certain sample locations does not establish that such coating morphology exists elsewhere on the same

[redacted]

part." *E.g.,* CX-0085 ¶¶ 40–41, 45. This argument is based on Dr. Brown's erroneous assertion that Dr. Fekete relies on one SEM image and an incorrect construction that a layer must be fully continuous and homogeneous across the entire part. *Id.* The law is also clear that only part of a product must satisfy a claim's elements to infringe. *SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1337 (Fed. Cir. 1999) ("[W]e have never required that a claim read on the entirety of an accused device in order to infringe. If a claim reads merely on a part of an accused device, that is enough for infringement."); *Bell Commc'ns Rsch., Inc. v. Vitalink Commc'ns Corp.*, 55 F.3d 615, 622–23 (Fed. Cir. 1995) (recognizing that "an accused product that sometimes, but not always, embodies a claimed method nonetheless infringes"). Moreover, as Dr. Fekete will testify, a POSITA would understand that the claimed "layer" does not have to have the same morphology across the entire part and that those in the industry would rely on the data presented by Dr. Fekete.

Dr. Brown's requirement of the same coating morphology across the entire part is also undermined by his invalidity opinions. As discussed in Sections III.F.2 and III.F.3.e, rather than collecting results from the same coupon from a single vehicle part, as was done with AcerlorMittal's testing of vehicle parts, Dr. Brown's analysis combines testing results of samples taken from different areas of the Passat 1049 to satisfy the claim elements. *E.g.,* CX-0086 ¶¶ 576–577, 579; *see also* CX-0082 ¶ 460. This position is clearly incorrect and inconsistent with Dr. Brown's noninfringement opinion requiring a "statistical" analysis to determine whether the layers are the same across the entire part. *See* CX-0020 at 119:1–12.

2. Dr. Brown's Annotations Do Not Show Noninfringement

Relying on various red boxes he has drawn on SEM images, Dr. Brown asserts that the VinFast Products do not show "homogenous and continuous four layers." *E.g.,* CX-0085 ¶¶ 42–44. However, he provides no additional analysis as to what these red boxes show other than to assert the "appearance of the coating in certain sample locations does not establish that such coating morphology exists elsewhere on the same part." *Id.* ¶ 45. The red boxes and statements are insufficient to explain *why* the red boxes support non-infringement. Thus, not only is his argument conclusory and unsupported but also it derives from his erroneous construction that the

[redacted]

layers must be "continuous and homogeneous." CX-0085 ¶¶ 42–46.

Additionally, Dr. Brown testified during his deposition that what is purportedly encompassed by the red boxes would not break the continuity of the layer. For example, Dr. Brown includes the following annotated SEM images and initially asserts that they purportedly show a "non-continuous/homogenous [sic] structure":

[redacted]

E.g., id. ¶ 44. While it is unclear how the red boxes support non-infringement, the red boxes appear to encompass mere cracks or voids in the coating. But Dr. Brown testified during his deposition that a crack "doesn't invalidate the continuity of the layer," and a void "wouldn't count as an interruption in continuity because all of these coatings have bubbles." CX-0020 at 71:21–73:5. He further testified that "cracks [that] develop during the hot stamping process," are "just a consequence of the deformation which occurs during hot stamping," and that he would be "amazed if you didn't find some cracks." *Id.*; *see also id.* at 73:11–22. As another example, Dr. Brown also includes the following annotated SEM image:

[redacted]

CX-0085 ¶ 44. Again, while it is unclear how this red box shows a non-continuous/homogeneous structure, the red box appears to encompass damage to the superficial layer. Dr. Brown conceded in his deposition that scratches, damage, or abrasion to the superficial layer would not count as breaking the continuity of the layer. CX-0020 at 74:23–75:9; *see also id.* at 81:17–22.

Thus, where Dr. Brown points to cracks or voids in the layers or damage to the superficial layer as supposed breaks in the continuity of the layer, the evidence will show, and Dr. Fekete will testify, that these could be the result of the hot-stamping process or sample preparation, and the layer would still satisfy the asserted claims. For example, Dr. Fekete will testify, and Dr. Brown agrees, that the cracks are common and the result of sample preparation. The cracks, moreover, do not go into the base layer of the steel and therefore the coating provides a buffer for the underlying base layer of the steel. Figure 1 of the Asserted Patents—a preferred embodiment that meets the claim requirements—also shows cracks in the layers (see annotation below), which further supports that a POSITA would understand that layers with cracks would satisfy the claims.

[redacted]

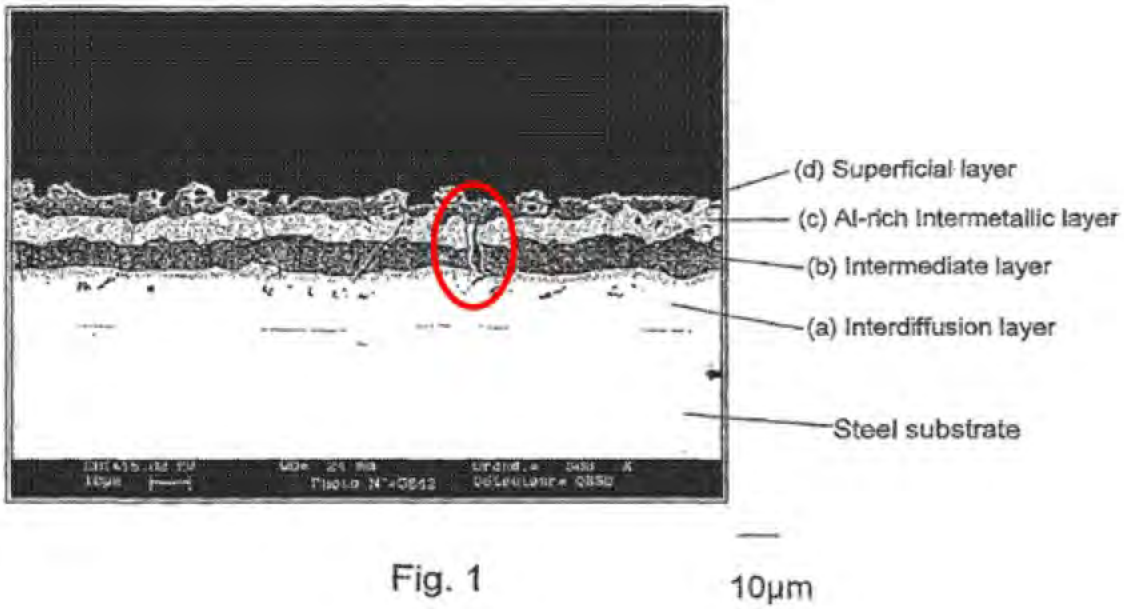

Fig. 1

E.g., JX-0002 at Fig. 1.

3. Dr. Brown's "Coating" Thickness Opinions

Dr. Brown also asserts that the "coating thickness is not met in many instances," once again drawing various red boxes on SEM images of tested parts without explanation. *See* CX-0085 ¶¶ 47–55. His argument appears based on his (mis)understanding that the coating must be thicker than 30 μm across the entire part to satisfy the claim. *E.g., id.* ¶ 48. For example, Dr. Brown states that he believes the coating must be thicker than 30 μm across the entire part "because the claimed coating comprises 4 different layers, which must be continuous and homogeneous across the entire part." *Id.* ¶ 48. But as described above, Dr. Brown's construction of "layer" is incorrect. *See* Section III.C.1. Dr. Brown notably does not and cannot dispute that there is an average coating thickness of greater than 30 μm for each VinFast Accused Product that Dr. Fekete discusses. *E.g.,* CX-0094. As Dr. Fekete will testify, when determining how to measure a coating thickness, a POSITA would turn to a standard that had been adopted for this type of material. Here, the coating thickness measurements were taken consistent with the following ASTM standard: "Standard Test Method for Measurement of Thickness of Metallic Coatings by Measurement of Cross Section with a Scanning Electron Microscope" (ASTM B748-90). CX-0092 at 5. This testing evidence that at least a portion of the VinFast Accused Products would have a thickness greater than 30 μm

[redacted]

is thus sufficient to satisfy the claims. *See SunTiger*, 189 F.3d at 1337.

Additionally, [redacted] which confirms the VinFast Accused Products meet the claimed coating thickness requirements. *E.g.,* CX-0315. VinFast also has a supplier quality director whose job is to ensure that these vehicle parts meet the specifications. *E.g.,* CX-0019 at 53:6–15, 86:13–87:13. Dr. Brown's attempt to detract from the control plans because "only testing of the actual Accused Products can show that limitation is met" is nonsensical and contrary to his invalidity opinions. *See* CX-0085 ¶ 47.

4. Dr. Brown's Opinions Regarding Claim 2

Dr. Brown argues that Dr. Fekete's testing of one of the thirty-four tested VinFast parts shows that more than 10% of layer (c) is exposed at the surface. *E.g.,* CX-0085 ¶ 57 (citing SEM image for part BIW30009236). Besides drawing arbitrary red boxes, Dr. Brown provides no explanation as to what these red boxes represent or how the red boxes show the part does not satisfy claim 2. *Id.* Notably, Dr. Brown fails to rebut the remainder of Dr. Fekete's testing data or address the other thirty-three VinFast parts analyzed by Dr. Fekete. *Id.* ¶¶ 56–58. And while Dr. Brown argues that two of the VinFast Accused Products that Dr. Bradley tested do not infringe claim 2 (*id.* ¶¶ 58 (citing SEM images for part codes [redacted] and [redacted] his failure to rebut Dr. Fekete's testing for these parts shows that at least a portion of these parts satisfy claim 2, which is sufficient to show infringement. *See SunTiger*, 189 F.3d at 1337.

5. Dr. Brown's Opinions Regarding Claims 9 and 26

Dr. Brown argues that Dr. Fekete's testing of one of the thirty-four tested VinFast parts shows that layer (a) has a thickness greater than 15 μm. *E.g.,* CX-0085 ¶¶ 59–60. Notably, Dr. Brown fails to rebut the remainder of Dr. Fekete's testing data or address the other thirty-three VinFast parts analyzed by Dr. Fekete. *Id.* His failure to rebut Dr. Fekete's testing for these parts shows that at least a portion of these parts satisfy claims 9 and 26, which is sufficient to show infringement. *See SunTiger*, 189 F.3d at 1337. And Dr. Brown's argument that layer (a) must have a thickness across the entire part is flawed because it derives from Dr. Brown's incorrect

[redacted]

construction that "layers" must be "continuous." *See* Sections III.C.1 and III.C.3.

D. Domestic Industry – "Technical Prong"

The DI Direct Products practice claims 1–4, 7–10, 18, 20–22, 24, and 26 of the '602 Patent. As described below, Tier 1 hot stamper and OEM documents alone show that the DI Direct Products satisfy many of the elements of the DI Claims for the '602 Patent. Testing of 15 DI Direct Products has further shown that those products practice the DI Claims, confirming what can be seen from the Tier 1 hot stamper and OEM documents. The tested parts cut across a range of car makes: Ford, Chevrolet, Chrysler, GM, Honda, Jeep, Tesla, Toyota, and Volkswagen. These parts also come from the seven different Tier 1 hot stampers subpoenaed in this Investigation: [redacted] The number and range of these tested parts, all of which practice multiple of the DI Claims, reflect how hot stamped steel products manufactured using the DI Precursor Products and sold by ArcelorMittal's Tier 1 manufacturers practice one or more claims of the Asserted Patents.

As Dr. Fekete will testify, the documents and test results described below reflect how the Tier 1 hot stampers have implemented manufacturing processes that produce parts that practice the Asserted Patents. *E.g.,* CX-0080 ¶ 191. Representatives of the Tier 1 hot stampers testified that they have procedures and controls in place to ensure that they are manufacturing hot stamped parts consistently and in line with OEM specifications. *E.g.,* CX-0022 at 98:21–99:5 (describing how [redacted] has a quality group to ensure "manufacturing the product to spec and delivering it to spec as we had agreed on"); CX-0027 at 24:15–21 (similar for [redacted] CX-0023 at 194:25–195:4 ("We have to meet a certain customer specification. And our goal is to make parts as specific as possible within the customer specification …."); CX-0026 at 29:6–9; CX-0028 at 19:9–21:11 (stating [redacted] chooses hot stamping parameters to satisfy OEM specifications and has procedures to ensure all parts are manufactured consistently); *id.* at 44:8–45:14 (stating [redacted] measures coating thickness and interdiffusion layer thickness to ensure conformity with OEM specifications). As discussed below, the test results are consistent with the OEM specifications. Accordingly, the tested DI Direct Products would practice the Asserted Patents.

[redacted]

Dr. Fekete will testify that other DI Direct Products made from DI Precursor Products with a coating weight of AS 150 or its equivalents by the Tier 1 hot stampers subpoenaed in this Investigation practice one or more claims of the Asserted Patents. CX-0080 ¶ 192. Representatives of the Tier 1 hot stampers testified that they use generally the same hot stamping process for all parts that they manufacture. *E.g.,* CX-0022 118:12–119:9 (stating that while the hot stamping parameters may be "slightly modified," [redacted] hot stamps all parts according to "the same process" and within "the same process window"); CX-0023 at 171:22–172:2 (stating that while hot stamping parameters may vary, [redacted] uses "essentially the same process" to hot stamp each part); CX-0026 at 28:16–29:5 (stating that it is "a desirable trait" to get "an aluminum coating that is generally the same across different products"); CX-0027 at 68:21–23 (stating that the same hot stamping process is used for all hot stamped parts discussed); CX-0028 at 19:9–17 (stating that the same hot stamping process is used for all parts using ArcelorMittal AlSi material). Thus, like the tested DI Direct Products, other DI Direct Products hot stamped by the Tier 1 licensees subpoenaed in this Investigation would also practice the claims of the Asserted Patents.

Dr. Brown asserts that Dr. Fekete's analysis "fails to account for any variations in the processing parameters used to hot stamp the DI Precursor Products." CX-0085 ¶¶ 69, 75; *see also id.* ¶¶ 78–81. But Dr. Fekete will testify that variations in hot stamping parameters are appropriate and necessary to account for characteristics of the individual part being hot stamped, such as the steel substrate's thickness, and to ensure that parts consistently have the claimed four-layer structure. CX-0080 ¶ 192; *e.g.,* JX-0002 at Fig. 7, 7:4–35 (describing how furnace temperature and dwell time in the furnace, necessary to achieve the claimed four-layer structure, varies according to the overall thickness of the part to be hot stamped); *see also* CX-0023 at 195:14–196:3 (agreeing "the different parameters around heating time and temperature are designed to get similar results with respect to the specification"). It is appropriate for the different DI Direct Products practicing the Asserted Patents to have different hot stamping parameters.

Dr. Fekete will also testify that DI Direct Products hot stamped by those Tier 1 manufacturers which were not subpoenaed as part of this Investigation would also practice the

Asserted Patents. *See* CX-0080 ¶ 193. OEMs generally have a single specification for hot stamping that they use to ensure consistent production of hot stamped steel products by all their suppliers. *See* CX-0023 at 195:6–12 (OEMs have "one specification for hot stamping as a whole, regardless of individual part numbers"). CX-0312 CX-0307. Because Tier 1 hot stampers by custom and practice manufacture parts consistent with OEM specifications, and OEM specifications applicable to the DI Direct Products are consistent with manufacturing parts that practice the Asserted Patents, DI Direct Products manufactured by hot stampers not subpoenaed in this Investigation would also practice the Asserted Patents.

Dr. Brown's characterization of Dr. Fekete's opinion as being that "simply hot stamping a DI Precursor Product would lead to the layers recited in the Domestic Industry Claims" is thus false. CX-0085 ¶ 75. As Dr. Fekete will testify, the above evidence demonstrates that Tier 1 hot stampers generally use a hot stamping process adjusted to produce parts that satisfy OEM specifications, which shows that the particular hot stamping processes employed would result in DI Direct Products that practice the Asserted Patents. Similarly, Dr. Brown's focus on how Dr. Fekete does not recite the exact number of DI Direct Products produced by Tier 1 manufacturers does not undercut how OEM specifications and the testimony from Tier 1 manufacturers show that the DI Direct Products would practice the claims of the Asserted Patents. *See* CX-0085 ¶ 72.

Although three parts manufactured by do not practice the DI Claims, Dr. Fekete will testify that these results are likely the result of manufacturing anomalies as explained below. *E.g.,* CX-0080 ¶¶ 194–99. First, has a single specification for hot stamped steel products that shows a "target structure" for the final hot stamped steel product that has the four-layer structure and a thickness greater than 30 μm. *See* CX-0112 at 6 (hot stamping specification); CX-0691 at AM-ITC-0106598; CX-0023 at 195:6–12 (similar). This "target

[redacted]

structure" does not look like the coating structure for the three [redacted] parts, which do not appear to comply with the Ford specification. *See* CX-0111 (SEM micrographs of [redacted] stamped [redacted] parts). Nevertheless, representatives from the Tier 1 manufacturers testified that they hot stamp products to satisfy OEM specifications. *E.g.,* CX-0022 at 98:21–99:5; CX-0027 at 24:15–21; CX-0023 at 194:25–195:4; CX-0026 at 29:6–9; CX-0028 at 19:9–21:11. And testing results for a [redacted] stamped [redacted] part show that part to practice the DI Claims. *See* Sections III.D and IV.D (describing how test results, including those from the [redacted] stamped [redacted] part, satisfy the DI Claims); CX-0109 (showing [redacted] part to have a four-layer coating). That the [redacted] stamped [redacted] part contains the four-layer structure depicted in the [redacted] specification (and claimed in the Asserted Patents) reinforces that the [redacted] stamped [redacted] parts are the result of manufacturing anomalies. Additionally, as explained below, other parts produced by [redacted] for other OEMs do not have this anomalous appearance but display the expected four-layer coating structure. As explained, because the Tier 1 manufacturers use the same general process for hot stamping, one would expect to obtain the same general results for all parts.

Dr. Fekete will further explain that the test results for the three [redacted] stamped [redacted] parts suggest that they were each left to dwell in the furnace for too short a time. *See* CX-0080 ¶ 196. Tests of the [redacted] stamped [redacted] parts showed them to have interdiffusion layers of relatively low thickness and a poorly defined intermetallic layer. *See* CX-0111. Research has shown that the interdiffusion layer increases in size as the dwell time of an Al-coated steel sheet in a furnace increases. *E.g.,* CX-0613 at AM-ITC-0094697. The Asserted Patents explain the importance of dwell time in the formation of the four-layer coating. *E.g.,* JX-0002 at Fig. 7; 6:51–7:3. As Dr. Drillet will also testify, the dwell time in the furnace is an "important parameter to control" to ensure that there is a four-layer coating structure. *See* CX-0010 at 37:15–20. Other tested parts that had relatively thin interdiffusion layers notably had very thin intermetallic layers. *See* CX-0103 ([redacted] parts). Accordingly, the [redacted] stamped [redacted] parts were not left to dwell in the furnace for a sufficiently long time, resulting in insufficient time to build the intermetallic layer.

[redacted]

Notably, this shorter dwell time is not reflective of a systematic processing error. Documents from [redacted] relating to the tested Ford parts indicate that [redacted] intends for two of those parts to have a dwell time of [redacted].[6] *See* CX-0349 ([redacted] parts spreadsheet) (row 31, column R; row 51, column R). Given that the two parts are [redacted] thick respectively, Dr. Fekete will explain that those dwell times are appropriate given the hot stamping parameters discussed in the specification of the Asserted Patents. *See* CX-0080 ¶ 197; JX-0002 Fig. 7, 7:27–35 (indicating a preferred dwell time at [redacted]); CX-0384 at VTK-ITC_00153 (indicating that a [redacted] furnace for hot stamping [redacted] parts is to be heated to [redacted] degrees Celsius). Accordingly, [redacted] intends to use a furnace dwell time that would result in the hot stamping of practicing parts, indicating that the parts tested are the result of a manufacturing anomaly.

Dr. Fekete will also testify that the results of the [redacted] reinforcement underscore how the Tier 1 hot stampers—and [redacted] in particular—follow a hot stamping process that results in products that practice the Asserted Patents. *See* CX-0080 ¶ 199. Testing of a [redacted] stamped [redacted] show that part to include the claimed four-layer structure but a coating less than 30 µm thick. CX-0865 at AM-ITC-0103323, AM-ITC-0103390. The less thick coating reflects how the [redacted] is manufactured using a sheet of base steel including AS 80 coating, which is insufficiently thick to obtain the desired coating thickness following hot stamping. *See* CX-0349 (row 90 and 91, column T); *see also* I.E.4.a (describing differences between AS 80 and AS 150). The [redacted] stamped [redacted] part underscores how the hot stamping process used by [redacted] and the Tier 1 hot stampers generally, achieves the four-layer structure, which is sufficiently thick to fall within the claims if AS 150 coating is used on the original base steel. These results are consistent with ArcelorMittal documents that describe that AS 150 and AS 80 can both have a four-layer structure following heat treatment. *See* CX-0581 at AM-ITC-0093891.

Dr. Brown's assertion that a different dwell time would not have resulted in the claimed four-layer structure is unavailing. *See* CX-0085 ¶ 77 n.2. Dr. Brown compares the processing

[6] One of the [redacted] parts, the [redacted], does not appear in CX-0349.

[redacted]

parameters for a Ford part and the Kia part and says that "as Dr. Fekete recognizes, neither part has the recited layer structure." *Id.* This is plainly wrong. As explained above, Dr. Fekete's opinion, to which he will testify, is that the [redacted] does have the recited layer structure—it is just insufficiently thick because the [redacted] part is made with AS 80.

Accordingly, as further explained on an element-by-element basis below, test results and documents produced in this Investigation establish how the DI Direct Products practice the claims of the Asserted Patents.

1. Claim 1

a) 1[pre] A precoated steel product comprising:

The DI Direct Products practice element 1[pre]. CX-0079 ¶ 202. Each of the DI Direct Products is a steel product with an aluminum-silicon coating. *See id.* ¶¶ 41–44; CX-0482 at AM-ITC-0079009 ("Usibor 1500 P, developed by Arcelor, is a precoated boron steel with a metallic coating of aluminum-silicon."); *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products practice this limitation.

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

The DI Direct Products practice element 1[a]. CX-0079 ¶ 203. Each of the DI Direct Products has a strip of base steel having a first side and a second side. *E.g.,* CX-0448 at [redacted] (showing a "top" and a "bottom" to the steel product); CX-0337 (depicting how [redacted] hot stamps strips of base steel with a first side and a second side); CX-0411 (similar for [redacted] *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products practice this limitation.

c) 1[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 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:

The DI Direct Products practice element 1[b]. CX-0079 ¶¶ 204–05. Each of the DI Direct Products has 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. CX-0482 at AM-ITC-0079009 (Usibor 1500 "is a precoated boron steel

[redacted]

with a metallic coating of aluminum-silicon."); *see also* Appx. ¶ 12. Additionally, each of the DI Direct Products has a coating that results from interdiffusion between the base steel, and an Al-pre-coating, as reflected in Tier 1 hot stamper documents describing a "diffusion" or "inter diffusion" layer, which would result from interdiffusion between the base steel and the aluminum or aluminum-silicon coating. *E.g.,* CX-0399 at [redacted]; CX-0448 at [redacted]; CX-0719 at [redacted]. Dr. Fekete will testify that the iron and aluminum compositions of the coating layers reflects that there has been interdiffusion between the base steel and the aluminum pre-coating. CX-0079 ¶ 205. VinFast does not dispute that the DI Direct Products practice this limitation.

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

The DI Direct Products practice element 1[c]. CX-0079 ¶¶ 206–08. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. *Id.* ¶¶ 206–07; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. The interdiffusion layer is a first layer. *E.g.,* CX-0399 at [redacted]; CX-0448 at [redacted]; CX-0412; CX-0023 at 122:25–123:8. And OEM specifications call for the creation of an interdiffusion layer. CX-0719 at [redacted]; CX-0638 at AM-ITC_0095446; CX-0112 at 6. Testing results show that the tested parts' interdiffusion layers have a first mean iron composition. Appx. ¶¶ 13, 20. VinFast only disputes whether the DI Direct Products' interdiffusion region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products practice element 1[d]. CX-0079 ¶¶ 209–11. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 209–10; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20 (SEM micrographs and line scans of coatings of tested DI Direct Products). The intermediate layer is a

[redacted]

second layer. OEM specifications describe the creation of a four-layer structure, including an intermediate layer. *E.g.,* CX-0719 at [redacted] (labeling intermediate layer as "Third layer"); CX-0112 at 6. Testing results also show that the tested parts' intermediate layers have a second mean iron composition different from the first mean iron composition. Appx. ¶¶ 13, 20. VinFast only disputes whether the DI Direct Products' intermediate region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

f) 1[e] (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

The DI Direct Products practice element 1[e]. CX-0079 ¶¶ 212–14. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 212–13; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20 (SEM micrographs and line scans of coatings of tested DI Direct Products). The intermetallic layer is a third layer. OEM specifications describe the creation of a four-layer structure, including an intermetallic layer. *E.g.,* CX-0719 at [redacted] (labeling intermetallic layer as "Second layer"); CX-0112 at 6. Testing results also show that the tested parts' intermetallic layers have a third mean iron composition different from the first and second mean iron compositions and higher than the second mean iron composition. Appx. ¶¶ 13, 20. VinFast only disputes whether the DI Direct Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products practice element 1[f]. CX-0079 ¶¶ 215–17. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 215–16; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20 (SEM micrographs and line scans of coatings of tested DI Direct Products). The superficial layer is a

[redacted]

fourth layer. OEM specifications describe the creation of a four-layer structure, including a superficial layer. *E.g.,* CX-0719 at [redacted] (labeling intermetallic layer as "First layer"); CX-0112 at 6. Testing results show that the tested parts' superficial layers have a fourth mean iron composition different from the third mean iron composition. Appx. ¶¶ 13, 20. VinFast only disputes whether the DI Direct Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

h) 1[g] wherein the coating has a thickness greater than 30 µm.

The DI Direct Products practice element 1[g]. CX-0079 ¶ 218. The DI Direct Products are each precoated steel products with a coating that has a thickness greater than 30 µm, as documents produced by Tier 1 hot stampers show is required. *E.g.,* CX-0458; CX-0455; CX-0326 at [redacted]; CX-0394 at [redacted]; CX-0412 at [redacted]. OEM specifications also provide that the coating thickness must be greater than 30 µm. *See* CX-0638 at AM-ITC_0095444; CX-0112 at 6. And measurements of the DI Direct Products' coating thickness show that the coating of each product tested has a thickness greater than 30 µm. *See* Appx. ¶ 16. This evidence that at least a portion of the DI Direct Products would have a thickness greater than 30 µm is sufficient to satisfy element 1[g]. *See SunTiger*, 189 F.3d at 1337. VinFast disputes that the DI Direct Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Section III.E.3.

2. Claim 2

a) [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.

The DI Direct Products practice claim 2. CX-0079 ¶¶ 219–20. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 219–20; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20 (SEM micrographs and line scans of coatings of tested DI Direct Products). Dr. Fekete will also testify that how the intermetallic layers (layer (c)) and superficial layers (layer (d)) occupy at least 90% of the level of

[redacted]

to which each layer corresponds, and are thus quasi continuous, can be seen in the coloring of the SEM micrographs. CX-0079 ¶ 220; Appx. ¶ 12. Dr. Fekete will testify that for each part tested less than 10% of layer (c) is present at the extreme surface furthest away from the base steel. CX-0079 ¶ 220; Appx. ¶ 12. VinFast disputes that the DI Direct Products practice claim 2. VinFast is wrong. *See* Section III.E.4.

3. Claim 3

a) 3[a] 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%;

The DI Direct Products practice element 3[a]. CX-0079 ¶ 221. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.15% and 0.5% carbon by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; CX-0719 at [redacted]; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

b) 3[b] 0.5%<manganese<3%;

The DI Direct Products practice element 3[b]. CX-0079 ¶ 222. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.5% and 3% manganese by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; CX-0719 at [redacted]; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

c) 3[c] 0.1%<silicon<0.5%;

The DI Direct Products practice element 3[c]. CX-0079 ¶ 223. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.1% and 0.5% silicon by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[c].

d) 3[d] 0.01%<chromium<1%;

The DI Direct Products practice element 3[d]. CX-0079 ¶ 224. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.01% and 1%

[redacted]

chromium by weight based on total weight. *See* CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[d].

e) 3[e] titanium<0.2%;

The DI Direct Products practice element 3[e]. CX-0079 ¶ 225. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.2% titanium by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[e].[7]

f) 3[f] aluminum<0.1%;

The DI Direct Products practice element 3[f]. CX-0079 ¶ 226. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.1% aluminum by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[f].

g) 3[g] phosphorus<0.1%;

The DI Direct Products practice element 3[g]. CX-0079 ¶ 227. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.1% phosphorus by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[g].

h) 3[h] sulfur<0.05%;

The DI Direct Products practice element 3[h]. CX-0079 ¶ 228. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.05% sulfur by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

i) 3[i] 0.0005%<boron<0.08%;

The DI Direct Products practice element 3[i]. CX-0079 ¶ 229. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.0005% and

[7] If VinFast applies its analysis for '227 Patent element 16[e] to this element, VinFast's argument is both new and wrong for the reasons provided in IV.E.5.

[redacted]

0.08% boron by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 3[i].

j) 3[j] and further comprises iron and impurities inherent in processing.

The DI Direct Products practice element 3[j]. CX-0079 ¶ 230. Test results and OEM specifications show that the base steel of the DI Direct Products includes iron and impurities inherent in processing. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.[8]

4. Claim 4

a) 4[a] 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%;

The DI Direct Products practice element 4[a]. CX-0079 ¶ 231. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.20% and 0.5% carbon by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; CX-0719 at [redacted]; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

b) 4[b] 0.8%<manganese<1.5%;

The DI Direct Products practice element 4[b]. CX-0079 ¶ 232. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.8% and 1.5% manganese by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; CX-0719 at [redacted]; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

c) 4[c] 0.1%<silicon<0.35%;

The DI Direct Products practice element 4[c]. CX-0079 ¶ 233. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.1% and 0.35% silicon by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast

[8] If VinFast applies its analysis for '227 Patent element 16[j] to this element, VinFast's argument is both new and wrong for the reasons provided in IV.E.5.

[redacted]

does not dispute that the DI Direct Products practice 4[c].

d) 4[d] 0.01%<chromium<1%;

The DI Direct Products meet this limitation for the same reason as '602 Patent element 3[d]. *See* Section III.D.3.d; *see also* CX-0079 ¶ 234; CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products meet 4[d].

e) 4[e] titanium<0.1%;

The DI Direct Products practice element 4[e]. CX-0079 ¶ 235. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.1% titanium by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 4[e].[9]

f) 4[f] aluminum<0.1%;

The DI Direct Products meet this limitation for the same reason as '602 Patent element 3[f]. *See* Section III.D.3.f; *see also* CX-0079 ¶ 236; CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products meet 4[f].

g) 4[g] phosphorus<0.05%;

The DI Direct Products practice element 4[g]. CX-0079 ¶ 237. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.05% phosphorus by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 4[g].

h) 4[h] sulfur<0.03%;

The DI Direct Products practice element 4[h]. CX-0079 ¶ 238. Test results and OEM specifications show that the base steel of the DI Direct Products includes less than 0.03% sulfur by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice this limitation.

i) 4[i] 0.0005%<boron<0.01%;

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[9] If VinFast applies its analysis for '227 Patent element 16[e] to this element, VinFast's argument is both new and wrong for the reasons provided in IV.E.5.

The DI Direct Products practice element 4[i]. CX-0079 ¶ 239. Test results and OEM specifications show that the base steel of the DI Direct Products includes between 0.005% and 0.01% boron by weight based on total weight. *E.g.*, CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 4[i].

j) 4[j] and further comprises iron and impurities inherent in processing.

The DI Direct Products meet this limitation for the same reason as '602 Patent element 3[j]. *See* Section III.D.3.j; *see also* CX-0079 ¶ 240; CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast does not dispute that the DI Direct Products practice 4[j].[10]

5. Claim 7

a) [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.

The DI Direct Products practice claim 7. CX-0079 ¶ 241. Test results and OEM specifications show that the base steel of the DI Direct Products includes a ratio of titanium to nitrogen in excess of 3.42. *See* CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast disputes that the ratio of titanium to nitrogen in the base steel of the DI Direct Products in weight is in excess of 3.42. VinFast is wrong. *See* Section III.E.5.

6. Claim 8

a) [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.

The DI Direct Products meet this limitation for the same reason as '602 Patent claim 7. *See* Section III.D.5.a; *see also* CX-0079 ¶ 242; CX-0691 at AM-ITC_0106599; Appx. ¶ 17. VinFast disputes that the ratio of titanium to nitrogen in the base steel of the DI Direct Products in weight is in excess of 3.42. VinFast is wrong. *See* Section III.E.5.

7. Claim 9

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

The DI Direct Products practice claim 9. CX-0079 ¶ 243. Tier 1 hot stamper documents

[10] If VinFast applies its analysis for '227 Patent element 16[j] to this element, VinFast's argument is both new and wrong for the reasons provided in IV.E.5.

[redacted]

show that layer (a) of the DI Direct Products must be less than or equal to 16 µm, a range that substantially overlaps with the claimed layer thickness, and some Tier 1 hot stamper documents show that the thickness of layer (a) must be less than 10 µm. *E.g.,* CX-0458; CX-0455; CX-0326 at [redacted]; CX-0394 at [redacted]; CX-0448 (<10 µm); CX-0374 (same); CX-0719 at [redacted] (same). Testing of the DI Direct Products shows, with one exception, that the thickness of the interdiffusion layer (layer (a)) is less than 15 µm. *See* Appx. ¶ 16. VinFast disputes that the DI Direct Products' layer (a) has a thickness less than 15 µm. VinFast is wrong. *See* Section III.E.7.

8. Claim 10

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

The DI Direct Products practice claim 10. CX-0079 ¶ 244. Tier 1 hot stamper documents show that layer (a) of the DI Direct Products must be less than or equal to 16 µm, a range that substantially overlaps with the claimed layer thickness, and some show that the thickness of layer (a) must be less than 10 µm. *E.g.,* CX-0458; CX-0455; CX-0326 at [redacted]; CX-0394 at [redacted]; CX-0448 (<10 µm); CX-0374 (same); CX-0719 at [redacted] (same). Testing of the DI Direct Products shows that the thickness of many parts' interdiffusion layer (layer (a)) is less than 10 µm. *See* Appx. ¶ 16. VinFast disputes that the DI Direct Products' layer (a) has a thickness less than 10 µm. VinFast is wrong. *See* Section III.E.7.

9. Claim 18

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

The DI Direct Products practice claim 18. CX-0079 ¶ 245. Tier 1 hot stamper documents show that layer (a) of the DI Direct Products must be less than or equal to 16 µm, a range that substantially overlaps with the claimed layer thickness, and some show that the thickness of layer (a) must be less than 10 µm. *E.g.,* CX-0458; CX-0455; CX-0326 at [redacted]; CX-0394 at [redacted]; CX-0448 (<10 µm); CX-0374 (same); CX-0719 at [redacted]

[redacted] (same). Testing of the DI Direct Products shows, with one exception, that the thickness of the interdiffusion layer (layer (a)) is between 1 and 15 µm. *See* Appx. ¶ 16. VinFast disputes that the DI Direct Products' interdiffusion layer has a thickness of from 1 µm to 15 µm. VinFast is wrong. *See* Section III.E.6.

10. Claim 20

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

The DI Direct Products practice claim 20. CX-0079 ¶ 246–47. Testing results show that the tested parts have a fourth mean iron composition that is lower than the third mean iron composition. Appx. ¶¶ 13, 20. VinFast does not dispute that the DI Direct Products practice this limitation.

11. Claim 21

a) 21[pre] A precoated steel product comprising:

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[pre]. *See* Section III.D.1.a; *see also* CX-0079 ¶ 249; CX-0448 at [redacted]; CX-0337; CX-0411; *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products meet this limitation.

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

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[a]. *See* Section III.D.1.b; *see also* CX-0079 ¶ 249; CX-0448 at [redacted]; CX-0337; CX-0411; *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products meet this limitation.

c) 21[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 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:

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[b]. *See* Section III.D.1.c; *see also* CX-0079 ¶¶ 250–51; CX-0482 at AM-ITC-0079009; Appx. ¶ 12; CX-0399 at [redacted]; CX-0448 at [redacted]

[redacted]

26; CX-0719 at [redacted]. This is not disputed by VinFast.

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

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[c]. *See* Section III.D.1.d; *see also* CX-0079 ¶¶ 252–54; JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174; Appx. ¶¶ 12, 20; CX-0399 at [redacted]; CX-0448 at [redacted]; CX-0412; CX-0023 at 122:25–123:8; CX-0719 at [redacted]; CX-0638 at AM-ITC_0095446; CX-0112 at 6. VinFast only disputes whether the DI Direct Products' interdiffusion region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III. E.2.

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

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[d]. *See* Section III.D.1.e; *see also* CX-0079 ¶¶ 255–57; JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174; Appx. ¶¶ 12, 13, 20; CX-0719 at [redacted]; CX-0112 at 6. VinFast only disputes whether the DI Direct Products' intermediate region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[e]. *See* Section III.D.1.f; *see also* CX-0079 ¶¶ 258–60; JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174; Appx. ¶¶ 12, 13, 20; CX-0719 at [redacted]; CX-0112 at 6. VinFast only disputes whether the DI Direct Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products practice element 21[f]. CX-0079 ¶¶ 261–63. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶

[redacted]

261–62; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. The superficial layer is a fourth layer. OEM specifications describe the creation of a four-layer structure, including a superficial layer. *E.g.,* CX-0719 at [redacted] (labeling intermetallic layer as "First layer"); CX-0112 at 6. Testing results also show that the tested parts' superficial layers have a fourth mean iron composition different from the first, second and third mean iron compositions. Appx. ¶¶ 13, 20. VinFast only disputes whether the DI Direct Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

h) 21[g] wherein the coating has a thickness greater than 30 µm.

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[g]. *See* Section III.D.1.h; *see also* CX-0079 ¶ 264; CX-0458; CX-0455; CX-0318 at [redacted]; CX-0394 at [redacted]; CX-0412 at [redacted]; CX-0638 at AM-ITC_0095444; CX-0112 at 6; Appx. ¶ 16. VinFast disputes that the DI Direct Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Section III.E.3.

12. Claim 22

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

The DI Direct Products meet this limitation for the same reason as '602 Patent claim 20. *See* Section III.D.10.a; *see also* CX-0079 ¶¶ 265–66; Appx. ¶¶ 13, 20. VinFast does not dispute that the DI Direct Products meet this limitation.

13. Claim 24

a) 24[pre] A precoated steel product comprising:

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[pre]. *See* Section III.D.1.a; *see also* CX-0079 ¶ 267; CX-0448 at [redacted]; CX-0337; CX-0411; *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products meet this limitation.

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

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation

[redacted]

1[a]. *See* Section III.D.1.b; *see also* CX-0079 ¶ 268; CX-0448 at [redacted]; CX-0337; CX-0411; *see also* Appx. ¶¶ 11, 12. VinFast does not dispute that the DI Direct Products meet this limitation.

c) 24[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 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:

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[b]. *See* Section III.D.1.c; *see also* CX-0079 ¶¶ 250–51; CX-0482 at AM-ITC-0079009; Appx. ¶ 12; CX-0399 at [redacted]; CX-0448 at [redacted] 26; CX-0719 at [redacted]. VinFast does not dispute that the DI Direct Products meet this limitation.

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

The DI Direct Products practice element 24[c]. CX-0079 ¶¶ 271–73. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 206–07, 252–53, 271–72; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. This first layer closest to the base steel is understood to be an interdiffusion layer. *E.g.,* CX-0399 at [redacted]; CX-0448 at [redacted]; CX-0412; CX-0023 at 122:25–123:8. And OEM specifications call for the creation of an interdiffusion layer. CX-0719 at [redacted]; CX-0638 at AM-ITC_0095446; CX-0112 at 6. Testing results also show that the tested parts' interdiffusion layers have a first mean aluminum composition. Appx. ¶¶ 14, 20. VinFast only disputes whether the DI Direct Products' interdiffusion region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products practice element 24[d]. CX-0079 ¶¶ 274–76. Dr. Fekete will

[redacted]

testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 274–75; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. The intermediate layer is a second layer. OEM specifications describe the creation of a four-layer structure, including an intermediate layer. *E.g.,* CX-0719 at [redacted] (labeling intermediate layer as "Third layer"); CX-0112 at 6. Testing results also show that the tested parts' intermediate layers have a second mean aluminum composition different from the first mean aluminum composition. Appx. ¶¶ 14, 20. VinFast only disputes whether the DI Direct Products' intermediate region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

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

The DI Direct Products practice element 24[e]. CX-0079 ¶¶ 277–79. Dr. Fekete will testify that each DI Direct Product has a coating that includes a four-layer structure. CX-0079 ¶¶ 277–78; JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. The intermetallic layer is a third layer. OEM specifications describe the creation of a four-layer structure, including an intermetallic layer. *E.g.,* CX-0719 at [redacted] (labeling intermetallic layer as "Second layer"); CX-0112 at 6. Testing results show the tested parts' intermetallic layers have a third mean aluminum composition different from the first and second mean aluminum compositions. Appx. ¶¶ 14, 20. VinFast only disputes whether the DI Direct Products' intermetallic region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

g) 24[f] (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;

The DI Direct Products practice element 24[f]. CX-0079 ¶¶ 280–82. Dr. Fekete will testify that each of the DI Direct Products has a coating that includes a four-layer structure. CX-0079 ¶¶ 261–62; *see also* JX-0002 at Fig. 1; CX-0683 at AM-ITC-0102174 (showing clearer version of

[redacted]

Figure 1, which Dr. Drillet will testify shows the four-layer structure); Appx. ¶¶ 12, 20. The superficial layer is a fourth layer. OEM specifications describe the creation of a four-layer structure, including a superficial layer. *E.g.,* CX-0719 at [redacted] (labeling intermetallic layer as "First layer"); CX-0112 at 6. Testing results also show that the tested parts' superficial layers have 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. Appx. ¶¶ 14, 20. VinFast only disputes whether the DI Direct Products' superficial region is a "layer." VinFast is wrong. *See* Sections III.E.1 and III.E.2.

h) 24[g] wherein the coating has a thickness greater than 30 µm.

The DI Direct Products meet this limitation for the same reason as '602 Patent limitation 1[g]. *See* Section III.D.1.h; *see also* CX-0079 ¶ 283; CX-0458; CX-0455; CX-0823 at [redacted]; CX-0394 at [redacted]; CX-0412 at [redacted]; CX-0638 at AM-ITC_0095444; CX-0112 at 6; Appx. ¶ 16. VinFast disputes that the DI Direct Products have a coating that has a thickness greater than 30 µm. VinFast is wrong. *See* Section III.E.3.

14. Claim 26

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

The DI Direct Products meet this limitation for the same reason as '602 Patent claim 9. *See* Section III.D.7.a; *see also* CX-0079 ¶ 283; CX-0458; CX-0455; CX-0326 at [redacted]; CX-0394 at [redacted]; CX-0448; CX-0374; CX-0719 at [redacted]; Appx. ¶ 16. VinFast disputes whether the DI Direct Products' layer (a) has a thickness less than 15 µm. VinFast is wrong. *See* Section III.E.6.

E. Dr. Brown's Opinions on Technical Domestic Industry

As explained above, Dr. Brown does not challenge that the DI Direct Products meet nearly all claim limitations. For the limitations that he does dispute, his opinions are based on an improper claim construction and an erroneous analysis of the evidence.

1. Dr. Brown's Opinions Depend on an Improper Meaning of "Layer"

For his domestic industry analysis, Dr. Brown contends that under the "plain and ordinary" meaning of "layer," the claimed layers must be both continuous and homogeneous across the entire part. *E.g.,* CX-0085 ¶¶ 97–99. For all the same reasons discussed in Section III.C.1, this construction is not only untethered from the intrinsic and extrinsic record but also is contrary to the basic tenets of claim construction and Dr. Brown's own testimony and opinions. *E.g.,* CX-0085 ¶¶ 97–114. Moreover, his criticism addresses only the testing results collected for this Investigation and does not rebut how OEM specifications call for a four-layer structure, which includes the interdiffusion layer. *See id.*

It is also inapposite that Dr. Brown asserts that late-produced testing data demonstrates that the "appearance of the coating in certain sample locations does not establish that such coating morphology exists elsewhere on the same part." CX-0085 ¶ 113; *see also* CX-0088 ¶¶ 7–8. As explained above, Dr. Brown's belief that one SEM image is insufficient to show that a part practices the Asserted Patents is based on an incorrect construction that a layer must be "continuous." *See* Section III.C.1. And the law is clear that only part of a product must satisfy a claim's elements to practice that claim. *E.g., SunTiger*, 189 F.3d at 1337. Thus, the testing data that Dr. Fekete will discuss is sufficient to show that the DI Direct Products have the claimed four layers.

2. Dr. Brown's Annotations Do Not Show the Direct DI Products Fail to Practice the Claims of the '602 Patent

Relying on various red boxes drawn on SEM images, Dr. Brown asserts that the DI Direct Products do not show "continuous and homogenous" layers. *E.g.,* CX-0085 ¶ 100. However, he provides no additional analysis as to what these red boxes show. *Id.* Without more, the red boxes are insufficient to explain *why* the red boxes support non-infringement. Thus, not only is his argument conclusory and unsupported but also it derives from his erroneous construction that the layers must be "continuous and homogeneous." *E.g.,* CX-0085 ¶¶ 97–114; CX-0088 ¶ 6. As explained in Section III.C.2, Dr. Brown appears to draw red boxes around cracks, voids, or damage to the superficial layer (*e.g.,* CX-0085 ¶ 100), that would not stop a POSITA from determining that the DI Direct Products satisfy the claim requirements.

[redacted]

3. Dr. Brown's "Coating" Thickness Opinions

Dr. Brown argues that Dr. Fekete's "testing shows that coating thickness is not met in many instances," relying again on his understanding that the coating must be thicker than 30 μm across the entire part to satisfy the claims. *E.g.,* CX-0085 ¶ 115; *see also* CX-0020 at 173:12–174:2 (stating that Dr. Brown intends to apply consistent criticisms to VinFast and Domestic Industry parts). For all the reasons discussed in Section III.C.3, Dr. Brown's opinions regarding the "coating" thickness limitations are unsupported and contrary to the record. Dr. Brown also asserts that the many documents cited from Tier 1 hot stampers and OEMs cannot "establish that the DI Direct Products have coating thickness over 30 μm" because "only testing of the actual DI Direct Products can show the limitation is met." *E.g.,* CX-0085 ¶¶ 115, 119–124. But each of these documents is certainly probative of the DI Direct Products practicing the DI Claims and therefore are proper, and sufficient, evidence that limitation is satisfied. *See Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1372 (Fed. Cir. 2009). Dr. Brown notably does not and cannot dispute that there is an average coating thickness of greater than 30 μm for each DI Direct Product specimen that Dr. Fekete discusses, a method of measuring coating thickness that Dr. Brown also uses when evaluating VinFast parts. *See* CX-0085 ¶ 50 (showing average thicknesses). This evidence that at least a portion of the DI Direct Products would have a thickness greater than 30 μm is sufficient to satisfy element 1[g]. *See SunTiger*, 189 F.3d at 1337.

4. Dr. Brown's Opinions Regarding Claim 2

Dr. Brown argues that one of the 15 DI Direct Products that Dr. Fekete shows practice the Asserted Patents (the [redacted]) has more than 10% of layer (c) present at the extreme surface. *E.g.,* CX-0085 ¶ 117. Besides drawing arbitrary red boxes, Dr. Brown provides no explanation as to what these red boxes represent or how the red boxes show the part does not satisfy claim 2. *Id.* Notably, Dr. Brown fails to rebut the remainder of Dr. Fekete's testing data or address the other 14 DI Direct Products analyzed by Dr. Fekete. *Id.* ¶¶ 116–117. And while Dr. Brown argues that three of the DI Direct Products that Dr. Bradley tested do not practice claim 2 (*id.* ¶ 117), his failure to rebut Dr. Fekete's testing for these parts shows that at least a portion of

these parts satisfy claim 2, which is sufficient to show that they practice claim 2. *See SunTiger*, 189 F.3d at 1337.

5. Dr. Brown's Opinions Regarding Claims 7 and 8

Dr. Brown asserts that the DI Direct Products do not have a ratio of titanium to nitrogen in the base steel in weight in excess of 3.42 because a single lab did not report titanium or nitrogen composition measurements for ***one*** of the 15 tested DI Direct Products. *See* CX-0085 ¶ 118. Dr. Brown does not rebut the remainder of Dr. Fekete's testing data or address the other DI Direct Products analyzed by Dr. Fekete. *See id.* Moreover, merely pointing out the absence of data for a single tested vehicle part does not undercut the conclusion that all DI Direct Products for which testing data was collected had a ratio of titanium to nitrogen in the base steel in excess of 3.42 and therefore practice claims 7 and 8. Moreover, his failure to rebut Dr. Fekete's testing for these parts shows that at least a portion of these parts satisfy claims 7 and 8, which is sufficient to show that they practice claims 7 and 8. *See SunTiger*, 189 F.3d at 1337.

6. Dr. Brown's Opinions Regarding Claims 9, 18, and 26

In similar fashion, Dr. Brown asserts that the DI Direct Products do not meet claims 9, 18, and 26 because ***one*** of the 15 tested DI Direct Products has a layer (a) that is greater than 15 µm. *See* CX-0085 ¶¶ 119–120. Notably, Dr. Brown does not dispute that the vast majority of DI Direct Products practice claims 9, 26, and 18. *See id.* Moreover, Tier 1 hot stampers' requirement that layer (a) be less than or equal to 16 µm is relevant, circumstantial evidence, despite Dr. Brown's suggestion otherwise. *See Tinnus Enterprises, LLC v. Telebrands Corp.*, 846 F.3d 1190, 1204 (Fed. Cir. 2017) ("A patentee is entitled to rely on circumstantial evidence to establish infringement."); *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003); *cf.* CX-0085 ¶ 120. And Dr. Brown's argument that layer (a) must have a thickness across the entire part is flawed because it derives from Dr. Brown's incorrect construction that "layers" must be "continuous." *See* Section III.C.1. Accordingly, the evidence above that at least a portion of the DI Direct Products' layer (a) would have a thickness less than 15 µm is sufficient to satisfy claims 9, 18, and 26. *See SunTiger*, 189 F.3d at 1337.

[redacted]

7. Dr. Brown's Opinions Regarding Claim 10

Dr. Brown also asserts that the DI Direct Products do not meet claim 10 because three of the 15 tested DI Direct Products have a layer (a) with a thickness greater than 10 µm. *See* CX-0085 ¶¶ 122–124. Again, he does not dispute that many DI Direct Products practice claim 10. *See* CX-0085 ¶ 122. VinFast does not otherwise dispute that the DI Direct Products meet this claim for reasons independent of those given for '602 Patent claims 9, 18, and 26. *See* Section III.D.7.a; *compare* CX-0085 ¶¶ 120–21 (claim 9, 18, and 26 rebuttal), *with id.* ¶¶ 123–24 (claim 10 rebuttal).

F. Validity

VinFast has not shown by clear and convincing evidence that any asserted claim of the '602 Patent is invalid. *SRAM Corp. v. AD-II Eng'g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006); CX-0082 ¶¶ 188–538. As explained below, for several references, VinFast has not shown they were publicly available before the priority date of the Asserted Patents. *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986); *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018). As explained below, for all references, VinFast has not shown each and every limitation is found in the reference or combination of references, that the references provide enabling disclosures, or that there would be motivation to combine references. *E.g., Amgen Inc. v. Sandoz Inc.*, 66 F.4th 952, 960–65 (Fed. Cir. 2023); *Teva Pharms. USA, Inc. v. Corcept Therapeutics, Inc.*, 18 F.4th 1377, 1380–83 (Fed. Cir. 2021); *Honeywell Int'l Inc. v. Mexichem Amanco Holding S.A. DE C.V.*, 865 F.3d 1348, 1353–56 (Fed. Cir. 2017); *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367–69 (Fed. Cir. 2017); *Minn. Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1305–08 (Fed. Cir. 2002).

1. Priority Date of the Asserted Patents

The Asserted Patents claim priority to application number PCT/IB2006/004019 which was filed on October 30, 2006. CX-0082 ¶ 116. The evidence will show that the Asserted Patents are entitled to a priority date of no later than December 2005. CX-0082 ¶¶ 116–120. Dr. Pascal Drillet, a named inventor on the Asserted Patents, will explain how the Asserted Patents were conceived and reduced to practice. He will explain why the named inventors were working on

what resulted in the inventions covered by the Asserted Patents. ArcelorMittal developed USIBOR 1500P in the late 1990s. USIBOR 1500P is an aluminum-silicon precoated boron steel. He will explain that USIBOR 1500P was initially not a commercial success, in part because hot-stamping USIBOR 1500P created various issues. ArcelorMittal researched ways to improve the process for hot-stamping USIBOR 1500P, so it would have better weldability, corrosion resistance, and other beneficial attributes, and could be better used in automobiles. Dr. Drillet will explain that all the named inventors were employed at ArcelorMittal, including in late 2005. During this time, Dr. Drillet and the other named inventors, Ronald Kefferstein and Dominique Spehner, invented a process for hot-stamping pre-coated steel that among other benefits, avoided problems during the manufacturing process and displayed superior weldability. Dr. Drillet will explain that by December 2005, the inventors tested that their conceived invention was possible, as exemplified by the hot-stamped steel [redacted] part. CX-0683. The named inventors, therefore, conceived of their invention no later than December 2005. Dr. Drillet will explain how the named inventors worked diligently to reduce their invention to practice by no later than October 30, 2006. The inventors' diligence is corroborated by contemporaneous documents, such as e-mails and invoices with prosecution counsel. CX-0082 ¶¶ 116–120; *see generally also* Drillet Dep. Tr.; Kefferstein Dep. Tr. As a result, the Asserted Patents are entitled to a priority date of no later than December 2005.

2. Overview of Alleged Prior Art References

a) Passat 1049

The Passat 1049 is a Volkswagen Passat vehicle. VinFast has not shown that Passat 1049 is prior art to the Asserted Patents. CX-0082 ¶¶ 121–130. VinFast admits that the Passat 1049 is a used car. CX-0082 ¶¶ 123. VinFast's experts did not personally examine the Passat 1049 before parts were removed from the vehicle. CX-0082 ¶¶ 124. The facility that removed parts from the Passat 1049 did not report examining the car to ensure that all the parts were original parts and were not repaired or replacement parts. CX-0082 ¶ 124. VinFast also has no reliable and non-hearsay information about when the Passat 1049 was first offered for sale. Rather than obtaining

[redacted]

official government records from, for example, the Department of Motor Vehicles, or obtaining records from Volkswagen.[11] VinFast relies solely on a CarFax report as alleged evidence of a sale date. CX-0082 ¶¶ 124–128. However, CarFax expressly disclaims any responsibility for inaccuracies and repeatedly states that not all accidents or issues are reported to CarFax. *Id.* Indeed, CarFax has repeatedly had issues with inaccurate information. *See Garcia v. Volkswagen Grp. of Am., Inc.*, No. 1:19-CV-331, 2022 WL 18034353, at *2 (E.D. Va. Mar. 23, 2022); *Off Lease Only, Inc. v. Carfax, Inc.*, No. 12-80193-CV, 2012 WL 1966372, at *1 (S.D. Fla. May 31, 2012); CX-0082 ¶ 128. Even if CarFax could be relied on, CarFax indicates there were 29 service records for the Passat 1049. CX-0082 ¶ 124. VinFast has not explained the impact of those service records. Because there is no reliable and non-hearsay evidence that the Passat 1049 was sold before the priority date of the Asserted Patents, it is not prior art to the Asserted Patents. Even if that could be overlooked, there is no reliable and admissible evidence that any of the tested parts were original parts and as a result, there is no evidence that the tested parts are prior art to the Asserted Patents. The Passat 1049 is also cumulative to information considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 122 (citing file histories); *see also* AM-ITC-0002545-2940; JX-0001; JX-0002. Passat 1049 also does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an enabling disclosure. CX-0082 ¶¶ 457–458.

b) Engels

Engels is non-patent literature, and it is not prior art to the Asserted Patents. VinFast does not have any admissible evidence regarding the public availability of Engels. CX-0082 ¶ 137 (relying on declarations by two individuals that are not part of this Investigation). But even if the nature of these declarations could be overlooked, the earliest asserted public availability date for Engels is May 9, 2006 which is after the December 2005 priority date of the Asserted Patents. Regardless, Engels was already considered by the Patent Office during the prosecution of the

[11] VinFast did not subpoena Volkswagen Group or Volkswagen Group of America, Inc. Instead, VinFast only served subpoenas on the same entities on which ArcelorMittal served subpoenas.

Asserted Patents. CX-0082 ¶ 132 (citing file histories); JX-0001; JX-0002. Engels also does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an enabling disclosure. CX-0082 ¶ 410–411.

c) Cornette

Cornette is non-patent literature and VinFast has not shown that it is prior art to the Asserted Patents because VinFast also does not have any admissible evidence regarding the public availability of Cornette. CX-0082 ¶ 137 (relying on a declaration from an individual who is not part of this Investigation). Regardless, Cornette was already considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 139 (citing file histories); JX-0001; JX-0002. Indeed, the inventors explained that Cornette was asserted as an invalidating prior art reference in inter partes review 2019-01275 against U.S. Patent 9,708,683 (the great-grandparent of the pending application). CX-0082 ¶¶ 102–109. As a result, Cornette was discussed during prosecution. And the Asserted Claims issued after and with the benefit of that inter partes review proceeding. Cornette also does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an enabling disclosure. CX-0082 ¶¶ 304–05.

d) Vaissiere

Vaissiere is non-patent literature and VinFast has not shown that it is not art to the Asserted Patents. VinFast does not have any admissible evidence regarding the public availability of Vaissiere. CX-0082 ¶ 156 (relying on declaration of an individual that is not part of this Investigation). Regardless, Vaissiere was considered by the Patent Office during the prosecution of the Asserted Patents before the Asserted Patents were allowed. CX-0082 ¶ 150 (citing file histories); JX-0001; JX-0002.

e) Laurent

Laurent is a patent that was considered and discussed by the Patent Office during the prosecution of the Asserted Patents before the Asserted Patents were allowed. CX-0082 ¶¶ 102–109, 158 (citing file histories); JX-0001; JX-0002.

[redacted]

f) Takagi

Takagi is a patent publication that was considered by the Patent Office during the prosecution of the '602 Patent. CX-0082 ¶¶ 78–84, 160–163. As the inventors explained to the examiner, Takagi did not disclose the claimed "coating has a thickness greater than 30 μm" and instead, disclosed only a coating layer thickness of 10-20 μm. CX-0082 ¶ 84 (citing AM-ITC-0003581-3582). There was also no evidence that Takagi could be modified to have a different layer thickness while still meeting the other limitations of inventors' claims, such as the limitations reciting specific layer compositions. *Id*. The Patent Office allowed the claims because the prior art did not teach the claimed limitations. CX-0082 ¶ 95 (citing AM-ITC-0004081); JX-0001; JX-0002. Takagi does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an enabling disclosure. CX-0082 ¶ 226.

g) Hein

Hein is non-patent literature and it is not prior art to the Asserted Patents. VinFast does not have any admissible evidence regarding the public availability of Hein. CX-0082 ¶ 170 (relying on declarations by two individuals that are not part of this Investigation). But even if the nature of these declarations could be overlooked, the earliest asserted public availability date for Engels is May 9, 2006, which is after the December 2005 priority date of the Asserted Patents. Regardless, Hein was also considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 165 (citing file histories); JX-0001; JX-0002.

h) GMW14400

GMW14400 is non-patent literature and VinFast has not shown that it is prior art to the Asserted Patents because VinFast does not have any admissible evidence regarding the public availability of GMW14400. CX-0082 ¶ 175 (relying on declarations by two individuals that are not part of this Investigation). Even if the admissibility of these declarations could be overlooked, they do not establish the public availability of GMW14400. The Schuster declaration states only that GMW14400 was available for purchase by December 1, 2005, but provides no information

about whether an interested POSITA could locate GMW14400. RX-0112 at VINFAST1402-00004593–94. The Munford declaration does not supply this missing information either because it relies on screenshots of selective web URLs with no information regarding how an interested POSITA would locate or know of these URLs in the first place. RX-0112 at VINFAST1402-00004571–79; *Int'l Bus. Machs. Corp. v. EnvisionIT LLC*, IPR2017-01246, Paper 7 at 15 (PTAB Oct. 16, 2017); *Microsoft Corp. v. Throughputer, Inc.*, IPR2022-01566, Paper 13 at 11-12 (PTAB May 31, 2023). And even if a POSITA would have known of these URLs, the Munford declaration relies on screenshots of webpages from 2003, which is the wrong time frame because there is no evidence GMW14400 was available in 2003. RX-0112 at VINFAST1402-00004571–79; *Envirologix Inc. v. Ionian Techs., Inc.*, No. IPR2018-00405 (PTAB July 30, 2018). Ms. Munford does not present any evidence of whether the webpages she relies on, existed and what they would have looked like when GMW14400 was allegedly published in November 2005. Regardless, GMW14400 was also considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 172 (citing file histories); JX-0001; JX-0002.

i) Nishibata WO / Nishibata US

Nishibata WO is the international publication corresponding to Nishibata US, which is a United States patent publication. CX-0082 ¶ 179. Nishibata WO was considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 177 (citing file histories); JX-0001; JX-0002.

j) Suehiro II

Suehiro II is non-patent literature and VinFast has not shown that it is prior art to the Asserted Patents because VinFast does not have any admissible evidence regarding the public availability of Suehiro II. VinFast does not attempt to rely on any declaration or otherwise establish the public availability of Suehiro II. Regardless, Suehiro II was considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 183 (citing file histories); JX-0001; JX-0002. Suehiro II also does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an

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enabling disclosure. CX-0082 ¶ 350–351.

k) Lachmann

Lachmann is non-patent literature and VinFast has not shown that it is prior art to the Asserted Patents because VinFast does not have any admissible evidence regarding the public availability of Lachmann. CX-0082 ¶ 187 (relying on declarations by individual that is not part of this Investigation). VinFast does not attempt to rely on any declaration or otherwise establish the public availability of Suehiro II. Regardless, Lachmann was considered by the Patent Office during the prosecution of the Asserted Patents. CX-0082 ¶ 186 (citing file histories); JX-0001; JX-0002. Lachmann also does not provide the information necessary for a POSITA to produce the claimed invention without undue experimentation, and thus, does not provide an enabling disclosure. CX-0082 ¶ 493–494.

3. The '602 Patent is Not Anticipated or Obvious Under §§ 102 and 103

a) Grounds Based on Takagi

(i) No Motivation to Combine

A POSITA would not have been motivated to combine Takagi with (a) Cornette, (b) Cornette and Laurent, (c) Cornette and Nishibata US, (d) Hein and GMW14400, (e) Hein, GMW14400, and Laurent, or (f) Hein, GMW14400, and Nishibata WO. CX-0082 ¶¶ 189–224.

Takagi in combination with Cornette: Takagi does not disclose a coating thickness greater than 30 μm. VinFast contends that a POSITA would, nevertheless, have expected Takagi's coating thickness to be greater than 30 μm based on Takagi disclosing a pre-hot-stamping coating thickness of 10-20 μm. Dr. Raabe will explain that hot-stamping must be carefully controlled, and that before the '602 Patent, a POSITA would not have known the post hot-stamping coating thickness or layer compositions based simply on knowing that a coated base steel has a pre-hot-stamping thickness of 10-20 μm. CX-0082 ¶ 191. This is consistent with documents and test results produced in this Investigation. *Id.*

Dr. Raabe will explain that a POSITA would not have been motivated to combine Takagi with Cornette because a POSITA would not have focused on this specific and arbitrary metric

when the pre- and post-hot-stamping coating thickness are just two of many different parameters involved in the hot-stamping process. CX-0082 ¶¶ 192 (citing example of products with thinner coating thicknesses); 47–64 (explaining different parameters). For example, Maki and Cornette do not discuss any benefits achieved by specific post hot-stamping coating thicknesses of 30 μm or greater, do not provide information about other hot-stamping parameters, or how they impact other aspects of a hot-stamped product. CX-0082 ¶¶ 193–196. While GMW14400 aspirationally requires a coating thickness of >35 μm, these are not rigid requirements and there is no explanation of why this is beneficial and there is no explanation of how a thickness of more than 35 μm would impact other aspects of a hot-stamped product. CX-0082 ¶ 197.

Post hot-stamping coating thickness is also not a "results-effective" variable. CX-0082 ¶¶ 198–201. VinFast does not point to any disclosed relationship between thickness and the aspects of the hot-stamped product, what it would mean to "optimiz[e]" this parameter, or why optimizing this parameter would lead to the claimed invention and not impact other aspects of the hot-stamped product. *Id*. Neither Cornette nor GMW14400 ascribe any benefit to a specific post hot-stamping coating thickness, and Maki merely states that a thickness of 20 μm is sufficient and discusses pre-coating thickness. *Id*.

Dr. Raabe will further explain that a POSITA would not have had a reasonable expectation of success. CX-0082 ¶¶ 202–204. Contrary to VinFast's assertion, a 25% difference between Cornette's and Takagi's pre-hot-stamping coating thickness is not a small change and would have had a significant impact on other aspects of the hot-stamped product. *Id*. The reference FR Laurent also does not provide any general relationship between coating thicknesses but instead only describes a highly parameter-specific scenario that does not result in the claimed invention. *Id*. For example, the thicknesses in Cornette have a different relationship then that described in FR Laurent. *Id*. The difference in thickness of the post-hot-stamping coating layer will significantly impacts all aspects of the hot-stamped product and there is no evidence that using achieving a post hot-stamping thickness of greater than 30 μm would keep everything else in Takagi the same (*e.g.*, the layer structure etc.). *Id*.

[redacted]

It also would not have been obvious to experiment Takagi's hot-stamping process based on Cornette. CX-0082 ¶ 205. Rather than provide evidence that it would have been obvious, VinFast lists various hot-stamping parameters and conclusory states they could be varied. *Id.* But VinFast does not discuss the impact one parameter has on another parameter or the impact any parameter(s) have on the hot-stamped product. *Id.* Indeed, notwithstanding VinFast's conclusory assertion, these are not result-effective variables, and VinFast has not explained what benefits or results were recognized from these variables. Moreover, VinFast fails to appreciate that Cornette's process parameters do not disclose the invention, Section III.F.3.b, such that a POSITA relying on Cornette's disclosure would not have achieved the claimed invention.

Any experimentation also would not have been routine. CX-0082 ¶¶ 205–208. Consequently, a POSITA would not have arrived at the claimed invention merely by varying parameters without undue experimentation. *Id.* For example, VinFast does not describe the range of values that could be varied, the dependency among the parameters that could be varied, or any general relationship among the parameters and/or aspects of the hot-stamped product (*e.g.*, pre and post host-stamping coating thickness and layer composition etc.). *Id.* Nor does the alleged similarity among values disclosed in the '602 Patent, Takagi, and Cornette mean that the claimed invention could be achieved through routine experimentation. *Id.* Unlike Takagi or Cornette, the '602 Patent explains the benefits of its disclosed process, and one cannot pick and choose various parameters in an effort to achieve the claimed process because altering just one parameter could significantly impact the hot-stamped product. *Id.*

Takagi in combination with Cornette and Laurent: A POSITA would not have been motivated to combine Takagi with Cornette and Laurent. CX-0082 ¶¶ 209–210. A POSITA would have understood that increasing the number of references, and then picking and choosing individual elements among the references, would not have been simple. *Id.* Contrary to VinFast's assertion, this combination is not a "simple" substitution of one base steel element for another base steel element. *Id.* Instead, by varying the base steel, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be

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impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* (citing AM-ITC-0103390). VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

Takagi in combination with Cornette and Nishibata US: A POSITA would not have been motivated to combine Takagi with Cornette and Nishibata US. CX-0082 ¶ 211. A POSITA would have understood that increasing the number of references, and then picking and choosing individual elements among the references, such as "low concentrations of sulfur" would not have been obvious to try. *Id.* Contrary to VinFast's assertion, this combination is not a "simple" substitution of one base steel element for another base steel element. *Id.* Instead, by varying the base steel, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

Takagi in combination with Hein and GMW14400: A POSITA would not have been motivated to combine Takagi with Hein and GMW14400. CX-0082 ¶¶ 212–222. While GMW14400 aspirationally requires a coating thickness of >35 μm, these are not rigid requirements, there is no explanation of why this is beneficial, and there is no explanation of how a thickness of more than 35 μm would impact other aspects of a hot-stamped product. CX-0082 ¶ 213. A POSITA would not have had any reason to seek a thickness of more than 35 μm at the expense of impacting the hot-stamping product in undesirable ways. *Id.* While VinFast asserts a researcher would review standards such as GMW14400 and been motivated to follow those guidelines, VinFast overlooks that GMW14400 specifies only a coating thickness of greater than 35 μm and does not specify the other elements of the invention. CX-0082 ¶ 214. A POSITA would have understood that trying to achieve such a thickness would have impacted other attributes of the hot-stamped product, and even if a POSITA would have tried to achieve a 35 μm

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thickness, a POSITA would not have been motivated to do so in combination with the other aspects of Takagi and Hein that are not required by GMW14400. *Id*. To the extent GMW14400 formed the basis for a POSITA's desire to achieve a certain hot-stamped product, that POSITA would not have cared about creating a hot-stamped product that possessed attributes not required by GMW14400. *Id*.

Contrary to VinFast's assertion, a POSITA would not have relied on Hein for process parameters to achieve a coating thickness of approximately 40 μm, because a POSITA would have known that utilizing those process parameters would have impacted the other attributes of the hot-stamped products. CX-0082 ¶ 215. Dr. Raabe will explain that a POSITA would have understood that adjusting the process parameters to focus on achieving a coating thickness of 40 μm would have meant that the other aspects of the combination (*e.g.*, the layer structure and composition) would have been impacted and changed. *Id*.

Dr. Raabe will also explain that GMW14400 does not disclose any "known techniques and parameters" for achieving a coating thickness of greater than 35 μm. CX-0082 ¶ 216. He will also explain that applying Hein and GMW14400 to Takagi would not obtain a "predictable" result because changing just one parameter would impact the hot-stamped product; VinFast does not provide any evidence about the relationship or interdependent nature of the parameters. *Id*.

As a result, a POSITA would not have found it obvious to try a pre-coating thickness of 25 μm/side or in the range of 20 to 33 μm when Takagi discloses only 10-20 μm. CX-0082 ¶ 217. A POSITA would not have found it obvious to try a different pre-coating thickness and would have understood that if a different pre-coating thickness was used, the hot-stamped product would have different attributes (*e.g.*, different layer structure and composition). *Id*. Contrary to VinFast's assertion, pre-coating thickness and coating thickness are not result-effective variables and do not have a predictable relationship. *Id*. (incorporating discussion of Takagi-Cornette combination for the '602 Patent); Section III.F.3.a.i.

Similarly, a POSITA would not have found it obvious to try varying the composition of the pre-coating because changing one parameter (here, the elemental composition of the pre-

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coating), would impact all other attributes of the hot-stamped product. CX-0082 ¶ 218. A POSITA would further understand that changing more than one parameter (*e.g.*, the elemental composition and thickness of the pre-coating) would have an even greater impact on the attributes of the hot-stamped product. *Id*. Contrary to VinFast's assertion, Takagi does not explain how changing the Si% in the pre-coating impacts the Al% in the resulting coating. *Id*. As a result, to the extent an "optimum" Si% exists (and VinFast does not assert that would constitute an optimum value), a POSITA would not have been motivated to find such a range based on Takagi. Similarly, contrary to VinFast's bare assertion that the Al% in the coating would be a function of the Al% in the pre-coating, VinFast does not identify the nature of that relationship or how the Al% would impact the other attributes of the hot-stamped product. *Id*.

A POSITA also would not have been motivated to vary the base steel based on a belief that both Hein and GMW14400 obtain favorable parts using their respective disclosed steels. CX-0082 ¶ 219. As an initial matter, GMW14400 simply provides aspirational requirements and says nothing about whether parts could be obtained with these attributes, let alone "favorable" parts, but to the extent these disclosures had "favorable" parts, a POSITA would not have been motivated to change the base steel since favorable parts were already being obtained. *Id*. A POSITA would have understood that varying any parameter would impact the hot-stamped product, such that it may no longer result in a "favorable" part. *Id*.

VinFast also asserts that it would have obvious to vary the various hot-stamping parameters. CX-0082 ¶ 220. Rather than provide any evidence that it would be obvious, VinFast lists various hot-stamping parameters and states in conclusory fashion they could be varied. *Id*. But VinFast does not discuss the impact one parameter has on another parameter or the impact any parameter(s) have on the hot-stamped product. *Id*. Indeed, notwithstanding VinFast's conclusory assertion, these are not result-effective variables, and VinFast has not explained what benefits or results were recognized from these variables. *Id*. VinFast does not explain why using Takagi's process parameters in the process windows described by Hein would not impact all attributes of the hot-stamped product or why this would be merely routine experimentation. *Id*.

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Dr. Raabe will further explain that a POSITA would not have had "high confidence" that modifications would be successful. CX-0082 ¶ 221. Contrary to VinFast's assertion, the process parameters disclosed in these references are not "generally in agreement" and a POSITA would have understood that varying any parameter in the hot-stamping process would have impacted the attributes of the hot-stamped product. *Id.*

Dr. Raabe will also explain that VinFast's assertion that there would be some degree of trial and error overlooks that any experimentation would not be routine. CX-0082 ¶ 222. Hot-stamping has many different parameters, and VinFast has not asserted any relationship among the parameters. A POSITA would have understood that varying one parameter would have impacted the hot-stamped product, and that one parameter could not be varied (or one attribute in the hot-stamped product could not be sought) without impacting all other attributes of the hot-stamped product. *Id.* Indeed, VinFast does not explain how isolating and selecting a feature from yet another reference would exponentially impact the hot-stamping process. *Id.* A POSITA would have understood that picking and choosing among individual elements of different references, each of which have different parameters, would impact all the attributes of the hot-stamped product. *Id.*

Takagi in combination with Hein, GMW14400, and Laurent: A POSITA would not have been motivated to combine Takagi with Hein, GMW14400, and Laurent for reasons discussed with respect to why there is no motivation to combine Takagi, Cornette and Laurent. CX-0082 ¶ 223; Section III.F.3.a.i.

Takagi in combination with Hein, GMW14400, and Nishibata WO: A POSITA would not have been motivated to combine Takagi with Hein, GMW14400, and Nishibata WO for reasons discussed with respect to why there is no motivation to combine Takagi, Cornette and Nishibata US. CX-0082 ¶ 224; Section III.F.3.a.i.

(ii) Asserted Claims – Takagi in view of Cornette

Claim 1: Takagi in view of Cornette does not disclose "wherein the coating has a thickness greater than 30 μm" of claim 1. CX-0082 ¶¶ 227–229. A POSITA would not have found it obvious to vary Takagi based on Cornette. CX-0082 ¶ 229; Section III.F.3.a.i.

[redacted]

Takagi in view of Cornette does not render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 230; **Claim 9**, CX-0082 ¶ 234.

Claim 5: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 231. Dr. Raabe will further explain that a POSITA would not have understood that sulfur was a parameter that could be "optimize[d]" merely because a prior art reference provided a "maximum" content. *E.I. DuPont de Nemours & Co. v. Synvina C.V.*, 904 F.3d 996, 1008 (Fed. Cir. 2018) ("Our predecessor court reasoned that a person of ordinary skill would not always be motivated to optimize a parameter 'if there is no evidence in the record that the prior art recognized that [that] particular parameter affected the result.'").

CX-0082 ¶ 232. Aside from the bare assertion, VinFast has not provided any reason why a POSITA would have been motivated to "optimize" sulfur content, and indeed, a POSITA would have understood that varying just one parameter would have impacted all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. *Id.*

Claim 6: For the same reasons as claims 2 and 5, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 233.

Claim 10: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 235. Contrary to VinFast's assertion, a POSITA would not have found it obvious to experiment with layer thickness by adjusting thermal parameters to arrive at the claimed less than 10 μm. CX-0082 ¶ 236. Dr. Raabe will explain that a POSITA would have understood that varying the thermal parameters would impact more than just the thickness of one layer. *Id.* For example, VinFast has not explained how the thermal parameters could be varied such that only the thickness of one layer is impacted and all other aspects of the hot-stamped product would stay the same. *Id.*

Dr. Raabe will also explain that the differences between the claimed invention and GMW14400 cannot be overlooked due to "manufacturing tolerances." CX-0082 ¶ 237. If manufacturing tolerances resulted in a different layer thickness, VinFast has not explained how

that would impact the other attributes of the hot-stamped product. *Id.* For example, if manufacturing tolerances produced a layer that was less than 10 μm, then the layer's mean iron composition and the formation of other layers would be impacted. *Id.* VinFast is also incorrect that the '602 Patent does not describe any benefits to a layer thickness of less than 10 μm. CX-0082 ¶ 238 (explaining '602 Patent does not associate reduced weldability with a layer thickness of less than 10 μm); *see also* JX-0002 at 13:7-27.

A POSITA also would not have been motivated to experiment with the layer thickness to arrive at the claimed layer thickness. CX-0082 ¶ 239. Dr. Raabe will explain that changing parameters would impact all attributes of the hot-stamped product and a POSITA would have understood that the impact of varying parameters could not be isolated to just one attribute in the hot-stamped product. *Id.* VinFast is also incorrect that the thickness of layer (a) is a result-effective variable. *Id.* For example, Takagi does not teach that the thickness of layer (a) provides a recognized result. *Id.* (explaining Takagi focuses on the softness and its thickness in relation to the overall coating layer). In fact, Dr. Raabe will explain that Takagi teaches away from the claimed invention because it provides that layer (a) should be equal or greater than 50% of the thickness of overall coating. *Id.* Similarly, a POSITA would have understood that changing the heating temperature and holding time would impact more than just any one layer. CX-0082 ¶ 240. As a result, a POSITA would have understood that it would not have been possible to only impact layer (a) without impacting the other attributes of the hot-stamped product. *Id.*

Claim 12: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 241. VinFast recognizes that the prior art does not disclose the claimed range but attempts to avoid this because of an alleged absence of unexpected results. CX-0082 ¶ 242. But a specification is not required to describe unexpected results or criticality to avoid obviousness. *See Genetics Inst., LLC v. Novartis Vaccines & Diagnostics, Inc.*, 655 F.3d 1291, 1307 (Fed. Cir. 2011) ("The dissent would require either an express prediction of unexpected properties in the patent specification or a showing of the inventors' contemporaneous knowledge of such properties before the PTO or any court could consider such probative evidence. Our

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precedent contains no such requirement."). The '602 Patent also provides the process parameters to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner. CX-0082 ¶ 242. Although VinFast argues there is not a qualitative difference between Takagi and the invention, VinFast fails to address that from a quantitative perspective, there is a difference. *Id.* A different layer composition will impact other attributes, including the composition and thickness of layers in the hot-stamped product. *Id.* Indeed, VinFast never states that the other attributes would not be impacted. *Id.*

Dr. Raabe will also explain that Fe% and Al% are not result-effective. CX-0082 ¶ 243. For example, Takagi does not describe Fe% and Al% as result-effective. *Id.* VinFast also does not provide any evidence showing that these are result-effective. *Id.* As a result, a POSITA would have understood that merely adjusting these parameters would not have achieved the invention as a matter of routine experimentation. *Id.* Instead, adjusting these parameters would have impacted all attributes of the hot-stamped product. *Id.*

VinFast also argues that the differences between the Al%, Fe%, and Si% are within "manufacturing tolerances." CX-0082 ¶ 244. But even if this were true, VinFast does not address how a change in percentage would impact the other attributes of the hot-stamped product, such as mean iron composition, and the formation and thickness of the other layers. *Id.* VinFast never states that if manufacturing tolerances led to other Al%, Fe%, and Si%, the other attributes of the hot-stamped product would not change. *Id.* For example, if there was an increase in percentages, VinFast has not explained where this increase would come from and how it would impact the hot-stamped product. *Id.*

Claim 18: For the same reasons as claims 1 and 5, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 245.

Claim 20: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 246.

Claim 21: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 247.

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Claim 22: For the same reasons as claims 20 and 21, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 248.

Claim 24: For the same reasons as claim 1, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 249. Contrary to VinFast's assertion, it would not have been obvious as a matter of routine experimentation to vary the second and/or fourth aluminum compositions. CX-0082 ¶ 250. Dr. Raabe will explain that varying the composition would have impacted all other attributes of the hot-stamped product. *Id*. It would not have been possible to just isolate one attribute in the hot-stamped product and attempt to vary parameters to change that attribute without impacting all other attributes in the hot-stamped product. *Id*. In fact, VinFast does not suggest any specific values or parameters beyond the bare assertion that this would be "routine experimentation." *Id*. Dr. Raabe will also explain that thermal parameters are not result-effective. *Id*. (citing Takagi).

Claim 25: For the same reasons as claims 12 and 24, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 251. Contrary to VinFast's assertion, it would not have been obvious to modify one or both mean aluminum compositions. CX-0082 ¶ 252. Dr. Raabe will explain that varying the composition would have impacted all other attributes of the hot-stamped product. *Id*. It would not have been possible to just isolate one attribute in the hot-stamped product and attempt to vary parameters to change that attribute without impacting all other attributes in the hot-stamped product. *Id*. In fact, VinFast does not suggest any specific values or parameters. *Id*.

Claim 26: For the same reasons as claims 9 and 24, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 253.

Claim 28: For the same reasons as claims 12 and 24, Takagi in view of Cornette does not render obvious this claim. CX-0082 ¶ 254.

(iii) Asserted Claims – Takagi in view of Cornette and Laurent

Claim 3: For the same reasons as claim 1, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 255. VinFast has not shown that Laurent discloses the

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claimed range or that it would have been obvious to reach the claimed range based on Laurent's disclosures. CX-0082 ¶ 256 (explaining, in contrast, the '602 Patent discloses how to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner).

Claim 4: For the same reasons as claims 1 and 3, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 257.

Claim 7: For the same reasons as claim 1, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 258.

Claim 8: For the same reasons as claims 2 and 7, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 259.

(iv) Asserted Claims – Takagi in view of Cornette and Nishibata US

Claim 3: For the same reasons as claim 1, Takagi in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 260. For example, Nishibata US discloses different ranges for several elements. CX-0082 ¶ 261. VinFast has not shown that Nishibata US discloses the claimed ranges or that it would have been obvious to reach the claimed range based on Nishibata US's disclosures. CX-0082 ¶ 262 (explaining, in contrast, the '602 Patent discloses process how to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner).

Takagi in view of Cornette and Nishibata US does not render obvious the following claims for the same reason as claims 1 and 3: **Claim 4**, CX-0082 ¶ 263; **Claim 5**, CX-0082 ¶ 264.

Claim 6: For the same reasons as claims 2 and 5, Takagi in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 265.

(v) Asserted Claims – Takagi in combination with Hein and GMW14400

Claim 1: Takagi in combination with Hein and GMW14400 does not disclose this claim. CX-0082 ¶¶ 267–268. For example, VinFast mixes and matches elements of these references but as explained, Section III.F.3.a.i, a POSITA would have understood that one attribute from one hot-stamped product could not be incorporated into another hot-stamped product without impacting

the other attributes of the hot-stamped product. *Id*.

Contrary to VinFast's assertion, the claimed thickness is not a matter of "routine optimization." CX-0082 ¶ 268; Section III.F.3.a.i. Dr. Raabe will explain that varying the pre-coating thickness would impact other attributes of the hot-stamped product. CX-0082 ¶ 268.

Takagi in view of Hein and GMW14400 does not render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 269; **Claim 9**, CX-0082 ¶ 281; **Claim 20**, CX-0082 ¶ 286; **Claim 20**, CX-0081 (Raabe Rep.) ¶ 287; **Claim 22**, CX-0082 ¶ 288; **Claim 24**, CX-0082 ¶ 289.

Claim 3: For the same reasons as claim 1, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 270. VinFast has not shown that GMW14400 discloses the claimed compositions or that it would have been obvious to reach the claimed compositions based on GMW14400 disclosures. CX-0082 ¶ 271 (explaining, in contrast, the '602 Patent discloses how to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner). GMW14400 also does not disclose how to obtain a commercially-desirable steel. *Id*. Instead, it simply lists aspirational attributes but does not explain how to achieve any of these attributes. *Id*.

Contrary to VinFast's assertion, GMW14400's lack of disclosure regarding a TI% range does not mean there is an upper bound on the presence of TI. CX-0082 ¶ 272. Instead, Dr. Raabe will explain that the lack of disclosure means GMW14400 does not have any requirements on the amount of TI that can be present in the base metal. *Id*.

Claim 4: For the same reasons as claims 1 and 3, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 273.

Claim 5: For the same reasons as claims 1 and 3, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 274. Dr. Raabe will explain that a POSITA would not have understood that sulfur was a parameter that could be "optimize[d]." CX-0082 ¶ 275. Aside from a bare assertion, VinFast has not provided any reason why a POSITA would have been motivated to "optimize" sulfur content, and indeed, a POSITA would have understood that varying

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just one parameter would have impacted all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. *Id.*

Claim 6: For the same reasons as claim 2, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 276.

Claim 7: For the same reasons as claim 1, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 277. Contrary to VinFast's argument, a POSITA would not have found it obvious to try varying the composition of the base steel as a matter of "routine experimentation." CX-0082 ¶¶ 277–78. Dr. Raabe will explain that varying the composition of the base steel would impact all attributes of the hot-stamped product. *Id.* For example, varying the composition to achieve a specific upper limit for TI% and N% would impact the other attributes of the hot-stamped product and VinFast has not shown how changes could be isolated to only these attributes and not the other attributes of the hot-stamped product. *Id.*

Claim 8: For the same reasons as claims 2 and 7, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 280.

Claim 10: For the same reasons as claims 1 and '602 Patent claim 10 for the Takagi-Cornette combination, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 282; Section III.F.3.a.ii.

Claim 12: For the same reasons as claim 1 and '602 Patent claim 12 for the Takagi-Cornette combination, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 284.

Claim 18: For the same reasons as claims 1 and 9, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 285.

Claim 25: For the same reasons as claim 24 and '602 Patent claim 25 for the Takagi-Cornette combination, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 290.

Claim 26: For the same reasons as claims 9 and 24, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 291.

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Claim 28: For the same reasons as claims 12 and 24, Takagi in view of Hein and GMW14400 does not render obvious this claim. CX-0082 ¶ 292.

(vi) Asserted Claims – Takagi in combination with Hein, GMW14400, and Laurent

Claim 3: For the same reasons as claim 1, Takagi in view of Hein, GMW14400, and Laurent does not render obvious this claim. CX-0082 ¶ 293. VinFast has not shown that Laurent discloses the claimed range or that it would have been obvious to reach the claimed range based on Laurent's disclosures. CX-0082 ¶ 294.

Claim 4: For the same reasons as claims 1 and 3, Takagi in view of Hein, GMW14400, and Laurent does not render obvious this claim. CX-0082 ¶ 295.

Claim 7: For the same reasons as claim 1, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 258.

Claim 8: For the same reasons as claims 2 and 7, Takagi in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 259.

(vii) Asserted Claims – Takagi in combination with Hein, GMW14400, and Nishibata WO

Claim 3: For the same reasons as claim 1 and '602 Patent claim 3 for the Takagi-Cornette-Nishibata US combination, Takagi in view of Hein, GMW14400, and Nishibata WO does not render obvious this claim. CX-0082 ¶ 298; Section III.F.3.a.iv.

Claim 4: For the same reasons as claim 1 and '602 Patent claim 4 for the Takagi-Cornette-Nishibata US combination, Takagi in view of Hein, GMW14400, and Nishibata WO does not render obvious this claim. CX-0082 ¶ 299; Section III.F.3.a.iv.

Claim 5: For the same reasons as claim 1 and '602 Patent claim 5 for the Takagi-Cornette-Nishibata US combination, Takagi in view of Hein, GMW14400, and Nishibata WO does not render obvious this claim. CX-0082 ¶ 300; Section III.F.3.a.iv.

Claim 6: For the same reasons as claims 2 and 5, Takagi in view of Hein, GMW14400, and Nishibata WO does not render obvious this claim. CX-0082 ¶ 301.

b) Grounds Based on Cornette

[redacted]

(i) No Motivation to Combine

Cornette in combination with Nishibata US: A POSITA would not have been motivated to combine Cornette and Nishibata US. CX-0082 ¶ 303; Section III.F.3.a.i. Contrary to VinFast's assertion, this combination is not a "simple" substitution of one element for another element. *Id.* Instead, varying one element will impact all attributes of the hot-stamped product. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that one element could be substituted without impacting the hot-stamped product. *Id.*

(ii) Asserted Claims – Cornette

Claim 1: Cornette does not anticipate or render obvious this claim. CX-0082 ¶¶ 306–311. Cornette does not disclose a "first mean iron composition," "a second mean iron composition different from the first mean iron composition," "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 "a fourth mean iron composition different from the third mean iron composition." CX-0082 ¶ 308. Contrary to VinFast's argument, while different colors in SEM images may indicate differences in composition, they do not provide the ability to determine differences in concentration between one element and another element. CX-0082 ¶ 308. For example, VinFast does not explain how the SEM colors relate to iron composition. *Id.*

VinFast also attempts to draw a relationship between mean iron compositions based on "ArcelorMittal's own testing." CX-0082 ¶ 309. But this is an unrelated test, and VinFast does not explain how this test relates to Cornette in any way. CX-0082 ¶ 310 (explaining how some tests did not result in the claimed invention). Indeed, Dr. Drillet was asked about Cornette, and he explained that it shows "multiple phases," which does not necessarily mean "multilayer" and that Cornette did not show a continuous and homogenous surface layer. CX-0082 ¶ 311 (citing Drillet Dep. Tr. 97:6-101:13.).

Cornette does not anticipate or render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 312; **Claim 3**, CX-0082 ¶ 313; **Claim 4**, CX-0082 ¶ 314; **Claim 7**,

[redacted]

CX-0081 (Raabe Rep.) ¶ 319; **Claim 9**, CX-0082 ¶ 321; **Claim 18**, CX-0082 ¶ 324; **Claim 21**, CX-0082 ¶ 327; **Claim 24**, CX-0082 ¶ 329.

Claim 5: For the same reasons as claim 1, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 315. Dr. Raabe will explain that a POSITA would not have understood that sulfur was a parameter that could be "optimize[d]." CX-0082 ¶ 316. Aside from a bare assertion, VinFast has not provided any reason why a POSITA would have been motivated to "optimize" sulfur content, and indeed, a POSITA would have understood that varying just one parameter would have impacted all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. *Id*. VinFast also makes a conclusory argument that to the extent a domestic industry product using Usibor 1500 meets the claim, then Cornette would disclose this claim because Cornette allegedly discloses the use of Usibor 1500P. CX-0082 ¶ 317. Dr. Raabe will explain the hot-stamping has many parameters beyond just the base steel, and even if Cornette and the domestic industry products use the same base steel, which VinFast has not shown, there are still several other parameters that would impact the attributes of the hot-stamped product. *Id*.

Claim 6: For the same reasons as claims 2 and 5, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 318.

Claim 8: For the same reasons as claims 2 and 7, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 320.

Claim 10: For the same reasons as claim 1, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 322. Contrary to VinFast's assertion, the thickness of interdiffusion layer (a) is not merely a "design choice" that can be adjusted without impacting any other attributes of the hot-stamped product. CX-0082 ¶ 323. Dr. Raabe will explain that hot-stamping has many parameters, and to the extent, parameter(s) could be isolated and adjusted to impact the thickness of the interdiffusion layer, other attributes of the hot-stamped product will also change. *Id*. For example, despite asserting this is a mere design choice, VinFast does not state what parameters could be adjusted and how they could be adjusted to achieve the claimed invention. *Id*.

[redacted]

Claim 20: For the same reasons as claim 1, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 325. VinFast also attempts to draw a relationship between mean iron compositions based on "ArcelorMittal's testing." CX-0082 ¶ 326. But this is an unrelated test, and VinFast does not explain how this test relates to Cornette in any way.

Claim 22: For the same reasons as claims 20 and 21, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 328.

Claim 25: For the same reasons as claim 24, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 330. VinFast also attempts to draw a relationship between mean iron compositions based on "ArcelorMittal's testing." CX-0082 ¶ 335. But this is an unrelated test, and VinFast does not explain how such relates to Cornette in any way. *Id.*

Claim 26: For the same reasons as claims 9, 10, 18, and 24, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 332.

Claim 28: For the same reasons as claims 12 and 24, Cornette does not anticipate or render obvious this claim. CX-0082 ¶ 333.

(iii) Asserted Claims – Cornette in combination with Nishibata US.

Claim 3: For the same reasons as claim 1, Cornette in combination with Nishibata US does not render obvious this claim. CX-0082 ¶ 334. For example, Nishibata US discloses different ranges for several elements. CX-0082 ¶ 335. VinFast has not shown that Nishibata US discloses the claimed ranges or that it would have been obvious to reach the claimed range based on Nishibata US's disclosures. CX-0082 ¶ 336 (explaining, in contrast, the '602 Patent discloses a process for how to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner).

Claim 4: For the same reasons as claims 1 and 3, Cornette in combination with Nishibata US does not render obvious this claim. CX-0082 ¶ 337.

Claim 5: For the same reasons as claim 1, Cornette in combination with Nishibata US does not render obvious this claim. CX-0082 ¶ 338. Nishibata US does not disclose the range as recited in the claim limitation, nor does VinFast show how Nishibata renders the range obvious.

[redacted]

Id.

Claim 6: For the same reasons as claims 2 and 5, Takagi in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 339.

c) Grounds Based on Suehiro II

(i) No Motivation to Combine

Suehiro II in combination with Cornette: A POSITA would not have been motivated to combine Suehiro II and Cornette. CX-0082 ¶¶ 341–346. Contrary to VinFast's assertion, a POSITA would not have been motivated to achieve a coating thickness of greater than 30 μm based on GMW14400. CX-0082 ¶ 342. While GMW14400 aspirationally requires a coating thickness of >35 μm, these are not rigid requirements, there is no explanation of why this is beneficial, there is no explanation of how a thickness of more than 35 μm would impact other aspects of a hot-stamped product. *Id.* A POSITA would not have had any reason to seek a thickness of more than 35 μm at the expense of impacting the hot-stamping product in undesirable ways. *Id.* While VinFast asserts a researcher would review standards such as GMW14400 and been motivated to follow those guidelines, VinFast overlooks that GMW14400 specifies only a coating thickness of greater than 35 μm and does not specify the other elements of the invention. *Id.* To the extent GMW14400 formed the basis for a POSITA's desire to achieve a certain hot-stamped product, that POSITA would not have cared about creating a hot-stamped product that possessed attributes not required by GMW14400. *Id.*

The reference FR Laurent also does not provide any general relationship between coating thicknesses but instead only describes a highly parameter-specific scenario that does not result in the claimed invention. CX-0082 ¶ 343. The difference in thickness of the post-hot-stamping coating layer will significantly impact all aspects of the hot-stamped product and there is no evidence that using achieving a post hot-stamping thickness of greater than 30 μm would keep everything else in Suehiro II the same (e.g., the layer structure etc.). *Id.*

Post hot-stamping coating thickness is also not a "results-effective" variable. CX-0082 ¶ 344. VinFast does not point to any disclosed relationship between thickness and the aspects of the

[redacted]

hot-stamped product, what it would mean to optimize this parameter, or why optimizing this parameter would lead to the claimed invention and not impact other aspects of the hot-stamped product. *Id*. Contrary to VinFast's characterization, Maki does not ascribe a benefit to post hot-stamping coating thickness; Maki addresses pre-coating thickness. *Id*. Similarly, Cornette does not ascribe a benefit to post hot-stamping coating thickness and thus, a POSITA would not have identified Cornette as a reference to combine with Suehiro II. CX-0082 ¶ 345.

Dr. Raabe will also explain that a POSITA would not have had high confidence that any modifications to Suehiro II based on Cornette would be successful. CX-0082 ¶ 346. The alleged similarity among values between Suehiro II and Cornette does not mean that the claimed invention could be achieved with a high degree of confidence. *Id*. Unlike these references, the '602 Patent explains the benefits of its disclosed process, and one cannot pick and choose various parameters in an effort to achieve the claimed process because altering just one parameter could significantly impact the hot-stamped product. *Id.*

Suehiro II in combination with Cornette and GMW14400: VinFast did not provide a motivation to combine Suehiro II with Cornette and GMW14400. CX-0082 ¶ 347.

Suehiro II in combination with Cornette and Laurent: A POSITA would not have been motivated to combine Suehiro II with Cornette and Laurent. CX-0082 ¶ 348. A POSITA would have understood that increasing the number of references, and then picking and choosing individual elements among the references, would not have been simple. *Id*. Contrary to VinFast's assertion, this combination is not a "simple" substitution of one steel for another steel. *Id*. Instead, by varying the steel, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id*. For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id*. VinFast has not provided any evidence that the steel could be substituted without impacting the hot-stamped product. *Id*.

Suehiro II in combination with Cornette and Nishibata US: A POSITA would not have been motivated to combine Suehiro II with Cornette and Nishibata US. CX-0082 ¶ 349. A

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POSITA would have understood that increasing the number of references, and then picking and choosing individual elements among the references, such as "low concentrations of sulfur" would not have been obvious to try. *Id.* Contrary to VinFast's assertion, this combination is not a "simple" substitution of one steel element for another steel element. *Id.* Instead, by varying the steel, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

(ii) Asserted Claims – Suehiro II in view of Cornette

Claim 1: Suehiro II alone or in view of Cornette does not disclose "wherein the coating has a thickness greater than 30 μm" of claim 1. CX-0082 ¶¶ 352–354. A POSITA would not have found it obvious to vary Suehiro II based on Cornette. CX-0082 ¶ 354; Section III.F.3.c.i.

Suehiro II alone and/or Suehiro II in view of Cornette does not anticipate or render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 355; **Claim 3**, CX-0082 ¶ 356; **Claim 9**, CX-0082 ¶ 361; **Claim 20**, CX-0081 (Raabe Rep.) ¶ 373; **Claim 21**, CX-0082 ¶ 374; **Claim 24**, CX-0082 ¶ 376.

Claim 4: For the same reasons as claims 1 and 3, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 357.

Claim 5: For the same reasons as claim 1, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 358. Dr. Raabe will further explain that a POSITA would not have understood that sulfur was a parameter that could be "optimize[d]" merely because a prior art reference provided a range. CX-0082 ¶ 359. Aside from the bare assertion, VinFast has not provided any reason why a POSITA would have been motivated to "optimize" sulfur content, and indeed, a POSITA would have understood that varying just one parameter would have impacted all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. *Id.*

[redacted]

Claim 6: For the same reasons as claims 2 and 5, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 360.

Claim 10: For the same reasons as claim 1, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 362. Contrary to VinFast's assertion, VinFast has not shown that the thickness of layer (a) is "directly" related to furnace temperature and dwell time, such that varying those parameters would impact only layer (a) and not impact any other attribute of the hot-stamped product. CX-0082 ¶ 363. This is not a mere "design choice" and varying these parameters will impact the other attributes of the hot-stamped product. *Id.*

A POSITA also would not have found it obvious to experiment with layer thickness by adjusting thermal parameters to arrive at the claimed less than 10 μm. CX-0082 ¶ 364. Dr. Raabe will explain that a POSITA would have understood that varying the thermal parameters would impact more than just the thickness of one layer. *Id.* For example, VinFast has not explained how the thermal parameters could be varied such that only the thickness of one layer is impacted and all other aspects of the hot-stamped product would stay the same. *Id.*

Dr. Raabe will also explain that the differences between the claimed invention and the proposed combination cannot be overlooked due to "manufacturing tolerances." CX-0082 ¶ 365. If manufacturing tolerances resulted in a different layer thickness, VinFast has not explained how that would impact the other attributes of the hot-stamped product. *Id.* For example, if manufacturing tolerances produced a layer that was less than 10 μm, then the layer's mean iron composition and the formation of other layers would be impacted. *Id.* VinFast is also incorrect that the '602 Patent does not describe any benefits to a layer thickness of less than 10 μm. CX-0082 ¶ 368.

A POSITA also would not have been motivated to experiment with the layer thickness to arrive at the claimed layer thickness. CX-0082 ¶ 367. Dr. Raabe will explain that changing parameters would impact all attributes of the hot-stamped product and a POSITA would have understood that the impact of varying parameters could not be isolated to just one attribute in the hot-stamped product. *Id.* VinFast is also incorrect that the thickness of layer (a) is a result-

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effective variable. *Id*. For example, Takagi does not teach that the thickness of layer (a) provides a recognized result. *Id*. (explaining Takagi focuses on the softness and its thickness in relation to the overall coating layer). In fact, Dr. Raabe will explain that Takagi teaches away from the claimed invention because it provides that layer (a) should be equal or greater than 50% of the thickness of overall coating. *Id*. As a result, a POSITA would have understood that it would not have been possible to only impact layer (a) without impacting the other attributes of the hot-stamped product. *Id*.

Claim 12: For the same reasons as claim 1, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 368. VinFast recognizes that the prior art does not disclose the claimed range but attempts to avoid this because of an alleged absence of unexpected results. CX-0082 ¶ 369. But a specification is not required to describe unexpected results or criticality to avoid obviousness. *Genetics Inst., LLC*, 655 F.3d at 1307 (citing cases). The '602 Patent also provides the process parameters to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner. CX-0082 ¶ 369. Although VinFast argues there is not a qualitative difference between the references and the invention, VinFast fails to address that from a quantitative perspective, there is a difference. *Id*. A different layer composition will impact other attributes, including the composition and thickness of layers in the hot-stamped product. *Id*. Indeed, VinFast never states that the other attributes would not be impacted. *Id*.

Dr. Raabe will also explain that Fe% and Al% are not result-effective and a POSITA would not have been motivated to experiment to arrive at the claimed ranges. CX-0082 ¶ 370. For example, Takagi does not describe Fe% and Al% as result-effective. *Id*. VinFast also does not provide any evidence showing that these are result-effective. *Id*. As a result, a POSITA would have understood that merely adjusting these parameters would not have achieved the invention as a matter of routine experimentation. *Id*. Instead, adjusting these parameters would have impacted all attributes of the hot-stamped product. *Id*.

VinFast also argues that the differences between the Al%, Fe%, and Si% are within "manufacturing tolerances." CX-0082 ¶ 371. But even if this were true, VinFast does not address

how a change in percentage would impact the other attributes of the hot-stamped product, such as mean iron composition, and the formation and thickness of the other layers. *Id*. VinFast never states that if manufacturing tolerances led to other Al%, Fe%, and Si%, the other attributes of the hot-stamped product would not change. *Id*. For example, if there was an increase in percentages, VinFast has not explained where this increase would come from and how it would impact the hot-stamped product. *Id*.

Claim 18: For the same reasons as claims 1 and 9, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 372.

Claim 22: For the same reasons as claims 20 and 21, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 375.

Claim 25: For the same reasons as claim 24, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 377. A POSITA would not have recognized that any differences between the mean aluminum composition of the layers as being minimal. CX-0082 ¶ 378. A POSITA would recognize that attempting to achieve any specific attribute in the hot-stamped product would have impacted the other attributes of the hot-stamped product. *Id*. And contrary to VinFast's assertion, it would not have been obvious to modify one or both mean aluminum compositions. *Id*. Dr. Raabe will explain that varying the composition would have impacted all other attributes of the hot-stamped product. *Id*. It would not have been possible to just isolate one attribute in the hot-stamped product and attempt to vary parameters to change that attribute without impacting all other attributes in the hot-stamped product. *Id*. In fact, VinFast does not suggest any specific values or parameters. *Id*.

Claim 26: For the same reasons as claims 9, 10, 18, and 24, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 379.

Claim 28: For the same reasons as claims 12 and 24, Suehiro II alone and/or Suehiro II in view of Cornette does not render obvious this claim. CX-0082 ¶ 380.

[redacted]

(iii) Asserted Claims – Suehiro II in view of Cornette and GMW14400

Claim 3: For the same reasons as claim 1, Suehiro II in view of Cornette and GMW14400 does not render obvious this claim. CX-0082 ¶ 381. VinFast has not shown that GMW14400 discloses the claimed composition or that it would have been obvious to reach the claimed range based on GMW14400's disclosures. CX-0082 ¶ 382. Contrary to VinFast's assertion, GMW14400's lack of disclosure regarding a TI% range does not mean there is an upper bound on the presence of TI. CX-0082 ¶ 383. Instead, Dr. Raabe will explain that the lack of disclosure means GMW14400 does not have any requirements on the amount of TI that can be present in the base metal. *Id.*

Claim 4: For the same reasons as claims 1 and 3, Suehiro II in view of Cornette and GMW14400 does not render obvious this claim. CX-0082 ¶ 384.

(iv) Asserted Claims – Suehiro II in view of Cornette and Laurent

Claim 3: For the same reasons as claim 1, Suehiro II in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 385. VinFast has not shown that Laurent discloses the claimed range or that it would have been obvious to reach the claimed range based on Laurent's disclosures. CX-0082 ¶ 386 (explaining, in contrast, the '602 Patent discloses how to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner). Contrary to VinFast's assertion, this combination is not a "simple" substitution of one element for another element. CX-0082 ¶ 387. Instead, varying one element will impact all attributes of the hot-stamped product. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that one element could be substituted without impacting the hot-stamped product. *Id.*

Claim 4: For the same reasons as claims 1 and 3, Suehiro II in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 388.

Claim 7: For the same reasons as claims 1, 3, and 4 Suehiro II in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 389.

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Claim 8: For the same reasons as claims 2 and 7, Suehiro II in view of Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 390.

(v) Asserted Claims – Suehiro II in view of Cornette and Nishibata US

Claim 3: For the same reasons as claim 1 and claim 3 in the Takagi-Cornette-Nishibata US combination, Suehiro II in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 391; Section III.F.3.a.iv.

Claim 4: For the same reasons as claims 1 and 3, Suehiro II in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 392.

Claim 5: For the same reasons as claims 1 and 3, Suehiro II in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 393.

Claim 6: For the same reasons as claims 2 and 5, Suehiro II in view of Cornette and Nishibata US does not render obvious this claim. CX-0082 ¶ 394.

d) Grounds Based on Engels

(i) No Motivation to Combine

Engels in combination with Cornette: A POSITA would not have been motivated to combine Engels and Cornette. CX-0082 ¶¶ 396–403. VinFast, however, mixes and matches elements of these references but a POSITA would have understood that one attribute from one hot-stamped product could not be incorporated into another hot-stamped product without impacting the other attributes of the hot-stamped product. CX-0082 ¶ 397. Indeed, aside from VinFast's bare assertion, there is no evidence that a POSITA would "already have been aware of reasonable values" for these parameters. *Id.*

VinFast also mischaracterizes Cornette's disclosures. Cornette explains benefits in the context of comparing pre-coated to uncoated Usibor. CX-0082 ¶ 398. Aside from a very specific pre-coating layer thickness, Cornette does not describe any other process parameters as providing any particular benefit. *Id.* Thus, Cornette does not provide any motivation for a POSITA to use its process parameters in the context of another reference. *Id.*

[redacted]

As a result, a POSITA would not have had combined various process parameters from different references, as a POSITA would have understood that one parameter used to create one hot-stamped part cannot be isolated and used in another hot-stamped process without impacting all the attributes of the hot-stamped product. CX-0082 ¶ 399. Similarly, a POSITA would not have experimented because any such experimentation would not be "routine"; VinFast does not attempt to describe any relationship between the various hot-stamping parameters and attributes of the hot-stamped product. CX-0082 ¶ 400. Likewise, the "similar" temperature ranges between Engels and Cornette would not have "reinforced" the obviousness of combining these two references because a POSITA would have understood that any variance of parameters would impact all the attributes of the hot-stamped product. CX-0082 ¶ 402. As a result, this would not have been routine experimentation. *See* Section III.F.3.a.i.

VinFast also asserts that there may be an association between layer thickness/morphology and composition. CX-0082 ¶ 403. But VinFast does not describe any relationship, and does not explain how or why a POSITA would have attempted to "optimize" this relationship. *Id.* A POSITA would not have been able to "optimize" this relationship through routine experimentation and VinFast does not explain how a POSITA could only focus on these attributes without impacting the other attributes of the hot-stamped product. *Id.*

Engels in combination with Laurent: A POSITA would not have been motivated to combine Engels and Laurent for the same reasons as the Takagi-Cornette-Laurent combination for the '602 Patent. CX-0082 ¶ 404; Section III.F.3.a.i.

Engels in combination with Nishibata WO: A POSITA would not have been motivated to combine Engels and Nishibata WO for the same reasons as the Takagi-Cornette-Nishibata US combination and the Takagi-Hein-GMW14400 combination for the '602 Patent. CX-0082 ¶ 405; Section III.F.3.a.i.

Engels in combination with Cornette and Nishibata WO: A POSITA would not have been motivated to combine Engels, Cornette, and Nishibata WO for the same reasons as the Takagi-Cornette-Nishibata US combination and the Engels-Cornette and Engels-Nishibata WO

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combinations for the '602 Patent. CX-0082 ¶ 406; Section III.F.3.a.i.

Engels in combination with Cornette and Laurent: A POSITA would not have been motivated to combine Engels with Cornette and Laurent for the same reasons as the Engels-Cornette and Engels-Laurent combinations for the '602 Patent. CX-0082 ¶ 407; Section III.F.3.d.i.

Engels in combination with Takagi: A POSITA would not have been motivated to combine Engels with Takagi. CX-0082 ¶¶ 408–409. Contrary to VinFast's assertion, it would not have been obvious to apply Takagi's teachings to Engels to obtain the layer compositions described by Takagi. CX-0082 ¶ 409. A POSITA would have understood that varying parameter(s) would impact all the attributes of the hot-stamped product, such that certain attribute(s) could not be isolated while keeping all attributes the same. *Id*. For example, VinFast has not explained how the thermal parameters could be varied such that only the thickness of one layer is impacted and all other aspects of the hot-stamped product would stay the same. *Id*.

(ii) Asserted Claims – Engels

Claim 1: Engles does not anticipate or render obvious this claim because Engels also does not provide the composition of the base steel beyond that it is an "aluminum coated boron steel." CX-0082 ¶¶ 413–414. Dr. Raabe will explain that one cannot determine from Engels whether it contains the claimed layers, such as the intermediate, intermetallic, and superficial layer. *Id*.

Engles does not anticipate or render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 415; **Claim 9**, CX-0082 ¶ 416; **Claim 10**, CX-0082 ¶ 417; **Claim 20**, CX-0081 (Raabe Rep.) ¶ 423; **Claim 21**, CX-0082 ¶ 424; **Claim 22**, CX-0082 ¶ 425; **Claim 24**, CX-0082 ¶ 426.

Claim 12: For the same reasons as claim 1, Engles does not anticipate or render obvious this claim. CX-0082 ¶ 418. VinFast recognizes that the prior art does not disclose the claimed range but attempts to avoid this because of an alleged absence of unexpected results. CX-0082 ¶ 419. But a specification is not required to describe unexpected results or criticality to avoid obviousness. *Genetics Inst., LLC*, 655 F.3d at 1307. The '602 Patent also provides the process parameters to obtain a beneficial coating microstructure in a repeatable, consistent, and robust

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manner. CX-0082 ¶ 419. Although VinFast argues there is not a qualitative difference between the references and the invention, VinFast fails to address that from a quantitative perspective, there is a difference. *Id.* A different layer composition will impact other attributes, including the composition and thickness of layers in the hot-stamped product. *Id.* Indeed, VinFast never states that the other attributes would not be impacted. *Id.*

Dr. Raabe will explain that Al% is not result-effective. CX-0082 ¶ 420. For example, Takagi and Maki do not describe Al% of the intermediate layer as result-effective, and VinFast provides no other evidence that this is result-effective. *Id.* As a result, a POSITA would have understood that merely adjusting these parameters would not have achieved the invention as a matter of routine experimentation and would not have been motivated to experiment. *Id.* Instead, adjusting these parameters would have impacted all attributes of the hot-stamped product. *Id.*

VinFast also argues that the differences with Al% are within "manufacturing tolerances." CX-0082 ¶ 421. But even if this were true, VinFast does not address how a change in percentage would impact the other attributes of the hot-stamped product, such as mean iron composition, and the formation and thickness of the other layers. *Id.* VinFast never states that if manufacturing tolerances led to other Al%, the other attributes of the hot-stamped product would not change. *Id.* For example, if there was an increase in percentages, VinFast has not explained where this increase would come from and how it would impact the hot-stamped product. *Id.*

Claim 18: For the same reasons as claims 1 and 18, Engles does not anticipate or render obvious this claim. CX-0082 ¶ 422.

Claim 25: For the same reasons as claims 1 and 12, Engles does not anticipate or render obvious this claim. CX-0082 ¶ 427. Dr. Raabe will explain that a POSITA would have understood that changing Engels' process would impact all attributes of the hot-stamping process such that any varying of the thermal parameters would not merely be "routine optimization." *Id.* In addition, VinFast has not explained how or why a POSITA would consider varying these parameters to lead to "optimization." *Id.* VinFast also has not explained how manufacturing tolerances would also impact the other attributes of the hot-stamped product.

[redacted]

Claim 26: For the same reasons as claims 9 and 24, Engles does not anticipate or render obvious this claim. CX-0082 ¶ 428.

Claim 28: For the same reasons as claims 12 and 24, Engles does not anticipate or render obvious this claim. CX-0082 ¶ 430.

(iii) Asserted Claims – Engels in combination with Cornette

Claim 2: For the same reasons as claim 1, Engels in combination with Cornette does not render obvious this claim. CX-0082 ¶ 431.

Claim 5: For the same reasons as claim 1 and '602 Patent claim 5 in reference to the Takagi-Cornette, Engels in combination with Cornette does not render obvious this claim. CX-0082 ¶ 432; Section III.F.3.a.ii.

Claim 6: For the same reasons as claims 2 and 5, Engels in combination with Cornette does not render obvious this claim. CX-0082 ¶ 433.

(iv) Asserted Claims – Engels in combination with Laurent

Claim 3: For the same reasons as claim 1 and '602 Patent claim 3 for the Takagi-Cornette-Laurent combination, Engels in combination with Laurent does not render obvious this claim. CX-0082 ¶ 434; Section III.F.3.a.iii

Claim 4: For the same reasons as claims 1 and 3, Engels in combination with Laurent does not render obvious this claim. CX-0082 ¶ 435.

Claim 7: For the same reasons as claim 1 and '602 Patent claim 7 for the Takagi-Cornette-Laurent combination, Engels in combination with Laurent does not render obvious this claim. CX-0082 ¶ 436; Section III.F.3.a.iii.

Claim 8: For the same reasons as claims 2 and 7, Engels in combination with Laurent does not render obvious this claim. CX-0082 ¶ 437.

(v) Asserted Claims – Engels in combination with Nishibata WO

Claim 3: For the same reasons as claim 1 and '602 Patent claim 3 for the Takagi-Cornette-Nishibata US combination, Engels in combination with Nishibata WO does not render obvious this claim. CX-0082 ¶ 438; Section III.F.3.a.iv.

[redacted]

Claim 4: For the same reasons as claims 1 and 3, Engels in combination with Nishibata WO does not render obvious this claim. CX-0082 ¶ 439.

Claim 5: For the same reasons as claim 1 and '602 Patent claim 5 for the Takagi-Cornette-Nishibata US combination, Engels in combination with Nishibata WO does not render obvious this claim. CX-0082 ¶ 440; Section III.F.3.a.iv.

Claim 6: For the same reasons as claims 2 and 5, Engels in combination with Nishibata WO does not render obvious this claim. CX-0082 ¶ 441.

(vi) Asserted Claims – Engels in combination with Cornette and Nishibata WO

Claim 6: For the same reasons as claim 2 and '602 Patent claim 2 (Engels-Cornette combination) and claim 5 (Engels-Nishibata WO combination), Engels in combination with Cornette and Nishibata WO does not render obvious this claim. CX-0082 ¶ 442; Sections III.F.3.d.iii and III.F.3.d.v.

(vii) Asserted Claims – Engels in combination with Cornette and Laurent

Claim 8: For the same reasons as claim 2 and '602 Patent claim 2 (Engels-Cornette combination) and claim 7 (Engels-Laurent combination), Engels in combination with Cornette and Laurent does not render obvious this claim. CX-0082 ¶ 443; Sections III.F.3.d.iii and III.F.3.d.iv.

(viii) Asserted Claims – Engels in combination with Takagi

Claim 12: For the same reasons as claim 1 and '602 Patent claim 12 for the Takagi-Cornette combination, Engels in combination with Takagi does not render obvious this claim. CX-0082 ¶ 444; Section III.F.3.a.ii.

Claim 25: For the same reasons as claim 24 and '602 Patent claim 25 for the Takagi-Cornette combination, Engels in combination with Takagi does not render obvious this claim. CX-0082 ¶ 445; Section III.F.3.a.ii.

Claim 28: For the same reasons as claim 24 and '602 Patent claim 12, Engels in combination with Takagi does not render obvious this claim. CX-0082 ¶ 445; Section III.F.3.d.viii.

[redacted]

e) Grounds Based on Passat 1049

(i) Asserted Claims

There are several issues related to VinFast's testing of the Passat 1049 that render VinFast's test results unreliable. CX-0082 ¶¶ 447–456. As an initial matter, the genesis and history of the Passat 1049 is not known. VinFast did not explain how or it why it chose this particular Passat, or whether it analyzed the Passat 1049 to determine if any repairs had been done to it. *Id.* VinFast also did not prepare or submit a testing protocol in advance of analyzing the test, which means VinFast may have selectively chosen parts in an unreliable manner. *Id.* For example, VinFast did not explain why it chose to analyze only a specific portion of the Passat 1049 or what happened to some of the cutouts it removed from the Passat 1049 (e.g., cutouts BL6, BL8, and whether any cutouts were obtained after BL9); indeed, even if these parts were from one area of a car or a single part, cars often have parts consisting of smaller subparts that are welded together, where the subparts may consist of steel from different mills and/or hot-stamped by different Tier 1 manufacturers, such that subparts within a larger part could have different coatings. CX-0082 ¶ 449. VinFast did not explain whether the cutouts it removed were from the same subpart of the car or from different subparts that have been welded together to make one part and also did not explain why it prepared smaller testing samples from a subset of the cutouts and why only test results were provided for an even smaller subset of those testing samples. CX-0082 ¶¶ 449–451. VinFast also did not explain why it tested different cutouts for elemental composition and mechanical strength, instead of using the same cutout for all elements of the claims (*e.g.*, VinFast used one part as it relates to the layer limitation of the claim and another part as it relates to the mechanical strength limitation of the claim). CX-0082 ¶ 452. VinFast's images of the tested cutouts also show significant differences from the claimed invention, including the presence of horizontal cracks. CX-0082 ¶¶ 453–455.

Claim 1: The Passat 1049 does not anticipate claim 1. CX-0082 ¶¶ 459–462. VinFast mixed and matched various components of the Passat, instead of consistently using the same component to assess whether all claim limitations could be found in one component. *Id.*

[redacted]

(explaining the various mixing and matching). VinFast also takes an inconsistent approach to identify layers and does not consistently identify a layer at each "change" in a region. CX-0082 ¶ 462.

Passat 1049 does not disclose the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 463; **Claim 9**, CX-0082 ¶ 474; **Claim 12**, CX-0082 ¶ 476; **Claim 20**, CX-0081 (Raabe Rep.) ¶ 478; **Claim 21**, CX-0082 ¶ 479; **Claim 24**, CX-0082 ¶ 481.

Claim 3: For the same reasons as claim 1, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 464. VinFast also relies on a different cutout sample for this limitation than that used for claim 1, and VinFast did not use the same sample for each limitation of the claim. CX-0082 ¶ 465.

Claim 4: For the same reasons as claim 1, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 466. VinFast also relies on a different cutout sample for this limitation than that used for claim 1, and VinFast did not use the same sample for each limitation of the claim. CX-0082 ¶ 467.

Claim 5: For the same reasons as claim 1, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 468. VinFast also relies on a different cutout sample for this limitation than that used for claim 1, and VinFast did not use the same sample for each limitation of the claim. CX-0082 ¶ 469.

Claim 6: For the same reasons as claims 2 and 5, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 470.

Claim 7: For the same reasons as claim 1, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 471. VinFast also relies on a different cutout sample for this limitation than that used for claim 1, and VinFast did not use the same sample for each limitation of the claim. CX-0082 ¶ 472.

Claim 8: For the same reasons as claims 2 and 7, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 473.

Claim 10: For the same reasons as claims 2 and 7, Passat 1049 does not anticipate or

[redacted]

render obvious this claim. CX-0082 ¶ 475.

Claim 18: For the same reasons as claims 1, 9, and 10, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 477.

Claim 22: For the same reasons as claim 21, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 480.

Claim 25: For the same reasons as claim 24, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 482.

Claim 26: For the same reasons as claims 9 and 24, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 483.

Claim 28: For the same reasons as claims 12 and 24, Passat 1049 does not anticipate or render obvious this claim. CX-0082 ¶ 484.

f) Grounds Based on Lachmann

(i) No Motivation to Combine

Lachmann in combination with Cornette. A POSITA would not have been motivated to combine Lachmann and Cornette. CX-0082 ¶¶ 486–490. VinFast, however, mixes and matches elements of these references, but a POSITA would have understood that one attribute from one hot-stamped product could not be incorporated into another hot-stamped product without impacting the other attributes of the hot-stamped product. CX-0082 ¶ 486. Indeed, aside from VinFast's bare assertion, there is no evidence that a POSITA would "already have been aware of reasonable values" for these parameters. *Id*.

VinFast also mischaracterizes Cornette's disclosures. Cornette explains benefits in the context of comparing pre-coated to uncoated Usibor. CX-0082 ¶ 487. Aside from a very specific pre-coating layer thickness, Cornette does not describe any other process parameters as providing any particular benefit. *Id*. Thus, Cornette does not provide any motivation for a POSITA to use its process parameters in the context of another reference. *Id*.

As a result, a POSITA would not have had combined various process parameters from different references as a POSITA would have understood that one parameter used to create one

[redacted]

hot-stamped part cannot be isolated and used in another hot-stamped process without impacting all the attributes of the hot-stamped product. CX-0082 ¶ 488. Similarly, a POSITA would not have experimented because any such experimentation would not be routine; VinFast does not attempt to describe any relationship between the various hot-stamping parameters and attributes of the hot-stamped product. CX-0082 ¶¶ 488, 490. Likewise, the "similar" temperature ranges between Lachmann and Cornette would not have "reinforced" the obviousness of combining these two references because a POSITA would have understood that any variance of parameters would impact all the attributes of the hot-stamped product. CX-0082 ¶ 489. As a result, this would not have been routine experimentation. Section III.F.3.a.i.

Lachmann in combination with Laurent: A POSITA would not have been motivated to combine Lachmann and Laurent. CX-0082 ¶ 491. Contrary to VinFast's assertion, this combination is not a "simple" substitution of one element for another element. *Id.* Instead, by varying the element, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

Lachmann in combination with Nishibata US: A POSITA would not have been motivated to combine Lachmann and Nishibata US. CX-0082 ¶ 492. Contrary to VinFast's assertion, this combination is not merely a substitution of one element for another element. *Id.* Instead, by varying the element, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

(ii) Asserted Claims – Lachmann

Claim 1: Lachmann does not anticipate or render obvious this claim. CX-0082 ¶¶ 495–

499. For example, Lachmann does not describe the composition of any layers that allegedly appear in its photographs. CX-0082 ¶ 496. Lachmann also does not explain how any one picture relates to any other picture. CX-0082 ¶ 497. In fact, Lachmann shows different pictures on different slides. CX-0082 ¶¶ 496–498. VinFast does not address how Lachmann's pictures are not the same, and as a result, VinFast does nothing more than picking an attribute from one part and an attribute from another part, without any explanation how these attributes from disparate pictures could be combined and achieved in one hot-stamped part. *Id*. A POSITA would have understood that one cannot just mix and match attributes from various hot-stamped parts to obtain a hot-stamped part with only desired attributes. *Id*. In addition, Lachmann does not indicate whether its "depth profile" reflects the mean composition, maximum composition, minimum composition or some other measurement of what is depicted in the photograph. CX-0082 ¶ 499. VinFast does not explain how Lachmann "depth profile" correlates to the claim limitations. *Id*.

Lachmann does not anticipate or render obvious the following claims for the same reason as claim 1: **Claim 2**, CX-0082 ¶ 500; **Claim 3**, CX-0082 ¶ 501; **Claim 4**, CX-0082 ¶ 502; **Claim 20**, CX-0081 (Raabe Rep.) ¶ 507; **Claim 21**, CX-0082 ¶ 508; **Claim 24**, CX-0082 ¶ 510.

Claim 12: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 503. VinFast recognizes that the prior art does not disclose the claimed range but attempts to avoid this because of an alleged absence of unexpected results. CX-0082 ¶ 504. But a specification is not required to describe unexpected results or criticality to avoid obviousness. *Genetics Inst., LLC*, 655 F.3d at 1307 (citing cases). The '602 Patent also provides the process parameters to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner. CX-0082 ¶ 504. Although VinFast argues there is not a qualitative difference between the references and the invention, VinFast fails to address that from a quantitative perspective, there is a difference. *Id*. A different layer composition will impact other attributes, including the composition and thickness of layers in the hot-stamped product. *Id*. Indeed, VinFast never states that the other attributes would not be impacted. *Id*.

Dr. Raabe will also explain that Fe% and Al% are not result-effective and a POSITA would

not have been motivated to experiment to arrive at the claimed ranges. CX-0082 ¶ 505. For example, Takagi and Maki do not describe Fe%, Al%, and Si% as result-effective. *Id*. VinFast also does not provide any evidence showing that these are result-effective. *Id*. As a result, a POSITA would have understood that merely adjusting these parameters would not have achieved the invention as a matter of routine experimentation. *Id*. Instead, adjusting these parameters would have impacted all attributes of the hot-stamped product. *Id*.

VinFast also argues that the differences between the Al%, Fe%, and Si% are within "manufacturing tolerances." CX-0082 ¶ 506. But even if this were true, VinFast does not address how a change in percentage would impact the other attributes of the hot-stamped product, such as mean iron composition, and the formation and thickness of the other layers. *Id*. VinFast never states that if manufacturing tolerances led to other Al%, Fe%, and Si%, the other attributes of the hot-stamped product would not change. *Id*. For example, if there was an increase in percentages, VinFast has not explained where this increase would come from and how it would impact the hot-stamped product. *Id*.

Claim 22: For the same reasons as claims 20 and 21, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 509.

Claim 25: For the same reasons as claim 24, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 511.

Claim 28: For the same reasons as claims 12 and 24, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 512.

(iii) Asserted Claims – Lachmann in combination with Cornette

Claim 5: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 513. Dr. Raabe will further explain that a POSITA would not have understood that sulfur was a parameter that could be "optimize[d]" merely because a prior art reference provided a range. CX-0082 ¶ 514. Aside from the bare assertion, VinFast has not provided any reason why a POSITA would have been motivated to "optimize" sulfur content, and indeed, a POSITA would have understood that varying just one parameter would have impacted

[redacted]

all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. *Id*

Claim 6: For the same reasons as claims 2 and 5, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 515.

Claim 9: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 516.

Claim 10: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 517. Contrary to VinFast's assertion, VinFast has not shown that the thickness of layer (a) is "directly" related to furnace temperature and dwell time, such that varying those parameters would impact only layer (a) and not impact any other attribute of the hot-stamped product. CX-0082 ¶ 519. This is not a mere "design choice" and varying these parameters will impact the other attributes of the hot-stamped product. *Id.*

A POSITA also would not have found it obvious to experiment with layer thickness by adjusting thermal parameters to arrive at the claimed less than 10 μm. CX-0082 ¶ 520. Dr. Raabe will explain that a POSITA would have understood that varying the thermal parameters would impact more than just the thickness of one layer. *Id.* For example, VinFast has not explained how the thermal parameters could be varied such that only the thickness of one layer is impacted and all other aspects of the hot-stamped product would stay the same. *Id.*

Dr. Raabe will also explain that the differences between the claimed invention and the proposed combination cannot be overlooked due to "manufacturing tolerances." CX-0082 ¶ 521. If manufacturing tolerances resulted in a different layer thickness, VinFast has not explained how that would impact the other attributes of the hot-stamped product. *Id.* For example, if manufacturing tolerances produced a layer that was less than 10 μm, then the layer's mean iron composition and the formation of other layers would be impacted. *Id.* VinFast is also incorrect that the '602 Patent does not describe any benefits to a layer thickness of less than 10 μm. CX-0082 ¶ 522.

A POSITA also would not have been motivated to experiment with the layer thickness to

[redacted]

arrive at the claimed layer thickness. CX-0082 ¶ 523. Dr. Raabe will explain that changing parameters would impact all attributes of the hot-stamped product and a POSITA would have understood that the impact of varying parameters could not be isolated to just one attribute in the hot-stamped product. *Id.* VinFast is also incorrect that the thickness of layer (a) is a result-effective variable. *Id.* For example, Takagi does not teach that the thickness of layer (a) provides a recognized result. *Id.* (explaining Takagi focuses on the softness and its thickness in relation to the overall coating layer). In fact, Dr. Raabe will explain that Takagi teaches away from the claimed invention because it provides that layer (a) should be equal or greater than 50% of the thickness of overall coating. *Id.* As a result, a POSITA would have understood that it would not have been possible to only impact layer (a) without impacting the other attributes of the hot-stamped product. *Id.*

Claim 18: For the same reasons as claims 1 and 9, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 524.

Claim 26: For the same reasons as claims 1, 9, 10, and 18, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 525.

(iv) Asserted Claims – Lachmann in combination with Laurent

Claim 3: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 526. Laurent does not disclose the claimed ranges. CX-0082 ¶¶ 527–528. Contrary to VinFast's assertion, this combination is not a "simple" substitution of one element for another element. CX-0082 ¶ 529. Instead, by varying the base steel, which itself will have different properties (*e.g.*, pre hot-stamped coating thickness and compositions), the end hot-stamped product will be impacted. *Id.* For example, testing in this Investigation showed that varying the pre-coating thickness resulted in a very different hot-stamped product. *Id.* VinFast has not provided any evidence that the base steel could be substituted without impacting the hot-stamped product. *Id.*

Claim 4: For the same reasons as claims 1 and 3, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 530.

[redacted]

Claim 7: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 531. While VinFast mentions Suehiro II, VinFast does not explain why a POSITA would be motivated to combine Suhiro II with Laurent or Lachmann. *Id.*

Claim 8: For the same reasons as claims 2 and 7, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 532.

(v) Asserted Claims – Lachmann in combination with Nishibata US

Claim 3: For the same reasons as claim 1, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 533. For example, Nishibata US does not disclose the claimed ranges. CX-0082 ¶¶ 534–535.

Claim 4: For the same reasons as claims 1 and 3, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 536.

Claim 5: For the same reasons as claims 1 and 3, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 537.

Claim 6: For the same reasons as claims 2 and 5, Lachmann does not anticipate or render obvious this claim. CX-0082 ¶ 538.

g) Secondary Considerations of Non-Obviousness

Secondary considerations weigh in favor of finding non-obviousness.

Commercial Success. Commercial success is reflected in industry acceptance and adoption of ArcelorMittal's patented technology as shown through (1) research activities focused on the Domestic Industry Products, (2) production and of the Domestic Industry Products, and (3) licensing of the Asserted Patents.

ArcelorMittal has long been a pioneer in hot stamping steel products, known to be "the first steelmaker to offer a coated steel for hot forming." CX-0771. As such, ArcelorMittal, its licensees, and the Tier 1 manufacturers make significant R&D related investments relevant to the Domestic Industry Products. CX-0081 at 160–62. For example, ArcelorMittal invested [redacted] related to R&D for the DI Products from 2014–2023, which accounts for an average

[redacted]

of [redacted]% of ArcelorMittal's total global investment in press hardened steels. *Id.* at 168–69; CX-0690. Overall, ArcelorMittal has made enormous investments in the relevant domestic industry—nearly [redacted]—including but not limited to labor and capital and plant and equipment at various R&D facilities. *See* Section V.

With respect to the DI Precursor Products, since 2006, ArcelorMittal's sales of USIBOR and DUCTIBOR products have resulted in billions of dollars in revenue. *E.g.*, CX-0565 at 00932255–56; CX-0663; CX-0653; CX-0662; CX-0689; CX-0489; CX-0082 ¶ 701. Between Q4 2019–Q2 2023, [redacted] alone produced approximately [redacted] metric tons ([redacted] of it in 2023 alone) of the DI Precursor Products, generating at least [redacted] in royalties to ArcelorMittal. CX-0042 at 13; CX-0489 at AM-ITC-0079089. In 2023 alone, Calvert produced and sold [redacted] metric tons of DI Precursor Products in the U.S., meaning that just one of ArcelorMittal's licensees represents around [redacted]% of the worldwide aluminized pressed hardened steels market.[12] CX-0081 at 169–70; CX-0489 at AM-ITC-0079089.

With respect to the DI Direct Products, the Tier 1 licensee manufacturers in the United States subsequently hot stamp these DI Precursor Products and have sold [redacted] of dollars of the resulting DI Direct Products to automotive manufacturers for incorporation into automobiles. CX-0663; *see* CX-0022 at 34:6–15; CX-0024 at 14:5–17; CX-0340; CX-0341; CX-0391; CX-0444; CX-0445; CX-0446; CX-692; CX-0430; CX-0431; CX-0432; CX-0433; CX-0435; CX-0434; CX-0436; CX-0437; CX-0438; CX-0439; CX-0440; CX-0441; CX-0702; CX-0704; CX-0706; CX-0708; CX-0709; CX-0422; CX-0349; CX-0357; CX-0358; CX-0359; CX-0360; CX-0401; CX-0008 at 35:3–10 ("Here we're now a decade or so into the commercialization of the products. It's certainly much well better known by the car companies themselves on what these products are and how they should build them into their vehicles, but at the beginning it was innovative and different . . . ."); *id.* at 32:17–2 ("[I]t's – took I guess more advanced engineering support in order to get it into the vehicles, and we've been very successful

[12] Overall, ArcelorMittal has a leading market share of [redacted]% in the worldwide automotive steel market. CX-0820 at 5.

[redacted]

in doing that. In fact, [redacted].”); CX-0082 ¶ 701.

A nexus exists between the sales and the patented invention, as evident at least from the explosive growth of sales of USIBOR 1500P, an aluminum-silicon perforated boron steel created in 1999 by ArcelorMittal. CX-0082 ¶ 117. Only after 2006 (the priority date leading to the claimed invention directed to hot stamping parameters) did sales of USIBOR 1500P grow exponentially. *Id.*; *e.g.,* CX-0565 (AM-ITC-0093243) at 00932255–56; CX-0082 ¶ 701.

Dr. Brown does not dispute the tremendous commercial success of USIBOR and DUCTIBOR (and Ultralume) and from the sale of DI Direct Products. CX-0084 ¶¶ 1020–30. His tangential response—that USIBOR's sales cannot be attributed to the Asserted Patents because USIBOR was available prior to 2006 and hot stamped prior to 2006—ignores that (i) substantial revenue derived from the DI Direct Products and (ii) the fact that USIBOR sales began to significantly increase only once ArcelorMittal began in 2006 to promote the hot stamping according to parameters that result in the Asserted Claims. *See id.* ¶¶ 1023-26.

ArcelorMittal's ability to license the Asserted Patents to entities such as [redacted] and Calvert additionally show the Asserted Patents' commercial success. *E.g.*, CX-0034; CX-0035; CX-0036; CX-0472; CX-0473; CX-0557; CX-0560. While Dr. Brown speculates that the above-mentioned licenses may have been taken as a cheaper alternative to defending an infringement suit, Dr. Brown's assertion is not grounded in any language from the licenses or any expertise regarding how licenses are negotiated. CX-0084 ¶ 1027.

Long-felt need and industry praise. The claimed invention addresses a long-felt but unsolved problem in the industry, and the resulting products garnered significant industry praise. While the "high degree of commercial success" explained above provides a basis for "inferring that [attempts to a solution] have been made and have failed," *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1376 (Fed. Cir. 2005), additional evidence illustrates that the claimed invention provides a unique solution for important issues in the art. Historically, automotive manufacturers struggled to achieve consistent, reliable steel that had all the benefits of the patented

[redacted]

invention, including characteristics like improved paintability and weldability. *E.g.*, JX-0002 at 2:3–33; CX-061 at AM-ITC-0094695–96; *see also* CX-0010 at 57:1–8 (describing identification of problems relating to welding, corrosion, and final usage of parts before invention); CX-0082 ¶ 704. With respect to USIBOR 1500P sold before the claimed invention, while automakers could use USIBOR 1500P for bolted parts, it was difficult to use USIBOR 1500P for welded parts because hot-stamped USIBOR 1500P had weldability, corrosion, and paintability issues. CX-0684; CX-0683; CX-0082 ¶ 704.

This long-felt need was satisfied by the Asserted Patents, which simultaneously allowed for improved weldability, paintability, corrosion resistance, and resistance to abrasion, wear, fatigue, and shock. JX-0002 at 2:60–63, 6:8–25, 8:16–19, 9:50–55, 11:32–39; *see also* CX-0617 at AM-ITC-0094960 (describing processing windows in specification as resulting in steel products good for "spot-welding and corrosion resistance" among other "mechanical properties"); CX-0634 (describing good weldability and paintability of the claimed invention); CX-0618 at AM-ITC-0094901–06 (same); CX-0616 at AM-ITC-0094802 (describing mechanism preventing corrosion of claimed product); CX-0010 at 127:15–129:19 (discussing identification of best microstructure through performance of weldability, corrosion, and painting adhesion studies); CX-0082 ¶ 704.

As one example illustrating these benefits, ArcelorMittals' innovations facilitated major safety improvements in motor vehicles. In a 2014 YouTube video, Mr. LeBlanc explained the safety benefits of the Usibor Door Ring created for Honda/Acura and the Acura MDX vehicle—the first hot stamped, laser welded, Usibor door ring—as a "breakthrough" that set the industry standard for automakers to use as a benchmark in small offset crash. CX-0818. Automotive News recognized this innovation and awarded a PACE award to ArcelorMittal and its collaborators ([redacted] and Honda) for the Usibor Door Ring. *Id.*

Dr. Brown asserts that there was no long-felt need because the Laurent reference shows that "the benefits of hot stamping and layers formed due to hot stamping were also known." CX-0084 ¶ 1028. But his argument here is irrelevant because he fails to show anticipation by Lauren, and more significantly, fails to point to any disclosure in the prior art discussing all the specific

[redacted]

benefits associated with the claimed invention—namely, weldability, paintability, and corrosion resistance. CX-0082 ¶ 705.

Unexpected results. Finally, the claimed invention produced unexpected results. In the prior art, uncertainty existed as to which types of hot stamped steels would result in the benefits described above. *E.g.,* CX-0010 at 118:24–119:9; CX-0082 ¶ 706. It was only during development of the claimed invention the inventors discovered that the claimed coating structure resulted not only in improved weldability, but also corrosion resistance and paintability. *See* CX-0010 at 127:15–129:19 (discussing identification of best microstructure through performance of weldability, corrosion, and painting adhesion studies); CX-0082 ¶ 706. Dr. Brown does not dispute the existence of any of these unexpected results. CX-0084 ¶ 1029.

For the foregoing reasons, secondary considerations support non-obviousness.

4. The Claims of the '602 Patent Are Not Invalid Based on "Preferred Hot Stamping Process" Or "Technical Domestic Industry"

VinFast asserts that alleged prior art hot stamping processes invalidate the asserted claims. CX-0082 ¶ 685–699. However, VinFast never compares the language of the asserted claims to any specific hot stamping process. CX-0082 ¶ 686 (discussing how VinFast does not compare the alleged prior art to the claim language), ¶ 689 (same); Sections III.F.2.k and III.F.3.f. In addition, VinFast's argument fails to recognize that prior art must be enabled. The Asserted Patents disclose a way to obtain a beneficial coating microstructure in a repeatable, consistent, and robust manner and disclose process parameters that will achieve a beneficial or ideal coating microstructure in a repeatable consistent, and robust matter. *See* JX-0001 and JX-0002; CX-0082 ¶ 687, 689. A POSITA would have further understood that varying just one parameter (let alone several) would have impacted all other attributes of the hot-stamped product, such that varying this parameter would not keep all other aspects of the hot-stamped product the same. CX-0082 ¶ 689. Similarly, a POSITA would have understood that attributes from one hot-stamped product cannot be isolated and incorporated into another hot-stamped product without impacting the other attributes of the second hot-stamped product. *Id.*

VinFast has not shown that any process parameters used by [redacted]

[redacted] actually resulted in the claimed invention. CX-0082 ¶¶ 691–693. For example, as it relates to [redacted] VinFast does not even state what type of steel was being allegedly hot-stamped in 2004. CX-0082 ¶ 691. Contrary to VinFast's assertion, [redacted] hot-stamping does not invalidate the Asserted Patents. CX-0082 ¶¶ 694–699. VinFast omits key facts, such as testimony that shows the document VinFast relies on as alleged prior art from 2004 was actually revised in August 2006. CX-0082 ¶ 695. This is apparent from the face of the document and confirmed by testimony. CX-0082 ¶¶ 695–697. Indeed, a revision date indicates that there was a change in the process. CX-0082 ¶ 698. As a result, VinFast has not set forth any evidence that hot-stamping that resulted in the claimed invention occurred before the invention date of the Asserted Patents. CX-0082 ¶ 699.

5. The Claims of the '602 Patent Are Not Invalid for Lack of Written Description Under ¶ 112

Respondents indicated that they intend to argue that the following terms of the '602 Patent are invalid for lack of written description: "mean iron composition" (claims 1, 20–22); "by weight based on total weight" (claims 3, 4, 12); "quasi continuous" (claim 2); and "extreme surface" (claim 2). But such defense is barred both *procedurally*, as it was not properly disclosed or preserved during discovery, and *substantively*, as Respondents offer no evidence that a POSITA, reviewing the specification, would fail to understand that the inventors were in possession of that claimed, which is necessary to support a written description defense. *Ry-Lock Co. v. Sears, Roebuck & Co.*, 227 F.2d 615, 616–18 (9th Cir.1955) (reversing invalidity finding where contention was made "without any attempt to support that claim by testimony of experts or other witnesses"); *Lucent Techs. Inc. v. Gateway, Inc.*, 2007 WL 1449804 (S.D. Cal. 2007) (granting summary judgment of no invalidity for written description, where patent challenger provided no evidence on how a POSITA would understand the specification).

Respondents' written description arguments are procedurally barred. Respondents failed to disclose or preserve (much less support) any such theory in their invalidity contentions or expert reports. While Respondents stated in their contentions that they would assert that certain terms lacked written description, those contentions merely stated that certain terms allegedly did not

meet the written description requirement. Nowhere in those contentions did Respondents ever state *why* this was the case or identify any *facts* or *rationale* to provide notice of the nature of the supposed written description failure. *See* Nov. 1, 2024 Invalidity Contentions at 36–38; *cf.* Ground Rule 4.4.2 ("Conclusory statements in responses to contention interrogatories are insufficient.").

Nor did Respondents' amendment of their contentions remedy this failure. Respondents' contentions, in final form, do not identify any basis for the alleged defense, or even identify the type of supposed written description problem at issue. Nov. 22, 2024 Revised Invalidity Contentions at 37–39. Respondents likewise failed to preserve or support a written description argument during expert discovery, as Respondents' experts are likewise silent on the basis for any alleged written description problem. CX-0084.

In sum, Respondents cannot now assert a defense that they failed to disclose or preserve during discovery. Given that Respondents failed to provide any expert opinion to support their nascent written description defense, Complainant had, for example, no chance to submit any *responsive* expert evidence to rebut the undisclosed defense. This violates Complainant's procedural rights to fair notice and an opportunity to respond. *See Abbott Lab'ys v. Sandoz, Inc.*, 743 F. Supp. 2d 762, 777 (N.D. Ill. 2010) (excluding written description defense for insufficient notice where patent challenger "has not provided any indication that it has evidence to support these defenses at trial"); *Ry-Lock Co.*, 227 F.2d at 616–18.

Notwithstanding the procedural bar, Respondents' failure to provide any evidence to support this untimely defense is also fatal to the supposed defense itself—Respondents cannot make out a written description defense on *attorney argument alone*, without any supporting evidence of how a POSITA would understand the underlying claim terms. Respondents must prove lack of written description by clear and convincing evidence. *Intirtool, Ltd. v. Texar Corp.*, 369 F.3d 1289, 1294 (Fed. Cir. 2004). The relevant query is whether a POSITA, reading the specification, would recognize that the inventors had possession of the claimed subject matter as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). This *requires* "objective inquiry into the four corners of the specification from the perspective of

[redacted]

a person of ordinary skill in the art," *id.*, which necessarily involves *a question of fact*. *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1308 (Fed. Cir. 2015). And here, fatally, Respondents have no evidence or expert testimony required to carry their burden on that question of fact. *See Capon v. Eshhar*, 418 F.3d 1349, 1358 (Fed. Cir. 2005) ("written description' requirement must be applied in the context of the particular invention and the state of knowledge."); *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1338–39 (Fed. Cir. 2016) (holding that claims were not invalid for lack of written description where the patent challenger presented only "general and conclusory testimony" which "does not rise to the level of clear and convincing evidence").

Nor can Respondents argue that the Asserted Patents lack written description simply because the specification does not mention the above-identified terms using those exact same words. "It is not necessary that the exact terms of a claim be used *in haec verba* in the specification[.]" *Nalpropion Pharm., Inc. v. Actavis Lab'ys FL, Inc.*, 934 F.3d 1344, 1350 (Fed. Cir. 2019). Where, as here, a patent challenger provides no expert testimony, courts reject written description challenges as a matter of law because "written description queries whether one of ordinary skill in the art would have understood the [] specification" and "the knowledge in the art in assessing whether the written description is adequate." *Lucent Techs. Inc.*, 2007 WL 1449804, at *3 (granting summary judgment of no invalidity based on written description). Here, to carry a written description defense, Respondents must demonstrate how a POSITA would understand what is disclosed in the specification, which Respondents have not shown and cannot show. Merely submitting "the patent itself does not suffice." *Id.*

Nor is this the rare case where a written description problem may be evident on the face of a patent. For example, in *Univ. of Rochester v. G.D. Searle & Co.* , the asserted patent claimed a biological effect without describing *any* compound that would achieve that result. 358 F.3d 916, 930 (Fed. Cir. 2004). There, it was *undisputed* that no such compound was known in the prior art—that is, there was *no factual question* concerning how a POSITA would understand the claim terms in light of the specification. *See id.* at 930. Here, in contrast, Respondents have not adduced any evidence, and cannot point to any part of the record (including the specification itself) to show

that a POSITA would understand the specification as not reasonably conveying the scope and limitations recited in the Asserted Claims. *See, e.g.*, *Lucent Techs. Inc.*, 2007 WL 1449804, at *3. Without that evidence, Respondents' case is thus categorically insufficient to carry their burden of proof under the clear and convincing standard. *Id.*

6. The Claims of the '602 Patent Are Not Indefinite Under § 112

The claims of the '602 Patent are not indefinite under 35 U.S.C. § 112, ¶ 2. Section 112, ¶ 2 provides that a patent must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention." A claim is invalid for indefiniteness if "its language, when read in light of the specification and the prosecution history, 'fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.'" *Media Right Techs., Inc. v. Cap. One. Fin. Corp.*, 800 F.3d 1366, 1371 (Fed. Cir. 2015) (quoting *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014)). "Notably, a claim is indefinite if its language might mean several different things and no informed and confident choice is available among the contending definitions." *Id.* A patent challenger must prove indefiniteness by clear and convincing evidence. *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017). VinFast fails to meet this high standard for indefiniteness.

a) Layer

The term "layer" as used in the Asserted Patents' claims is not indefinite because the Asserted Patents inform a person of ordinary skill in the art about the scope of the term "layer." Start with the claims, which are the beginning of any indefiniteness analysis. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363 (Fed. Cir. 2018). Each of the independent claims of the Asserted Patents describes the four layers of the coating as having a distinct first, second, third, and fourth mean (iron or aluminum) composition respectively. *See* JX-0002 at 14:59–18:2; JX-0001 at 14:59–15:10. As Dr. Raabe will testify, these claim limitations inform a POSITA that each "layer" of the claimed invention is distinguished by its mean elemental compositions, an objective boundary for the scope of the term "layer." *See* CX-0082 ¶ 715.

A POSITA would then turn to the specification, which provides further detail about the

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scope of the term "layer." Notably, Figure 1 illustrates a preferred embodiment of the invention, including the four claimed layers. JX-0002 at 3:54–55.[13]

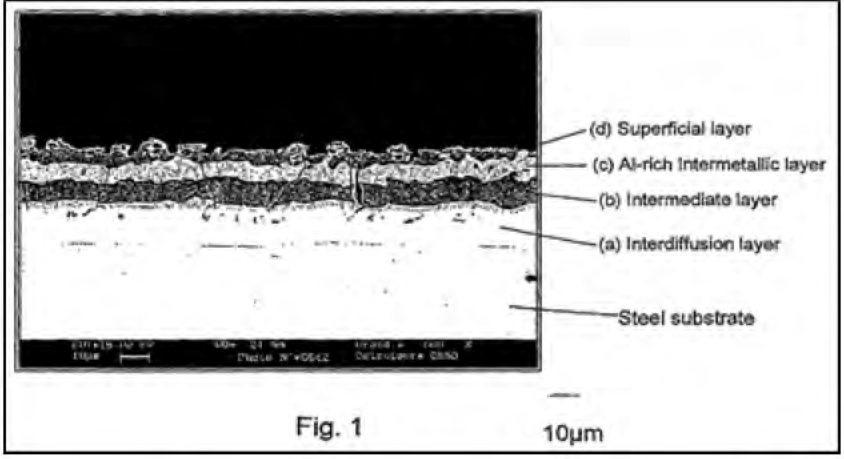

Fig. 1

Id. at Fig. 1. In Figure 1, the interdiffusion layer, intermediate layer, intermetallic layer, and superficial layer are regions distinguishable to a POSITA by the different colors that they appear as in the SEM image. This is consistent with how the claim limitations inform a POSITA that the different layers correspond to the successive regions with distinct mean elemental compositions—the different mean elemental compositions result in different colors in the SEM image. *See* CX-0082 ¶ 715; CX-0083 ¶ 29 (explaining that "regions with heavier elements [such as iron] generally manifest as brighter regions in [an SEM] image compared to regions with light elements" such as aluminum).

Figure 1 can be contrasted with Figure 2, which the specification says "does **not** correspond to the invention." JX-0002 at 3:57–59 (emphasis added). The Asserted Patents only discuss two layers in Figure 2: "[t]his succession of layers (interdiffusion layer and intermetallic layer) yields inferior results in resistance spot welding." *Id.* at 3:59–61.

[13] The two Asserted Patents share a specification, and so the '602 Patent is cited for simplicity.

[redacted]

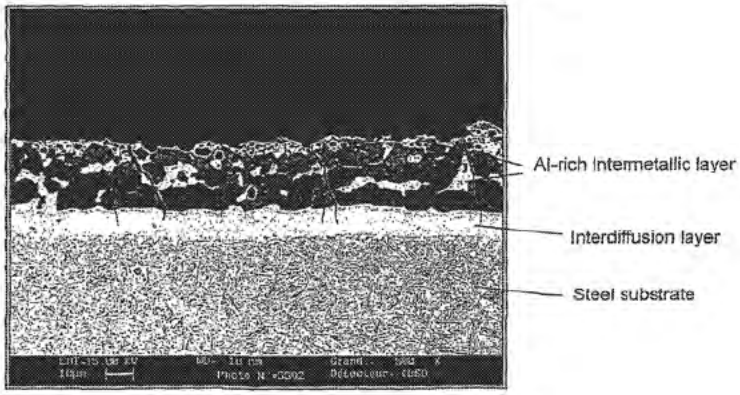

Fig.2 10μm

Id. at Fig. 2. A POSITA would read Figures 1 and 2 as using the term "layer" consistently: Each layer labeled in the two figures is a region that is visually distinguishable by its color in the SEM image, which a POSITA would understand corresponds to the layer being composed of a material with a distinct mean elemental composition. *See* CX-0082 ¶ 716. Although the specification does not expressly define "layer," its meaning is "fairly inferable from the patent," and therefore the term is definite. *Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004). Because the intrinsic evidence demonstrates that the meaning of the term "layer" "is unambiguously set forth in the specification, the expert testimony on this issue is irrelevant to the issue of indefiniteness and cannot serve to inject ambiguity where none exists." *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 706 (Fed. Cir. 1998).

As Dr. Raabe will describe, other extrinsic evidence confirms the scope of the term "layer" would be understood by a POSITA. CX-0082 ¶ 718. A number of publications and patents, including those cited on the face of the Asserted Patents and VinFast's prior art references, use the word "layer" in a manner consistent with the Asserted Patents. *E.g.,* RX-0063 at VINFAST1402-00002292 (describing hot stamped steel coatings with phases that "differ in their layer thickness and chemical composition"); RX-0109 at VINFAST1402-00004535 (3:15–23) (describing a coating with two "layers"—one layer "highly alloyed with iron" and a second that "contains approximately 90% aluminum and may contain silicon and a small amount of iron"); CX-0104 at VINFAST1402-00004401 ([0022]) (describing a "multi-layer structure including three or more

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subordinate layers differing in composition or compound"); *id.* at AM-VINFAST1402-00004398 (Table 1 reflecting same); RX-0022 at AM-ITC-0014694–95 (describing "coating layer" as consisting of five "sub-layers" each of which has a different elemental composition). Additionally, POSCO, one of ArcelorMittal's competitors, owns a patent that uses the word "layer" to refer to the different regions of the coating of a steel product, further confirming that POSITAs would understand the scope of the term "layer" as used in the Asserted Patents. CX-0930. Accordingly, the intrinsic and extrinsic evidence show that "layer" as used in the Asserted Patents is generally understood to POSITAs and provides reasonable certainty as to the scope of the invention.

Although VinFast's expert, Dr. Brown, asserts that the testimony of Dr. Pascal Drillet, a named inventor, is not "consistent," CX-0084 ¶ 1093, that testimony is not properly considered in a § 112 analysis. *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379–80 (Fed. Cir. 2000). Also, as Dr. Raabe will testify, both Dr. Drillet and Mr. Bala Krishnan understand a "layer" to be a region with a distinct mean elemental composition. *See* CX-0082 ¶ 717. Dr. Drillet testified that "each layer is defined by its chemical composition." CX-0010 at 45:3–8. Similarly, Mr. Krishnan, an ArcelorMittal research and development employee, testified that "a chemical composition or alloy . . . would be the unique identifier of [a] layer to differentiate from others." CX-0006 at 181:4–182:3.

VinFast's argument that the term "layer" is indefinite contorts the Asserted Patents to find ambiguity where there is none. Indeed, Dr. Brown's statements themselves underscore that the term "layer" has a reasonably certain scope. Dr. Brown states that "'layer' as a general term is a commonly used and well-understood term." CX-0084 ¶ 1092. And in deposition, Dr. Brown stated that he was able to identify whether a given SEM image had "layers in it that meet the requirements of the asserted patent claims," consistent with "how a person skilled in the art would understand that term in the context of the asserted patent claims." CX-0020 at 243:13–244:14; *see also id.* at 101:16–102:5; 134:2–8 (agreeing that he was able to apply a construction of the term "layer" for purposes of noninfringement and technical domestic industry opinions). Accordingly, Dr. Brown's ability to identify layers for this Investigation demonstrates that the term "layer" does

not have an uncertain scope. *See Sonix Tech. Co. v. Publications Int'l, Ltd.*, 844 F.3d 1370, 1380 (Fed. Cir. 2017) (expert's ability to "appl[y] the term to the references and the accused products . . . further supports the conclusion that a skilled artisan did understand the term with reasonable certainty"); *ClearOne, Inc. v. Shure Acquisition Holdings, Inc.*, 35 F.4th 1345, 1350–51 (Fed. Cir. 2022) (same).

Dr. Brown's main argument that Figure 2 renders the term "layer" indefinite is also flawed. Most notably, Dr. Brown stated in his deposition that he believes Figure 2 renders the term "layer" indefinite because "what is labeled as an aluminum-rich intermetallic layer is not continuous across the sample." CX-0020 at 237:10–239:11. Dr. Brown's argument that the term "layer" is indefinite therefore is premised on his incorrect construction, discussed above, that a "layer" must be "continuous." *See* Section III.C.1.

More fundamentally, Dr. Brown's argument supposedly based on Figure 2 fails because he (1) draws connections between unrelated parts of the specification and (2) makes assumptions unsupported by the Asserted Patents. Throughout his analysis, Dr. Brown discusses a portion of the specification describing a layer "scattered within the coating," 50% of which is "present at the extreme surface," as if that portion of the specification refers to Figure 2. CX-0084 ¶¶ 1084–85, 1088 (citing JX-0002 at 13:1–4); *id.* ¶ 1089 (stating "the specification describes for Fig. 2 only the thickness of the 'interdiffusion layer' as '10 μm thick,'" and citing '602 Patent at 13:1–6). It does not. Rather, this passage is clearly discussing "[c]onditions of reference" for **Example** 2, not **Figure** 2. *See* JX-0002 at 12:30–13:6. Nowhere does this passage of the specification reference Figure 2 or otherwise suggest that it is describing Figure 2. Accordingly, as Dr. Raabe will testify, a POSITA would not attempt to read Figure 2 as reflecting this portion of the specification. *See* CX-0082 ¶ 719.

Nevertheless, the specification's description of a layer at column 13 of the '602 Patent (to which Dr. Brown points) does not inject ambiguity into the meaning of the term "layer." Dr. Brown faults the specification for not describing "the point at which matter scattered within a coating no longer amounts to a 'layer.'" CX-0084 ¶ 1085 (following citation to JX-0002 at 13:1–

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4). But, as described above, the claims, Figure 1, and Figure 2 make clear that a layer is defined by its distinct mean elemental composition. Indeed, the specification's description of an intermetallic layer that is "scattered within the coating" is consistent with (1) Figure 2's depiction of a non-continuous layer, and (2) '602 Patent, claim 2's description of layers that are only "quasi continuous." *See* JX-0002 at Fig. 2, 13:1–4, 15:16–21; *see also id.* at 6:52–56. As Dr. Raabe will testify, these portions of the specification make it abundantly clear to a POSITA that layers need not be continuous. *See* CX-0082 ¶ 720. Dr. Brown's dismissal of Figure 2's intermetallic layer as "nothing more than a loose collection of pockets of material interspersed in a different background material in black," CX-0084 ¶ 1085—as well as his questioning of "whether the 'Al-rich Intermetallic layer' is really 'a layer,'" *id.* ¶ 1086—does not undercut that Figure 2 clearly states that the depicted intermetallic layer *is a layer* despite being non-continuous.

Dr. Brown's flawed analysis of Figure 2 continues through his making several unsupported assumptions. First, Dr. Brown repeatedly suggests that the darker toned portions of the coating in Figure 2 are part of the intermetallic layer. *E.g., id.* ¶ 1086 (a "substantial majority of the 'Al-rich Intermetallic layer' is actually the darker-toned background material"); *id.* ¶ 1087 ("[T]here is no principled way for determining whether the slab of dark-toned material immediately above the white-toned "interdiffusion layer" in Fig.2 is . . . a part of the so-called 'Al-rich Intermetallic layer.'"). But nothing about Figure 2 suggests that the "darker toned background material" is the Al-rich Intermetallic layer—Figure 2 clearly points to only the white-colored areas as the Al-rich Intermetallic layer. *See* JX-0002 at Fig. 2. That only the white areas of the coating are the intermetallic layer is consistent with the claims' description of layers as having distinct mean compositions, which is reflected in the different colors seen in the SEM micrograph of the coating. *See* CX-0083 ¶ 29. As Dr. Raabe will testify, Dr. Brown's concerns are unjustified because the claims and the specification both inform a POSITA that the darker toned material is not part of the Al-rich Intermetallic layer. *See* CX-0082 ¶ 721.

Dr. Brown also repeatedly asserts that the Asserted Patents do not tell a POSITA "with reasonable certainty whether Fig. 2 also has one or both of the intermediate layer and the