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United States District Court
Northern District of California

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

INTERNATIONAL TEST SOLUTIONS,
INC,

Plaintiff,

v.

MIPOX INTERNATIONAL
CORPORATION, et al.,

Defendants.

Case No. [16-cv-00791-RS](#)

ORDER CONSTRUING CLAIMS

I. INTRODUCTION

International Test Solutions, Inc. (“ITS”) manufactures cleaning devices for semiconductor test equipment. It holds three patents at issue—U.S. Patent No. 6,777,966 (“the ’966 patent”), No. 7,202,683 (“the ’683 patent”), and No. 8,801,869 (“the ’869 patent”)—and accuses Mipox International Corporation, MGN International, Inc., and Mipox Corporation (collectively “Mipox”) of infringing those patents. The parties seek construction of ten terms pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (en banc). For several terms, the parties dispute definiteness under 35 U.S.C. § 112(2). For the reasons set forth below, the disputed terms are construed as follows.

II. BACKGROUND

A. Factual Background

Integrated circuits are manufactured in large batches on silicon wafers. The wafers are cut into pieces (“dies”), each containing one copy of the circuit. The dies are then packaged to produce recognizable computer chips. As part of the integrated circuit manufacturing process, each die undergoes testing to ensure proper manufacture. The testing machines use probes to engage the circuit’s contact points. The probes deliver a range of electronic signals to the circuit

1 and evaluate the circuit’s response. Circuits exhibiting unsatisfactory responses are repaired or
2 discarded.

3 Over time, probe elements deform, corrode, or get dirty. This degrades the electrical
4 connection between the probe and the integrated circuit, which can cause circuits to suffer false
5 failures, where the circuits function properly but the probes’ own contact elements fail. False
6 failures result in unnecessary repair or disposal of functional circuits and thus significant costs to
7 manufacturers. In the prior art, cleaning probe elements was disruptive because it required
8 removing the probe from the test machine, perhaps several times an hour. The patents at issue
9 describe a device that cleans the probe elements without removal and without great disruption to
10 the testing cycle.

11 **B. Procedural Background**

12 On February 17, 2016, ITS filed suit against Mipox International and MGN International
13 alleging infringement of the ‘869 patent and U.S. Patent No. 8,371,316 (‘316 Pat.). On March 14,
14 2016, ITS amended the complaint; it dropped allegations regarding the ‘316 patent and added
15 allegations of infringement of the ‘966 and ‘683 patents. The parties exchanged infringement and
16 invalidity contentions in June and July 2016. In October 2016, the parties identified the ten
17 disputed claim terms whose construction would be most significant to the resolution of the case,
18 pursuant to Patent Local Rule 4-3(c). In December 2016, ITS sought leave to add Mipox
19 Corporation as a defendant. ITS filed its claim construction brief on December 5, 2016 and its
20 amended complaint on January 5, 2017. On February 3, 2017, Mipox filed its response to the
21 claim construction brief and, on February 10, 2017, ITS filed its reply. Between February 10 and
22 16, 2017, Mipox filed a petition for inter partes review (IPR) of each of the patents at issue. On
23 February 17, 2017, just over one week before the Markman hearing, Mipox filed a motion to stay
24 proceedings pending disposition of the IPR. The Markman hearing was held on February 27,
25 2017. The stay motion is denied without prejudice in a concurrently filed order.

26 **III. LEGAL STANDARD**

27 **A. Claim Construction**

1 Claim construction is a question of law to be determined by the courts. See *Markman*, 52
2 F.3d at 979. “Ultimately, the interpretation to be given a term can only be determined and
3 confirmed with a full understanding of what the inventors actually invented and intended to
4 envelop with the claim.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (quoting
5 *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).
6 Accordingly, a claim should be construed in a manner “most naturally align[ed] with the patent’s
7 description of the invention.” *Id.*

8 The first step in claim construction is to look to the language of the claims themselves. “It
9 is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the
10 patentee is entitled the right to exclude.’” *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water,*
11 *Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). A disputed claim
12 term should be construed in a manner consistent with its “ordinary and customary meaning,”
13 which is “the meaning that the term would have to a person of ordinary skill in the art in question
14 at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at
15 1312–13. The ordinary and customary meaning of a claim term may be determined solely by
16 viewing the term within the context of the claim’s overall language. See *id.* at 1314 (“[T]he use of
17 a term within the claim provides a firm basis for construing the term.”). Additionally, the use of
18 the term in other claims may provide guidance regarding its proper construction. See *id.* (“Other
19 claims of the patent in question, both asserted and unasserted, can also be valuable sources of
20 enlightenment as to the meaning of a claim term.”).

21 A claim should also be construed in a manner consistent with the patent’s specification.
22 See *Markman*, 52 F.3d at 979 (“Claims must be read in view of the specification, of which they
23 are a part.”). Typically the specification is the best guide for construing the claims. See *Phillips*,
24 415 F.3d at 1315 (“The specification is . . . the primary basis for construing the claims.”);
25 *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[T]he specification is
26 always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single
27 best guide to the meaning of a disputed term.”). In limited circumstances, the specification may

1 be used to narrow the meaning of a claim term that otherwise would appear to be susceptible to a
2 broader reading. See *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337,
3 1341 (Fed. Cir. 2001). Precedent forbids, however, term construction imposing limitations not
4 found in the claims or supported by an unambiguous restriction in the specification or prosecution
5 history. See *Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998) (“[A] court may
6 not import limitations from the written description into the claims.”); *Comark Commc’ns., Inc. v.*
7 *Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998) (“[W]hile . . . claims are to be interpreted in
8 light of the specification, it does not follow that limitations from the specification may be read into
9 the claims.”); *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en
10 banc) (“It is the claims that measure the invention.”) (emphasis in original). A final source of
11 intrinsic evidence is the prosecution record and any statements made by the patentee to the PTO
12 regarding the scope of the invention. See *Markman*, 52 F.3d at 980.

13 Courts may also consider extrinsic evidence, such as expert testimony, dictionaries, or
14 technical treatises, especially if such sources are “helpful in determining ‘the true meaning of
15 language used in the patent claims.’” *Phillips*, 415 F.3d at 1318 (quoting *Markman*, 52 F.3d at
16 980). Ultimately, while extrinsic evidence may aid the claim construction analysis, it cannot be
17 used to contradict the plain and ordinary meaning of a claim term as defined within the intrinsic
18 record. See *id.* at 1322–23.

19 **B. Claim Indefiniteness**

20 Under 35 U.S.C. § 112(2), a patent specification must “conclude with one or more claims
21 particularly pointing out and distinctly claiming the subject matter which the applicant regards as
22 [the] invention.”¹ To satisfy this requirement, a patent claim must “inform, with reasonable
23 certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig*
24 *Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). “Although absolute or mathematical precision is
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27 ¹ All patents in dispute were issued from applications filed before March 16, 2013. Therefore,
pre-AIA 35 U.S.C. §112(2) applies.

1 not required . . . [t]he claims . . . must provide objective boundaries for those of skill in the art.”
2 Interval Licensing, LLC v. AOL, Inc., 766 F.3d 1364, 1370–71 (Fed. Cir. 2014). A skilled artisan
3 should be able to “compare a potentially infringing product with examples in the specifications to
4 determine whether interference . . . is substantial.” *Sonix Tech. Co., Ltd. v. Publ’ns Int’l, Ltd.*,
5 844 F.3d 1370, 1377 (Fed. Cir. 2017) (internal quotation omitted).

6 As indefiniteness analysis involves general claim construction principles, courts begin with
7 the language of the claims. See *id.* at 1378. In so doing, they have distinguished between “purely
8 subjective” terms and “term[s] of degree.” *Id.*; see also Interval Licensing, 766 F.3d at 1370–71.
9 “For some facially subjective terms, the definiteness requirement is not satisfied by merely
10 offering examples that satisfy the term within the specification.” *DDR Holdings, LLC v.*
11 *Hotels.com, L.P.*, 773 F.3d 1245, 1260 (Fed. Cir. 2014). “For other terms like [] terms of degree,
12 specific and unequivocal examples may be sufficient to provide a skilled artisan with clear notice
13 of what is claimed.” *Id.*

14 Where a claim cannot be construed to satisfy 35 U.S.C. § 112(2), a court may find the term
15 indefinite during claim construction, even in advance of any separate summary judgment motion.
16 See *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008) (“Indefiniteness is a matter
17 of claim construction, and the same principles that generally govern claim construction are
18 applicable to determining whether allegedly indefinite claim language is subject to construction.”);
19 *Interval Licensing LLC*, 766 F.3d at 1368–69 (affirming a finding of indefiniteness in the district
20 court’s claim construction order). “Indefiniteness must be proven by clear and convincing
21 evidence.” *Sonix*, 844 F.3d at 1377.

22 **IV. DISCUSSION**

23 **A. ‘966 Patent**

24 Asserted claims 26 and 28 of the ‘966 patent describe a “cleaning device for cleaning
25 probe elements.” ‘966 pat. col. 10 ll. 23, 53. The device includes a “substrate . . . configur[ed] to
26 [fit] into the testing apparatus” so probes may be cleaned “during normal testing operation.” *Id.*
27 col. 10 ll. 26–29, 56. The “pad [has] predetermined characteristics . . . to clean debris from the
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1 probe elements when the probe elements contact the pad.” Id. col. 10 ll. 30–32, 60–62. The
2 parties dispute the construction of three phrases in the ‘966 patent.

3 **1. “the substrate comprises a semiconductor wafer having a surface”**

4 ITS argues this term does not require construction. For its part, Mipox argues the term
5 should be construed as “a substitute semiconductor wafer or substitute packaged IC device.”
6 While the specification states a “substrate” may be plastic, metal, glass, silicon, ceramic, or any
7 other similar material, claims 26 and 28 refer to a substrate which “comprises a semiconductor
8 wafer.” The term “substrate” need not be construed because the claim language in question
9 defines it and the “inventor’s lexicography governs.” Phillips, 415 F.3d at 1316. For purposes of
10 the ‘966 patent, the term will be given its plain meaning.²

11 **2. “predetermined characteristics that cause the pad to clean debris from the probe**
12 **elements when the probe elements contact the pad so that the probe elements are**
13 **cleaned, without modification or damage”**

14 Mipox contends this phrase is indefinite under 35 U.S.C. § 112(2). It argues there is no
15 limit to the “predetermined characteristics” that cause the pad to clean and contends the phrase
16 “without modification or damage” is vague because the patent recites no timeline.³ ITS offers no
17 procedural objection to deciding indefiniteness at this juncture, but claims Mipox has failed to
18 prove indefiniteness clearly and convincingly. For the following reasons, “predetermined
19 characteristics” and “without modification or damage” are both indefinite under § 112(2).

20 i. “predetermined characteristics”

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22 _____
23 ² The ‘869 patent defines the term “substrate” differently, but the parties do not seek to construe
24 that term.

25 ³ Mipox also argues the claim’s later reference to a “testing machine” is indefinite. As an initial
26 matter, this term was not identified as disputed in the joint claim construction statement. In any
27 event, Mipox alleges no facts supporting significant variation between integrated circuit test
28 machines. Moreover, while Mipox correctly notes the term “testing machine” does not have
antecedent basis in the claim body, the claim preamble recites “a semiconductor testing
apparatus,” thus providing antecedent basis. See *Catalina Marketing Int’l, Inc. v.*
Coolsavings.com, Inc., 289 F.3d 801 (Fed. Cir. 2002).

1 To start, Mipox claims the term “predetermined characteristics” is indefinite. ITS
2 advances four arguments in response. Each fails to persuade.

3 First, ITS contends probe cleaning is an objective baseline for the term “predetermined
4 characteristics.” Specifically, ITS claims the “predetermined characteristics” are not open-ended
5 because the “ultimate outcome” is known—i.e., the characteristics must clean the probe elements
6 well enough to permit electrical connection. Trans. 28:17–19. On this point, *Dow Chem. Co. v.*
7 *Nova Chemicals Corp.*, 803 F.3d 620 (Fed. Cir. 2015) is instructive. There, the Federal Circuit
8 evaluated a patent covering novel plastic compositions quantified in part by their “slope of strain
9 hardening coefficient.” The court considered whether “the existence of multiple methods [for
10 calculating the ‘slope of strain hardening’] leading to different results without guidance in the
11 patent . . . as to which method should be used render[ed] the claims indefinite” and decided it did.
12 *Id.* at 634. Though the inherent strength of the patented material did not change, the choice of
13 calculation method “could affect whether a given product infringe[d] the claims.” *Id.* Thus, the
14 claim scope turned upon the “unpredictable vagaries of any one person’s opinion.” *Id.* at 635
15 (quotation omitted).

16 The ‘966 patent suffers the same flaw. While the device must render probes clean enough
17 to make a functional electrical connection, the claim only indicates the cleaning pad should be
18 comprised of “predetermined characteristics” that effectively clean the probes. ‘966 pat. col. 10 ll.
19 31–34. Multiple compositions and states of cleanliness may achieve the desired result. Here, as in
20 *Dow*, the subjective choice of characteristics, and resulting cleanliness level, could affect whether
21 a given product infringes the claims.

22 Second, ITS argues the specification’s details and examples provide guidance on the
23 meaning of the phrase. While a patent which defines a claim phrase through examples may satisfy
24 the definiteness requirement in some situations, the Federal Circuit has declined to “cull out a
25 single e.g. phrase from a lengthy written description to serve as the exclusive definition of a
26 facially subjective claim term.” *Interval Licensing*, 766 F.3d at 1373 (finding a single example of
27 the term “unobtrusive manner” in the specification did not provide sufficient guidance because a
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1 person of ordinary skill in the art would not understand an “e.g.” phrase to constitute an exclusive
2 definition of a facially subjective term). The ‘966 patent recites numerous properties—e.g.,
3 abrasion, density, and elasticity—and the specification describes a range of materials—e.g.,
4 rubbers, polymers, elastic materials, and gels—in an effort to encompass a great breadth of
5 cleaning pad media. ‘966 pat. col. 5 ll. 27–37. If the examples had been preceded by “i.e.”
6 instead of “e.g.” they might have “provid[ed] the clarity that the specification lacks.” Interval
7 Licensing, 766 F.3d at 1373. Yet, the specification is a litany of “may[s].” ‘966 pat. col. 5 ll. 28,
8 30, 32, 37, 47, 51, 53. Nowhere is a complete embodiment of the cleaning pad’s “predetermined
9 characteristics” described. See *id.* col. 5 ll. 14–55. Nor does the patent offer any guidance on the
10 relationship between the different characteristics. *Contra* Sonix, 844 F.3d at 1379 (where the
11 patent provided direct guidance for producing “visually negligible” matrices based on the
12 relationship between micro-unit size, spacing, and visual effect). While the ‘966 patent states an
13 abrasive pad will scrub debris from probe elements, and debris will attach to a sticky pad, it does
14 not guide a skilled artisan in the production of an effective pad by advising different combinations
15 of qualities like abrasion, tackiness, and elasticity. The specification provides no objective
16 boundary for the claim scope.

17 Third, ITS claims *Cox Commc’ns, Inc. v. Sprint Commc’n Co. LP*, 838 F.3d 1224 (Fed.
18 Cir. 2016) excuses the lack of definiteness under 35 U.S.C. § 112(2).⁴ Cox involved a patent
19 related to voice-over-IP technology, which used a “processing system” to receive and send signals.
20 *Id.* at 1226. The Federal Circuit decided the term “processing system” did not render the patents
21 indefinite because the “processing system[] play[ed] no discernable role in defining the scope of
22 the claims.” *Id.* at 1229. It found the “point of novelty reside[d] with the steps of [the asserted
23 method claims], not with the machine that perform[ed] them.” *Id.* Thus, the term “processing
24 system” did not “prevent the claims” from informing a skilled artisan of the claim scope. *Id.* at
25 1232. In response to Cox’s argument that the specification described “processing system” “only

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27 ⁴ As in Cox, the parties here agree 35 U.S.C. § 112(6) does not apply.

1 in functional terms,” the court reasoned that “it [made] sense to define the inventive method as a
2 series of functions” because all of the asserted claims were method claims. *Id.* It concluded the
3 patent specification was sufficiently detailed and a person of ordinary skill in the art would
4 understand the claim’s method requirement.

5 Here, like in *Cox*, the “predetermined characteristics” of the cleaning pad are not the point
6 of novelty of the patent. Rather, the patent is directed toward cleaning probe elements in a
7 semiconductor testing apparatus during normal operations of the testing machine. See ‘966 pat.
8 col. 10 ll. 23–24, 35–36. As ITS notes, matching the various properties of a cleaning pad to a
9 particular probe is incidental to the invention. The point of novelty is when and where the
10 cleaning takes place—not how the cleaning is done.

11 Yet, unlike in *Cox*, the contested term here is part of a device claim, not a method claim.
12 Much of the logic in *Cox* rested on the fact the contested claims were method claims. Indeed, the
13 court rejected the indefiniteness challenge because, as a device, the “processing system” was
14 merely “the locus at which the steps [of the method claim were] being performed.” *Id.*, 838 F.3d
15 at 1229. The term “processing system” did not muddle the claim scope because the method steps
16 themselves were “sufficiently detailed” in the specification. *Id.* at 1233. The term “predetermined
17 characteristics,” however, describes the constitution of the “cleaning device” in a “device” claim.
18 See ‘966 pat. col. 10 l. 23. *Cox* excuses lack of definition of a device incidental to the execution of
19 a method, but it does not excuse lack of definition of a device, which is the subject of a device
20 claim. See 838 F.3d at 1229. Thus, *Cox* does not save “predetermined characteristics” from
21 indefiniteness.

22 Finally, ITS argues generally that “patents are allowed to be broad.” *Trans.* 28:22–23. It
23 emphasizes breadth alone does not render a patent indefinite, but ignores the second half of the
24 rule requiring objective direction for persons of skill in the art. See *Cal. Inst. of Tech. v. Hughes*
25 *Comm’ns Inc.*, 35 F. Supp. 3d 1176, 1194 (C.D. Cal. 2014) (“The fact that a term covers broad
26 possibilities does not render it indefinite as long as a person of ordinary skill can identify the outer
27 boundaries, expansive though they may be.”) (emphasis added). Breadth defined in the language
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1 of the patent is permitted. See *id.* Breadth stemming from ambiguity is not.

2 As explained above, the intrinsic evidence fails to provide guidance and points of
3 comparison for skilled artisans. ITS argues a skilled artisan will know precisely what
4 “predetermined characteristics” involves, but provides no clearly defined embodiment of what the
5 skilled artisan would understand. “Such ambiguity falls within the ‘innovation-discouraging
6 “zone of uncertainty” against which [the Supreme Court] warned.’” *Interval Licensing*, 766 F.3d
7 at 1374 (citing *Nautilus*, 134 S. Ct. at 2130.) A skilled artisan, having developed a superior set of
8 “predetermined characteristics” has no objective boundary in the ‘966 patent against which “to
9 determine whether interference is substantial.” *Sonix*, 844 F.3d at 1377. Thus, “predetermined
10 characteristics” are indefinite under 35 U.S.C. § 112(2).

11 ii. “*without modification or damage*”

12 Mipox argues this phrase lacks an objective boundary. It asks, for example, whether
13 “without modification or damage” is measured “after one contact or after thousands of contacts?”
14 *Opp.* at 8. This argument is persuasive.

15 The ‘966 patent teaches a cleaning pad with micro-features that clean the probes without
16 wear. Yet, according to the uncontroverted record, material wear is inherently time dependent.
17 See *Feldman Decl.*, ¶ 141. Accordingly, probe wear and durability must be framed in some time
18 scale or cycle count because a competing artisan cannot be subjected to the unpredictable vagaries
19 of the patentee’s opinion. For example, if ITS regards its invention as a device that causes non-
20 negligible wear after 10,000 cleaning cycles, then a competing artisan could use the information to
21 determine whether a device that causes such wear after 20,000 cycles is enough of an
22 improvement to avoid infringement.

23 ITS argues the patent is not required to specify a precise timeline for probe wear. At the
24 hearing, it contended the patent claims only what a skilled artisan would consider a reasonable
25 timeline. While “absolute precision is unattainable” and not required, reasonable certainty is.
26 *Nautilus*, 134 S. Ct. at 2129. Further, the patent itself provides no guidance on the question of
27 timeframe for wear. As drafted, the ‘966 patent claims an indefinite timeframe of negligible wear.

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1 This does not provide reasonable certainty. Accordingly, Mipox has satisfied its burden of
2 showing clearly and convincingly that “without modification or damage” is indefinite under
3 § 112(2).

4 **3. “microroughness which burnishes the probe elements”**

5 Mipox challenges the definiteness of this phrase under 35 U.S.C. § 112(2) and,
6 alternatively, contests the phrase’s construction. ITS contends the phrase is definite and requires
7 no construction.

8 i. Indefiniteness

9 Mipox argues the phrase is indefinite for two reasons. First, it contends the phrase
10 conflates the constitution of the cleaning device with the method of using the device. In support,
11 Mipox relies on IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377 (Fed. Cir. 2005),
12 which held a claim may not recite multiple classes of subject matter—e.g. may not recite a method
13 and system claim together. Here, by contrast, the claim does not recite both a device and a method
14 of use. The above phrase is part of the clause: “wherein the semiconductor wafer surface has
15 microroughness which burnishes the probe elements.” ‘966 pat. col. 10 ll. 36, 64. “Wherein”
16 denotes the phrase which modifies the antecedent, “a semiconductor wafer.” Read in context, the
17 phrase describes the wafer surface, which is of a roughness suitable for burnishing. See id. col. 10
18 ll. 32–33, 64–65. Unlike IPXL, where the claim specified both a “system” and then explicitly
19 stated “the user uses the [system],” 430 F.3d at 1384, no actor or user is invoked here. Thus, the
20 claim does not recite two classes of subject matter. Second, Mipox contends this phrase evidences
21 indefiniteness because there is no objective test for microroughness or burnishing. The disputed
22 language, however, includes an objective baseline. The surface roughness is specified as one to
23 three micrometers. See ‘966 pat. col. 5 l. 11. This guidance allows a skilled artisan to compare
24 products to determine infringement. Thus, Mipox has not carried its burden of showing the
25 disputed language to be indefinite.

26 ii. Construction

27 Mipox construes the phrase as an “abrasive surface that abrades the probe elements by
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1 contacting the probe elements.”⁵ ITS argues the phrase’s plain meaning is sufficient because the
 2 specification describes a “slightly abrasive . . . finish” that “may burnish/abrade the probe tips.”
 3 ‘966 col. 5 ll. 9–13. ITS notes this construction is consistent with the definition of “burnish,”
 4 which is “to polish (a surface) by friction.” Burnish, RANDOM HOUSE WEBSTER’S COLLEGE
 5 DICTIONARY 177 (2d ed. 1997). Mipox argues the distinction between burnishing and abrasion is
 6 weak and the specification uses both terms interchangeably. While the specification does conflate
 7 the two terms, there is a valid distinction between them. Abrasion generally means “wearing,
 8 grinding, or rubbing away by friction,” whereas “burnish” means “to make shiny or lustrous
 9 especially by rubbing.” Abrasion, burnish, MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 4,
 10 153 (10th ed. 1996). Though burnishing and abrasion both cause wear, the difference between
 11 them is a matter of degree. ITS specified “burnishes” in claims 26 and 28, see id. col. 10 ll. 32–
 12 33, 64–65, and Mipox’s construction effectively ignores the term. Accordingly, Mipox’s
 13 construction is rejected and the disputed language will have its plain meaning.

14 **B. ‘683 Patent**

15 Asserted claim 1 of the ‘683 patent describes the fabrication of the cleaning device from
 16 four pieces: “a first release liner layer,” “a cleaning pad layer,” “an adhesive layer,” and “a second
 17 release liner layer.” ‘683 pat. col. 12 ll. 64–67. The “cleaning pad layer [has] a working surface”
 18 to clean probe elements. Id. col. 12 ll. 60, 64–65. The “first release liner layer is removed to
 19 create a matte finish” on the working surface of the “cleaning pad layer.” Id. col. 13 ll. 1–3. The
 20 matte finish is capable of being “detected by the prober.” Id. col. 12 ll. 60–61; col. 10 ll. 57–60.
 21 Thus, the device allows for an “automatic prober/tester cleaning method.” Id. col. 11 ll. 58–59.

22 **1. *“forming a cleaning pad layer having a working surface on the first release liner
 23 layer” & “forming an adhesive layer on the cleaning layer”***

24
 25 ⁵ On this point, Mipox further argues “burnish” requires contact between the substrate and the
 26 probe elements. ITS does not disagree. Rather, ITS argues probe contact with the cleaning device
 27 is not required for infringement. Claims 26 and 28 recite a device, which cleans probe elements
 28 by contact, but “contact” describes use, not device constitution. A competitor device need not be
 in contact with probe elements in order to infringe the ‘966 patent.

1 With regard to these two phrases, the parties dispute: (i) whether the phrases should be
2 read as having an inherent order; (ii) the construction of the specific terms “cleaning pad layer”
3 and “release liner layer”; and (iii) the construction of the full phrases. The phrases are addressed
4 together because of the joint disputes.

5 i. Ordering

6 Mipox argues the language of Claim 1, including the above phrases, should be construed
7 as having an inherent order. Generally, as ITS notes, “[u]nless the steps of a method actually
8 recite an order, the steps are not ordinarily construed as having one.” *Altiris, Inc. v. Symantec*
9 *Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (internal quotation omitted). That presumption,
10 however, may be overcome “if, as a matter of logic or grammar, they must be performed in the
11 order written” or if “the rest of the specification . . . ‘directly or implicitly requires such a narrow
12 construction.’” *Id.* at 1369–70.

13 Here, Claim 1 describes “forming a cleaning device . . . by forming a first release liner
14 layer, forming a cleaning pad . . . on the first release liner layer, forming an adhesive layer on the
15 cleaning pad layer, and forming a second release liner layer on the adhesive layer.” ‘683 pat. cols.
16 12–13 ll. 63–1 (emphasis added). “[O]n” is “a function word to indicate a source of dependence.”
17 *On*, MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 811 (10th ed. 1996). As described in the
18 claim, the cleaning pad is not formed until it is formed upon a pre-existing first liner layer.
19 Similarly, the adhesive layer is not formed until it is formed upon a pre-existing pad which is
20 already attached to the first liner layer. This is consistent with explicit ordering in the
21 specification. The construction begins “initially” with the “first release liner layer.” ‘683 pat. col.
22 9 ll. 54–55. The cleaning pad “is formed on” the first layer. *Id.* col. 9 ll. 61–62. “Next,” the
23 adhesive layer is “formed on” the cleaning pad. *Id.* col. 10 l. 10. “Finally,” the second release
24 layer is “formed on the adhesive layer.” *Id.* col. 10 ll. 19–21. The logical progression of the claim
25 denotes an order and the dependence of subsequent added parts. The claim language and its
26 internal logic support Mipox’s position. Accordingly, the language of Claim 1 will be construed
27 as having an order.

1 ii. *“release liner layer”*

2 ITS proposes construing “release liner layer” as “a layer that, when removed, exposes
3 another layer or surface.” Mipox would construe the phrase as “a release layer comprising
4 polymeric film that is easily separable from an adjacent layer contacting the release layer.” Mipox
5 adds two limitations not found in the claim language: “polymeric film” and “easily separable.” It
6 notes the ‘683 patent specification describes an embodiment of the “release liner layer” as a
7 “polymeric film,” preferably “a polyester film.” ‘683 pat. col. 9 ll. 55–56. The Federal Circuit,
8 however, has “repeatedly warned against confining the claims to [the specification]
9 embodiments.” Phillips, 415 F.3d at 1323. Moreover, no intrinsic evidence supports limiting the
10 layer to a “polymeric film” that is “easily separable.” As such, Mipox’s construction is rejected.
11 ITS’s construction is true to the claim and the specification. Both release liner layers cover
12 another layer. See ‘683 pat. cols 12–13 ll. 63–1. Each layer is removed prior to use of the
13 cleaning device. Id. col. 10 ll. 24–26, 30–33. Thus, a “release liner layer” will be construed as “a
14 layer that, when removed, exposes another layer or surface.”

15 iii. *“cleaning pad layer”*

16 ITS construes “cleaning pad layer” as “a layer that cleans probe or testing equipment by
17 contact with and/or penetration into its surface.” Mipox suggests the term means “a layer adapted
18 to clean probes that come in contact therewith.” ITS’s construction tracks the claim and
19 specification more than Mipox’s. It also makes more sense in light of the surrounding claims. See
20 Phillips, 415 F.3d at 1314 (“Differences among claims can also be a useful guide in understanding
21 the meaning of particular claim terms.”)

22 Claim 1 describes a “cleaning device.” ‘683 pat. col. 12 l. 63. Claims 2, 4, and 5 explain
23 cleaning is accomplished via contact between the cleaning device and the probe elements. Id. col.
24 13 ll. 19–20, 26–31. Claims 4 and 5, which depend from claim 2, also describe a horizontal
25 scrubbing motion. Id. col. 13 ll. 26–31. Claim 2 is presumed not to include the horizontal
26 scrubbing motion. See Phillips, 415 F.3d at 1315 (“the presence of a dependent claim that adds a
27 particular limitation gives rise to a presumption that the limitation in question is not present in the
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1 independent claim”). The cleaning motion in Claim 2 is thus restricted to the vertical axis,
2 indicating cleaning via penetration into the cleaning pad. Indeed, the specification explains
3 cleaning is accomplished by penetration into or contact with the cleaning device surface. ‘683 pat.
4 col. 6 ll. 39–48, col. 8 ll. 24–26, col. 9 ll. 28–34. Accordingly, ITS’s construction is supported by
5 the language of the patent. The term “cleaning pad layer” will be construed as “a layer that cleans
6 probe or testing equipment by contact with and/or penetration into its surface.”

7 iv. “forming a cleaning pad layer having a working surface on the first release
8 *liner layer*” & “*forming an adhesive layer on the cleaning layer*”

9 Mipox construes “forming a cleaning pad layer having a working surface on the first
10 release liner layer” as “producing a cleaning pad layer having a working surface adopting the
11 texture of the first release liner layer comprising textured polymeric film” and “forming an
12 adhesive layer on the cleaning layer” as “producing a layer of adhesive on the cleaning pad layer.”
13 ITS contends each phrase should be given its plain meaning.

14 Mipox’s construction is problematic. First, Mipox changes the words of the claim without
15 providing a meaningful reason to do so. There is no rationale for converting “forming” into
16 “producing.” See Phillips, 415 F.3d at 1312 (warning against including “elements not mentioned
17 in the claim”) (citation omitted). Moreover, Mipox adds language reiterating that the liner layer
18 imparts the matte finish to the cleaning pad, but the claim already specifies as much. ‘683 pat. col.
19 13 ll. 2, 5. The Federal Circuit has warned against constructions that “contribute nothing but
20 meaningless verbiage.” Harris Corp. v. IXYS Corp., 114 F.3d 1149, 1152 (Fed. Cir. 1997).
21 Finally, Mipox’s construction does not further define the “scope that should be encompassed by
22 [the] claim language.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361
23 (Fed. Cir. 2008). Therefore, these two phrases will retain their plain meaning.

24 2. “***forming a second release liner layer on the adhesive layer wherein the first release***
25 ***liner layer is removed to create the matte finish of the working surface*”**

26 The parties primarily dispute whether this phrase is indefinite. Mipox argues this phrase is
27 indefinite because “the matte finish” lacks antecedent basis. Indeed, no antecedent basis is found

1 within the body of the claim or the preamble. The term “the matte finish” is recited before “a
2 matte finish.” Per *Nautilus*, however, the ultimate question is whether the claims “inform those
3 skilled in the art about the scope of the invention with reasonable certainty.” 134 S. Ct. at 2129.
4 Here, the preamble of the ‘683 patent refers to a “surface . . . capable of being detected by a
5 prober.” ‘683 pat. col. 12 l. 61. The specification explains the probe “[uses] light or optical
6 energy to detect the working surface . . . due to the matte [finish].” *Id.* col. 10 ll. 59–60. Thus, as
7 described in the preamble, the result of the “the matte finish” is detection of the working surface.⁶
8 The language in the preamble provides context, so a skilled artisan should reasonably understand
9 the antecedent for “the matte finish.”

10 Additionally, Mipox contends the phrase is indefinite because the language duplicates a
11 claim step. The claim describes a method for fabricating a cleaning device by forming a cleaning
12 device “wherein the first release liner layer is removed to create the matte finish of the working
13 surface” and then “removing a layer from the working surface wherein the removal of the layer
14 imparts a matte finish to the working surface of the cleaning device.” ‘683 pat. col 13. ll. 1–5.
15 According to Mipox, the claim appears to require creation of the matte finish twice because it
16 specifies removal of the liner layer both “create[s] the matte finish” and “imparts a matte finish.”
17 *Id.* col 13. ll. 1–5.

18 As ITS argues, however, “wherein” indicates a modification of the “first release liner
19 layer” not a new step in the device formation. Indeed, the claim teaches a method with two
20 general steps: (1) formation of the layers and (2) removal of the first release liner layer to impart a
21 matte finish. Though inelegant and unnecessary, the “wherein” clause simply modifies the term
22 “first release liner layer” in the formation step of the claim. It does not affirmatively instruct
23 removal at that step. The second step, which affirmatively instructs removal of the liner layer to
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26 ⁶ This case is thus distinguishable from *Adaptix, Inc. v. Huawei Techs. Co. Ltd.*, 74 F. Supp. 3d
27 832, 843 (E.D. Tex. 2014), on which Mipox relies, where a court found claim language indefinite
28 due to the lack of antecedent basis. There, the challenged language was completely without basis
in the claim body or preamble. See *id.* at 841, 843.

1 impart the matte finish, is thus not redundant. Further, the clauses are consistent in establishing
2 that the removal of the first release liner layer creates a matte finish. In this context, “create” and
3 “impart” are functionally synonyms. The extra verbiage does not render the claim indefinite.

4 As to construction, the parties dispute how the matte finish is created. ITS contends the
5 matte finish could be formed a variety of ways, not all by the first release liner layer. This
6 contention is rejected. As noted, the words of the claim plainly state the first release liner layer
7 “create[s]” and “imparts” the matte finish. ‘683 pat. col 13. ll. 2, 5. The disputed language shall
8 have its plain meaning, though with the emphasis that the first release liner layer alone creates the
9 matte finish of the cleaning surface.

10 **3. “a matte finish”**

11 Mipox contends the term “matte finish” is indefinite because it is not objectively bounded
12 and because optical acuity varies across test machines. While these arguments are substantial,
13 ultimately Mipox has not carried its burden of proving indefiniteness by clear and convincing
14 evidence.

15 The term “matte finish” does have an objective baseline. The purpose of the matte finish is
16 to distinguish the cleaning device from an integrated circuit. ‘683 pat. col. 12 ll. 60–63. Thus, the
17 baseline is the optical acuity of the test probe. See *Sonix*, 844 F.3d at 1378 (finding visual acuity
18 to be an objective baseline). While optical acuity may vary across testing machines, such that
19 certain “matte finishes” would be distinguishable on certain machines and indistinguishable on
20 others, Mipox has “not provided evidence that the [machine] perception varies so significantly that
21 reliance on it as a standard renders the claims indefinite.” *Id.*, at 1379 (finding an objective
22 baseline where no evidence of material variance in human visual acuity was provided).

23 Additionally, the claims and specification provide examples and guidance. Claim 2
24 describes the method for detecting the matte finish: the probe shines light onto the cleaning device
25 and detects the reflected energy. ‘683 pat. col. 13 ll. 12–18. The specification explains the probe
26 may use visual, infrared, or ultra-violet light to detect the cleaning device. *Id.* col. 10 ll. 63–65. It
27 further explains typical semiconductor wafers have a “mirror finish.” *Id.* col. 11 ll. 3–4. Certainly

1 this guidance does not rise to the level of specificity approved of in Sonix, where the patent
2 specification indicated precise numbers for print resolution to render the text “visually negligible.”
3 844 F.3d at 1379. However, the specification still provides a clear rule—the cleaning device
4 cannot have a “mirror finish.” ‘683 pat. col. 11 ll. 3–4. Thus, it guides the artisan to a “matte
5 finish” clearly distinguishable from a “mirror finish.” Accordingly, “matte finish” will be
6 construed according to its plain meaning.

7 **C. ‘869 Patent**

8 Asserted claims 1 and 4 of the ‘869 patent teach an improvement of the cleaning surface of
9 the prior patents. Like the prior patents, the “cleaning device” is intended to clean “contact
10 elements and support hardware in a semiconductor testing apparatus.” ‘869 pat. col. 15 ll. 27–28,
11 col. 16 ll. 8–9. The device includes a “substrate . . . configur[ed] to [fit] into the testing apparatus
12 during normal testing [operation].” Id. col. 15 ll. 35–37, col. 16 ll. 21–23. The “cleaning layer” is
13 improved by adding “a plurality of geometric micro-features” that clean the “pin contact elements
14 and support hardware . . . during normal operation.” Id. col. 15 ll. 31–32, 4–42, 45–46, col. 16 ll.
15 12–13, 25–27, 29–30.

16 **1. “a plurality of geometric micro-features that extend above a surface of the cleaning
17 layer with predetermined geometrical and dimensional properties”**

18 Mipox argues this entire phrase is indefinite and the parties separately dispute the
19 construction of the term “micro-features.” Because the term’s construction is instructive in the
20 definiteness analysis, “micro-features” is addressed first.

21 i. “micro-features”

22 ITS construes “micro-features” as “structures or features with micron-scale dimensions
23 and/or spacing.” Mipox construes the term as “microscopic geometric structures.” The parties’
24 disagreement distills to three issues.

25 First, the parties dispute whether the features are “micron-scale” or “microscopic.” The
26 specification includes examples of “micro-features” with micron scale dimensions. ‘869 pat. col.
27 11 ll. 35–43. It describes features with dimensions of “100 . . . 50 . . . 100 . . . 200 . . . 400 . . .

1 15.0 . . .” microns. Id. cols. 11–12, ll. 37, 39, 41, 42, 63, 64. Accordingly, the term will be
2 construed using “micron-scale” rather than “microscopic.”

3 Second, ITS’s construction applies “micron-scale” to micro-feature spacing. While the
4 specification describes micron-scale spacing between the features, ‘869 pat. col. 11 ll. 37–38, the
5 plain language of the claim only specifies the features are micron-scale. ‘869 pat. col. 15 ll. 31–
6 32, col. 16 ll. 12–13. The claim is thus broader than the embodiment. ITS’s proposal
7 unnecessarily imports a limitation from the specification into the claim, without any reason for
8 doing so. See Phillips, 415 F.3d at 1323. The feature spacing thus need not be “micron-scale.”

9 Third, Mipox originally proposed the addition of the term “geometric” in the construction
10 of “micro-features.” At oral argument, Mipox revised its position and eliminated that term.
11 Trans. at 91:15–22. The parties agree the claim refers to “geometric micro-features.” ‘869 pat.
12 col. 15 ll. 31–32, col. 16 ll. 12–13. Construing “micro-features” inherently to include the modifier
13 “geometric” would be improper. Phillips, 415 F.3d at 1324 (“The inclusion of a specific
14 limitation . . . makes it likely that the patentee did not contemplate that the term . . . already
15 contained that limitation.”). Given the asserted claims already limit themselves to “geometric
16 micro-features,” the proffered construction is also unnecessary. Accordingly, the term “micro-
17 features” will be construed as “structures or features with micron-scale dimensions.”⁷

18 ii. Indefiniteness

19 Mipox contends the full phrase is indefinite because the micro-features are not sufficiently
20 defined. The specification, however, sets out objective definitions of micro-features by providing
21 guidance and examples regarding the size and shape of the micro-features. The specification
22 describes “uniformly shaped and regularly spaced, geometric micro-features, such as micro-
23 columns, micro-pyramids” ‘869 pat. col. 7 ll. 21–22. It describes the relevant physical
24 properties as aspect-ratio (width to height), cross-section (square, circular, triangular, etc.), and
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26 ⁷ Both parties propose inclusion of the word “structures.” While the word is consistent with the
27 embodiments, ‘869 pat. col. 7 ll. 20–25, col. 11 ll. 26–30, it is a limitation without basis in the
claim and thus unnecessary. Yet, because the parties agree to its use, the term will be adopted.

1 inclusion of abrasive particles. *Id.* col. 7 ll. 24–26. It then provides detailed examples for
2 tailoring micro-feature dimensions to those of the probe elements. For example, a “contact
3 element” of 125 micron spacing and 360 micron exposed tip length would be cleaned by features
4 of greater than 60 micron length and less than 125 micron width. *Id.* col. 12 ll. 18–24; see also *id.*
5 col. 11 ll. 35–43, 56–64, col. 12 ll. 46–54. The specification also recommends the micro-features
6 and probe elements be relatively equal in size; greater dimensional differences cause more wear or
7 diminish cleaning efficacy. *Id.* col. 11 ll. 50–55. This level of guidance weighs in favor of
8 definiteness. See *Sonix*, 844 F.3d at 1379. Mipox has not met its burden of proving this language
9 indefinite by clear and convincing evidence.⁸

10 **2. “predetermined characteristics that clean debris from the pin contact elements and**
11 **support hardware when the pin contact elements and support hardware contact the**
12 **cleaning layer so that the pin contact elements and support hardware are cleaned**
13 **during a normal operation of the testing machine”**

13 Mipox argues this language is indefinite because, like the similar language in the ‘966
14 patent, the “predetermined characteristics” are not well defined. Where similar language failed in
15 the ‘966 patent, the ‘869 patent specification provides sufficient guidance to prevent a finding of
16 indefiniteness here.

17 As discussed above, ITS’s argument that “predetermined characteristics” are objectively
18 based in the resultant cleaning is mistaken. While the result is objective, it may be accomplished a
19 variety of ways. Thus, on its face, the claim opens the scope of “predetermined characteristics” to
20 the subjective preferences of a skilled artisan.

21 The subjectivity, however, does not render this claim indefinite. Like the ‘966 patent, the
22 ‘869 patent explains the “cleaning layer” may be comprised of an open ended list of properties:

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25 ⁸ Mipox notes that, while the claim language permits the micro-features of uniform and non-
26 uniform characteristics, prior art references have non-uniform micro-features on the cleaning
27 surface and the ‘869 patent professes to solve the issues of non-uniform abrasive wear with
28 “uniformly shaped and regularly spaced, geometric micro-features.” ‘869 pat. col. 7 ll. 12–42.
While this argument may be directed toward limitation of the claim scope, Mipox has not
proposed a limited construction.

1 cross section, aspect ratio, and abrasion. ‘869 pat. col. 7 ll. 20–26, col. 6 ll. 41–44. Unlike the
 2 ‘966 patent, however, the ‘869 specification provides specific examples and guidance. For
 3 example, the specification advises placing a flexible or micro-porous layer beneath a rigid
 4 cleaning layer to decrease probe wear. Id. col. 9 ll. 10–15. The specification also advises an
 5 abrasive particle layer upon a rigid polyester film is effective at cleaning and maintaining the
 6 shape of flat probe contact elements. Id. col. 9 ll. 16–20. This parallels the examples which were
 7 found to be sufficient in Sonix. See id., 844 F.3d at 1379. The specification also teaches specific
 8 ranges for different properties of the cleaning layer. For example, elasticity would be between 40
 9 and 600 mega-Pascals, tackiness between 20 to 800 grams, and thickness between 25 and 300
 10 micrometers. ‘869 pat. col. 9 ll. 62–67, col. 10 ll. 8–14, 41, 51, 63–65. These examples establish
 11 an objective boundary for the “predetermined characteristics” that fall within the scope of the
 12 claim. See Interval Licensing, 766 F.3d at 1371. Mipox provides no evidence that this level of
 13 guidance would not help the skilled artisan in reasonably determining infringement. Because the
 14 “predetermined characteristics” at issue are sufficiently delineated in the specification, the scope
 15 of the claim is established with reasonable certainty. Thus, Mipox fails to show clearly and
 16 convincingly that the language at issue is indefinite.

17 **3. “*plurality of geometric micro-features that extend above a surface of the cleaning*
 18 ***layer with geometrical and dimensional properties so that a contact area and*
 19 ***surrounding support hardware are cleaned without modification or damage*”******

20 Mipox contends “without modification or damage” is indefinite because the patent recites
 21 no timeline. For the reasons discussed above, this argument is persuasive. As with the ‘966
 22 patent, the ‘869 patent provides no indication of a time frame during which the probes are cleaned
 23 without modification or damage. Thus, the language claims an indefinite period and is indefinite
 24 under 35 U.S.C. § 112(2).

25 **V. CONCLUSION**

Patent	Claim	Language	Construction
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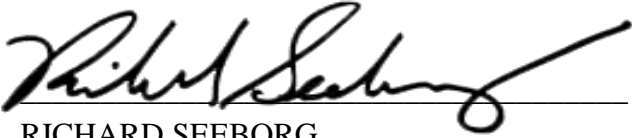
'966	26, 28	“the substrate comprises a semiconductor wafer having a surface”	Plain meaning
'966	26	“predetermined characteristics that cause the pad to clean debris from the probe elements when the probe elements contact the pad so that the probe elements are cleaned, without modification or damage”	Indefinite under 35 U.S.C. § 112(2).
'966	26, 28	“microroughness which burnishes the probe elements”	Plain meaning
'683	1	“forming a cleaning pad layer having a working surface on the first release liner layer”	Plain meaning
'683	1	“forming an adhesive layer on the cleaning layer”	Plain meaning
'683	1	“release liner layer”	A layer that, when removed, exposes another layer or surface
'683	1	“cleaning pad layer”	A layer that cleans probe or testing elements by contact with and/or penetration into its surface
'683	1	“forming a second release liner layer on the adhesive layer wherein the first release liner layer is removed to create the matte finish of the working surface”	Plain meaning
'683	1	“a matte finish”	Plain meaning
'869	1	“a plurality of geometric micro-features that extend above a surface of the cleaning layer with predetermined geometrical and dimensional properties”	Plain meaning
'869	1, 4	“micro-features”	Structures or features with micron-scale dimensions

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'869	1	“predetermined characteristics that clean debris from the pin contact elements and support hardware when the pin contact elements and support hardware contact the cleaning layer so that the pin contact elements and support hardware are cleaned during a normal operation of the testing machine”	Plain meaning
'869	4	“plurality of geometric micro-features that extend above a surface of the cleaning layer with geometrical and dimensional properties so that a contact area and surrounding support hardware are cleaned without modification or damage”	Indefinite under 35 U.S.C. § 112(2).

IT IS SO ORDERED.

Dated: April 10, 2017



RICHARD SEEBORG
United States District Judge