

Decisions of the United States Court of International Trade

Slip Op. 04-23

BEFORE: NICHOLAS TSOUCALAS, SENIOR JUDGE

VANDERHOOF SPECIALTY WOOD PRODUCTS, INC., PLAINTIFF, v.
UNITED STATES, DEFENDANT.

Court No. 02-00793

The United States moves to dismiss the action brought by plaintiff, Vanderhoof Specialty Wood Products, Inc., pursuant to USCIT R. 12(b)(5) for failure to state a claim upon which relief may be granted. The government argues that there is no justiciable case or controversy in this matter because the merchandise at issue was entered duty free. Vanderhoof opposes the motion and argues that it suffered actual injury since reclassification of the subject entries obligated plaintiff to expend valuable Canadian export permits on such entries.

Held: For the reasons stated below, Government's motion to dismiss this case is granted. Case dismissed.

March 11, 2004

Alston & Bird LLP (Paul F. Brinkman and Daniel J. Gerkin) for Vanderhoof Specialty Wood Products, Inc., plaintiff.

Peter D. Keisler, Assistant Attorney General; *Barbara S. Williams*, Attorney-in-Charge, International Trade Field Office, Civil Division, Commercial Litigation Branch, United States Department of Justice (*Aimee Lee*) for the United States, defendant.

MEMORANDUM OPINION

TSOUCALAS, Senior Judge: The United States (“the government”) moves to dismiss the action brought by plaintiff, Vanderhoof Specialty Wood Products, Inc. (“Vanderhoof”), pursuant to USCIT R. 12(b)(5) for failure to state a claim upon which relief may be granted. The government argues that there is no justiciable case or controversy in this matter because the merchandise at issue was entered duty free. Vanderhoof opposes the motion and argues that it suffered actual injury since reclassification of the subject entries obligated

plaintiff to expend valuable Canadian export permits on such entries.

DISCUSSION

A. Background

Vanderhoof “remanufactures” value-added softwood lumber products in Vanderhoof, British Columbia, Canada. *See* Compl. ¶9. Vanderhoof “purchases ‘trim blocks’ or ‘mill trim ends’ (waste wood) from sawmills in British Columbia, cuts off defects, and joins the blocks to form longer dimensional wood products . . . using a finger-jointing machine. These products are graded, and some are sold as framing lumber (*e.g.* ‘studs’).” *Id.* ¶11. Some of these finger-jointed studs were used by Vanderhoof to manufacture Deckmate brand handrails (“handrails” or “subject merchandise”) that were imported into the United States. *See id.* ¶12. Vanderhoof entered the handrails under subheading 4409.10.45 of the Harmonized Tariff Schedule of the United States (“claimed provision”). *See id.* ¶14. The United States Bureau of Customs and Border Protection (“Customs”) liquidated the subject merchandise under subheading 4407.10.00 (“assessed provision”). *See id.* ¶15. Both subheadings carry a duty-free rate of importation since all NAFTA-originating wood products are duty free. *See* Pl.’s Opp’n Def.’s Mot. Dismiss (“Pl.’s Opp’n”) at 1. However, Customs’ reclassification of the handrails under subheading 4407.10.00 “required Vanderhoof to present valid Canadian export permits for the [subject] merchandise.”¹ *Id.* at 2. As a result, Vanderhoof filed timely protests against the subject entries that were ultimately denied by Customs on August 30, 2002. *See* Compl. ¶4. Subsequently, Vanderhoof filed a complaint with this Court contesting Customs’ reclassification of the subject entries and requesting a judgment directing Customs to reliquidate the subject entries under the proposed subheading.

B. Contention of the Parties

The government argues that this action involves a non-justiciable controversy and, accordingly, this case should be dismissed. *See* Def.’s Mot. Dismiss Lack Justiciable Controversy (“Def.’s Mot.”) at 2–4. According to the government, “[e]ven if the Court decides that plaintiff’s proposed classification is correct, which is not the case, the

¹Under the Softwood Lumber Agreement between the United States and Canada, items classified under subheading 4407.10.00 are encumbered with a bond requirement mandating Vanderhoof to present a government issued permit within 20 days of entry. *See* Softwood Lumber Agreement (“SLA”), May 29, 1996, Canada-United States, 35 I.L.M. 1195 (entered into force May 29, 1996); 19 C.F.R. §§ 12.140(a), 113.62(k) (2000). The permit fee may cost a Canadian exporter \$50.00 (USD) or \$100.00 (USD) per thousand board feet. *See id.* This requirement is not imposed on Canadian imports classified under 4409.10.45. *See* 19 C.F.R. § 12.140(a).

Court cannot grant relief to plaintiff” because both the assessed and claimed provisions are duty free. *Id.* at 2. The government cites a string of cases to support its contention that “where the duty rate under both the assessed and the claimed tariff provisions is the same, the case should be dismissed as moot.” *Id.* at 3. (citing *Sneakers Circus, Inc. v. Carter*, 566 F.2d 396, 400 n.9 (2d Cir. 1977) (stating, in dicta, that where “a reclassification would have no effect on either the rate or amount of duty payable, no opportunity to challenge exists”); *3V, Inc. v. United States*, 23 CIT 1047, 1049, 83 F. Supp. 2d 1351, 1353 (1999) (finding no case or controversy where the claimed an assessed classifications were duty free); *Acrilicos v. Regan*, 9 CIT 442, 449, 617 F. Supp. 1082, 1088 (1985) (finding that any decision would render an advisory opinion because the amount of duty to be paid by plaintiff is unaffected by the action); *Carson M. Simon & Co. v. United States*, 55 Cust. Ct. 103, 108, C.D. 2558 (1965) (dismissing claims as to entries that were entered at a rate lower than the claimed rate)).

Vanderhoof argues that Customs’ classification does not involve rate of duty, but rather the resulting encumbrance placed on plaintiff pursuant to the Softwood Lumber Agreement. *See* Pl.’s Opp’n at 3. Specifically, plaintiff argues that Customs’ reclassification of the subject entries under subheading 4407.10.00 required Vanderhoof to obtain export permits from the Canadian government. *See id.* at 2. To obtain these permits, Vanderhoof paid fees to Canada determined in accordance with the schedule listed under Article II of the Softwood Lumber Agreement. *See id.* 2–3; *see also* SLA, 35 I.L.M. at 1197. According to Vanderhoof, the injury suffered deals not with the amount of duties assessed pursuant to the reclassification, but rather the surrender of “valuable” export permits to Customs as a result of the reclassification. *See* Pl.’s Opp’n at 2–3. Vanderhoof further argues that this injury can be redressed by a favorable judicial decision because proper classification of the subject merchandise and reliquidation under 4409.10.45 would require Customs to return the permits submitted by plaintiff under protest at the time of entry. *See id.* at 3.

C. Analysis

Pursuant to Article III of the United States Constitution, federal courts are empowered to decide only those claims that present live cases or controversies. *See Iron Arrow Honor Soc’y v. Heckler*, 464 U.S. 67, 70 (1983) (citing *DeFunis v. Odegaard*, 416 U.S. 312, 316 (1974)). In order to satisfy the case or controversy requirement, “a litigant must have suffered some actual injury that can be redressed by a favorable judicial decision.” *See id.* (citation omitted). A claim must be dismissed as non-justiciable if it fails to meet the Article III criteria. *See Powell v. McCormack*, 395 U.S. 486, 496 n.7 (1969); *Liner v. Jafco, Inc.*, 375 U.S. 301, 306 n.3 (1964). Ultimately, “[t]he

duty of this [C]ourt, as of every judicial tribunal, is limited to determining rights of persons or of property, which are actually controverted in the particular case before it." *California v. San Pablo & Tulare R.R. Co.*, 149 U.S. 308, 314 (1893). "Even where a court possesses jurisdiction to hear a claim, it may not do so in cases where the claim . . . is such that the court lacks 'ability to supply relief.'" *Adkins v. United States*, 68 F.3d 1317, 1322 (Fed. Cir. 1995)(citing *Murphy v. United States*, 993 F.2d 871, 872 (Fed. Cir. 1993)).

The parties in this case disagree as to the correct classification of the subject merchandise. It is uncontested that no matter the Court's ruling, "the Government collects and [the plaintiff] pays nothing" since all NAFTA-originating wood products are duty free. *See 3V*, 23 CIT at 1049, 83 F. Supp. 2d at 1353. The crux of plaintiff's argument is that classification under the proposed heading would entitle Vanderhoof to the return of "valuable" export permits currently in Customs' possession. *See Pl.'s Opp'n 2-3*. Plaintiff's complaint, however, makes no mention of such permits. *See Compl.* It is not until plaintiff's opposition papers to the government's motion to dismiss that Vanderhoof claims its injury rests in something other than the assessment of duties and links this case to the Softwood Lumber Agreement.

Even after reading plaintiff's arguments, the Court cannot discern what injury can be redressed by a favorable ruling. In this case, valid export permits were presented to Customs at importation for the subject entries. Once such permits were presented, any encumbrance of Vanderhoof's entries were extinguished. *See Def.'s Reply Pl.'s Opp'n Def.'s Mot. Dismiss (Def.'s Reply)* at 2. *But see Pl.'s Opp'n* at 1 (stating that Customs' classification resulted in "the unlawful encumbrance of Vanderhoof's entries and that the resolution of the classification dispute by this Court and an order directing reliquidation under the claimed tariff provision would, albeit belatedly, remove the encumbrance"). Moreover, plaintiff does not seek a refund for the export permits but rather their return. *See Pl.'s Opp'n* at 3.

The Court agrees with the government. "The matter of permits is wholly peripheral to the issue actually raised by Vanderhoof in its complaint." *Def.'s Reply* at 2. The permits were issued by the Canadian government under the requirements of the U.S.-Canada Softwood Lumber Agreement and, ultimately, pursuant to 19 C.F.R. § 12.140(a). This agreement expired in 2001 (five years after its effective date) and, accordingly, there no longer exists a permit requirement pursuant to such agreement. *See SLA*, 35 I.L.M. at 1195; *Def.'s Reply* at 3; *see also* 19 C.F.R. § 12.140 (stating that "[t]he requirements set forth in this section are applicable for as long as the Softwood Lumber Agreement . . . remains in effect"). Thus, Vanderhoof would be precluded from using such permits today. Although Vanderhoof has termed these permits "valuable," it has not established what, if any, value such permits possess. Since plaintiff

has no “legally cognizable interest” in the outcome of this litigation, Vanderhoof’s claims are moot. *See PPG Indus., Inc. v. United States*, 11 CIT 303, 306, 660 F. Supp. 965, 968 (1987) (quoting *Powell*, 395 U.S. at 496). Accordingly, this case is dismissed.

CONCLUSION

Plaintiff’s claim fails to meet the Article III criteria. Since the encumbrance on Vanderhoof’s entries was extinguished upon presenting Customs with required export permits, and since return of such permits can not meaningfully redress any economic or legal injury, this case is dismissed. Judgment will be entered accordingly.



Slip Op. 04-24

DAL-TILE CORPORATION, PLAINTIFF, v. THE UNITED STATES, DEFENDANT

Court No. 95-05-00679

[On classification dispute over whether imported wall tile from Mexico meets statutory test for “ceramic” and is entitled to duty-free entry under the Generalized System of Preferences, judgment for the plaintiff.]

Decided: March 16, 2004

McGuireWoods LLP (Joseph S. Kaplan), New York City, New York, for the plaintiff. *Peter D. Keisler*, Assistant Attorney General, *Barbara S. Williams*, Attorney in Charge, International Trade Field Office, Commercial Litigation Branch, Civil Division, United States Department of Justice (*Saul Davis*); *Beth C. Brotman*, Office of Assistant Chief Counsel, International Trade Litigation, Bureau of Customs and Border Protection, for the defendant.

Howrey Simon Arnold & White LLP (John F. Bruce), Washington, D.C., for *amicus curiae* Tile Council of America.

OPINION

Following trial of the issues, the parties entered into mediation with the assistance of another judge of this Court. The attempt was ultimately unsuccessful.

Dal-Tile disputes the classification of 1984, 1985 and 1988 entries of wall tile from Mexico. The imports were classified by the predecessor of the Bureau of Customs and Border Protection,¹ along with other Dal-Tile entries between 1984 and 1993, as “ceramic articles” under item 532.24 of the Tariff Schedules of the United States. They

¹Formerly the U.S. Customs Service.

were also denied duty-free treatment under the Generalized System of Preferences.

Dal-Tile contends that classification is appropriate under item 523.94, TSUS (“other articles of stone or of other mineral substances . . . not elsewhere specified”). In 1993 and 1994, Dal-Tile filed protests of all entries for the 1984–1993 period. After considering the protests, Customs changed the classification of all the 1987 entries and some of the 1988 entries from TSUS 532.24 to Dal-Tile’s claimed classification and refunded all customs duties for those entries, which were liquidated as Mexican products pursuant to the GSP. Dal-Tile’s claims with respect to a number of other shipments were also settled prior to this action. *Cf. Dal-Tile Corp. v. United States*, 24 CIT 939, 116 F.Supp.2d 1309 (2000). Subsequently, however, Customs reverted to its original classification under 532.24, and Dal Tile sues to have its other entries also classified, like its earlier ones, under 523.94.

This test case covers the classification of the remaining contested Dal-Tile entries. Dal-Tile’s claim concerns Headnote 2(a) to Part 2 of Chapter 5 of the TSUS, which defines a “ceramic article” as

a shaped article having a glazed or unglazed body of crystalline or substantially crystalline structure, which body is composed essentially of inorganic nonmetallic substances and . . . is formed and subsequently hardened by such heat treatment that the body, if reheated to pyrometric cone 020, would not become more dense, harder, or less porous, but does not include any glass article.

TSUS, Ch. 5, Part 2, Note 2(a). The language of this statute is clear (although the history of the reason for its having been promulgated is not). Pyrometric cone 020 is the state of energy required to deform a cone of a particular composition and size, and it may be achieved through different time and temperature combinations. The question here is simply which of the parties’ proffered test methodologies proves the presence or absence of change in samples of wall tile upon reheating to pyrometric cone 020. If Dal-Tile prevails on its classification claim, the Court must also consider whether the wall tile is entitled to duty-free entry under the GSP. For the reasons set forth below, judgment will enter for Dal-Tile on both issues.

Findings

Wall tile is unlike floor tile. Floor tiles are typically installed with more grout and wider space between them than wall tiles, which are normally fitted close together with minimal grout. Therefore, flatness and uniformity in size and shape are less important for floor tiles than for wall tiles, which must be pleasing to the eye when installed.

Floor tile must also resist prolonged contact with water and be more scratch resistant. They are therefore composed of different materials than wall tile and are fired to a more “stable” or “mature” state. By contrast, a degree of absorption is desirable in wall tile, because this allows the back of the wall tile body, which is unglazed, to absorb moisture from the adhesive used for installation and stick to it while it cures. To achieve the desired absorptiveness,² wall tile body is fired at a comparatively lower temperature than floor tile body, which results in what Dal-Tile avers is a not completely mature body that tends to further harden upon subsequent firings as it becomes more fully mature.

American National Standards Institute (ANSI) 6.1.1.3.1, the industry standard for absorption in wall tile, specifies that wall tile should have between 7 and 20 percent body weight absorption. Dal-Tile requires between 12 and 16 percent absorption for its wall tile. This is achieved through the use of formula “1776,” which was introduced into production at its manufacturing facility in Monterrey, Mexico, in 1976. The use of manufacturing formulas, and their variations, is standard practice in the industry as a means of maintaining consistent production.³ In addition to compensating for naturally occurring chemical differences and impurities in the raw materials Dal-Tile uses, most of the 13 variations of formula 1776 to compensate for different amounts of scrap to be incorporated into the mixture of materials for wall tile body. The same basic materials comprise each variation of formula 1776: clay, talc, wollastonite and scrap tile, *i.e.*, bisquet (fired scrap, which is usually unglazed) or *desperdicio* (unfired “green” scrap, which may or may not be glazed). Talc, also known as soapstone, is used to maintain consistent porosity. The Texas talc used in the 1776 formula is very stable and has low shrinkage. The Tennessee ball clay used in the 1776 formula adds plasticity and keeps the other materials together during forming. Wollastonite (calcium silicate) helps maintain stability of size and porosity. Bisquet helps with degassing during firing, and the use of both bisquet and *desperdicio* allow reuse of scrap tiles.

²The relative difference in absorption between wall and floor tiles can apparently be ascertained without the use of scientific testing. When asked to do so by counsel, two former Dal-Tile officers were able to tell the difference between a wall and a floor tile — and even the difference in absorption between two wall tiles — by touching their tongues to the unglazed back of the tiles. When they performed this test at trial, both witnesses stated that their tongues stuck to the more absorptive wall tile, but would not stick to the floor tile. Each witness performed this test independently; one had been excluded from the courtroom during the other’s testimony and had not observed the other perform this test or testify about the relative absorption of the tiles.

³For example, the pyrometric cones used by both Dal-Tile and Customs to monitor the reheating of the tiles in this matter were manufactured according to a formula controlling the variability of the raw materials used from batch to batch. The other method commonly in use among manufacturers is to prepare very large amounts of wall tile body in advance in order to have a large, uniform supply of wall body on hand.

At trial, Dal-Tile demonstrated its process of wall tile manufacture with the aid of a videotape shot at Ceramica Regiomontana, its plant in Monterrey. The raw materials are obtained from the same mines that Dal-Tile's factory has used for over 50 years. The mined raw materials for the tile body are brought into the plant in their lump or crude state, checked for quality, separately ground to 200 mesh size, and stored in silos. At this point, the precise formulation of the wall tile body is determined depending on the properties of each of the raw materials. Once the formula is determined, the raw materials are weighed, ground, and mixed together with a precise amount of ground scrap tile. After mixing, removal of iron and drying, the procedure results in spray dried body, which has the consistency of instant coffee granules.

Dal-Tile does not sell to others the spray dried body manufactured in Monterrey, since it is all used in the manufacture of Dal-Tile tile. Spray dried body is bought and sold on the market, however, since many other tile manufacturers do not make their own tile body. The equipment used to make tile comes from only a few manufacturers in Italy and is used throughout the tile-making industry. Since all manufacturers use the same or similar equipment, any tile manufacturer who used spray dried body manufactured at the Monterrey plant could create a substantially similar tile.

The characteristics of Dal-Tile's tunnel-kiln fired wall tile have not changed over time. The raw materials for wall tiles have come from the same mines, the manufacturing process has remained essentially unchanged, Ceramica Regiomontana has used the same or more modern versions of the basic tile-making equipment (*e.g.*, mills, pressing equipment, dryers, except for one of the 14 tunnel kilns which has not been updated since it was first put into use in 1955), and the 1776 formula has been employed since 1976 to create consistent end product. It is therefore reasonable to infer that wall tile produced in 1976 is comparable to wall tile produced in 1986, 1996, or today.⁴ Indeed, Dal-Tile's protests for 1984, 1985 and 1988 entries resulted in reliance upon tests of samples produced from 1988 and later by Customs' New Orleans laboratory,⁵ since tiles for most of the challenged shipments were no longer available.

⁴The only exception to this inference would be for wall tile fired in 1990 or thereabouts in one of Dal-Tile's three fast-firing kilns, which were acquired in that year. Dal-Tile was able to produce wall tile meeting the 7-20% ANSI specification on these kilns, but they were unable to consistently produce wall tile according to the stricter 12-16% Dal-Tile standard. Dal-Tile eventually abandoned the effort. No tests of fast-fired wall tile samples were involved in this action.

⁵It was averred at trial that responsibility for testing wall tile devolved from Customs' Los Angeles laboratory to its New Orleans laboratory in 1988 and that the Customs' Los Angeles laboratory had tested samples of wall tiles produced for 1984, 1985, and 1988 entries (among other years' entries).

ASTM C-373 is a test which is routinely employed in the tile industry to determine the water absorption of wall tile; however it is not typically used in the industry to compare the absorption before and after an event such as reheating. The manufacture of wall tiles does not require that they be reheated to cone 020, and no ASTM specification for wall tile requires reheating. The language of the statute is a “before” and “after” test. Therefore, Dal-Tile submits, even if an item is ceramic in the commonly accepted sense, it would not fit the Customs definition of a “ceramic article” if it becomes harder, more dense, or less porous upon reheating to pyrometric cone 020.

Neither the statute nor the C-373 standard provide guidance on how to perform a comparative test using C-373 or on how to achieve pyrometric cone 020. The Customs Service does not have a written protocol in place therefor. The Customs manual for ceramics testing contains only a description of ASTM C-373. Thus, the New Orleans laboratory which tested the tile developed its own methodology for performing the testing.

The New Orleans laboratory method involved taking one tile, cutting it into at least five pieces, subjecting the pieces to the five-hour boil and 24-hour soak specified in C-373, testing for absorption, and then reheating those pieces to pyrometric cone 020. The laboratory used the time/temperature ramp of 60°/hour until cone deformation at 625° Celsius. This time/temperature ramp was selected from charts of temperature equivalents included in the literature in the packaging of the pyrometric cones manufactured by Orton, which are used by both Customs and Dal-Tile. Included are data for reaching pyrometric cone 020 at 635° Celsius.

Ms. Jacqueline Simoneaux, a quality control manager and former senior analyst at the New Orleans Laboratory testifying for the government, stated she was not aware of any rationale for taking one tile and cutting it into five samples, other than usually having one tile to test and needing at least five samples in accordance with ASTM C-373. ANSI also specifies that whole glazed tiles are preferred for testing over unglazed, fractured specimens (in addition to specifying that water absorption testing is destructive).

After the Customs samples were reheated, they were again subjected to the C-373 process and again measured for absorption. Ms. Simoneaux testified that she elected to perform a second C-373 test on the same samples because of the possible variations within a single tile, which she felt made comparisons between tiles difficult. The results were incoherent. After the Customs samples had been subjected to a 29-hour boil/soak, reheating, and another 29-hour boil/soak, they showed that the absorption of the samples either increased, decreased, or stayed the same, depending upon interpretation. The Customs laboratory did not use any control samples.

After conducting physical experimentation to determine the appropriate cycles (temperature/time) to achieve cone 020, Dal-Tile determined to test at the extremes (the slowest and fastest rates the Dal-Tile kiln could achieve cone 020), which were 575° at 5°/minute and 700° at 50°/minute. Dal-Tile also conducted tests at 625° at 60°/hour (the rate Customs selected from the Orton literature) and 635° at 50°/hour, which are intermediate temperature equivalents that achieve cone 020.

For each temperature equivalent, Dal-Tile broke 15 tiles into halves. Dal-Tile then took one half from each sample and subjected each to the C-373 procedure. Rather than reheat these samples, Dal-Tile used their absorption measurements as a baseline, and then reheated the other remaining halves which had not been subjected to destructive testing to pyrometric cone 020. After reheating, the laboratory took the reheated halves and ran them through the ASTM C-373 procedure, and then compared the data from these halves to their counterparts which had been soaked but not reheated.

As a population, when compared against the samples which were not reheated, the wall tile samples became less absorbent after reheating to cone 020. Samples which had been reheated at different temperatures were not compared to each other. The absorption of a few individual tiles appeared to increase or stay the same, but such results reflected variations within the tiles, not variations in the behavior of the tiles: the overall trend was toward lower absorption.

Dal-Tile also performed density and apparent porosity testing on the sample tiles. The results showed that as the water absorption of the specimens decreased, the apparent porosity decreased and the apparent density increased.⁶ These results were confirmed by Dal-Tile through analysis of variance (ANOVA), a standard statistical technique. Theoretically, ANOVA should reveal whether any observed changes caused by reheating to pyrometric cone 020 were statistically significant or merely apparent. Statistical significance is defined as a result in which the F factor, an average of certain values, is greater than the F critical (or statistically significant) factor, in this instance to Dal-Tile's proffer of a confidence level of 95 percent. Specifically, ANOVA examined whether the changes observed were the differences in the mean values of the properties of absorption, apparent density and apparent porosity within a population of tiles, half of which had been subjected to ASTM C-373 only, and the other half of which had been subjected to reheating and then ASTM C-373. In the testing Dal-Tile performed, the ANOVA showed that the changes observed at the extreme 700° test and at the intermedi-

⁶The relationship between hardness, density, porosity and absorption is that as hardness increases, so does density, while porosity and absorption both decrease. The reverse is also true: as hardness and density decrease, porosity and absorption increase.

ate 625° and 635° tests were statistically significant, but that the observable changes at the extreme 575° test were not statistically significant.

Dal-Tile also contacted Richard Haber, a professor of ceramics engineering at Rutgers University, for assistance. Without telling him anything concerning the test methodologies Dal-Tile and Customs had separately determined, Dal-Tile presented him with tile manufactured in 1985 and asked him to construct a test methodology according to the statute. Prof. Haber testified that the methodology he worked out was to split the tiles into four pieces and run ASTM C-373 on half the samples after reheating to cone 020 and then perform ASTM C-373 testing on the other halves without subjecting them to reheating. Except for the number of samples used, this was identical to the methodology Dal-Tile had constructed, and he, too, testified that he felt it was reasonable to use a control and to split a tile in two before reheating half. His results showed that on average, the 1985 tiles became more absorptive, more dense, and less porous, upon reheating to cone 020.

When Prof. Haber was then informed of Dal-Tile's results, he performed another series of tests on tile manufactured in 1997, using the same methodology, to corroborate Dal-Tile's results. His testing differed from Dal-Tile's in that the temperature ramps used to reach cone 020 at 710° Celsius was not as rapid as that achieved by Dal-Tile because his kiln was unable to heat at the same rate. He also used a greater number of tile samples (50) than did Dal-Tile. Otherwise, Prof. Haber's methodology was identical to that used by Dal-Tile. His results in the 575° and 710° tests were consistent with those observed by Mr. Cornia and the Dal-Tile laboratory as well as with his own results from the earlier tests on the 1985 tiles.

Prof. Haber testified that he felt very comfortable that the Customs tests proceeded from a faulty hypothesis which assumes that the initial C-373 test does not inherently change the nature of the tile. He testified that the ANSI and the industry recognizes that C-373 is a destructive test, even if whole tiles are used to perform the testing. In order to test the hypothesis that C-373 was destructive because it changed the nature of the tile itself and not simply because the tile had to be broken in order to perform the test, Prof. Haber also performed a multiple soak test in which he subjected 15 tiles to a succession of C-373 tests. His results for the population were that the tiles changed between soak one and soak two, and between soak one and soak three, confirming his hypothesis.

Both Prof. Haber and the government's expert, Dr. Denis A. Brosnan, a professor of ceramics engineering at Clemson University, discussed the published moisture expansion theory during their testimony. Prof. Haber testified that the results he observed are consistent with the findings of Dr. Richard Bowman of SCI in Australia, who published peer-reviewed articles on the theory of moisture ex-

pansion in tiles, which holds that items which are ceramic (in the general sense) tend to expand when exposed to moisture which increases their porosity, either over time or when subjected to a C-373 boiling and soaking. Dr. Brosnan did not perform his own testing on any of the wall tile produced at the Monterrey plant; however he theorized that any expansion, *e.g.* from C-373 testing, can be reversed by subjecting the expanded tile to a heat treatment of about 600° Celsius, which would likely return the tile to a state close to its state at manufacture. Dr. Brosnan differed with Prof. Haber about whether this sort of heat treatment, which is approximately the same temperature used during the Customs testing, would affect the results of any subsequent testing on the same tile. Prof. Haber testified that the tile may lose *de minimis* mass due to tile material likely being dissolved in the water.

The government also presented the testimony of Robert Daniels, the Executive Director of the Tile Council of America. Mr. Daniels testified that although the Tile Council's laboratory performs independent ASTM testing for its members nearly continuously, it has never been requested to do any comparison testing for changes in porosity, density or absorption before and after reheating to pyrometric cone 020, and that he himself has never tested tile for changes in water absorption, porosity or density to determine if they are ceramic articles under the tariff definition. In response to questioning by the Court, Mr. Daniels stated that he did not know why the statutory definition was drafted the way that it was, and could only speculate as to the reason.

With respect to the issue of whether Dal-Tile's imports may be entered duty-free subject to GSP, Dal-Tile presented the testimony of Delfina Estrada, the chief financial officer for Dal-Tile de Mexico, formerly Ceramica Regiomontana. Mrs. Estrada testified that the value of materials of Mexican origin plus the direct costs of Ceramica Regiomontana's processing operations accounted for more than thirty-five percent of the appraised value of the merchandise at issue in this case.

In addition, Mrs. Estrada has been the custodian of Ceramica Regiomontana's books and records since 1990. At trial, she testified as to Ceramica Regiomontana's record retention policy, stating that the company was required by Mexican tax authorities to keep the books and records underlying its tax returns and certified financial statements for a period of ten years. Every six months, Ceramica Regiomontana destroys the oldest six months' worth of underlying financial papers which are at least 10 years old. For this reason, Ceramica Regiomontana no longer has the underlying journals, ledgers and working papers which support the company's certified financial statements and inventory reconciliations from 1978 to 1989.

Mrs. Estrada testified that the financial statements and inventory reconciliations that Dal-Tile presented at trial contain the particular

costs of the actual materials used in the production of the tiles at issue in this case. Ceramica Regiomontana no longer has the underlying journals, ledgers and working papers which support the certified financial statements from 1984 to 1988, because these materials were destroyed in the normal course of business. Mrs. Estrada concluded that Ceramica Regiomontana met the 35% GSP standard by adding the cost of raw materials, direct labor costs, parts and packaging, and fixed and variable manufacturing expenses, as reflected in the annual figures. The value of raw materials used by Ceramica Regiomontana to produce glaze and spray dried body — two separate and distinct components of wall tile — was included in this calculation.

Ceramica Regiomontana manufactures glaze in Mexico from several ingredients, some of which are imported from the United States. Glaze is composed of frit, clay, silica and zinc. Frit, which is the main ingredient in glaze and gives it its either glass or matte appearance, is manufactured by Ceramica Regiomontana's sister company, Materiales Ceramicos. The clay used to make the glaze is imported from the United States, however the glaze Ceramica Regiomontana manufacturers in Mexico is a good capable of being bought and sold in the marketplace. Specifically, three witnesses, all officers or former officers of Dal-Tile, each testified that glaze is bought and sold commercially, and Dal-Tile's former CEO and board chairman testified that Ceramica Regiomontana regularly sells glaze to other companies.

Discussion

In a challenge to the government's classification of articles for import duty, a presumption of correctness attaches to the government's classification; the importer has the burden of demonstrating that the classification is incorrect. *Jarvis Clark Co. v. United States*, 733 F.2d 873, 876 (Fed. Cir. 1984). *Jarvis Clark* instructs that a dual burden is overbroad: a court "must consider whether the government's classification is correct, both independently and in comparison to the importer's alternative . . . the importer's alternative may have faults and yet still be a better classification than the government's." 733 F.2d at 878. In other words, a court must determine the correct classification from the evidence presented.

The primary issue here is whether the subject articles are properly classified as "ceramic articles" as Customs has classified them. If the articles are not "ceramic articles" but are classifiable as "other articles of stone or mineral substances," the subsidiary issue is whether they qualify for duty-free entry under the Generalized System of Preferences (GSP).

I

Interpreting Headnote 2(a)

The inquiry into the classification issue begins with the language of the statute at issue. The parties agree that the applicable statutory definition of ceramic articles is found in TSUS Chapter 5, Part 2, Headnote 2(a). *See* Def. Br. at 30; TCA Br. at 11. As mentioned, Headnote 2(a) defines a “ceramic article” as “a shaped article having a glazed or unglazed body . . . [which] is formed and subsequently hardened by such heat treatment that the body, if reheated to pyrometric cone 020, would not become more dense, harder, or less porous. . . .” The TSUS further specifies that the method for testing the absorption of a ceramic body is ASTM C-373. TSUS Ch. 5, Part 2, Note 2(k). ASTM C-373 directs that a sample of tile be weighed, then subjected to a five-hour boil and an additional 24-hour soak before being weighed again to determine how much water the sample has absorbed. Apparent density and porosity are measured by comparing the wet suspended and dry weight of the sample before and after soaking.

There is no standard methodology for performing ASTM C-373 as a comparative test, *i.e.*, after reheating an article to cone 020, and ASTM has not developed a protocol for comparing water absorption before and after reheating. *See* A-II⁷ at 147, 155-156, A-IV at 475, D-II at 83-84. Reheating is largely irrelevant in the commercial context unless gold or decoration is applied. Normally, once tiles are fired and samples tested for water absorption, they are shipped and consumed as is. Nonetheless, the TSUS specifies C-373 as the sole acceptable method to test for water absorption in conjunction with reheating to pyrometric cone 020. *Compare* ASTM C-373 with TSUS Ch. 5, Part 2, Notes 2(a) and (k). The C-373 test portion of the statutory test for ceramic articles is not in question — C-373 is widely known and is performed on a nearly daily basis in the industry — but neither the TSUS nor ASTM provide direction on how to perform comparative testing to determine the change or non-change in absorption, density and porosity after reheating to pyrometric cone 020. *See* TSUS Ch. 5, Part 2, Note 2(k). Nor, prior to Dal-Tile’s challenge to the classification of wall tiles as ceramic articles, did the Customs Service have a protocol in place to perform this testing. *See* A-II at 155-156.⁸ The parties have therefore each developed a meth-

⁷Herein, the volumes of the Atlanta and Dallas oral records are indicated by “A” or “D” respectively followed by the relevant volume number (Roman).

⁸Reheating was not done on Dal-Tile tiles until 1993 when it began filing protests. On the other hand, Dal-Tile’s representation that the paperwork was filled out by staff in the business office, who relied upon a more general understanding of ceramics and declared that the wall tiles were to be classifiable as ceramic articles, might reasonably be interpreted as an admission against interest, in light of the fact that Dal-Tile also submitted at

odology for using C-373 in the context of a comparative test. In light of case law establishing the factors by which courts are to evaluate the reliability of scientific evidence and the weight to be accorded that evidence, the Court must determine which of the two produces the reliable and probative results: the double-soak method employed by Customs or the split-tile method employed by Dal-Tile. *See Anhydrides & Chemicals, Inc. v. United States*, 130 F.3d 1481, 1486 (Fed. Cir. 1997); *Jarvis Clark, supra*, 733 F.2d at 876.

The government contends it is entitled to deference on two broad arguments to suggest that Headnote 2(a) should be interpreted to classify as ceramic some articles which become denser and less porous upon reheating. First, it argues that the statute was meant to classify as “ceramic” all or most wall tiles considered commercially to be ceramic. Second, it argues it would be an absurd result if many wall tiles considered in the commercial world to be ceramic are determined to fall outside the statutory classification for ceramic tiles. In addition, the government argues that the changes in the tile demonstrated by Dal-Tile are *de minimis* and should be ignored.

Tile Counsel of America (TCA), *amicus curiae*, supports the government’s position. TCA asserts that it is “uniquely qualified to provide the Court with an accurate understanding of what the domestic tile industry considers to be ceramic wall tile” and agrees with the government that the statute was intended to encompass all items considered commercially to be ceramic wall tile. TCA Br. at 5–8. TCA would simplify the statute, reasoning that if an article is fired to cone 020 or higher during manufacture, it cannot (by definition) become more dense, harder or less porous upon reheating. TCA explains that tiles not heated to that point during manufacture are not stable and will not be durable for a “ceramic”-intended application. TCA Br. at 11–12. TCA argues that under the plain meaning of Headnote 2(a), the statutory reheat test is used only to determine whether the article is a finished, usable product. TCA Br. at 12. Therefore, according to TCA, the sole purpose of the statutory test is to determine whether an article had been fired to cone 020 when manufactured, *i.e.*, whether it had become “stable,” and if it had, then any increase in density or decrease in porosity should be regarded as *de minimis*. *See* TCA Br. at 11–13.

A. Deference

The arguments presented implicate pure questions of law. The government is therefore not entitled to deference with respect thereto. *See, e.g., Mead Corporation v. United States*, 185 F.3d 1304

trial that the technical staff of Ceramica Regiomontana and Dal-Tile were aware of the statutory definition of “ceramic articles” and knew by their nature the wall tiles would not meet that definition. *See* A–V at 570–572. Nonetheless, *Jarvis Clark* compels finding the correct classification, whatever the parties’ representations.

(Fed. Cir. 1999). Only appropriately authoritative rules and regulations which interpret customs classification statutes “warrant judicial deference.” See *United States v. Hagggar Apparel Co.*, 526 U.S. 380, 390 (1999). Although the statute does not state whether the same articles are to be tested for water absorption before and after reheating, or whether a control group may be used, the government has failed to issue a regulation that would provide a legally binding interpretation on that issue. In addition, there is no evidence that the government “utilized the notice and comment rule-making process” in order to issue regulations, as was evident in *Hagggar Apparel* (wherein Customs set forth its interpretation in 19 CFR 10.16(C) of “operations incidental to the assembly process” in HTSUS Subheading 9802.00.80 to exclude perma-pressing, with which the Supreme Court agreed). 526 U.S. at 380–381, 390. The government’s interpretation of the statute, therefore, does not meet the standard for deference.

B. *Ambiguity*

Headnote 2(a) requires that in order to be considered “ceramic” for TSUS classification purposes, articles may not become more dense, harder or less porous if “reheated to pyrometric cone 020.” The language chosen by Congress refers to a specific and determinable state of energy achieved by varying times and temperature combinations and is unique to customs classification, because reheating to test for changes in density, hardness or porosity is not performed for commercial purposes. See A–II at 281–282.

In other words, classification is to be based on testing which produces empirical results. The meaning of Headnote 2(a) is plain and unambiguous: it bases classification on the effect of reheating subject articles to pyrometric cone 020.

As a general rule, where the meaning of the statute is plain and unambiguous, that meaning prevails. See *Muwwakkil v. Office of Personnel Management*, 18 F.3d 921 (Fed. Cir. 1994). If the statute’s text answers the question of Congress’ intent, “that is the end of the matter” and the Court should not examine legislative history or employ other means of statutory interpretation. *International Business Machines Corp. v. United States*, 201 F.3d 1367, 1372 (Fed. Cir. 2000); *Timex V.I., Inc.*, 157 F.3d 879, 882 (Fed. Cir. 1998); *Brookside Veneers, Ltd. v. United States*, 847 F.2d 786, 788 (Fed. Cir. 1988); *Koyo Seiko Co., Ltd. v. United States*, ___ CIT ___, ___, 110 F.Supp.2d 934, 936 (2000). Moreover, if a statute contains a specific definition, that definition “excludes any meaning that is not stated.” *Colautti v. Franklin*, 439 U.S. 379, 392 & n.10 (1974) (citing 2A Sands, *Statutes and Statutory Construction* § 47:07 (4th ed. Supp. 1978)). Here, the statute plainly permits classification of articles as ceramic only if they do not become more dense, harder or less porous after they are reheated to pyrometric cone 020.

In an analogous case, this Court's predecessor required a precise definition of "artificial flowers" even though that excluded merchandise generally understood in the industry to be artificial flowers from classification under the relevant provision. *Armbree Corporation v. United States*, C.D. 3278 p. 105 (1968). The plain meaning of the artificial flower provision excluded all items except those assembled by one or more specific methods. The subject articles in that case were not assembled by any of the enumerated methods and were therefore excluded. Testimony in the case suggested that the definition if read literally would exclude most artificial flowers, however the court refused to depart from the plain meaning of the statute, since courts are "bound to determine the intent of Congress by the language which was actually used." *Id.* at 110–111.

The government argues that even where the statute appears unambiguous, a court may alter the statute's plain meaning based upon an examination of legislative history. However, the government fails to point to any ambiguity or imprecision in the statute. Rather, the government apparently objects to the statute's precision and seeks to bypass it in order to obtain a more favorable result.

The government also relies on *United States v. Turkette*, 452 U.S. 576 (1981) for the proposition that legislative intent may trump the plain language of the statute. Def. Br. at 25. The Supreme Court in *Turkette*, however, reversed an appellate court's decision in order to adhere to the plain language of the statute. 452 U.S. at 580–593. As the Supreme Court noted on several occasions in that decision (and as the CCPA noted in *Nippon Kogaku*, 873 F.2d at 383), aids or guides to statutory interpretation are only to be relied upon to resolve ambiguity, not to create it. 452 U.S. at 581 & 587 n.10. There is no basis to disregard the plain language of the statute and decline to apply an objective standard to the classification of ceramics.

TCA's description of a "classical" meaning of ceramic or the "stability" of the fired material, which TCA points to as indicative of commercial usage, do not appear in the statute and are at odds with a plain meaning interpretation. Likewise, TCA's assertion that an initial treatment to cone 020 and a negative result after reheating are functional equivalents is unsupported by the evidence and the plain language of Headnote 2(a) does not mention the initial heat treatment, only the effect on the body of reheating. TCA's interpretation of Headnote 2(a) would substitute a standard based upon heat treatment at manufacture. Congress expressly rejected such a standard.

"Although it is unnecessary to consider the legislative history because the statutory language is clear," *International Business Machines*, 201 F.3d at 1373, the legislative history of Headnote 2(a) supports the statute's plain and unambiguous requirement to use an objective test to determine which tiles become more dense, harder or less porous after reheating to cone 020 and are not classifiable as ceramic articles. As the government points out, the original draft of

Headnote 2(a) proposed basing classification upon the initial heat treatment applied during the manufacturing process. The proposal was for any item hardened by “heating to a temperature of over 1200° F” (equivalent to 649° C) and which met the other criteria to be classified as ceramic. *See* Def. Br. at 29. But that standard was deleted in favor of the standard now before the Court — an article is not ceramic for tariff purposes if its density, hardness or porosity changes as stated after reheating to pyrometric cone 020. *See* Tariff Classification Study, First Suppl. Rep. (Jan. 1962) at 40 (“TCS”). The intent of the legislature could not be clearer: it has based classification on the physical properties of the items measured by the effects of reheating to cone 020, and it rejected the temperature achieved by the initial heat treatment as a basis of classification. On this point, the TCS First Supplemental Report removes doubt:

It can be determined if an article is a ceramic article by measuring the physical properties of pieces of the body of such article before and after reheating them to cone 020. If the body of the article has not previously had sufficient heat treatment to qualify it as a ceramic article, the density and hardness of the pieces will increase and their absorptivity and volume will decrease.

Id. *See* Def. Br. at 30 (quoting *id.*).

C. Absurdity

The government also argues that applying the plain language of Headnote 2(a) leads to the absurd result of items commonly called ceramic tiles being classified elsewhere. Avoiding allegedly absurd results in interpretation of statutory language is appropriate only to resolve ambiguities, not to justify disregard of plain language. *See, e.g., Commissioner of Internal Revenue v. Asphalt Products Co., Inc.*, 482 U.S. 117, 121 (1987); 2A Sutherland, Statutes and Statutory Construction § 45:12 at 102 (6th ed. 2000) (statutory “interpretation cannot be justified on the ground that a result would be unreasonable when the language of Congress would have to be disregarded”). In any event, the government does not point to ambiguity in the language of Headnote 2(a) or offer an alternative reading; rather, the argument is premised on the ground that it would be absurd to exclude from Headnote 2(a) items which demonstrate “slight” changes in porosity and density. Def. Br. at 27–31.

The cases relied upon for that proposition are inapposite. They involve obvious or patent absurdities. For example, in *United States v. X-Citement Video*, 513 U.S. 64 (1994), the Supreme Court rejected the most natural grammatical reading of a statute prohibiting distribution of child pornography and adopted a construction that avoided criminalizing the transportation of items containing child pornography without knowledge of the items’ contents. Under a strict gram-

mational reading, for example, a retail druggist who shipped an undeveloped roll of film could face severe penalties. 513 U.S. at 69. This result would not only have been absurd, it would have been contrary to settled principles of criminal law requiring scienter and would have put the statute's constitutionality into question. 513 U.S. at 69–78. The Supreme Court thus resolved an obvious absurdity resulting from a purely grammatical reading of the statute which Congress could not have intended. Here, the statutory language was clearly and deliberately inserted, the application of the plain meaning is not absurd, and the government fails to propose a workable alternative.

Alternatively, the government argues that finding for Dal-Tile would render superfluous the specific reference in the tariff schedule to ceramic wall tiles. It reasons that few wall tiles meeting the commercial definition would be so classified. The Court considers this mere speculation, however. There was no testimony to the effect that the Dal-Tile test would result in exclusion of “all” commercial-standard ceramic wall tile from such classification, and the matter here concerns only Dal-Tile's slow-fired 4 1/4 x 4 1/4 wall tile and associated trim. It is true that a construction which renders words superfluous in a statute is to be avoided, but a word is not rendered superfluous unless it ceases to have application altogether. In *NEC America, Inc. v. United States*, 11 CIT ___, 681 F.Supp. 862 (1987), for example, the plaintiff in that case proposed an interpretation which would have rendered the customs classification “radiographic and radiotelephonic transmission and reception apparatus” superfluous as no items would be classifiable under that description that were not also specifically listed following that description. 681 F.Supp. at 865.

Indeed, it is rather the government's and *amicus* TCA's interpretations that would render the testing provision of Headnote 2(a) superfluous. The provision of Headnote 2(a) requiring that the relevant properties do not change after reheating is just that — a requirement, one of several that must be satisfied for an item to be classified as ceramic. There is no exception. The government argues that Congress' objective standard should be ignored for items fired in compliance with the subjective industry standards for ceramics, *see* Def. Br. at 31, a standard which Congress eschewed. The government further claims that any tiles that were improperly fired would be too fragile to have commercial value. *Id.* But broadening the “ceramic articles” definitions to include any article having “commercial value,” as the government suggests, would render the reheating test superfluous and introduce a completely subjective test in its place. The Court will not supplant the plain and objective standard embodied in the statute.

D. *Method Not Mandated by Statute or Legislative Intent*

The government also argues that its double soak method is mandated as a matter of legislative intent and must be followed notwithstanding its lack of adherence to scientific method. Def. Br. at 36–37. The portion of Headnote 2(a) relied upon by the government states:

a “ceramic article” is a shaped or unshaped body of crystalline or substantially crystalline structure, *which body . . .*, if reheated to pyrometric cone 020, would not become more dense, harder or less porous. . . .

Def. Br. at 36 (emphasis added by the government).

Neither Headnote 2(a) nor the legislative history the government cites require that the same piece of the same tile be tested for density, hardness and absorptivity both before and after reheating, and both methods may arguably be said to fall within the language of the statute. There is no dispute that each party’s method purports to test for changes in density and absorptivity after reheating; the government’s method does so by testing the same piece and Dal-Tile’s does so by comparison with a control group.

The government further argues that Headnote 2(a)’s legislative history requires testing to be performed on the same tiles. Def. Br. at 36. The government notes that Congress stated: “‘It can be determined if an article is a ceramic article by measuring the physical properties of pieces of the body of such an article before and after reheating them to cone 020.’” *Id.* (quoting TCS First Suppl. Rep. at 41). Both methodologies, however, measure the density and absorptivity of “pieces of the body” of the same tile before and after reheating. The government does so by testing the same piece before and after reheating whereas Dal-Tile’s method tests one piece of the tile before reheating and the other afterwards. Again, neither method is prohibited by the legislative history provided it is capable of producing the data Congress has required. Dal-Tile’s method is not barred and it is up to the Court to determine which method is more reliable.

E. *De Minimis Changes*

Dal-Tile demonstrated at trial that the subject articles, when reheated, become more dense and less porous. *See* Pl. Br. 17–18. The results of Dal-Tile’s test were observable and were confirmed through analysis of variance (ANOVA) to be statistically significant to a confidence level of 95%. *See* Pl. Br. at 19. These results were corroborated through further testing and statistical analysis by Dal-Tile’s expert, Professor Haber. The government contends that the demonstrated changes in the relevant properties of the subject articles are *de minimis* trifles which should be disregarded under the statute. Def. Br. at 32–35. The government also contends, essentially, that any articles that fall within the commercial standard for

ceramic wall tiles must be classified as ceramic, no matter how great the magnitude of change after reheating. *Id.* The government's position is overbroad for three reasons.

First, as above mentioned, the statute does not reference commercial definitions, it bases classification on a before-and-after comparison which measures the effects of reheating. Classification is not achieved on the basis of reference to commercial definitions but pursuant to an objective test, one that is unique in the TSUS. Nothing in the statute implicates a basis for comparing any changes produced by reheating to "commercially-accepted variations" among the properties of wall tiles considered "ceramic" in the industry.

Second, the government relies upon the CAFC's decision in *Alcan Aluminum Corp. v. United States*, 165 F.3d 898 (1999) for the proposition that Dal-Tile's results should be ignored as *de minimis*. The *Alcan* court held, however, that the *de minimis* rule only applies where a standard's purpose would otherwise be defeated. 165 F.3d at 903. Dal-Tile does not argue that even the slightest change should control, it argues that the subject articles are not "ceramic articles" because the observed changes of Dal-Tile's methodology were proven to be statistically significant. The purpose of Headnote 2(a)'s objective standard is to classify as ceramic only those articles which do not exhibit the relevant changes after being reheated to cone 020. The statute's purpose would be defeated if, as the government proposes, tiles demonstrating significant change are nonetheless classified as ceramic.

Third, as described more fully below, the changes are not *de minimis* even under the ASTM C-373 specifications relied upon by the government. C-373 states that the test is accurate to $\pm 0.1\%$ on measurements made by a single operator and to $\pm 0.2\%$ for testing involving multiple laboratories. Pl. Ex. 12. The changes observed through Dal-Tile's method conducted by a single operator exceeded 0.2%, thus exceeding the C-373 threshold for accuracy. The results obtained by Dal-Tile are therefore reasonable as they are produced by close adherence to the statute and do not contradict the statute's purpose.

II

Test Methodology Probativeness — Whether the Subject Articles Meet the Statutory Definition of "Ceramic Articles."

In the context of a challenge to a scientific testing method used by the government to classify imported merchandise, our appellate court has addressed certain factors to be considered in deciding how much weight to give scientific testimony. *Libas, Ltd. v. United States*, 193 F.3d 1361 (Fed. Cir. 1999). In *Libas*, an importer of textiles challenged the government's classification of certain textiles as machine-loomed rather than hand-loomed. 193 F.3d at 1363. The

CAFC found error in accepting a government test method without examining its reliability, although the importer had presented sufficient evidence to destroy the presumption of correctness attaching to the government's testing method. 193 F.3d at 1366–68. *Libas* held that the admissibility of the government's test could not be challenged because the test had become part of the official record, and it concluded that the trial court should have, at least, applied the four factors enumerated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) to assess the reliability of the evidence and the weight to be accorded to it. Those four factors are: (1) the testability of the hypothesis; (2) whether the theory or technique has been subject to peer review and publication; (3) the known or potential rate of error and the existence or maintenance of standards controlling the technique's operation; and (4) whether the technique is generally accepted. *Id.* at 1366–67 (citing *Daubert*, 509 U.S. at 593–94).

The purpose behind the *Daubert* factors is to assess the scientific validity, trustworthiness and evidentiary reliability of a scientific theory. *Daubert*, 509 U.S. at 589–90 & n.9. “[I]f a trial court relies upon expert testimony, it should determine that the expert testimony is reliable.” *Libas*, 193 F.3d at 1366. Reliability, in turn, is the touchstone for expert testimony on scientific knowledge. *Daubert*, 509 U.S. at 589; *Libas*, 193 F.3d at 1365–66. Where the reliability of scientific or technical testing is in dispute, reliability becomes a “key consideration” in the weight to be accorded to the scientific evidence by the court sitting as the finder of fact. *Libas*, 193 F.3d at 1366 (citing *United States v. Velazquez*, 64 F.3d 844, 848 (3d Cir. 1995)). *Daubert* and *Libas* thus place scientific method at the heart of the reliability inquiry. See *Daubert*, 509 U.S. at 590 (“in order to qualify as ‘scientific knowledge’ an inference or assertion must be derived by the scientific method”); *id.* at 594–95 (“[t]he focus . . . must be solely on principles and methodology”).

(1) *Testability of the Hypothesis*

The first *Daubert* factor, the testability of the hypothesis behind the methodology, includes determining whether the hypothesis can be falsified. *Daubert*, 509 U.S. at 593. The hypothesis underlying the Customs test is that the ASTM C–373 procedure and the subsequent heat treatment do not alter the tile, so that the second C–373 procedure can be performed on the very same sample. By contrast, the hypothesis underlying the split tile-method is that the ASTM C–373 procedure is itself destructive to the tile and that the heat treatment called for in the statute will confound the results of any subsequent test on the same piece of tile because it will return the tile to its original state.

Dal-Tile and Prof. Haber tested both of these hypotheses, by replicating the Customs test, by analyzing the results of the New Orleans lab tests as well as those done in Los Angeles, and by performing a

multiple-soak test to measure the effect of the C-373 procedure on a single piece of tile. The Customs laboratory in New Orleans appears to have developed its double-soak methodology without attempting to test its hypothesis: the expert for the government assumed that C-373 was destructive only because the tile was broken into pieces, not because boiling a tile for five hours and then soaking it for another 24 might affect the tile. A-VI at 844-845. Likewise, Dr. Brosnan never performed any testing on the wall tiles in an attempt to confirm the Customs hypothesis or the scientific soundness of the Customs method. A-VI at 881-884. It is significant, however, that Dr. Brosnan did not disagree with the scientific validity of the particular elements that make up the split-tile technique, such as taking a large sample population and using control samples against which to check the results. A-VI at 870-74. He also agreed that ANOVA is an important technique used to validate the results of research. *Id.* On the other hand, he indicated that the larger sample populations that Dal-Tile and Prof. Haber used are not required under the terms of C-373, which he termed a practical test, and that ANOVA is likewise not called for under the statute. *See id.*

It is true that some of the steps that Dal-Tile and its expert took in order to check and double-check the results of their methodology are not required by the statute. Such steps would not, however, be required of Customs by this decision in routine ceramics testing practice. But in this instant matter, at least, it is very the precision of such steps which confirm the reliability of Dal-Tile's split-tile method.

Dr. Brosnan testified that a heat treatment of 600° Celsius (pyrometric cone 020 was reached at 625° Celsius in the Customs test) on a tile which had been subjected to a C-373 soak would return to its original state. A-VI at 844. This directly undermines the Customs hypothesis that the same tile would be unaffected by moisture expansion during the 29-hour soak, could be tested before and after reheating, and that the results would be a reliable indicator of change or its absence. Dr. Brosnan also testified that he had heard this at a presentation the week before his testimony in April 2000, which is not likely enough time to absorb all the nuances of the theory. *Id.*

(2) *Peer Review and Publication*

The second *Daubert* factor considers whether a method has been published and subjected to peer review. At trial, the government criticized Dal-Tile's methodology for not having been subjected to either and argued against the admission of Dal-Tile's expert testimony and the plaintiff's test evidence.

Both *Daubert* and *Libas* emphasized repeatedly that the factors to be considered in evaluating the reliability of scientific evidence are flexible. "There is no iron law that the *Daubert* factors be applied in

Customs classification cases,” the *Daubert* factors are merely representative of the matters which should be taken into account when a court assesses reliability, a matter of discretion. *Libas*, 193 F.3d at 1367. A rigid approach to the admissibility of scientific evidence is at odds with the “liberal thrust” of the Federal Rules of Evidence and their general approach to relaxing traditional barriers to the admission of scientific evidence, particularly when based on innovative, but reliable, theories. *Daubert*, 509 U.S. at 588. *Cf. Frye v. United States*, 293 F. 1013, 1014 (App. D.C. 1923). *Daubert* further cautioned against reading into the decision a “definitive checklist.” *Daubert*, 509 U.S. at 593. Publication is not the “*sine qua non*” of reliability and peer review is a relevant but not dispositive factor in assessing reliability. 509 U.S. at 593–94. “Some propositions . . . are too particular, too new, or of too limited interest to be published.” *Id.*; see also *Libas*, 193 F.3d at 1366–67 (*Daubert* factors do not exhaust the list of possible factors to be considered when assessing reliability, and the *Daubert* factors may not be applicable to every Customs case).

The evidence presented at trial established that a methodology for a test which is only performed for purposes of Customs classification of ceramic tile is of interest only to Customs and to those who might import tile to the United States. It is “too particular . . . or of too limited interest to be published.” Moreover, when Customs began to test wall tiles to determine their conformity with the statutory definition of “ceramic articles,” there was no standard protocol developed by Customs Headquarters. See A–II at 155–156. The New Orleans laboratory developed the double-soak methodology on an *ad hoc* basis, and it, too, has not been published or peer-reviewed for reliability by other scientists or by the courts in light of the standards for determining the evidentiary reliability of scientific evidence. See A–II at 152. The government’s own double-soak methodology suffers from at least the same “deficiencies” that the government ascribes to Dal-Tile’s methodology.

Although neither the split-tile method nor the Customs double-soak method had been published or peer reviewed at the time of trial,⁹ the purpose of the requirement for peer review is that submission to scrutiny “increases the likelihood that substantive flaws in the methodology will be detected.” *Daubert*, 509 U.S. at 593. Dal-Tile contends this was precisely what happened when it and an outside expert replicated the Customs tests in their own laboratories — they found the flaw in the Customs hypothesis. Dal-Tile contends that the split-tile test was designed to eliminate that flaw, and to ensure that

⁹ Prof. Haber testified that he intended to publish his findings.

what was being measured was really a change due to reheating, not due to any alteration of the tile by the earlier C-373 testing. A-II at 285-287; A-IV at 436-440, 468-475. Dal-Tile argues that the split-tile test itself has not been peer reviewed, but the individual elements which make up the split-tile test (ASTM C-373, the sampling technique, the use of control samples) have all been accepted as part of sound scientific technique. Moreover, Dal-Tile points out, the moisture expansion theory — which led Mr. Cornia and Prof. Haber to question the reliability of a technique which subjects the same tile twice to the same test and which has been deemed destructive by ANSI — has been widely published. *See, e.g.*, A-VI at 844-848, 851-855 (testimony mentioning paper on moisture expansion delivered the previous week at the Southeastern Section of the American Ceramics Society), A-V at 732 (testimony mentioning various papers on moisture expansion authored by Dr. Richard Bowman); *see also* Pl. Exs. 44-48. In other words, Dal-Tile argues, the work done by Dr. Bowman confirms what has been known by ANSI, an association which sets standards for industry acceptance: that C-373 is a destructive test and so alters the nature of the tile that it cannot be sold after testing, even if it is tested whole. *See* Pl. Ex. 1. The Court concurs.

(3) *Known or Potential Rate of Error*

The third *Daubert* factor looks at the known or potential rate of error. One of the ways this rate of error can be determined is through analysis of variance, or ANOVA. Dr. Brosnan testified that ANOVA is not only an important technique in scientific research but is a commonly accepted statistical method, although it is not called for in the statute or in the C-373 test method. A-VI at 870-871. ANOVA was employed by both Dal-Tile and Prof. Haber to check the statistical significance of the results of their testing and of the results of testing performed by the New Orleans and Los Angeles laboratories. Although not required by the statute to be employed in everyday use, the method provides a further check on the reliability of the testing methodologies being presented.

The analysis of the split-tile method showed that the results were reliable to a 95 percent confidence level (a level commonly used in research) and that the changes observed in the tile populations were statistically significant. Pl. Exs. 17, 43. The analysis of the Customs method — in tests performed both by the New Orleans lab and the Los Angeles lab — showed that the changes observed in the tiles were not statistically significant because in each case the F factor was significantly below the F critical factor, and that the results were incoherent, regardless of how long after manufacture the tiles were tested. Pl. Ex. 51; App. B. In other words, the Customs method apparently demonstrates a high potential rate of error.

Another element of the third *Daubert* factor is the existence and maintenance of standards controlling the operation of the technique. This factor became important in *Libas*, where the court found that the failure of Customs to employ the “obvious and natural” method of double-blind testing (in which the testers would perform the comparison without the knowledge of which fabric was hand-loomed and which was machine-loomed) cast doubt upon the reliability of the Customs testing method. *Libas*, 193 F.3d at 1368. Here, Customs failed to employ — or apparently even consider — the equally “obvious and natural” technique of comparing a specimen which has been subjected to reheating against control samples, which may not be required by the language of the statute but is required by good scientific practice. *See id.* Accordingly, the Court accords the reliability of the Customs methodology little weight. *See Libas*, 193 F.3d at 1366.

(4) *General Acceptance*

The fourth *Daubert* factor is general acceptance. General acceptance is the former standard for admissibility of scientific evidence under *Frye*. Perhaps recognizing that general acceptance is “an imperfect proxy for reliability,”¹⁰ the Supreme Court stated in *Daubert* that Rule 702 of the Federal Rules of Evidence permits but does not require the identification of the relevant scientific community and an express determination on the degree of acceptance within that community. *Daubert*, 509 U.S. at 594.

In this matter, to the extent that general acceptance is applicable to either method as a whole, the relevant community (*i.e.*, the tile-making industry exporting tiles to the United States) has not had much of an opportunity to absorb the methods. On the other hand, the particular elements of each methodology can be scrutinized for general acceptance or widespread use, even if the techniques as a whole are not well known beyond a very small circle. The individual elements of the split-tile method are well-known and generally accepted by the scientific community. The only new part of the split-tile methodology is the means of making the comparison, which is itself based upon the sound scientific practice of using a control. Although the case law expressly counsels against reading *Daubert* as a rigid checklist or test for reliability of scientific evidence, it is at least clear that the split-tile technique developed by Dal-Tile comes closer to satisfying the four *Daubert* factors than does the method developed by Customs. Consideration of the *Daubert* principles thus supports finding in favor of Dal-Tile’s methodology over Customs’ methodology.

¹⁰ *Libas*, 193 F.3d at 1368

III

The Split-Tile Method Produces a Reliable Reading Of Change or Non-Change In a Tile Sample.

The evidence presented at trial demonstrates that Dal-Tile's split-tile method produces consistently reliable and probative results at several different temperatures and rates used to reach pyrometric cone 020. *See* Pl. Exs. 17, 43. Those results show that, with very few exceptions, when compared to the corresponding half which had not been treated with heat the samples of tile halves which were reheated to cone 020 at 700°, 710°, 635° or 625° Celsius became less absorptive, more dense, and less porous, to a statistically significant degree. Pl. Ex. 17 and 43. Testifying for the government, Ms. Simoneaux agreed that Customs would not classify a tile as a ceramic article under TSUS 532.24 if testing shows that it becomes harder, more dense, or less porous as a result of reheating. A-II at 143. Since the results of the split-tile method show that the tiles tested became more dense and less porous upon reheating to pyrometric cone 020, it is therefore unnecessary also to show that the tile has become harder.

The results of the split-tile method were confirmed by a standard statistical analysis technique. *See* Pl. Ex. 17 and 43. In contrast, the government's double-soak method produced inconsistent and incoherent results and employed no controls. In its post-trial brief, the government now suggests that because *Daubert* and *Libas* are applied flexibly, the *Daubert* factors may be ignored. Def. Br. at 35-36. Indeed, the case for the reliability of the government's test rests on two propositions that require the Court to ignore the *Libas* inquiry altogether. First, the government argues that Headnote 2(a)'s legislative history mandates the government's double soak method regardless of its reliability. Def. Br. at 36-37. Second, the government and TCA argue that the Customs method, which involves soaking the same pieces of tile both before and after reheating to cone 020, is more reliable than Dal-Tile's split-tile method which employs a control group. In so arguing, they ask the Court to bypass a proper *Libas* inquiry on two essential points: (1) the government and TCA ask the Court to credit the government's expert's opinion testimony that the initial soak performed under the C-373 procedure does not affect the tile for purposes of the subsequent reheating and soak, rather than crediting the experiment conducted by Dal-Tile's expert which demonstrated the existence of such an effect and the evidence of other experiments including published research, which support these findings; (2) the government and TCA ask this Court to accept the government's expert opinion that *normal* variations in density, hardness and water absorption within a given tile undermine the reliability of Dal-Tile's results rather than credit solid evidence that the potential for such an effect was negated by Dal-Tile's use of stan-

dard research techniques including the use of a sufficiently large sample population and statistical checks for the significance of its results.

The government cannot square its reliability claim with the methodological inquiry required by *Libas* on such bases. None of the factual arguments put forth by the government either in support of its test or in opposition to Dal-Tile's address reliability as it is to be considered under *Libas*. Dal-Tile demonstrated, apart from the two mandated components, that only Dal-Tile's test employed generally accepted methods of scientific inquiry. Only Dal-Tile's method employed a control sample. Only Dal-Tile tested a larger sample population. Only Dal-Tile tested the hypothesis that the first soak affected subsequent results. And only Dal-Tile subjected its results to analysis for statistical significance using an analysis of variance. The government does not dispute that methods employed in Dal-Tile's test — such as a larger sample size, use of a control group, the testing of hypotheses, and the use of statistical analyses to test the significance of results — are generally accepted methods routinely employed in scientific research inquiry that aid in establishing the reliability of results. Nonetheless, the government argues that two aspects of Dal-Tile's test undermine its reliability: Dal-Tile's use of a control group and Prof. Haber's use of low and high temperature extremes for reheating to cone 020. As discussed below, the elements of Dal-Tile's method which the government challenges actually make Dal-Tile's test more reliable, not less so. By contrast, the government's test fails to meet any of the *Daubert* criteria or employ basic principles or methods of scientific inquiry, such as using a representative sample population, using control groups, or testing the hypotheses via, *e.g.*, statistical checks. The government has not offered any methodological basis to support the reliability of its own test or offered appropriate arguments for the abandonment of the *Daubert/ Libas* analysis in favor of other indicia of reliability.

There is no dispute that *Libas* guides this Court's fact finding with respect to the reliability of the tests put forth by the respective parties. But, none of the arguments offered by the government or by TCA are supported by the analysis of scientific methods required under *Libas*. Although *Libas* does not require the application of each *Daubert* factor in every customs case, the factors are applicable where, as here, the question involves the reliability of scientific or technical processes. *See Libas*, 193 F.3d at 1367.

The evidence presented by Dal-Tile in support of its split-tile method clearly demonstrated the reliability of the results under a variety of conditions. The split-tile methodology that Dal-Tile performed in preparation for trial involved far more measures to determine the accuracy of the method and of the data than would be required of or by Customs in everyday application; however in this matter, at least, these measures demonstrate that the split-tile

method produces results which are a more reliable reading of change or non-change than the Customs double-soak method.

A. *Sample Population Size*

The parties dispute the sufficiency of the sample size necessary for reliable testing (thus implicating the fourth *Daubert* factor). It is a well-known proposition in science that the greater the number of samples chosen from a population, the greater the likelihood that the samples tested will be representative of the population as a whole. The government's witness who performed the test, Ms. Simoneaux, accepted this proposition. *See* Def. Br. at 35–41; A–II at 177, 185–86. She testified that one reason she began using five samples from one tile was simply that she often had just one tile to work with, and that as soon as more tiles became available to her, she used a greater population of tiles. A–II at 177, 185–186. In addition, she stated explicitly that the reason she chose 10 to 20 indentation sites on each sample on which to perform hardness testing was that she felt she could get a more accurate result with a greater number of sites. *Id.*

In this matter, Dal-Tile used 15 samples in each of its four tests while Prof. Haber used 50 samples per test. Dal-Tile confirmed the sufficiency of its sample size of 15 in two ways. First, its expert, Prof. Haber, replicated two of Dal-Tile's four tests using 50 split tiles instead of 15 and obtained strikingly similar results. Second, Dal-Tile tested its results for statistical significance using ANOVA. By contrast, the government's tests used a sample population of five pieces taken from a single tile. It is true, as the government points out, that the statute calls for "at least" five samples to be used, but that is only the minimum number. Whether it is considered reasonably representative of the shipment being classified is a question of fact. Arguing in support of the government's position, TCA contends that five samples are sufficient because it represents standard industry practice for everyday testing under ATM C–373. TCA Br. at 33–34. However, the contention is irrelevant because the issue here is the sample size needed for reliable comparisons between different sets of C–373 results to measure the effects of reheating.

Tile-making is not an exact science, and there are necessarily variations within tiles and from tile to tile. The greater the number of samples used, the more representative the sample population will be of the true population, and the less likely will the results be skewed due to variation within and among tiles. *See* A–II at 290–291. A tile may have internal variations of absorption of 10 or 20 percent from one spot to another, however these variations tend to fall into a predictable pattern. This was evident in Prof. Haber's observation that he was getting "unusual" density results and his subsequent discovery that the tiles he was using were all denser on one side than the other: he had inadvertently split the tile at the line of

demarcation. A–V at 620–623. Moreover, it is important not to take such variations out of context, where the overall absorption of the tile still falls within the range of absorption acceptable to Dal-Tile. Even though a particular spot on a tile may have 15 percent absorption and be 25 percent more absorbent than another spot on the same tile, which has only 12 percent absorption, such variability is narrowed as more observations are compared, eventually reaching the point of irrelevancy as the perspective becomes the average absorption of the entire tile. The same is true when considering an entire shipment or tile population.

Thus, where the government is deciding the classification of an entire shipment of tiles based on five samples from a single tile, it is incorrect to argue that the population of tiles (of the shipment as a whole) is less important than a single tile. The Court therefore concludes that Customs' use of the statutory minimum does not undermine Dal-Tile's contention that its larger sample size is more representative of an entire shipment of tile than samples of a single tile, and the government does not otherwise argue the implications of each party's sample size with respect to the relative reliability of the tests. Def. Br. at 4, 35–41; Pl. Ex. 12 (“at least 5”). Further, the Court concludes that only Dal-Tile used a sample sufficiently large enough to produce reliable results.

B. *Baseline Measurement*

Dal-Tile's method employed a control group consisting of half of each tile tested, which served as a baseline against which to measure changes in the subject articles properties after reheating to cone 020. Pl. Br. 49–50. By contrast, the government's method involved subjecting the same pieces of tile to the C–373 soaking procedure both before and after reheating. In setting aside half of each tile, Dal-Tile isolated the sole variable relevant to classification, namely the effect of reheating the tile to pyrometric cone 020. The use of control groups is standard scientific practice, just the kind of “obvious and natural” technique that a fact-finder would expect to see when assessing reliability. *See Libas*, 193 F.3d at 1368.

The government does not dispute that the control groups are generally accepted in scientific experimentation as aiding reliability; rather, the government makes the unusual contention that this generally accepted aspect of scientific experiment design should be abandoned in this instance. The government argues that each piece tested should be subject to C–373 both before and after reheating because, the government contends, the relevant properties of a control sample taken from the same tile is not reliable. The government is wrong for at least two reasons.

First, the government's failure to use a control group introduces error and uncertainty into its own test. In the government's test, the effect of the subject tile's physical properties resulting from reheat-

ing the samples to cone 020 cannot be viewed separately from the effect of subjecting the samples to C-373 before reheating. The government contends that the effect of soaking the tiles before reheating is nonexistent or is reversed by reheating to 600° C,¹¹ however neither the government nor Dr. Brosnan tested either hypothesis on representative samples of the subject articles. A-VI at 881-84. For that matter, unrebutted evidence indicates that the tiles must be reheated to a temperature greater than that prescribed by Dr. Brosnan to fully reverse the effects of the soak. *See* Pl. Exs. 54, 48, and A-V at 732-33. Rather, the government relies on its expert's opinion as to the likely effect of the C-373 test on ceramic tiles generally. But that merely begs the question: are the subject tiles "ceramic articles" under the statute if (and as apparently demonstrated by Prof. Haber) they are indeed altered by the C-373 procedure? *See* Def. Br. at 39.

Second, Dal-Tile's test is designed to minimize the effect of any variations within a single tile on the overall results. By testing a large sample, Dal-Tiles method accounts for the possibility that variances may exist among different pieces taken from the same tile. Dal-Tile tested sufficiently large quantities of pieces such that a general trend emerged despite variances within individual tiles. As an additional control, Dal-Tile tested and established the statistical significance of its results by employing an analysis of variance (ANOVA).

Thus, as Dal-Tile has shown, the government's method does not reliably test the effect of reheating the subject articles because the government's method introduces another variable which confounds the results. This Court therefore can be certain only that Dal-Tile's test measures the effect of reheating to cone 020, because only Dal-Tile identified and addressed the possible effect of other variables. Any alleged ill effects resulting from potential nonrandom selection of the control group are negated through other generally accepted elements of scientific technique, *e.g.*, sample size and ANOVA.

Ms. Simoneaux, the Customs analyst, and Dr. Brosnan (Customs' expert) contradicted one another regarding the variations within a single tile and the impact of these variations on the methodology chosen. While Ms. Simoneaux testified that there was too much variation within any individual tile to do a split-tile test and compare two halves of the same tile to one another, Dr. Brosnan testified that there was too much variation from tile to tile to compare one tile to another. A-II at 163-164; A-VI at 855-859. Both, however, came to the conclusion that the remedy for these variations was to subject individual tile specimens to two rounds of testing, without using control samples which were not subject to heat treatment to

¹¹ *See* Def. Br. at 6.

determine if the observed change or non-change was really due to the reheating or was due to another factor. *Id.*

By contrast, the split-tile method compares two halves of the same tile, one of which has been subjected to reheating, the other which has not. Even though there may be variations within a tile, these tend to fall into predictable patterns and can be accounted for. A-V at 622. These variations cannot be accounted for when the same tile is put through a series of destructive tests which effect the tile. Dr. Brosnan stated that the first C-373 test and the reheating have the effect of canceling each other out. *See* A-VI at 844-847 (testimony that a heat treatment of 600° Celsius after a C-373 test would return a tile to its original state). The assertion either continues to presume that C-373 had no effect whatsoever on the tile prior to reheating, which is not proof of that hypothesis, or it admits that C-373 altered the tile prior to reheating. Either way, the double-soak method itself is not sufficient proof of the hypothesis that C-373 does not effect the tile. The double-soak method, therefore, does not provide a reliable baseline from which measurement may be made, and it comes as no surprise that the data therefrom proved incoherent.

C. Consistency of Results at Different Reheating Ramps to Cone 020

The split-tile method was shown to produce consistent and reliable results at different temperature equivalents for pyrometric cone 020 — both at the slowest and fastest cycles and in the middle. Although the government focused on the extreme temperatures and reheating ramps to which Dal-Tile and Prof. Haber had subjected their tested samples, Dal-Tile also tested to cone 020 at 625° and 635°, the very temperature equivalents listed in the Orton Literature. Dal-Tile's results were consistent with the results achieved at the temperature extremes. Pl. Ex. 17. Dal-Tile and Prof. Haber explained that the reason he did not perform such intermediate testing was that his results at 575° and 710° — the slowest and fastest cycles possible with Dal-Tile's equipment — confirmed the reliability of the results Mr. Cornia had achieved at those extremes.¹² Witnesses for Dal-Tile and Prof. Haber represented that due to the expense and time-consuming nature of the C-373 testing, additional testing by Prof. Haber at 625° and 635° was determined unnecessary because the results were bound to fall between those observed at 575° and 700°. Pl. Exs. 17, 43; A-V at 720.

The government and TCA suggest that Dal-Tile's method should be rejected because Prof. Haber used an allegedly less reliable heat

¹²Dal-Tile's and Prof. Haber's tests at 575° were both consistent in the sense that both achieved statistical insignificance, even if they did not prove changes in porosity and hardness.

cycle for reheating to cone 020 than the government did. Def. Br. at 10; TCA Br. at 38–39. This suggestion is misleading in that it suggests that Dal-Tile’s method rests on the test performed by its expert, Prof. Haber, and not the tests performed by Dal-Tile itself. TCA attempts to discredit Prof. Haber’s testimony on the grounds that the tests he conducted did not conform to industry standards or were not the subject of publication. TCA Br. at 14. However, Prof. Haber, like the government, used the standard C–373 procedure and independently constructed a methodology similar to what Dal-Tile had constructed to accomplish a reheat test that is unique to the statute and not the subject of industry standards. Moreover, no method for conducting a reheat test for customs classification purposes has been published. However, Dal-Tile’s claim in this protest is based on the tests that Dal-Tile itself conducted, the results and methodology of which Prof. Haber confirmed. The government and TCA ignore the uncontroverted testimony that Dal-Tile used the same heat cycle for one of its tests as the government used.

It is undisputed that both the government and Dal-Tile conducted tests using a time/temperature ramp of 60°/hr until the proper cone deformed at 625°. See Dal. Br. at 16 (Government test), 18 (Dal-Tile test). Dal-Tile also conducted tests at 635°, 575° and 700° C using different rates of heat increase. All four tests involved reheating to cone 020. Dal. Br. at 17. As Mr. Cornia testified, he chose to test at extreme as well as intermediate firing rates to obtain results that would be representative of all possible firing rates of Dal-Tile’s kilns. *Id.* Mr. Cornia testified that the results of all four Dal-Tile tests showed a trend towards lower absorption. Dal. Br. at 18. Further, these results were statistically significant at all temperatures with the exception of 575°. *Id.* However, it is also of some significance that Dal-Tile and Prof. Haber each independently observed no statistically significant change at 575°. Since the government also reheated to 625° C and concedes that reheating to cone 020 at 635° C is acceptable, only the tests of reheating to cone 020 at 575° C and 700° C are disputed by the government.

Prof. Haber conducted additional tests which confirmed Dal-Tile’s results at 575° and 710°. Prof. Haber testified that the results of reheating at the intermediate heating rates would produce results between those of the two extremes he tested, mirroring the results obtained by Dal-Tile. See Dal. Br. at 21. Although Prof. Haber stated that the results he obtained at 575° and 700° C were different than those he would expect at the intermediate rates used by Dal-Tile, his results at the extreme rates agreed with those Dal-Tile achieved at the same rates. His testimony is unequivocal that he confirmed the soundness of Dal-Tile’s method and results. TCA makes much of Prof. Haber’s “admission” that reheating to cone 020 using different reheating rates would produce different results. TCA Br. at 39. Prof. Haber did not suggest that results of reheating to cone 020 at 625° or

635° C would fail to show a change in water absorption. Dal. Br. at 22. Thus, the fact that Prof. Haber did not conduct additional tests at 625° and 635° does not undermine the reliability of the tests Dal-Tile conducted at those temperatures.

The government and TCA also imply that the time/temperature ramp employed in the government's test (and one of Dal-Tile's tests) is "prescribed" or "recommended" by the manufacturer and that the rates employed by Dal-Tile in addition to those rates are somehow not "permitted." See, e.g., Def. Br. at 4. However, none of the witnesses who had experience with pyrometric cones would agree with the government's statement that the manufacturer of the pyrometric cones "recommended" any particular temperature or rate of heating to reach pyrometric cone 020. A-V at 759. Even Dr. Brosnan testified that there are many different ways to reach cone 020 and that the temperature equivalents listed in the Orton literature — 625° and 635° Celsius — had been observed over the decades to produce reliable deformation of the cone and that any of the reliability of deformation was not as well observed for any other temperature or rate. A-VI at 862-864. Research papers prepared by the Orton Foundation, which manufactures the cones, make clear that each of the Orton cones measures various time/temperature ramps producing deformation. See Exhibit 20 at 107 & Table 1 (data available showing deformation produced by various heating rates exists for most Orton cones). As Table 1 of Exhibit 20 shows, a given cone will deform differently depending upon the heating rate used and maximum temperature achieved. In fact, the Tariff Classification Study cited by the defendant and TCA recognizes that 020 cones deform at different heating rates. See 1962 TCS First Suppl. Rep. at 41. As the Report notes, the temperature at which cone 020 deforms depends in part upon the rate at which temperature is increased. Neither Headnote 2(a) nor the legislative history indicates the angle of deformation of cone 020 that should be used in reheating. Thus, there is no requirement that a particular heating rate be used to conduct the statutory test, so long as it produces a deformation in the cone.

D. Testing Hypotheses

Daubert identifies the testability of the hypotheses as the first of four factors to be considered with respect to the reliability of any scientific evidence. 509 U.S. at 593. In particular, Dal-Tile hypothesized that C-373 is a destructive test that alters the density, hardness and absorptivity of the subject articles. By contrast, the government's method assumes that C-373 is non-destructive.

Dal-Tile tested and proved the hypothesis that C-373 is a destructive test in that it causes the subject merchandise to absorb water. See Pl. Br. at 22, 40. This hypothesis is supported by the research of R. Bowman who, in peer reviewed articles, established that tiles must be reheated to approximately 900° C (well in excess of

pyrometric cone 020) in order to reverse fully the effects of moisture absorption resulting from soaking the tiles in a manner similar to C-373. *See* Pl. Exs. 45, 48, A-V at 732-33. Dal-Tile's hypothesis is further supported by ANSI, which has designated C-373 as a destructive test. The government's argument that ANSI designated C-373 as "destructive" solely because tiles are split, and not because the tiles are boiled and soaked, is incorrect, since the ANSI materials state that C-373 should be performed on whole tiles. *See* Ex. 1 ("use uncut, unbroken glazed samples in lieu of unglazed fractured specimens as called for in ASTM C-373"). Since, as Prof. Haber demonstrated, the C-373 test alters the tile, A-V at 608-13, and, as Dr. Brosnan testified, reheating reverses the water absorption that took place during C-373, A-VI at 844-45, the effect of reheating the tiles to cone 020 is masked.

As noted above, the government never tested its hypothesis on the subject articles, and instead relies upon the opinion testimony of Dr. Brosnan. A-VI at 881-84; Def. Br. at 39. Since the government's test neither isolates nor disproves the existence of any effect produced by the initial soak on the subject articles, it is impossible to know how the initial soak affected the pieces the government tested and how that might have affected the results of the government's test. The government's method is unreliable as a test of the effect of reheating to cone 020 on the relevant properties of the subject articles, because the effect of reheating was not isolated as a variable. As the *Libas* court noted, "[t]o assess a test's reliability, it is necessary to know what it tests." 193 F.3d at 1367.

TCA incorrectly suggests that Prof. Haber did not establish that the initial soak alters the subject tiles. *See* TCA Br. at 27-28. TCA so argues on the ground that the changes were not uniform from tile to tile and that some individual tiles showed changes after soaking that were inconsistent with the hypothesis. While Prof. Haber's experiment showed that the effect of soaking under the C-373 procedure was not uniform on every tile tested, he testified that, in subjecting 50 tiles to multiple soaks under the C-373 procedure, he obtained statistically significant results showing changes in the tiles' relevant properties after an initial soak. *See* A-V at 692-700. Again, individual results vary, which is why good research practice uses sufficiently large sample populations and analyzes variance, as Dal-Tile did here. Thus, Prof. Haber's conclusion that the initial soak affects the tile rests on the application of sound scientific research methods and is here accorded such credit as is due.

Prof. Haber's conclusion that the initial soak affects the tiles is further supported by the published research of Richard Bowman. *See* Exs. 44-48. Dr. Bowman demonstrated, *inter alia*, that the tiles exposed to a 24-hour soak, even after reheating, will expand. Ex. 48. Dr. Bowman's articles were published, thus meeting the second *Daubert* factor. Dal-Tile's hypothesis that the tiles are affected by the

C-373 procedure is supported by both Prof. Haber's analysis of the subject articles and published research.

The government's assertion that C-373 would not alter the subject tiles' properties because "tiles were made for long-term use in water without any meaningful deterioration," *see* Def. Br. at 6, is incorrect for several reasons. First, the testimony upon which the government relies related to the potential impact of steam from a bath or shower on wall tiles, not the effect of their immersion in water for 24 hours after 5 hours in boiling water. Wall tiles are not intended for long-term immersion in water and are therefore not designed with the same structural stability that characterizes stable ceramic articles. Pl. Br. at 4. Second, only the glazed side of wall tiles (or floor tiles) is exposed to water in commercial use, whereas the C-373 procedure exposes the entire body of the tile to water. Third, the commercial conditions cited by the government, unlike the C-373 procedure, do not expose the tiles to prolonged boiling. Thus, the general performance of tiles when exposed to moisture under commercial conditions cannot suffice as proof of the effect of the C-373 boil/soak procedure on the subject articles.

Finally, TCA argues that Prof. Haber, in running ANOVA on the government's results, somehow admitted that the government's test proved that the tiles did not change. TCA Br. at 30-31. Prof. Haber, however, observed that the Dal-Tile test demonstrated a statistically significant change while the government's test demonstrated a statistically significant lack of change, and he concluded that the different results could only be attributed to the difference in the two methodologies. Specifically, Prof. Haber attributed the lack of change or incoherence found in the customs method to be due to the destructive effect of C-373 on the sample population, which hypothesis Prof. Haber tested and proved. Restated, Prof. Haber theorized that under the government's testing method the tiles changed twice — once by soaking, and once by heating; he did not testify that C-373 did not change the tile samples at all.

E. Analysis and Confirmation by Statistical Method

In order to check the accuracy of its results, Dal-Tile subjected the data gathered from the split tile tests to a standard statistical technique, analysis of variance, or ANOVA. ANOVA is not a measure of absorption but is merely a method for determining the statistical significance of data collected. Dal-Tile and Prof. Haber demonstrated through ANOVA that the split-tile methodology had a low potential for error to within a confidence level of 95%, the most common standard in scientific and academic contexts. ANOVA also demonstrated that the potential for error in the government's method is much greater. *See* Dal. Br. at 43-44. The ANOVA on the Customs testing in the New Orleans laboratory of the tiles from 1994 and on tests performed by the Los Angeles laboratory of tiles from each of the years

for which a protest had been filed showed that the changes observed are not statistically significant and are consistently incoherent regardless of which year the tiles were produced. ANOVA's general acceptance as a statistical check on the significance of an empirical study's results is not in dispute. Its purpose and action is to test for potential error in the underlying experiment. As such, it meets both the third and fourth *Daubert* factors.

Contrary to the government's assertion, ANOVA does not supplant or supersede the results of the physical test but merely helps to explain whether the results — *i.e.*, the changes measured between the control and experimental samples — are statistically significant. *See* Dal. Br. at 19. The government's argument that Dal-Tile failed to maintain "testing controls over the statistical analysis," Def. Br. at 38, reflects a misunderstanding of research method. Statistical analyses like ANOVA are themselves testing controls. Dal. Br. at 43–44, 52. ANOVA in this instance merely assists the Court in determining that Dal-Tile's results can be relied upon. The government, by contrast, failed to subject its results to any test for statistical significance. This does not advance the probativeness of the double-soak test method before the Court.

The government does not dispute that ANOVA is an accepted test for the significance of empirical results nor does it contest Dal-Tile's ANOVA findings or assert that ANOVA was improperly done. Thus, the government does not dispute that the ANOVA performed by Dal-Tile on its results was a valid test of statistical significance. Instead, the government disputes ANOVA's explanatory power. It argues that Dal-Tile "failed to demonstrate how using ANOVA statistical analyses will obviate" the effect of differences between two pieces of the same split tile. Def.'s Br. at 38. However, ANOVA's very purpose and function is to determine whether a group of results is significant despite any potential anomalies contained in individual results. *See, e.g.*, Dal. Br. at 19. ANOVA performs this function by providing a statistical comparison of two or more means. Since individual factors may affect individual results, ANOVA helps determine whether, overall, the results of a scientific test or procedure are grouped around a norm, such that variations can be discounted. The ANOVA would not have demonstrated statistical significance for Dal-Tile's results if the intra-tile variations at the heart of the government's concern prevented observation of a significant trend. Thus, Dal-Tile's use of ANOVA further supports the reliability of Dal-Tile's method, and the government's failure to test its results for statistical significance casts doubt on the reliability of the government's method.

TCA's suggestion that use of ANOVA is improper because ASTM rejected use of statistical methods to analyze the physical properties of tile specimens under the C-373 procedure is also without merit. *See* TCA Br. at 4,23–25,3 1. As noted above, ANOVA does not measure physical properties, it merely checks the statistical significance

of the results of a given study. At issue is not the accuracy of C-373, but of a comparison between the means produced by two separate tests of sample populations under C-373 to measure the effect of reheating the subject articles to pyrometric cone 020. It would be inappropriate to use ANOVA to analyze individual results of C-373, because ANOVA involves a comparison of means. It is further of no significance that C-373 has a known rate of error (*see* TCA Br. at 25,29-30) because the Court need not determine the reliability of C-373, which is not in dispute. TCA's assertion that the customs test was shown at the hearing to be "accurate and precise" (TCA Br. at 4) refers only to the C-373 procedure, and that is a component of both parties' methods and is not in dispute. Rather, the reliability of each party's method of comparing different sets of C-373 results to measure the effect of reheating must be determined. TCA also errs in arguing against use of ANOVA here on the ground that ANOVA is not used in testing tiles for service. *See* TCA Br. at 31. The purpose of the tests at issue is to determine their customs classification, not their quality for service.¹³

F. *Relevance*

The government points out that the tiles tested in Dal-Tile's laboratories and by Prof. Haber which generated evidence of increased density and diminished porosity upon reheating to pyrometric cone 020 were not produced in the years of production of the entries in issue. Def. Br. at 3, 31. The government argued that because this is true, Dal-Tile's evidence of increased density and diminished porosity is not probative of the tile in issue. Def. Br. at 31. The government is incorrect. As Messrs. Turk, Orrell, and Cornia testified, (B3-19 at 62-63, S7-58,70-73, 84-85,88; A-IV 1 at 404-06) the wall tile bodies in issue have been produced in accordance with the same formulas from the commencement of production upon the opening of the factory until today. The reason there are several formulas for producing wall tile body is to account for naturally occurring differences in the materials used and to permit the efficient recycling of

¹³As an aside, Dal-Tile submits that the split-tile technique would not place any additional burden upon Customs, as it would not require any new equipment nor would it require any additional tests to be performed. The Court agrees that the split-tile test actually appears less burdensome and time-consuming than the Customs method, since it eliminates a step — instead of performing a 29-hour soak followed by reheating and then another 29-hour soak, the 29-hour soak could be performed on half the samples at the same time as the other half are being heated to cone 020. Furthermore, it has not been suggested that ANOVA must be performed in connection with every test conducted under Headnote 2(a). Here, Dal-Tile merely bolstered its position using ANOVA to demonstrate that the physical properties of the subject articles change based on a comparison of the mean results of the C-373 tests of the reheated and control sample groups. ANOVA is not necessary to reach this conclusion, however Dal-Tile's use of ANOVA to demonstrate the statistical significance of its results aids the Court in determining that Dal-Tile's test produced reliable results.

production waste whether generated before firing (*desperdicio*) or after firing (bisque). See Dal. Br. at 7–8. The raw materials continue to be produced at the same mines as the inception of production, but are natural products subject to variation. (A–II at 275) By itself, this requires that several formulas exist in order to assure as uniform as possible an end product. A–II, at 270–71. When *desperdicio* and bisque are taken into account and consideration is given to the fact that bisque has been glazed, it is obvious even to non-technical people that formulas must be adjusted for the sake of achieving a uniform end product. The government suggestion that several formulae produced different end products is therefore speculative.

G. *Reliability of the Double-Soak Method*

Once the plaintiff has made out a *prima facie* case in a challenge to a Customs classification, the government must come forward with proof of the correctness of its method; the Court is then required by 28 U.S.C. § 2643(b) to “consider whether the government’s classification is correct, both independently and in comparison to the importer’s alternative.” *Jarvis Clark*, 733 F.3d at 878. The government in this case has not demonstrated the correctness and reliability of its method, either independently or in comparison to Dal-Tile’s methodology.

As discussed more fully above, using the same pieces to run two subsequent destructive tests and then comparing the results is inherently unreliable because there is no control to which results can be compared. Indeed, the government’s own expert witness, Dr. Brosnan, testified that the very temperature at which the tiles were subjected to reheating after the first C–373 test had the effect of returning the tile to its original state. A–VI at 844–847. If it is true that the piece is returned to its original state by heat treatment before the second C–373 test is conducted, the results cannot be a reliable indicator of change or non-change brought about by such heat treatment: by definition, the results will show no change. But that is plainly not the case, given the incoherence of the double-soak results, which bear out the flaws in the Customs methodology. In some cases, the absorption goes up after reheating, in some cases it goes down, and in some cases it stays the same. Pl. Ex. 51. The data for porosity and density are similarly scattershot, showing no clear pattern. *Id.* It is this very type of data distribution — a scattered, unfocused pattern of change — about which the government’s witness, Mr. Daniels, testified that “one could not draw any valid conclusion as to the characteristics of the tile.” A–VI at 917. Therefore, the incoherence of the behavior of the specimens within each laboratory test batch and the inconsistency of these results — confirmed by Dal-Tile’s ANOVA of the New Orleans and Los Angeles Customs results — render the Customs double-soak method an unreliable means of

testing. It cannot prove that upon reheating the tile did change, and it cannot prove that it did not.

H. *Applicability*

The government also argues in favor of limiting the merchandise in issue to 4 1/4 x 4 1/4 square wall tiles. Def. Br. at 19. The denied protest giving rise to this litigation covered all wall tile contained in the entries, but Dal Tile decided not to proceed with its claims on 6 x 6 wall tile. Both the government and TCA argue that this Court should accept ANSI parlance in judging this case. In ANSI parlance, "4 1/4 x 4 1/4" is a nominal designation referring not only to square tile but to other shapes (*e.g.* trim sized for same). *See* Exhibit 1 at ¶6.1.1.1. Perforce of the abandonment of 6 x 6 wall tile claims, entries of trim for 6 x 6 wall tile are no longer an issue, but the claims concerning 4 1/4 x 4 1/4 wall tile trim remain in issue. This conclusion is consistent not only with ANSI parlance, but comports with logic while the opposite conclusion does not. The tile products in issue are those produced with the use of the materials and formulas in evidence and fired in slow fired kilns; moreover, no evidence exists in the record of an intention of the parties to interpret the phrase "4 1/4 x 4 1/4 tile" in the narrow manner that the government now proposes.

IV

Duty-free Treatment under the Generalized System of Preferences

An article must be classifiable in a GSP-eligible provision in order to enter duty-free. "Eligible articles" may be imported into the United States duty-free if they meet three requirements: (1) the article must be the "growth, product or manufacture" of a beneficiary developing country ("BDC"); (2) the article must be imported directly from a BDC into the customs territory of the United States; and (3) the sum of (a) the cost or value of the material produced in the BDC plus (b) the direct costs of processing operations performed in the BDC must not be less than 35% of the appraised value of such article at the time of its entry into the customs territory of the United States. *See* 19 U.S.C. § 2463(b); 19 C.F.R. § 10.177(a)(2).

The sole issue here is whether the 35% requirement has been met. There is no dispute that Mexico was a BDC during the period at issue, that the subject merchandise was a product of and imported from Mexico directly into the customs territory of the United States, and that the claimed tariff provision, TSUS item 523.94, was a GSP-eligible provision during the relevant period. Dal-Tile argues that the non-Mexican components of the direct processing costs were substantially transformed into new and different articles of commerce, namely glaze and spray dried body, and that these constituent parts became, when combined, products wholly of Mexico. Pl.'s Br. at 28,

referencing D-II at 38-52 & Pl. Ex. 8. It further argues that even if the non-Mexican components are excluded from the costs of processing, the dutiable Mexican value of the wall tiles meets the GSP threshold.

A. *Substantial Transformation*

Before a material of non-Mexican origin can be regarded as the “product or manufacture” of Mexico for GSP purposes, there must first be a “substantial transformation” of that material into a “new and different article of commerce.” 19 C.F.R. § 10.177(a)(2). A substantial transformation occurs when a product has “lost the identifying characteristics of its constituent material” through “a processing that results in a new article having a distinctive name, character, or use.” *Torrington Co. v. United States*, 8 CIT 150, 154, 596 F. Supp. 1083, 1086 (1984), *aff’d* 764 F.2d 1563 (Fed. Cir. 1985) Each of these elements need not be satisfied before a court finds that a material results from substantial transformation. *See, e.g., SDI Technologies, Inc. v. United States*, 21 CIT 895, 897, 977 F. Supp. 1235, 1239 (1997); *Koru North America v. United States*, 12 CIT 1120, 1126, 701 F. Supp. 229, 234 (1988), *aff’d* 155 F.3d 568 (Fed. Cir. 1998)

Relevant to this matter, an earlier case contested the denial of GSP eligibility for “casting slip,” a mixture created by blending dry ingredients, deflocculant, and dispersants in water with a blunger. *Zuniga v. United States*, 16 CIT 45 9, *aff’d* 996 F.2d 1203 (1993). There, the plaintiff failed to demonstrate that casting slip was either a “new and different” article of commerce or “commercially recognized.” The plaintiff had failed to provide any evidence of actual commercial sales of casting slip. On the basis of the evidence presented, the Court deemed the product “clearly” recognizable as a “simple blend” of its dry ingredients. 16 CIT at 465-66. The government here argues that *Zunega* is dispositive, while Dal-Tile argues that the evidence it provided is distinguishable from that offered in *Zuniga*.

In the recent case of *Drexel Chemical Co. v. United States*, Slip Op. 03-60, 2003 WL 21302955 (CIT June 5, 2003) the Court found that there had been substantial transformation of an herbicide exported to the United States which had been imported in cake form into a BDC where it was pulverized through a complex air milling process. As in *Zuniga*, the government had argued that the air milling process had not changed the “identifying characteristic” of the chemical which gave the molecule its herbicidal properties. The Court disagreed and found “that the air milling process causes not only a physical change in the size of the particle, but also a chemical change as valance bonds are freed, enabling the Diuron molecule to adsorb to a plant leaf.” Slip Op. 03-60 at 11. The Court thus found that the transformation of herbicide from cake form to powder was akin to the substantial transformation of wire into “swage,” *i.e.*, “sewing machine needle blanks,” considered in *Torrington* to be “new

and different article[s] of commerce” that would undergo a second substantial transformation when processed into finished sewing needles. *Torrington*, 8 CIT at 154, 596 F. Supp. at 1086.

Here, the wall tile components satisfy not only the “articles of commerce” requirement but also the “new and different” requirement of the statute. The *Zuniga* Court found no market for casting slip, which had no further purpose other than to be cast and used as kiln furniture. The *Zuniga* Court was thus unconvinced that slip was any different than a mix of its component ingredients. By contrast, in this matter the relevant articles of commerce are spray dried body and glaze, not casting slip, and the Court concludes that the spray dried body and glaze at issue are new and different articles of commerce. They are not “simple blends,” like casting slip. The process of producing spray dried body is similar in complexity to the air milling process considered in *Drexel*. There was less evidence proffered on the complexity of the process to produce glaze, however it is evident that both spray dried body and glaze require extensive analysis, processing and refinement in order to go from raw materials to usable, saleable articles of commerce. Moreover, glaze is bought and sold in commerce. Several witnesses in this matter testified that glaze is sold commercially, that Ceramica Regiomontana has in the past sold and now sells the glaze it manufactures from frit produced in Mexico by Materiales Ceramicos, its sister Company. Dal-Tile also proved that spray dried body can be pulled from the production line and sold to another company, which may press it into tiles or into some other article of commerce. A-VI at 922. Several witnesses, including Robert Daniels, a witness for the government, testified that spray dried tile body is an article of commerce purchased by many smaller tile manufacturers. D-I at 12-19, 99-101; A-IV at 488-95; A-VI at 922. Although the Monterrey plant does not sell the spray dried body it produces, since it uses all that it manufactures in its own production, the Court concludes that the spray dried body that it produces is the “functional equivalent” of the spray dried body regularly sold by other manufacturers, which in turn is of the “same general class or kind” as the spray dried body produced by Ceramica Regiomontana.

The Court finds that the constituent parts of the wall tile, the dried body and the glaze, represent 100 percent of the subject merchandise and are both of Mexican origin. The subject merchandise is of 100 percent Mexican origin and “wholly the growth, product, or manufacture of a [BDC].” 19 C.F.R. § 10.176(c). The wall tile manufactured from these constituent parts is therefore entitled to a presumption that it meets the requirements of the GSP. Even were that not the case, the evidence amply demonstrates that the 35% threshold of Mexican-origin value in the subject articles is amply met.

The Court also notes that the purpose of the GSP statute is to “encourage BDC’s to produce goods for export, thereby fostering eco-

conomic diversification and industrialization.” *SDI Technologies, Inc. v. United States*, 21 CIT at ____, 977 F. Supp. at 1242 (citing S.Rep. No. 93–1298 at 5, 1974 U.S.C.C.A.N. at 7187). See also *Torrington*, 764 F.2d at 1563. That purpose is furthered by the growth of jobs requiring higher or technical skills, a groundwork for building additional skills and developing more self-sufficiency. The “GSP program, therefore, is not meant to encourage an increase in the number of simple labor intensive jobs within a BDC.” *SDI Technologies*, 977 F. Supp. at 1242 (finding that the purpose of the GSP not met by stereo rack systems claimed to be the product of Mexico where complex manufacturing took place in China and the finishing which occurred in Mexico — placing components in a wooden cabinet — required only a basic education and did not change the character of the product) (citing *Texas Instruments, Inc. v. United States*, 681 F.2d 778, 785 (Fed. Cir. 1982)).

The testimony of several witnesses establishes that the tilemaking process at Ceramica Regiomontana meets the purposes of the GSP program. This is not a mere finishing; Ceramica Regiomontana as well as its sister company Materiales Ceramicos each engage in a complex process which requires the chemical analysis of the raw materials, the careful blending of the ingredients to achieve a consistent outcome, the use of state-of-the-art equipment for creating the tile body, including spray driers, strict controls on size and shape, careful matching of the body and glaze formulas, inspection of the tiles, and daily analysis in the laboratory to confirm absorption. D–II at 38–52; Pl. Ex. 8. The testimony establishes that the process would be done substantially no differently in a non-BDC, since the equipment, materials and process are nearly the same throughout the industry, and indeed, the Ceramica Regiomontana plant has both the skill and the equipment to manufacture its own tile body (something even many American tile manufacturers do not have). A–VI at 920–922. The purposes of the GSP are served in this instance.

B. *Direct Costs of Processing*

Neither statutory language nor the legislative history on the law elaborates on the term “direct costs of processing operations.” 13 Cust. Bull. 1270, C.S.D. 79–199 (1979). However, certain costs have been generally recognized as direct costs of processing operations, including direct labor costs, overhead, supervision, interest incurred in acquiring machinery, packaging and assists. *Id.*; 18 Cust. Bull. 1085, C.S.D. 84–104; 14 Cust. Bull. 1085, C.S.D. 80–208 (1980); 13 Cust. Bull. 1464, C.S.D. 1464, C.S.D. 79–312 (1979); 13 Cust. Bull. 1355, C.S.D. 79–242 (1979). In determining the direct costs of processing operations, Ceramica Regiomontana took into account raw material consumption, direct labor costs, parts and packaging used and fixed and variable manufacturing expenses. Ceramica Regiomontana’s chief financial officer, Mrs. Delfina Estrada, testified that the cost

system that Ceramica Regiomontana used to calculate the direct costs of processing operations was based upon generally accepted accounting principles of Mexico (to which Ceramica Regiomontana strictly adhered) and that she took a conservative approach when calculating manufacturing costs by omitting, *inter alia*, applicable depreciation and taxes. A-I at 116-117A-I at 117. These accounting principles were also relied upon by Dal-Tile Corporation in the United States to prepare consolidated financial statements. A-I at 116. All of Ceramica Regiomontana's cost figures appear on the certified financial statements submitted in evidence.

Ms. Estrada testified that Ceramica Regiomontana used the full assertion method to calculate the costs for the tile in issue, a method consistent with generally accepted accounting principles in Mexico. A-II at 137-138. By this method, Ceramica Regiomontana calculated its costs by month rather than calculating costs for each tile manufactured. She also stated that the latter method was not available to Ceramica Regiomontana because the company does not identify each specific invoice or expense on a specific tile. A-II at 139.

As to the value of materials of Mexican origin plus the direct costs of the processing operations, Ms. Estrada attested that they accounted for 68% in 1984, 62% in 1985, 49% in 1986, and 70% in 1988, *i.e.*, more than 35% of the appraised value of the subject merchandise in those years. A-I at 111-25. *See* 19 U.S.C. § 2463(b)(1)(B); Pl Ex. 40. She further testified that it was not possible that the value of Mexican origin materials and the direct costs of processing was less than 35 percent of the value of the subject merchandise in any month during 1984, 1985, 1986, or 1988. A-I at 118-125. Moreover, the testimony was to the effect that even if the value of dried body is deducted, the respective percentages of value of Mexican origin materials only drops by, at most, a few percentage points — far above the 35 percent threshold set forth in the GSP. A-I at 120-129.

The Court credits her testimony and finds that even if the non-Mexican components are excluded from the value of the wall tile the remainder still exceeds the required 35% minimum threshold. The government argues that the value of the tile bodies may not be taken into account under the double substantial transformation rule, but the Court concludes that the total value of the material inputs may be taken into account. The testimony of Mr. Cornia (A-IV at 494-95) that the glaze of the type used to glaze Dal Tile's 4 1/4 x 4 1/4 wall tiles and *dry* body similar to that used in the production of Dal Tile's 4 1/4 x 4 1/4 wall tiles are finished intermediate products which are bought and sold in the marketplace is unrefuted by any probative evidence. The existence of tariff provisions for glaze establishes the fact that glaze is a recognized commercial product. *See* items 540.21 and 540.27, TSUS. The court therefore takes judicial notice of the

commercial status of glaze. Labor and glaze alone amount to more than 35% of dutiable value of the merchandise in issue. A–I at 120–21.

As to dry body, the facts are similar. *See* A–IV at 492–94. In TCA’s effort to explain that there is a commercially recognized group of clay products which it concedes would not be ceramic for tariff purposes, it cites examples of unfired or lightly fired body. TCA Br. at 18. While TCA is not a party, it proclaims its expertise with regard to commerce in clay products. For its part, the government defers to TCA for this purpose. Therefore, in addition to undisputed proofs of record, defendant and TCA must be held to have admitted the facts necessary for the Court to determine that the double substantial transformation rule applies to the dry body as well.

Similarly, the use of equivalences to reflect extra labor or production costs to manufacture non-rectangular tile or to account for the use of more expensive glazes is a reasonable accounting practice which the government has failed to demonstrate is capricious.

C. *Admissibility of Certain Records*

The government seeks to deny the admissibility of four types of business records: yearly certified financial statements, end of year inventory reconciliations, “Countervailing Tax Reports” submitted to the U.S. Commerce Department and statistics for the sale of tile prepared by Dal-Tile’s accounting team in the ordinary course of business. The government seeks to exclude these documents on the grounds that they are summaries of voluminous records and are therefore inadmissible under Rule 1006 of the Federal Rules of Evidence because the government did not have the opportunity to review the underlying documents.

Dal-Tile argues that the Court should not consider the government’s argument under Rule 1006 because the documents are admissible in their own right under the Rule 803(6) hearsay exception for business records, notwithstanding the government’s right to examine the sources underlying summary financial statements (*see VWP of America v. United States*, 25 CIT ____, 163 F. Supp. 2d 645 (2001), opinion after remand, 27 CIT ____, 259 F. Supp. 2d 1289, appeal docketed, Ct. No. 03–7347 (Fed. Cir., Apr. 28, 2003)).

The Court notes that Ms. Estrada is Dal-Tile’s Chief Financial Officer and the custodian of the company’s books and records. She authenticated the certified financial statements and inventory reconciliations as company business records prepared in the ordinary course of business. A–I at 10–25. (There is apparently no dispute with respect to the admissibility of the tax returns.) The certified financial statements are prepared annually by Dal-Tile’s external public accountant from information contained in the company’s general ledgers and journals. A–I at 10–11. The accountant prepares the certified financial statements regularly each year after Dal-Tile’s tax re-

turns are complete. The certified financial statements are prepared to satisfy the requirement under Mexican law that the accuracy of the company's financials be independently certified for submission to the Mexican taxing authorities. A-I at 10.

Similarly, Mrs. Estrada's uncontroverted testimony establishes that the other documents in question are business records of the company. Dal-Tile prepares its inventory reconciliations annually when Dal-Tile closes its calendar year. The purpose for which the inventory reconciliations are prepared is to support various financial information contained in the tax returns and certified financial statements. A-I at 12-13. Dal-Tile prepared the three annual countervailing duty reports (Exhibits 36-38) for administrative verification by the U.S. Department of Commerce in connection with a countervailing duty case. These documents were duly filed with the Commerce Department after they were prepared and were, in fact, obtained from the Commerce Department for production in this litigation A-I at 22-24, 27-32. Finally, Mrs. Estrada testified that Exhibit 39 contains statistics of tile sales broken down by market that were prepared in the ordinary course of business. A-I at 24.

At trial, the government objected to the admission of the certified financial statements and the inventory reconciliations under Rule 1006 on grounds that the government was not given access to the underlying documentation when it existed. Mrs. Estrada testified that the company's ledgers that are more than ten years old are destroyed at regular intervals. A-I at 11-12. The government does not suggest that destruction of these underlying documents was improper, only that the government did not have the opportunity to review them. The government did not object with respect to their admissibility under Rule 803(6). The government also objected to the admissibility of Exhibits 36-39 under both Rule 1006 and 803(6). The Court admitted the documents conditionally, reserving reconsideration for the end of trial. A-I at 38. In its brief, the government reiterates its objection on Rule 1006 grounds, but does not address and apparently has abandoned its Rule 803(6) objection to the admissibility of Exhibits 36-39. Def. Br. at 44-45.

Based on Mrs. Estrada's uncontroverted testimony, the Court concludes the financial statements and inventory reconciliations are admissible under Rule 803(6) and the government has waived any such objection. *Accord Ford Motor Company v. Auto Supply Company, Inc.*, 661 F.2d 1171, 1175-76 (8th Cir. 1981) (admission of end-of-year financial statements and profit analyses); *Gerling International Ins. Co. v. Commissioner of Internal Revenue*, 98 T.C. 640,652-54 (1992) (admission of end of year financial statements). Their admissibility under Rule 803(6) obviates any need for consideration of their admissibility under Rule 1006. *See Gerling International*, 98 T.C. at 654.

The parties do not dispute that the financial statements are prepared from other information contained in the company's ledgers and other business records. Thus they may be regarded in some sense as summarizing some of the information contained in those records. That fact does not preclude their admission under Rule 803(6), however, as that rule does not require that the opposing party have access to underlying documentation as a basis for admission. Even where a document is inadmissible under Rule 1006, that rule does not bar admission where the requirements of another rule, such as Rule 803(6) are satisfied. *See Gerling International*, 98 T.C. at 654. Rule 1006 merely provides an exception to the best evidence rule allowing for use of summaries prepared for trial in lieu of original documents; where as here, the documents themselves are original documents (or photocopies) admissible under another rule, the Rule 1006 exception is irrelevant. Thus, there is no reason for the Court to reverse its decision admitting the certified financial statements and the inventory summaries.

Similarly Exhibits 36–39 are admissible under the Rule 803(6) hearsay exception. The evidence is uncontroverted that the data compiled in these reports, which were prepared for government verification, were kept in the ordinary course of a business activity. A–I at 22–24. It was Dal-Tile's regular practice — as required by law — to prepare such reports whenever so requested by the Commerce Department. *Id.* Moreover, there is no evidence in the record that would cast doubt on the trustworthiness with respect to the circumstances under which the reports were prepared, as the information they contained was subsequently verified by the Commerce Department. Further, none of the documents at issue were prepared in connection with the present dispute, which did not arise until the countervailing duty case had ended, and there is no suggestion that they might have been prepared to advance Dal-Tile's position in this case.

Finally, Dal-Tile argues, and the Court agrees, that to the extent any of the Rule 803(6) requirements are not met, the documents are admissible under the residual hearsay exception found in Rule 807 (formerly Rule 803(24)).

Given their close scrutiny by the Commerce Department, this Court finds that the documents were prepared under circumstances providing equivalent guarantees of trustworthiness to those under the other hearsay exceptions of Rule 803. They are the only records available with respect to the points for which they are offered and there is no dispute as to their probative value. The notice requirement of Rule 807 does not bar the documents' admission because the government was on notice months before the hearing of Dal-Tile's intent to introduce the documents into evidence. The government was not harmed because it had ample opportunity to examine and respond to the evidence during discovery after the documents were obtained from the Commerce Department and turned over to the gov-

ernment, and it could have deposed Mrs. Estrada on their trustworthiness between the Dallas and Atlanta trial sessions but chose instead to object to their admission at trial without having conducted such discovery. Even if the documents were not admissible in their own right under Rule 803(6), it is preferable to consider Rule 807's notice requirement flexibly so as not to bar admission in the absence of prejudice. *See* 5 *Weinstein's Evidence* 9 807.04[2] (noting flexible approach to notice requirement). Therefore, the Court accepts into evidence all of the foregoing documents, which had been admitted conditionally.

D. Domestic Versus Export Product

Lastly, the government argues that Dal Tile has failed to prove GSP eligibility because the evidence in issue does not distinguish between product manufactured for the domestic market and that manufactured for export. Def. Br. at 46–49. The Court disagrees. The only testimony of record of arguable support for the government's contention was brief discussion concerning "seconds" of wall tile that were sold on the Mexican market, but there was no indication that such seconds were of significant volume or intentionally produced. While it may be true that dutiable value must be calculated as accurately as necessary, the overwhelming evidence indicates that pro rating would not alter the result.

Conclusion

The articles are to be classified under item 523.94, TSUS. They are also entitled to duty-free entry under the GSP. Judgment will enter accordingly.