

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF KANSAS

FEDERAL TRADE COMMISSION

Plaintiff,

v.

SUPERIOR PRODUCTS
INTERNATIONAL II, INC., a corporation,
and

JOSEPH E. PRITCHETT, individually and
as an officer of SUPERIOR PRODUCTS
INTERNATIONAL II, INC.,

Defendants.

Case No. 2:20-cv-02366-HLT-GEB

**FIRST AMENDED COMPLAINT FOR
PERMANENT INJUNCTION AND OTHER
EQUITABLE RELIEF**

Plaintiff, the Federal Trade Commission (“FTC”), for its First Amended Complaint (the “Complaint”) alleges:

1. The FTC brings this action under Sections 13(b) and 19 of the Federal Trade Commission Act (“FTC Act”), 15 U.S.C. §§ 53(b), 57(b) and the Trade Regulation Rule Concerning the Labeling and Advertising of Home Insulation (“R-value Rule” or “Rule”), 16 C.F.R. Part 460 (initially issued in 1980 and last amended in 2019), which authorize the FTC to seek, and the Court to order permanent injunctive relief, monetary relief, and other relief for Defendants’ acts or practices in violation of Section 5(a) of the FTC Act, 15 U.S.C. § 45(a) and in violation of the R-value Rule.

2. Defendants market their Super Therm and Sunshield roof and wall coatings using deceptive energy savings claims and claims related to R-values, which measure the insulating ability of a material, including home insulation.

3. Defendants claim that their Super Therm and Sunshield products provide significant energy savings for consumers when applied to a home or other building. They also claim those products have R-values and R-value equivalents of R-19, and consequently, also provide significant energy savings for consumers when applied to a home or other building.

4. However, these claims are false. Therefore, Defendants cannot substantiate them. In fact, Defendants' coatings have R-values that are substantially less than one when applied as Defendants instruct, and Defendants' purported substantiation demonstrates their products do not provide the advertised energy savings.

5. Defendants' R-value claims since May 13, 2020, when amendments to the R-value Rule went into effect, violate the R-value Rule because they either are based on testing that does not comply with the Rule or do not fairly reflect the results of such testing. As stated above, Defendants' coatings have R-values that are substantially less than one when applied as directed, not the R-19 or RE-19 values that Defendants claim in their marketing materials.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331, 1337(a), and 1345.

7. Venue is proper in this District under 28 U.S.C. §§ 1391(b)(1) and (c)(2).

PLAINTIFF

8. The FTC is an independent agency of the United States created by statute. 15 U.S.C. §§ 41-58. The FTC enforces Section 5(a) of the FTC Act, 15 U.S.C. § 45(a), which prohibits unfair or deceptive acts or practices in or affecting commerce.

9. The FTC is authorized to initiate federal district court proceedings, by its own attorneys, to enjoin violations of the FTC Act and to secure such equitable relief as may be

appropriate in each case, including rescission or reformation of contracts, restitution, the refund of monies paid, and the disgorgement of ill-gotten monies. 15 U.S.C. § 53(b).

DEFENDANTS

10. Defendant Superior Products International II, Inc. (“Superior Products”) is a Kansas corporation with its principal place of business at 10835 W 78th St, Shawnee, Kansas 66214. Superior Products transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with others, Superior Products has advertised, marketed, distributed, or sold its Super Therm and Sunshield coatings to consumers throughout the United States.

11. Defendant J.E. Pritchett (“Pritchett”) is the President and founder of Superior Products. At all times material to this Complaint, acting alone or in concert with others, he has formulated, directed, controlled, had the authority to control, or participated in the acts of Superior Products, including the acts and practices set forth in the Complaint. Defendant Pritchett resides in this District and, in connection with the matters alleged herein, transacts or has transacted business in this District.

COMMERCE

12. At all times material to this Complaint, Defendants maintained a substantial course of trade in or affecting “commerce,” as “commerce” is defined in Section 4 of the FTC Act, 15 U.S.C. § 44.

DEFENDANTS’ BUSINESS PRACTICES

13. Defendants manufacture and market coatings designed for residential, industrial, and commercial applications, including “Super Therm” and “Sunshield.”

14. Coating products are marketed for application on homes and buildings and include paint, paint with additives (such as ceramic spheres), varnishes, lacquers, and products that incorporate such coatings.

15. Defendants claim that Super Therm is a water-borne combination of aliphatic acrylics, urethanes and resin additives that contains four types of ceramic particles that allow it “to block heat gain into the surface upon which the coating film is applied.” Defendants also claim that Super Therm is an “[i]nsulation coating to create [sic] thermal barrier on substrates,” including “[a]s a one-coast insulation system on exteriors” and “[a]s an insulation system for interior applications.” Super Therm retails for \$108.50 per gallon.

16. Defendants claim Sunshield is a water-borne combination of elastomeric acrylic and resin additives that includes four different ceramics that provide it “both heat reflectivity and insulating properties.” On their website, Defendants claim that Sunshield has “similar performance characteristics to Super Therm,” but does not provide “the same benefits.” Sunshield retails for \$60 per gallon.

17. Since at least 2008, Defendants have disseminated or caused the dissemination of advertising, packaging, and promotional materials for Super Therm and Sunshield, including through advertisements on their website and marketing materials for their distributors.

18. In these materials, Defendants describe Super Therm’s performance in terms of R-values and R-value equivalents. For example, they advertise that Super Therm provides a “benefit comparable to R 19” when applied 0.01 inches thick. **Exhibit A** at 1.

19. R-value is a measurement of resistance to heat flow. *See* R-value Rule, 16 C.F.R. Part 460. The greater the R-value, the greater the reduction in heat flow, and the more energy may be saved to heat or cool a building. 70 Fed. Reg. 31,258 (2005).

20. Different products have different R-values. For example, fiberglass batt is among the most common insulating materials in the United States. It generally has an R-value of R-3.0 to R-3.8 per inch. Other popular insulation materials, polyisocyanurate or polyurethane foam, have R-values of R-5.6 to R-8.0 per inch. Consumers typically apply those materials several inches thick to provide the desired level of insulation. By comparison, hardwood has an R-value of R-0.9 per inch. Poured concrete has an R-value of about R-0.08 per inch, making it a poor insulator.

21. The U.S. Department of Energy recommends levels of insulation for homes. It divides the country into eight climate zones and lists R-values for each zone. Most of Kansas is in Zone 4. The Department recommends homes in this zone have R-38 to R-60 insulation in the attic and R-13 to R-15 insulation in the walls. Thus, if such a home uses fiberglass batt (at R-3.8 per inch), it should have at least 10 inches of the batt in its attic. By comparison, Miami, Florida is in Zone 1 where the Department recommends R-30 to R-49 for attics. For the coldest zone, Zone 8, the Department recommends attic insulation of R-49 to R-60.

22. Defendants' conduct is ongoing as of the filing of this Complaint.

23. Based on the facts and violations of law alleged in this Complaint, the FTC has reason to believe that Defendants are violating or are about to violate laws enforced by the Commission.

**DEFENDANTS CLAIM SUPER THERM HAS AN R-VALUE OF R-19
OR IS EQUIVALENT TO R-19 AND THAT SUNSHIELD IS SIMILAR**

24. Defendants claim in marketing materials that a 0.01-inch thick coat of Super Therm provides a "benefit comparable to R 19," has "a R-19 [e]quivalent [r]ating," and has the same insulating qualities as six inches of "traditional fiberglass insulation." See **Exhibit A** at 1; **Exhibit B** at 6.

25. Defendants claim Sunshield is a “[c]ost-efficient alternative with similar performance characteristics to Super Therm.”

26. In 2008, Superior Products started using a brochure, which it posted on its website – where it remained until the FTC contacted Defendants in April 2019 as part of the investigation that lead to this suit. That brochure expressly claims Super Therm has “a R-19 [e]quivalent [r]ating” when applied 0.01 inches thick. *See Exhibit B* at 6.

27. Superior Products bolstered this claim by stating in the same brochure that Super Therm is “Approved” to have an “RE19” R-value at a 0.01-inch thickness, with “RE” meaning an R-value equivalent. *Exhibit B* at 5.

28. The 2008 brochure further claims Super Therm has an “RE19” R-value whether applied to the “[i]nterior” or “[e]xterior” of a building. *Exhibit B* at 5. It explains this feature by claiming, “SUPER THERM holds heat inside the room in the winter by not loading the heat which would be absorbed into the wall to be transferred and lost to the cold. The ceramics will not load the heat and allow the normal transfer.” *Exhibit B* at 4. In this way, Defendants market Super Therm not merely as a product that reflects the Sun’s heat, but as a product that performs as traditional home insulation.

29. The 2008 brochure remains on the website of some Superior Products distributors.

30. Pritchett stated his goal when developing Super Therm was to create a product “that could compete with or compliment batt forms of installed insulation.”

31. Superior Products also created a “Technical Data Sheet” about Super Therm that it posted on the company’s website and includes with shipments of Super Therm. Under “Tests and Certifications,” the March 1, 2019 version of the data sheet claims: “Exterior insulation

against Solar Radiation – benefit comparable to R 19” and references several standardized test methods used to determine R-value. **Exhibit A** at 1.

TESTS AND CERTIFICATIONS (partial list)

1. Exterior insulation against Solar Radiation - benefit comparable to R 19
2. Blocks 99.5% of infrared / up to 68% sound blockage
3. Interior- ASTM C1363 (Guarded Hot Box), E1269 and E1461-92 (Blocking heat through coating Film)

32. A video on Superior Products’s website, as of April 2019, claims: “With one coating [of Super Therm] at 16mils wet, or 10mil dry, you’re going to get an R-20 R-factor equivalence.”

33. Pritchett personally makes unsubstantiated R-value claims about Super Therm. An article about Super Therm on www.bobvila.com, a popular home improvement website, quotes Pritchett throughout and states: “SuperTherm achieves an R-19 rating with one coat applied, and a rating of R-28.5 when the surface is coated on the exterior and interior.” See **Exhibit C** at 1-2.

34. In a patent application to the U.S. Government for a method of applying a coating, Pritchett claims: “it has been found that the equivalent R value (thermal resistance) of a single coat of Super Therm® is R-19 equivalence.”

35. Defendants bolster their express R-value claims by comparing Super Therm to products with known R-values and implying that Super Therm has that level of R-value.

36. Traditional fiberglass insulation, for example, has an R-value of about R-3.0 per inch; six inches of that insulation is R-18. Pritchett claims Super Therm has an R-value of “about that of a fiberglass batt having a thickness of six inches.”

37. Until contacted by the FTC, the Superior Products website repeated Pritchett’s six-inch claim, in which it claimed: “A layer of Super Therm, the thickness of a business card,

has the same insulation value as 6 inches of traditional insulation by blocking the initial loading of heat so that the heat available for conduction is reduced.” The 2008 Super Therm brochure mirrors that claim, stating, “[i]n fact, a layer of SUPER THERM no thicker than a single business card provides the same protection as 6 inches of fiberglass,” accompanied by the following visual and express “R-19 Equivalent” claim:

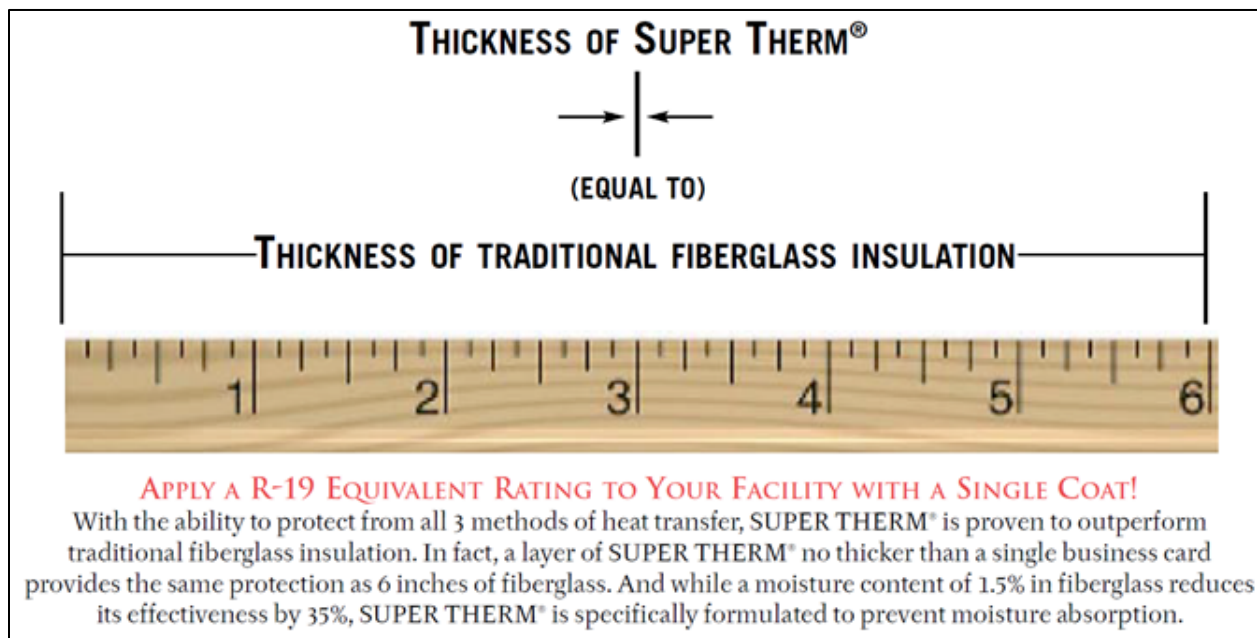


Exhibit B at 6.

38. In addition, the product label on containers of Super Therm in 2019 claims: “Insulating equivalent better than batt insulation due to [heat] load reduced.”

39. Defendants make further claims in the 2008 brochure and on their website as late as April 2019, including expressly claiming Super Therm has an “RE19” R-value and suggesting it is equivalent to *ten* inches of fiberglass (R-value of approximately R-30), eight inches of cellulose filler (R-value of approximately R-25), and 5.5 inches polystyrene foam (R-value of approximately R-25) by using the visual below:

	Super Therm®	Fiberglass	Cellulose Fillers	Ceramic Paints	Polystyrene Foam
 = Approved  = Partial Approval  = Not Possible					
RE19, one, 10-mil coats (Interior App.)*		10~	8~		5.5~
RE19, one, 10-mil coat (Exterior App.)**					
68% Sound Blockage					
Rated as one of EnergyStar's® best overall					
Approved by California Cool Roof program					
NASA tested					
Proven for both interior and exterior					
Class "A" rated "0" flame spread					
Passed 2000 hrs of salt spray testing					
USDA approved					
Moisture resistant					
Blocks 99.5% of infrared rays					
Resists mold and mildew					
K Factor (less is better)	0.10	0.29	0.31		0.28
25 years, residential life expectancy					

Exhibit B at 5.

40. When contacted by the FTC, Defendants removed certain R-value claims from their website. Nonetheless, R-value and R-value equivalent claims still appear on Superior Products' website and, as late as October 2019, in its technical brochure for Super Therm (claiming "R 19" equivalency). For example, a part of Defendants' current website sub-titled, "Reflective Coating vs. Fiberglass vs. SUPER THERM," compares fiberglass insulation to Super Therm. Defendants state "Fiberglass has only an 'R 19' value when it is a full 6 inches." They

then claim that a 0.01-inch coating of “Super Therm was tested in the lab and found to have” a “better” R-value, by about 70%, than a test sample of 3-inches of fiberglass.

DEFENDANTS’ R-VALUE CLAIMS AFTER MAY 13, 2020

41. Since May 13, 2020, when the R-value Rule amendments took effect, Defendants continued making both express and implied R-value claims, including R-value equivalent claims, that exceeded the R-value of Super Therm as established by testing under the R-value Rule.

42. For example, from May 13, 2020 until at least August 14, 2020, Defendants claimed on their website that “testing demonstrated” as little as 10 mils of Super Therm, in their words, “credit card thickness,” had a lower k value (i.e., thermal conductivity) than three inches of traditional fiberglass batt insulation. They further explained, “[t]he lower the ‘k’ value, the better the R-value.”

43. Defendants also continued circulating to their distributors claims that Super Therm has an R-19 equivalency when applied and dried to approximately 10 mils thickness.

44. Defendants also made R-value claims directly to purchasers in response to inquiries regarding Super Therm’s performance characteristics.

45. For example, on September 14, 2020, in response to a customer who inquired about “specification data” for Super Therm, Tim Cappel, Superior Products’ Vice President of Business Development, Technology, and Legal responded by “confirming that Super Therm can perform as an equivalent R 19.”

46. On that same date, Cappel responded to another customer’s inquiry by providing a “Super Therm Equivalent Analysis” that stated that Super Therm has an “R-equivalent value” of 18.85. In that same document, Defendants concede that “because the thickness of Super Therm is only 254 microns it’s R-value is miniscule”.

47. Defendants also made R-value claims to consumers after May 13, 2020 through their network of distributors. *See* Paragraphs 68-69, *infra*.

**DEFENDANTS CLAIM THAT SUPER THERM AND SUNSHIELD
SAVE CONSUMERS MONEY**

48. Defendants claim that using Super Therm “reduc[es] important energy costs,” results in “[e]nergy savings,” and brings about “cost-saving, long-term energy efficiencies.” *See, e.g., Exhibit D* at 2. They also claim that Sunshield provides “similar performance characteristics to Super Therm.”

49. In 2015, Defendants added a second brochure to their website, which remains on the site today. This brochure makes energy savings claims about Super Therm. Under the heading “PROVEN ENERGY EFFICIENCY,” the brochure claims a “26% - 30% increase in energy efficiency” in “Interior Temperature Performance” attributed to analysis by the U.S. Department of Energy. *Exhibit D* at 4. It also claims “22% overall energy reduction with 40% HVAC savings” as a result of Super Therm being applied at an airport terminal. *Exhibit D* at 4.

50. Defendants also included on their website (as of April 2019) a number of specific claims about substantial energy savings achieved by using Super Therm, for example:

- a. Under the title, “Energy Saving Products,” the website claims “[s]hown in field usage to save between 40% and 70%.”
- b. “Energy Efficient – Energy savings of 20-70% (field results as given by customers’ own testing, such as Sony.”
- c. “**FACT:** Sony Corporation coats roof and walls of one monitored building with SUPER THERM and finds a 78% reduction in total energy consumption.”

- d. “**FACT:** Florida Department of Energy Specialist documents . . . 30% utility savings on homes in Florida (hot humid climates) and in Denver (dry climates) as well as steel containers.”
- e. “**FACT:** German Mechanical Engineer in Construction Physics makes study of home coated with SUPER THERM and finds 76% less energy usage from SUPER THERM as compared to fiberglass and rock wool.”
- f. “**FACT:** Total house application cost is paid with energy savings in 2-4 years.”

51. Pritchett has personally made energy savings claims about Super Therm. On the popular home improvement website, bobvila.com, Pritchett claims: “We estimate that a home can save up to 40 to 50 percent in energy costs using our product.” **Exhibit C** at 2.

52. After the FTC identified the claims in Paragraph 50, Superior Products removed them from its website, but maintained other energy savings claims. For example, Defendants continued to claim that applying Super Therm to the roof of a building resulted in “total utility savings of \$22,144 (22%) in August for the total facility and the A/C portion of the total utility being 55%, this relates to a 40% savings in A/C operational cost.”

DEFENDANTS CLAIM THAT TESTING ESTABLISHES THEIR R-VALUES

53. Defendants expressly claim that testing supports their R-value claims of R-19.

54. For example, Superior Products created a March 1, 2019 “Technical Data Sheet” about Super Therm, which it posts on the company’s website and includes with shipments of Super Therm. Under the heading, “Tests and Certifications,” the data sheet claims: “Exterior insulation against Solar Radiation – benefit comparable to R 19.” **Exhibit A** at 1.

55. In support of Superior Products’ R-value claims, Defendants have circulated to their distributors several letters and reports purporting to show that Super Therm has an R-value

of R-19. For example, in January 1997, the Thermophysical Properties Research Laboratory, Inc. (“TPRL”) produced a report for Superior Products titled, “Thermophysical Properties of SUPER THERM Coating, Report No. 1780.” Although the report does not state an R-value or even use the term “R-value,” Defendants provided the report to distributors and used it in a promotional video also given to distributors in which Defendants claim the report supports their R-19 claims.

56. On March 7, 1997, a TPRL researcher wrote a two-sentence letter to Defendants that contained an R-19 claim, which Defendants then circulated to distributors. The letter states:

I have reviewed the information provided by Superior Products International II, Inc. on the thermal performance of Super Therm. The combination of it’s[sic] reflectivity, emissivity and thermal conductivity allows it to be a thermal resistor as effectively as fiberglass with a R 19 rating as shown by the Hot Box Test.

57. Superior Products also circulated a one-page letter from VTEC Laboratories, Inc. to its distributors. The January 28, 1998 letter claims: “As stated in the testing report performed at the [sic] Thermophysical Properties Research Laboratory, Inc., the calculated R-value [of Super Therm] is to be RE-19.” Superior Products created a video that visually showcased the afore-quoted sentence and the January 1997 TPRL report, with the voiceover claiming:

In fact, independent laboratory tests, such as the one conducted by Thermophysical Properties Research Laboratory reported that Super Therm stopped 99.5% of the heat conducted in their tests. In fact, Thermophysical Properties Research Laboratory conducted a test that clearly and unequivocally proved that a coat of Super Therm with a thickness no bigger than the a human hair produces an insulation rating that is equivalent to six to eight inches of comparable fiberglass insulation. Imagine that. Super Therm stops heat better than a wall full of harmful fiberglass insulation.

58. Later, Defendants circulated to distributors a May 2, 2013 two-sentence letter from VTEC Laboratories, Inc. to Pritchett, which claims: “SuperTherm can perform as an equivalent R 19 based upon application and test method.”

59. In or about 2017, Superior Products circulated to its distributors a report prepared for it by Inn Choi, Ph.D, in which Choi claims, “a 10-mil [0.01-inch] thickness of SuperTherm is the same as 6 [inches] of fiberglass in Thermal Conductivity.” Choi states that he did not conduct independent testing, and instead reviewed summaries of tests by others provided to him by Defendants without access to the test reports. At least one distributor then posted the report on its website.

60. Superior Products also claims that testing supports its R-value claims by comparing Super Therm to known insulation materials. Defendants’ 2008 brochure claims, for example, states: “Tests prove it. SUPER THERM is the better option.” This appears next to a visual (shown above at ¶ 39) comparing a 0.01 thick coat of Super Therm to 10” fiberglass insulation, 8” of cellulose insulation, and 5.5” of polystyrene foam insulation. **Exhibit B** at 5. The brochure further claims: “SUPER THERM outperforms and outlasts traditional insulation in lab tests and on the field.” **Exhibit B** at 6.

61. After the FTC contacted Superior Products on their website and marketing materials, Defendants continued to claim that testing supports their R-value claims for Super Therm. In a “Thermal Tutorial” section of Defendants’ website, they claim that “Super Therm was tested in the lab and found to have” a “better” R-value, by about 70%, than a test sample of 3-inches of fiberglass.

62. Additionally, Defendants claim that NASA testing supports their insulation claims. A page of Superior Products’s 2015 brochure compares Super Therm to “traditional insulation” and Defendants claims: “Super Therm passed NASA testing with Best Test Result.” **Exhibit D** at 3. Next to that claim is a picture of the Space Shuttle. Defendants claim that Super Therm is based on the ceramics used by NASA to protect the Space Shuttle and that “Super

Therm® was designed and developed with the assistance of NASA, a fact that can be substantiated.”

DEFENDANTS USE A NETWORK OF DISTRIBUTORS TO SPREAD THEIR CLAIMS

63. Superior Products sells Super Therm across the United States through authorized distributors and provides them with marketing materials. Internationally, the company claims to have distributors in at least 40 countries.

64. At all times relevant to this Complaint, these authorized distributors have acted as Superior Products’ agents with actual or apparent authority.

65. Superior Products provided its distributors with product brochures, reports, letters, graphs, charts, and videos created by or for Superior Products that contain Defendants’ claims. The distributors, in turn, spread those claims throughout the United States. Predominately, they did this on their own websites, oftentimes using the exact materials and wording created by Defendants.

66. Superior Products has 15 distributors who sell its products in the United States.

67. Eleven of those 15 distributors have identifiable websites. Of those 11, eight prominently repeated Defendants’ R-value and energy savings claims in April 2019 or later. They do this often by re-publishing Defendants’ materials or making claims based upon the materials distributed by Defendants. For example:

- a. **Arizona Superior Coatings** claims that Super Therm has an “R-19 equivalent rating. (Equal to 6-8 inches of fiberglass)” when applied 0.01 inches thick. The distributor claims Super Therm is “Approved” to achieve an “RE19” rating when applied to the outside *or inside* of a building. The distributor makes multiple energy savings claims about Super Therm, such as “SAVE UP TO 35% ON

YOUR UTILITY BILLS!” and that it produces “[e]nergy savings of 20-70% for air-conditioned buildings.” It also claims: “Super Therm can be used as replacement for traditional insulation on most substrates and in most conditions.” The distributor’s website includes three videos. In the first, the distributor’s owner, Gary Collins, claims: “when applied to your home, you can experience as much as a 45-50% reduction in your utility bill.” In the second video, it is claimed “[w]ith one coating at 16mils wet, or 10mil dry [*i.e.*, 0.01 inches], you’re going to get an R-20 R-factor equivalence.” In the third video, it is claimed that Super Therm “achieve[s] an R-19 insulation value, as tested by independent laboratories, or the equivalent of 6-8 inches of traditional fiberglass batt insulation, with merely a 7 dry mil [*i.e.*, 0.007 inches] coating.”

- b. **Coating Solutions** of Texas claims that using Super Therm provides insulation “[c]omparable to an R19 effect” and that it can be used to “replac[e] the 6 to 8 inches of traditional insulation to block initial heat load.” The distributor republishes a document prepared by Superior Products that claims: “Super Therm has a “R-19 Equivalent Rating (equal to 6-8 inches of fiberglass)[sic] Thickness of a business card, but outperforms fiberglass in laboratory and field testing;” “SUPER THERM (R-19);” and “Super Therm is a certified insulator providing an R-19 equivalent.” The distributor also claims, “Super Therm® can provide energy savings of 20-70%.”
- c. **DW Pearce Enterprises Ltd.** dba Eagle Specialized Coatings and Protected Environments of Canada (serving parts of the United States) republishes many of the R-value tests and documents prepared by or for Superior Products. These

documents claim “R19 is achieved” using Super Therm or that “RE19” is possible with a coating 0.01-inches thick. The distributor further claims Super Therm is a “RE19 [n]on-deteriorating [i]nsulation,” has a “[t]hermal [b]enefit [e]quivalent to R19,” “provides a thermal benefit equivalent to R19 at the very least,” and that painting asphalt roof shingles with Super Therm provides “an additional EFFECTIVE R19 insulation.” It also claims, based on purported testing paid for by Superior Products, “[w]hen SuperTherm is applied at 10 mils [0.01 inches], the improvement to the R Value [of the material to which it is applied] is 68%. Based on the 68% improvement ratio, a minimum R13 material improves to R21.8 by applying 1 coat of SuperTherm.” Elsewhere the distributor claims applying Super Therm to a building will result in “making a 60% improvement” in the structure’s R-value. The distributor also includes an article attributed to bobvila.com with the claim: “SUPER THERM . . . carries an R value of R-19.”

- d. **Innovative Coatings Technologies** of Colorado claims Super Therm has an “R-19 Equivalent Rating (equal to 6-8 inches of fiberglass),” an “R-19 equivalency,” and provides an “insulation value equivalent to R19” when applied 0.01 inches thick (“only the thickness of a business card”). The distributor also claims that using Super Therm “[s]aves [e]nergy [u]sage of 20-70% for air-conditioned buildings during the warmer months, averaging 25%-35% annual total utility savings.” It repeats other energy savings claims made by Superior Products, such as “30% utility savings on homes in Florida,” “76% less energy usage as compared to fiberglass and rock wool” in a home, and a “78% reduction in total energy consumption” of a commercial building.

- e. **RBG Constructors, Inc.** of Mississippi has a video with the following statement about Super Therm: “With one coating at 16mils wet, or 10mil dry, you’re going to get an R-20 R-factor equivalence.”
- f. **Superior Coatings International, Inc.** of California claims Super Therm has an “R-19 Equivalent Rating . . . replacing the 6 to 8 inches of traditional insulation to block initial heat load” and that “Super Therm has been tested to have an RE-19 value compared to traditional insulation.” It also makes the claim that “[a] layer of Super Therm, the thickness of a business card, has the same insulation value as 6 inches of traditional insulation.” The distributor repeats claims by Superior Products that “Super Therm can provide energy savings of 20-70%,” can result in “saving between 40 and 60 percent on your next power bill,” and that “Super Therm is 296% more effective than traditional insulation under identical conditions and shown to be stable all day in field studies by Sony, UPS and others.”
- g. **Superior Products Coatings, Inc.** of Georgia claims: “Because of special ceramic used Super Therm has a high emissivity, the ability to block heat transfer, block air and moisture infiltration, this results in a performance, comparison wise, of better than a R-19.” The distributor uses the visual shown in ¶ 37, *supra*, and the claim, “[i]n fact, a layer of SUPER THERM no thicker than a single business card provides the same protection as 6 inches of fiberglass.” For Sunshield, the distributor claims the product “[s]hatters air conditioning costs.”
- h. **Superior Coating Solutions LLC** of New York claims: “While Super Therm handles heat transfer differently than traditional insulation such as fiberglass,

spray foam, polyisocyanurate, or polystyrene, the overall heat loss/gain or energy savings would be comparable to that of using traditional R-19 insulation.” It further claims that Super Therm results in energy savings of “20-70% depending on use” and claims, “Super Therm is 296% more effective than traditional insulation under identical conditions and shown to be stable all day in field studies by Sony, UPS and others.”

68. R-value claims sourced from materials provided by Superior Products appeared ubiquitously on distributors’ websites after May 13, 2020, and many continue to be displayed.

For example:

- a. **DW Pearce Enterprises Ltd.** dba Eagle Specialized Coatings and Protected Environments of Canada (serving parts of the United States) includes a brochure prepared by Superior Products that claims Super Therm has an “RE 20” when two coats are applied at 10 mils each and “RE 19” when one coat is applied at 10 mils.
- b. **Superior Products Coatings, Inc.** of Georgia included a different brochure prepared by Superior Products that claims testing shows that Super Therm has “148% better performance than [three inches of] fiberglass” batt insulation by having a lower k value, and thus, a higher R-value than the fiberglass.
- c. **Coating Solutions** of Texas claims on its website that Super Therm “can be used as replacement for traditional insulation on most substrates and in most conditions,” and includes a claim that testing establishes Super Therm has a much lower thermal conductance, and thus, higher R-value than fiberglass insulation.
- d. **Real Invention Enterprises (USA) / Resonant Innovative Technologies LLP (India)** posted a video on YouTube.com on June 23, 2020 that is still displayed

that states, “[TPRL] conducted a test that clearly and unequivocally proved that a coat of Super Therm with a thickness no bigger than a human hair produces an insulation rating that is equivalent to six to eight inches of comparable fiberglass insulation.” The video has extensive visuals of a residential home when discussing Super Therm. The distributor’s website contains another video about Super Therm (posted to YouTube February 26, 2020 and still present today) being applied to a residential container home with the statement, “With one coating [of Super Therm] at 16mils wet, or 10mil dry, you’re going to get an R-20 R-factor equivalency.” Another video still on the distributor’s website today (posted to YouTube.com on February 26, 2020), states the ceramics in Super Therm “have allowed this coating to achieve an R-19 insulation value as tested by independent laboratories, or the equivalent of six to eight inches of fiberglass.”

- e. **NEOtech Coatings Australia Pty Ltd** (“NEOtech”) posted a video to YouTube on April 22, 2020 that is still present today and claims that testing shows Super Therm is as effective “as fiberglass with an R 19 rating.” The distributor had a page on its website, as of May 20, 2021, titled “Super Therm insulation coatings for residential use,” describing Super Therm used on residential homes with the claim, “Super Therm Blocks 95% of Heat.” After the FTC showed that page to Defendants, it was removed, but the distributor continues to make other claims about Super Therm applied to residential homes in Florida and Nevada, and claims Super Therm “Insulates[;] 95% Heat Block.”
- f. **Power Correction Systems, Inc.** includes on its website a “Certificate of Insulation” signed by JE Pritchett and stating: “Tested, analyzed, and measured

for Thermal Insulation value of RE 19.” Its website further calls Super Therm “R19 Insulation.”

- g. South Point International Inc.** claims on its website that “Super Therm has been tested to have an RE-19 value compared to traditional insulation.” It further claims that the basis for Super Therm’s “RE-19 value” is “the ASTM C-236 hotbox, BTU conduction test, Merrimac testing performed on shipping containers, and tests by VTEC laboratories.” South Point also claims that “Super Therm can be used as a replacement for traditional insulation on most substrates and in most conditions.” Its website also contains brochures and technical data sheets created by Superior Products that claim variously that Super Therm has an “RE 19” and “RE 20” depending on the number of coats applied. Those marketing materials also claim that users can “apply a R-19 equivalent rating to your facility with a single coat” and that “a layer of Super Therm no thicker than a single business card provides the same protection as 6 inches of fiberglass” insulation and that Super Therm provides a “benefit comparable to R 19.”

69. Beginning in early 2020, NEOTECH sent marketing videos about Super Therm to Pritchett for review and approval that were based on claims from Superior Products. Pritchett reviewed and provided editorial comments. When a question was raised about Defendants’ dealings with the FTC and NEOTECH’s claims, for example, that “Super Therm® Insulation Coating blocks 95% of heat - 99% BTU Rating Tested,” Pritchett responded on April 1, 2020, “you are not in the US and can do this,” and then, “No restriction. Use them.” On April 8, 2020, Pritchett sent links to NEOTECH’s Super Therm YouTube videos to Superior Products’ distributors in the United States and elsewhere, stating, “Shane in Australia put these videos

together to help everyone out with marketing.” On May 1, 2020, Pritchett told NEOtech and Superior Products’ U.S. employees, “The video collection is perfect for everyone to use,” and offered Superior Products’ “help . . . to get them on line or into YouTube for public view.” On May 13, 2020, Pritchett informed U.S. distributors about the videos “that you can download and use” and added, “I encourage you to make contact with Shane and discuss how best to set this up for your own ... use.” On December 16, 2020, Pritchett again promoted a Super Therm marketing video by NEOtech to distributors in the United States, telling them, “it is fantastic” and describing NEOtech’s website as “very good.”

70. Consumers in the United States, including residential homeowners, see the claims made by Superior Products’ foreign distributors and contact them for information. Those U.S. consumers are then referred to Superior Products or its U.S. distributors for sales. Based on Defendants’ emails and sworn testimony, this practice occurred prior to May 13, 2020 and continues today.

71. Additionally, distributors make claims directly to consumers. A Superior Products distributor told a consumer in 2017: “The Super Therm coating application is a thick as a business card and carrying an $R = 19$ which results in a very thin ceramic coating that repels sunlight heat and keeps internal heat from escaping through the cold roof.”

**DEFENDANTS’ R-VALUE AND ENERGY SAVINGS
CLAIMS ARE FALSE OR UNSUBSTANTIATED**

72. Super Therm and Sunshield do not significantly restrict heat flow, let alone to the extent claimed by Defendants. Indeed, the R-value of Super Therm applied to the thickness Defendants instruct is considerably less than R-1.

73. In 2009, the Cold Climate Housing Research Center (“Climate Center”), a group not affiliated with Defendants, tested Super Therm and a similar product by a different

manufacturer. The Climate Center’s report concluded: “Neither product contributed to the R-value of the building material on which they were applied” and “[t]he coatings did not demonstrate an energy savings in the realistic box tests we conducted.”

74. In January 2012, TPRL, the laboratory that Defendants claim had determined Super Therm has an R-19 value, rebuked Defendants’ claim. Under the title, “Insulation Paint Claims,” TPRL posted this warning on its website:

Beware of Insulated paint or ceramic type products that claim wild insulation values. TPRL Inc. would like to counter misinformation concerning various claims about insulated paint products that our company has tested If you find a copy of [sic] TPRL 1780 report [*i.e.*, the report on Super Therm] on the web you will notice that no R values are in the report. Our company did provide a memo that stated that a R19 value was possible under certain conditions which included how the HotBox[sic] test was done. The HotBox[sic] test, performed by another company, used a coating of insulated paint on top of a[sic] insulating media to get a R19 value. In real world conditions you will not get a R value of 19 from these insulated paints.

75. Based on the data compiled by TPRL in its original report, the R-value of Super Therm can be determined to be approximately R-0.00265.

76. In 2017, Superior Products prepared an energy savings analysis for a potential client that more accurately reflected the true R-value of Super Therm. In their calculations, Defendants identified Super Therm as having an R-value of R-0.00258 when applied 0.01 inches thick.

77. Most recently, Superior Products admitted during the FTC’s investigation: “Super Therm is a coating and cannot have a R-value or a R-value equivalency based upon established criteria [Superior Products] clearly understands that a coating such as Super Therm cannot have a R-value.”

78. This admission mirrors a prior acknowledgment by Defendant Pritchett. In October 2009, an energy efficiency newsletter published a response by Pritchett to the Climate Center report described in ¶ 73, which had concluded after testing that Super Therm did not contribute to a building's R-value. In response, Pritchett conceded: "Super Therm does not have an R value because an R value measures *only* thermal resistance (absorb and resist heat transfer) and requires thickness."

79. Despite these concessions, Defendants continued to make numerous R-value, R-value equivalency, and energy savings claims in their marketing materials, in public statements, and on the Superior Products website when the FTC contacted them in April 2019. While Defendants removed some false or unsubstantiated claims, they continue to make others.

DEFENDANTS' CLAIMS ARE MATERIAL

80. Defendants tout their products' purported R-values, insulating benefits, and energy saving capabilities to consumers as a basis of superiority over paints and other coatings.

81. Defendants state in marketing materials and public statements, for example, that:

- a. "We estimate a home can save up to 40 to 50 percent in energy costs using our product."
- b. Using Super Therm results in a "26% - 30% increase in energy efficiency."
- c. Using Super Therm results in "40% savings in A/C operational cost" and 22% in "total utility savings."
- d. Super Therm has been "[s]hown in field usage to save between 40% and 70%."

DEFENDANTS PROVIDED THE MEANS AND INSTRUMENTALITIES FOR THE COMMISSION OF DECEPTION

82. Defendants provided their promotional materials, third party reports, and related documents containing false and deceptive claims to their distributors.

VIOLATIONS OF THE FTC ACT

83. Section 5(a) of the FTC Act, 15 U.S.C. § 45(a), prohibits “unfair or deceptive acts or practices in or affecting commerce.” Misrepresentations and unsubstantiated claims constitute deceptive acts or practices prohibited by Section 5(a) of the FTC Act.

COUNT I **False or Unsubstantiated Performance Claims**

84. In numerous instances in connection with the advertising, promotion, offering for sale, or sale of Super Therm and Sunshield, as described in Paragraphs 24-52, Defendants have represented, directly or indirectly, expressly or by implication, that:

- A. Super Therm has an R-value of R-19, or provides a benefit equivalent to R-19.
- B. Sunshield has similar performance characteristics as Super Therm.
- C. Using Super Therm or Sunshield will save consumers a significant amount of money, including of up to 78% on existing energy bills.

85. The representations set forth in Paragraph 84 are false and misleading and were not substantiated at the time the representations were made.

86. Therefore, the making of the representations as set forth in Paragraph 84 constitute deceptive acts or practices in violation of Section 5(a) of the FTC Act, 15 U.S.C. § 45(a).

COUNT II **False Establishment Claim of R-values**

87. In numerous instances in connection with the advertising, promotion, offering for sale, or sale of Super Therm and Sunshield, as described in Paragraphs 53-6261, Defendants have represented, directly or indirectly, expressly, or by implication, that testing establishes an R-value or R-value equivalent of R-19 for Super Therm.

88. In truth and in fact, testing does not establish these R-values.

89. Therefore, the representations in Paragraph 87 are thus false or misleading and constitute deceptive acts or practices in or affecting commerce in violation of Section 5(a) of the FTC Act, 15 U.S.C. § 45(a).

COUNT III
Means and Instrumentalities

90. By furnishing distributors with promotional materials for Super Therm, including materials such as brochures and third-party reports, that make false or misleading representations, Defendants have provided the means and instrumentalities that constitute deceptive acts or practices in or affecting commerce in violation of Section 5(a) of the FTC Act, 15 U.S.C. § 45(a).

VIOLATIONS OF THE R-VALUE RULE

91. The R-value Rule was issued by the Commission under Section 18 of the FTC Act, 15 U.S.C. § 57a. The Rule became effective on September 29, 1980. The Commission amended the Rule on March 28, 1996, May 31, 2005, and May 13, 2019, under Section 18 of the FTC Act, 15 U.S.C. § 57a, and these amendments became effective on April 29, 1996, November 28, 2005, and May 13, 2020, respectively. The Rule specifies substantiation and disclosure requirements for insulation products used in the residential market, for non-insulation products marketed with R-value claims, and prohibits certain claims unless they are true.

92. Section 460.5 of the Rule requires that R-values given in labels, fact sheets, advertisements, and other promotional materials must be based on tests conducted under the methods listed in the Rule.

93. Section 460.22 of the Rule requires that where an advertiser makes an R-value claim for an product, other than a fenestration-related product, that is not home insulation and is

marketed in whole or in part to reduce residential energy use by slowing heat flow, the advertiser must test the product pursuant to Section 460.5 using a test or tests in that section appropriate to the product. Section 460.22 of the Rule also requires that “[a]ny advertised R-value claims must fairly reflect the results of those tests.”

94. Pursuant to Section 460.1 of the Rule, 16 C.F.R. § 460.1, and Section 18(d)(3) of the FTC Act, 15 U.S.C. §57a(d)(3), a violation of the R-value Rule constitutes an unfair or deceptive trade practice in or affecting commerce, in violation of Section 5(a) of the FTC Act, 15 U.S.C. §45(a).

Count IV

Violations of the R-Value Rule

95. In numerous instances, in connection with the advertising, promotion, offering for sale, or sale of Super Therm and Sunshield, as described in paragraphs 13-18, 41-52 and 68-70, Defendants have represented, directly or indirectly, expressly or by implication that:

- A. Super Therm has an R-value of R-20, R-19, or provides a benefit equivalent to R-20 or R-19.
- B. Super Therm has an R-value that is higher than 3-inches of fiberglass batt insulation or that is the same as 6-inches of fiberglass batt insulation.
- C. Sunshield has similar performance characteristics as Super Therm.
- D. Super Therm and Sunshield reduce residential energy use by slowing heat flow.

96. The R-value claims set forth in Paragraph 95 were based on testing that did not comport with the testing described in Section 460.5 of the Rule or did not fairly reflect the results of such testing, as set forth in Paragraphs 72-79.

97. Therefore, the acts or practices as set forth in Paragraphs 95-96 violate the R-value Rule, 16 C.F.R. §460.22.

CONSUMER INJURY

98. Consumers are suffering, have suffered, and will continue to suffer substantial injury because of Defendants' violations of the FTC Act and the R-value Rule. In addition, Defendants have been unjustly enriched as a result of their unlawful acts or practices. Absent injunctive relief by this Court, Defendants are likely to continue to injure consumers, reap unjust enrichment, and harm the public interest.

PRAYER FOR RELIEF

99. Wherefore, Plaintiff FTC, requests that the Court:
- A. Enter a permanent injunction to prevent future violations of the FTC Act by Defendants;
 - B. Award monetary and other relief within the Court's power to grant; and
 - C. Award Plaintiff the costs of bringing this action, as well as such other and additional relief as the Court may determine to be just and proper.

REQUEST FOR PLACE OF TRIAL

Plaintiff hereby requests that trial of the above-entitled matter be held in the City of Kansas City, Kansas

* * *

Respectfully submitted,

DUSTON J. SLINKARD
Acting United States Attorney

s/ Jon P. Fleenor

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Dated: August 30, 2021

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Commission

INDEX OF EXHIBITS TO
PLAINTIFF FEDERAL TRADE COMMISSION'S
FIRST AMENDED COMPLAINT

Exhibit A: Super Therm Technical Data Sheet (3/1/19)

Exhibit B: Super Therm Brochure (2008)

Exhibit C: Bobvila.com Article by B. Hardy

Exhibit D: Super Therm Brochure (2015-2021)



SUPER THERM®

Technical Data Sheet

(3/1/19)

DESCRIPTION

SUPER THERM® is a water-borne combination of high-performance aliphatic acrylics, urethanes and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, SUPER THERM® contains 4 unique ceramics to block heat gain into the surface upon which the coating film is applied. SUPER THERM® resists 95% of Solar heat blocking Visual Light, Ultra Violet (UV), and Infrared (IR). SUPER THERM® is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.

TYPICAL USES

- As a one-coat insulation system on exteriors to block the migration of Solar Heat gain (roofs and side walls).
- As an insulation system for interior applications to seal and block IR heat loss and ambient heat loss.
- For interior insulation uses see number three in testing
- Exterior application to reduce or eliminate condensation on HVAC systems, tanks, spheres, storage systems, and concrete walls.
- As a system over metal, concrete, masonry, and wood to stop moisture penetration and corrosion.
- Ability to resist dirt, mold, mildew, and pollution to increase longevity, and reduce surface maintenance.
- As a topcoat over metal roofs, or an intermediate coat on flat roofs.
- Applied over tent fabrics to provide insulation & remain flexible.
- Applied to tilt-up concrete walls to hold interior heat.

APPLICATION METHODS

SUPER THERM® can be applied to metal, concrete, masonry and wood. The application can be spray, brush or roller. For specific instructions on surface preparation, mixing and application, please refer to the SPI's application instructions for SUPER THERM®. This coating should never be applied at less than 17 mils wet (425 microns), 10.0 mils dry (250 microns), each coat.

TESTS AND CERTIFICATIONS (partial list)

1. Exterior insulation against Solar Radiation - benefit comparable to R 19
2. Blocks 99.5% of infrared / up to 68% sound blockage
3. Interior- ASTM C1363 (Guarded Hot Box), E1269 and E1461-92 (Blocking heat through coating Film)
4. UL (Underwriters Laboratory) approved
5. Flame Spread Test (ASTM E84; 0 smoke, 0 flame)
6. Class "A" Flame Spread
7. Marine Approvals: - American Bureau of Shipping; USCG
8. UV & Salt Spray Resistance (ASTM 5894) 5000 hours
9. USDA Approved
10. Flexibility (ASTM E1737): 180 degree bend - passed
11. Adhesion ASTM (D4541): 115.2psi, not suitable for films <5 mils
12. Perm Rating (ASTM d1653-13): 10 dry mils=8perms; 12 dry mils=4perms
13. Abrasion Resistance (ASTM D4060): 3,000 cycles
14. Resistance to Salt Spray: 2,000 hours
15. Resistance to Wind Driven Rain (ASTM D6904)
16. Airforce Canopy: MIL-PRF-6799

PHYSICAL DATA

- ◆ Solids: By weight 70% / By Volume: 60% (+/-2%)
- ◆ 30-60 minutes to tack free at 70°F (21°C)
- ◆ Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- ◆ Full Cure: 21 days
- ◆ Lead-, chromate-, and asbestos-free
- ◆ Cures by evaporation
- ◆ Weight: 11.72 lbs. per gallon
- ◆ Vehicle Type: Urethane/Acrylic blend
- ◆ Shelf Life: Up to 5 years if unopened under appropriate storage conditions (See MSDS).
- ◆ VOC Level: 67.2 grams/liter, 0.561 gal/lbs.
- ◆ Viscosity: 105 – 110 KU; 25,000 Centipoise
- ◆ pH: 8.5 – 9.5
- ◆ 95 sq.ft./gallon (8sqm): 17 mils (425 microns) wet / 10.0 mils (250 microns) dry
- ◆ Maximum Surface Temperature when applying: 150° F (65°C)
- ◆ Minimum Surface Temperature when applying: 40°F (5°C)
- ◆ Maximum Surface Temperature after curing: 300°F (149°C)
- ◆ Do not apply over 18 mils wet per application. Allow to dry down before adding additional thickness.

MEETS MIL SPEC: MIL-PRF-6799L

SAFETY PRECAUTIONS

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: proper ventilation, use of proper lamps, wearing of protective clothing and masks, tenting, and proper separation of application areas. For more specific safety procedures, please refer to the SUPER THERM® Material Safety Data Sheet. **KEEP OUT OF REACH OF CHILDREN.**

LIMITATION OF LIABILITY: The information contained in this data sheet is based upon tests that we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by SPI, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge is reliable. The products and information are designed for users having the requisite knowledge and industrial skills, and the end-user has the responsibility to determine the suitability of the product for its intended use.

SPI has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, SPI does not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The information contained in this data sheet is subject to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues and the user has the responsibility to ensure that this sheet is current prior to using the product.



Application Instructions (2/28/19)

SUPER THERM® is a water-borne combination of high-performance aliphatic urethanes, elastomeric acrylics, and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, **SUPER THERM®** contains 4 unique ceramics to block up to 95% of Solar Heat entering a structure due to Visual Light, Ultra Violet (UV), and Infrared (IR). **SUPER THERM®** is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.

SURFACE PREPARATION

Surface must be clean from oil, tar, rust, grease, salts, and films.

- 1) Use general degreaser if needed.
- 2) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
- 3) Pressure-wash if possible @ 3500 psi.
- 4) Salt contamination on a surface can come as a result of salt water, fertilizers, and car exhaust. Use Chlor-Rid or equivalent to decontaminate surface if salts are present. Acceptable levels: Nitrates: 5-10 mcg/cm², Sulfates: 5-10 mcg/cm², Chlorides: 3-5 mcg/cm²

Surface must be completely dry before applying.

- 1) **SUPER THERM** must be applied during proper temperatures (below) and the prescribed overcoat window of the coating over which it will be applied.
- 2) Maximum Surface Temperature when applying: 150°F (65°C)
- 3) Minimum Surface Temperature when applying: 40°F (5°C)
- 4) Maximum Surface Temperature after curing: 300°F (149°C)

NOTE: Use Rust Grip® as a primer when needed. Refer to Rust Grip technical data sheet for overcoat window.

NOTE: If pack rust or mill scale exist, it must be removed by grit blast, power tool or needle gun. Once removed, begin with Step 1 (power wash).

NOTE: Harsh environments where color is desired, or where pooling may occur: **SUPER THERM®** should be over coated with ENAMO GRIP (solvent based) over metal or concrete, and SP SEAL COAT over flexible surfaces (foam, tar, rubber and wood).

NOTE: Modified bitumen, asphalt roofing, PVC, TPO and single-ply membranes must be primed with the appropriate primer (i.e. Super Base/HS or SP Single-Ply Primer).

MIXING

SUPER THERM® should be mechanically mixed or mixed by hand (boxing) for three minutes, then applied.

APPLICATION

SUPER THERM® can be applied by brush, roller or spray; however, the preferred method is by air or airless sprayer. It should never be applied directly over rust, nor should it ever be diluted or thinned.

- 1) If application is by brush, use a soft bristle brush.
- 2) If application is by roller, use a 3/4 inch nap roller.
- 3) If application is by spray, use a standard airless sprayer (2 gallons/minute at 3,300 psi.) with a .029-.033 tip according to fan width spread of application and pump pressure. To achieve proper thickness, temperature and humidity must be considered by applicator.

- **NOTE:** The number of applications and the thickness of each should be in accordance with the job specifications.
- **NOTE:** All filters should be removed from both the gun handle and spray machine prior to application, as they will trap the ceramics.
- **NOTE:** Temperatures must always be a minimum of 5 degrees above the dew point during application.
- **NOTE:** If **SUPER THERM®** is applied during a period of extremely high humidity or if there is rain soon after the application, bubbles may appear on the surface. Do not puncture these bubbles. This is normal and the coating will continue to cure with no effect on the performance or appearance of the coating. Bubbles will dry down tight and disappear without a trace or imprint.
- **NOTE:** 2" corrugation = roof size x 135%; 2.5" corrugation = roof size x 145%; 3" corrugation = roof size x 160%

MINIMUM SPREAD RATES (mil thickness)

SUPER THERM® will be applied at no less than a total of 17 mils wet (425 microns)/10.1 mils dry (250 microns) for each application. Spread Rate is 95 sq ft per gallon. (8.8 sq meter per gallon)

CURE TIME

- 1) 30-60 minutes to tack free at 70°F (21°C)
- 2) Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- 3) Full Cure: 21 days

TEMPERATURE

- 1) Apply between 40°F. and 150°F.
- 2) Store between 40°F. and 100°F.

CLEAN-UP EQUIPMENT

- 1) After completion, spray system should be cleaned with soap and water; cleaned brushes and rollers can be reused.

SAFETY DATA SHEET (ST/11/00)

pg 1 of 2

SECTION I - IDENTIFICATION OF THE PRODUCT AND THE COMPANY:

PRODUCT NAME: Super Therm (UPC#851207002003, SKU#768399, Part#0311)
 GHS PRODUCT IDENTIFIED: Global Harmonized System #3209.10.000
 CHEMICAL TYPE: Waterbased coating
 MANUFACTURER: Superior Products International II, Inc.
 ADDRESS: 10835 W. 78th St., Shawnee, KS 66214 USA
 PRODUCT USE: Insulation coating to create thermal barrier on substrates
 EMERGENCY TELEPHONE NUMBER: 800/424-9300; 202/483-7616

SECTION II - HAZARD IDENTIFICATION:

This product is water-based and not classified as dangerous for supply or conveyance. The ingredients are water-reduceable. This product has been analyzed for use in and around food manufacturing and found to be safe for use on non-contact surfaces. No toxics nor toxic off-gassing are present.

SECTION III - HAZARD INGREDIENTS:

<u>Hazardous Ingredients</u>	<u>%</u>	<u>CAS/PIN</u>	<u>LD-50 (species/route)</u>	<u>LC50 (species)</u>
texanol	0.5	25265-77-4	3200 mg/kg (oral, rat)	NAV
mica/additives	14.0	12001-26-2	NAV	NAV

This material does not pose a potential risk of inhalation in the solution mixture contained herein.
 waterborne

polyurethane	10.0	58043-05-3	NAV	NAV
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SECTION IV - FIRST AID MEASURES:

EYES: Flush with water for at least 15 minutes; consult physician if irritation continues.

INGESTION: Do not induce vomiting. Drink 1-2 glasses milk/water. Seek medical attention according to amount of product ingested.

SKIN: Wash with mild soap and water.

INHALATION: Remove to fresh air.

SECTION V - FIRE FIGHTING MEASURES:

CONDITIONS OF FLAMMABILITY: Not flammable; water-based product

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, methacrylate and other noxious gases

AUTOIGNITION TEMP.: NAP MINIMUM IGNITION ENERGY: NAV

FLAMMABLE LIMITS: (Lower) NAP% (Upper) NAP% FIRE POINT: NAV

FLASH POINT & METHOD: NAP SENSITIVITY TO MECHANICAL IMPACT? No

SENSITIVITY TO STATIC DISCHARGE? No

SPECIAL PROCEDURES: Firefighters should wear full-body protection & SCBA

MEANS OF EXTINCTION: Water, water fog, dry chemical, foam or CO2

SECTION VI - ACCIDENTAL RELEASE MEASURES:

Use kitty litter, sand or other to control spread and absorb liquid.

SECTION VII - HANDLING AND STORAGE:

STORAGE REQUIREMENTS: Keep from freezing. Store below 50C. degrees. Keep container closed tightly to prevent drying out.

HANDLING PROCEDURES/EQUIPMENT: Treat as paint product. Use ventilation and protective equipment to suit conditions of use. Use soap and water for clean-up.

NAP = Not Applicable

NAV = Not Available

PRODUCT NAME: Super Therm

pg 2 of 2

SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PERSONAL PROTECTIVE EQUIPMENT: Avoid inhalation of liquid when applying. Use particulate respirator.

ENGINEERING CONTROLS: Use mechanical ventilation to control aerosol or mist if product is sprayed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: Liquid SOLUBILITY IN WATER: soluble/miscible
 APPEARANCE AND ODOR: white color, mild acrylic odor
 FREEZING POINT: 30F. degrees BOILING POINT: 192C degrees pH: 8
 SPECIFIC GRAVITY: 1.4 ODOR THRESHOLD: 0.08-25ppm
 COEFF. WATER/OIL: NAV VAPOUR PRESSURE: 17 mmHg @ 20C degrees
 VAPOUR DENSITY (Air=1): 2.1
 EVAPORATION RATE: slow% VOLATILES: less than 5

SECTION X - STABILITY AND REACTIVITY DATA:

CONDITIONS OF REACTIVITY: stable CONDITIONS OF INSTABILITY: stable
 CHEMICAL INCOMPATIBILITY: strong acids or bases CORROSIVE BEHAVIOR? no
 HAZARDOUS DECOMPOSITION PRODUCTS: none known, no hazardous polymerization

SECTION XI - TOXICOLOGICAL PROPERTIES:

ROUTES OF ENTRY: SKIN CONTACT ___ SKIN ABSORPTION ___ EYE CONTACT X
 INHALATION ___ INGESTION X SYNERGISTIC PRODUCTS None Known
 EXPOSURE LIMITS: mica 3 mg/m³ (ACGIH)
 EFFECTS OF ACUTE EXPOSURE: liquid splash could result in eye or nose irritations and/or headache
 EFFECTS OF CHRONIC EXPOSURE: excessive exposure to liquid product may result in minor irritations
 MUTAGENICITY: NAP TERATOGENICITY: NAP
 REPRODUCTIVE TOXICITY: NAP CARCINOGENICITY: ingredients not listed
 SENSITIZATION: not expected
 IRRITANCY: possible skin or eye irritation if not washed off

SECTION XII - ENVIRONMENTAL INFORMATION:

Air -this product is environmentally-friendly and poses no threat to the air.
 Water -the resins will be diluted and dissipate when flushed with water.
 Soil -the resin contents are biodegradable in ground acids over a period of time.
 No ecological hazards are known to exist.

SECTION XIII - WASTE DISPOSAL:

Product spill should be contained by previously described absorption methods, and dried product disposed of as normal industrial waste according to all federal, state or governmental regulations.

SECTION XIV - TRANSPORT INFORMATION:

The only restriction to carriage is for protection against freezing. Contents are water-based.

SECTION XV - REGULATORY INFORMATION:

Regulatory agency controls and restrictions are minimal regarding conveyance or use of water-based products other than what has been specifically addressed.

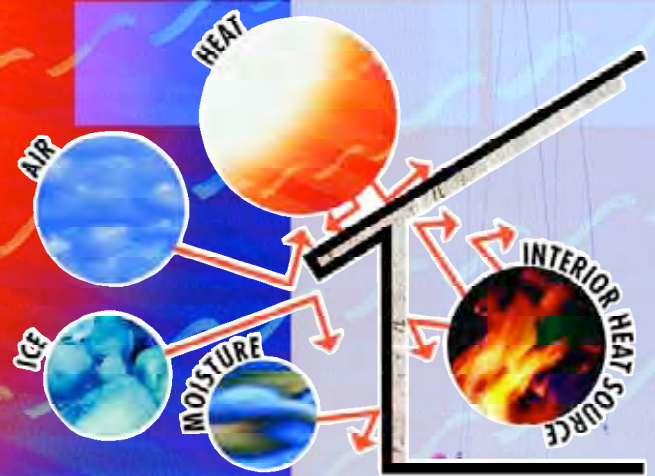
SECTION XVI - OTHER INFORMATION:

.....
 PREPARED BY: J. Pritchett, Superior Products Int'l Inc.

DATE: 9/11/18

SUPER THERM[®]

WHEN IT COMES TO INSULATING
AND WEATHERIZING, NOTHING RATES
HIGHER THAN SUPER THERM[®].



- Blocks 95% of Heat Load (blocks the absorption and transfer of heat)
 - 99% of Ultra Violet Radiation (UV)
 - 92% of Visual Light (Short Wave Radiation)
 - 99.5% of Infra Red (Long Wave Radiation)
- Blocks Water and Moisture Penetration—certified and tested water barrier
- Blocks Mold, Mildew, Wood Rot
- Blocks Air Infiltration—permanently flexible windbreaker and wind barrier
- Blocks 68% of All Sound Waves—sound deadening
- Blocks Flame Spread and Smoke—Class "A" Fire Rating ("0" Flame Spread and Smoke)
- Interior insulation by emissivity (0.91), moisture block and air block to hold convective heat inside a room



SUPERIOR PRODUCTS
INTERNATIONAL II, INC.[®]

Challenge: *No other insulation or weatherization material in the market has the facts, tests results and field studies to compare with SUPER THERM®. There is no product in the world market with the proof of performance equal to SUPER THERM®. Forget the pretty brochures and advertising media and look at the facts to see the real value of SUPER THERM®.*

1. High Reflectivity of Radiation Heat Transfer (sum of all three radiation waves) is 95% to block the loading of heat onto the surface.

a. UV represents 3% of heat load SUPER THERM blocks 99% of heat generated by UV.

b. Visual Light (short wave radiation) represents 40% of heat load-SUPER THERM blocks 92% of heat generated by Visual Light.

c. Infrared (long wave radiation) represents 57% of heat load-SUPER THERM blocks 99% of heat generated by Infrared.

2. High Thermal Emittance to throw off heat that has loaded onto it's surface. SUPER THERM has a thermal emittance of 0.91.

REGISTRATIONS AND CERTIFICATIONS:

3. American Bureau of Shipping (ABS)

a. Passed SOLAS 1974 (as amended) requirements for paints/finish materials requiring compliance with Parts 2 (Smoke & Toxicity) and 5 (Surface Flammability) of the IMO FTP Code, Res.MSC.61(67).

b. U.S. Type Approval Certificate No. SL520997-a

c. E.C. Type Approval Certificate No. 04-CH 468315-MED1

d. U.S. Coast Guard Product Approval No. 164.112/EC1347/4368315/EC0729

4. Energy Star Program

Approved Partner/ Approved Product
a. Only 0.6% drop in reflectivity over a 3 year roof test period (2% over 10 years).

5. ICC (International Code Council)

BOCA Legacy Report.

6. USDA (United States Dept. of Agriculture)

a. USDA approved product for use inside food facilities.

7. Marine Approvals of World-wide Salt Water and Maritime Use

a. DNV (Det Norske Veritas)

8. Factory Mutual Approval

a. Tested and approved for Metal Roofing

9. GSA Approval for Federal Uses

10. UL (Underwriters Laboratory, Inc.) approval

11. ECAP Report: Energy Conservation Assistance Program Department of Energy-United States of America-Florida Energy Office

12. State of California Cool Roof Program

a. Approved and listed

13. State of California Bureau of Home Furnishings and Thermal Insulation

a. License Number TE 1392

14. State of Florida Energy Rebate Program

a. Qualifies for a percentage reduction from cost of coating substrates

15. Superior Products International II, Inc. is an active member of the NRCA (National Roofing Contractors Assoc)

16. ASTM TEST LISTINGS:

a. B117/D 1654 Salt Fog (400 hours and 2000 hours)-passed

b. C 236 - 89 (93) Thermal Transmittance/Conductance

i. Fiberglass 0.52 K

ii. SUPER THERM in one coat 0.31 K

iii. SUPER THERM in two coats 0.21 K

c. C411 High-Temperature Surface Performance

20th Century Insulation Theory: "R" value – load heat and then resist heat transfer through the material.

21th Century Insulation Theory:
BLOCK HEAT LOAD. Prevent heat load into the surface to reduce heat that is available for transfer.

d. C412 Tensile Properties-444 psi

e. D522 Mandrel Bend on metal or rubber materials

f. D1653 Water Vapor Permeability 3%

g. D3273-82T/ D3274 Fungal Resistance

h. D4060 Abrasion Resistance

i. E 84/NFPA 255/UL723/UBC42-1/ANSI2.5/FM E 84 – Flame Spread / Smoke-"O" Class A or 1

j. E 84-89 Flame spread/ Smoke Development-Flame "O" and Smoke "O"

k. E96 Water Vapor Transmission-Less than .01

l. E108 Flame Spread on Pitched Roof -passed

m. E903-96 Spectral Reflectance 80% and 0.6% loss after three years weathering.

n. E 1269 Heat Capacity by Differential Scanning Colorimeter

o. E 1461 (92) Thermal Diffusivity/ Conductivity by Flash Method-reduced 367.20 BTU conduction to 3.99

p. G53 1000 hours UV Exposed

q. D 7088 (Superseded Federal Specification TT-P-1411A Paint) hydro-static pressure resistance of a submitted water proof coating over concrete interior surface to prevent exterior rain driven water from penetrating the wall from exterior to interior during construction.
r. D 6904 resistance to wind driven rain for exterior coatings applied to masonry without block filler in test blocks. Superseded Federal Specification TT-C-555 B. SUPER THERM is a certified water barrier.

s. D-3274 numerical basis for rating the degree of fungal growth or mold and dirt accumulation on paint films. Resist the development of mold and mildew and not allow the growth over it's surface. Score 9 out of 10.

t. E90 Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
u. E413 Standard Classification for Determination of Sound Transmission Class.

17. NASA (National Aeronautics and Space Administration) Testing:

a. NASA 8060.1B/C Test 1 Flammability test, Class A, "O" Flame Spread

b. NASA 8060.1C Test 7 Toxic Off-gassing Test, K rated (no off-gassing).

18. ABS (American Bureau of Shipping), IMO (International Marine Organization), and US Coast Guard Approval:

a. IMO A. 653 (16) Flame Spread-passed

b. MSC 41 Smoke Toxicity-passed

19. Japanese Testing (Japanese Institute of Technology):

a. JIS A 5759 Reflectivity Light and Radiation

i. Visual Light Ration- 92.2 %

ii. Long Wave Radiation (Infrared)-995%

20. China Center for Technical Testing:

a. National Measurement M0729

b. GB/T 1771-91 Resistance to Salt Fog (2000 hours)-passed

c. GB/T 1866-88 Manual Aging (2000 hours)-passed

d. GB/T 10834-88 Resistance to Salt Water (1000 hours)-passed

e. GB/T 5219-85 Adhesion (pulling apart method) - 4.07 MPa

f. GB/T 1733.93 Boiling Water Immersion (8 hours)-passed

**21. ECAP Report–Florida Energy Office
DENVER COLORADO LOCATION**

- a. Reduction of 202 BTU load over roof and wall surfaces.
- b. Over the 24 hour test period, total cloud cover and still produced a 26% savings in energy usage for heat /cool.
- c. SUPER THERM sealed and reduced moisture load into the surfaces and therefore into the building.
- d. 25% of heating and cooling cost is dehumidification.
- e. Standard building constructed and coated with white paint required 1,037 BTU to maintain comfort.
- f. SUPER THERM coated building required 766 BTU to maintain comfort – 26-30% savings.
- g. SUPER THERM reduces the Heat Island Effects.

**22. ECAP Report–Florida Energy Office–
Miami Florida Location–only roof was coated for test**

- a. SUPER THERM reduced solar heat load by 20-30%.
- b. Reduced interior ambient temperature of rooms by 2.3° F (with the roof coated). ConEdison reports that a 6° reduction in thermostat will produce a 39% saving in utility cost. Provided full roof coated, this could be a 5-6° drop in ambient inside the home giving the 39% savings.
- c. Solar gain on roof: Without SUPER THERM is 206 BTU's. With SUPER THERM is 85 BTU's.
- d. UV absorption: Without SUPER THERM is 98.0. With SUPER THERM is 03.0

**23. ECAP Report–Florida Energy Office –
LaPorte, Texas Location–Metal Shipping Containers**

- a. Coated containers resulted in 46%-52% reduction in conduction related energy loads.
- b. BTU per sq.ft.per hour loads dropped from 606 BTU to 295 BTU or 311 BTU reduction.
- c. Interior ambient registered 22° cooler
- d. Thermal conductance to outside environment was 50% less
- e. External surface temperature was 47° cooler.
- f. Internal surface temperature was 37° cooler.
- g. UV absorption rate was 92% less.
- h. Internal Moisture levels was 28.5% dryer.
- i. Uncoated container surface moisture reading was 68%. Coated Container was 33%.
- j. To cool the container coated with SUPER THERM would require 46%-52% less energy.

k. External Surface Energy Flow Analysis shown by Tons (12,000 BTU) being lost through the external surfaces from inside the container. Without SUPER THERM is 7.78 and with SUPER THERM is only 3.39 for a savings in tonnage of 4.39 tons of A/C.

l. “SUPER THERM product concerning load and reductions produced by thermal conduction, convection and absorption WERE SIGNIFICANT”—reported by the Energy Specialist Alexander E. Othmer CEA/CBA/NDE III.

m. As expressed by Mr. Othmer at the conclusion of this report: “This is the third time we have had the pleasure to test SUPER THERM PRODUCTS, it is rare that a single products will show such Repeatable Results in three totally different environments, South Florida, Denver, Colorado and LaPorte, Texas a true testimonial to your products’ ENERGY STAR rating.”

24. Reported, shown and discussed as the only insulation material used on container homes being built in Florida by the **Bob Vila building show aired in 2006 from Tampa, Florida.** Found on BobVila.com.

25. SUPER THERM used to **glue wall boards to steel studs** in steel facility construction and offer fire resistance.

a. Performed by William B. Gleckman Architect, NY, NY; testing performed by VTEC Labs, Bronx, NY.

26. Japanese Testing results:

a. Sony–Koda Factory: Coated one of their buildings with SUPER THERM and measured against year before. Previous year in month of May used 3767 KW and June used 5647 KW. Following year after coating with SUPER THERM, May used 519 KW and June used 1869 KW. **A 75% savings on KW or actual cost of energy in real dollars.**

b. Hitachi Electric: Roof–Uncoated temp was 82° C facing sun, after coated temp was 47° C

c. Sekisui : Actual room temp changes: Uncoated: 43° C After coating: 31° C on interior ambient.

d. Yokohama Tire–Rubber: Actual interior room temp changes: Uncoated: 47° C and after coated: 28° C.

e. Kirin Brewery: Actual interior room temp changes: Uncoated: 63° C and after coated: 48° C.

f. Panasonic–Matsushita Electric: Roof surface temp changes: Uncoated: 70° C and coated 46° C.

27. SUPER THERM has been applied over 70,000,000 sq.ft. of roofing in Japan and all of the **70 million sq.ft. has been data logged to check performance (before and after). No other insulation type material has been field tested as extensively as SUPER THERM.**

28. Japanese Government in an effort with Sony Corporation did a joint effort with the National Electricity Saving Committee to study SUPER THERM and how it could save energy cost.

a. 40,300 sq.m (434,636 sq.ft.) of manufacturing space is chosen to coat.

b. Currently rockwool is used as insulation.

c. Factory takes 30% of all electrical cost for A/C.

d. Results of Energy Saving Cost Savings was 736,704 kWh/year X 15yen/kWh = 11,050,560 yen/year (\$96,092 USD).

e. ROI (Payback period on the cost of the SUPER THERM system) is 1.06 years or 13 months.

29. Nissan Plant in Yokohama, Japan is 2,200,000 sq.ft. and coated with SUPER THERM.

30. BTU testing under test method ASTM E 1461-92, Thermal diffusivity and E1269, differential scanning calorimeter.

a. Standard metal test plate allowed 367.20 BTU to load and conduct through.

b. Standard metal test plate with single coat of SUPER THERM allowed 3.99 BTU to load and conduct through.

31. Wal-Mart Testing performed at their own corporate facility on their own trailers.

a. One trailer was the control with nothing over the roof to block heat.

b. One trailer was coated with white paint.

c. One trailer was coated with SUPER THERM at 8 mils.

d. One trailer was fitted with 3 inches of Low E (foil/bubble pack).


e. One trailer was fitted with 3 inches of fiberglass.

f. Measurements were taken over the last full week of August in 2001.

g. These were 53 foot trailers and the back doors were left open during the testing and placed side by side.

h. Data loggers were used to record the ambient temperatures inside the trailers each day.

i. Result: SUPER THERM outperformed consistently the other trailer ambient temps by a minimum of 6° F and as much as 11° F.



j. White paint could not throw off loading heat even though it had good emissivity of .70.

k. The Low E and fiberglass, due to their characteristics, load heat and then hold this heat which develops and loads into the ambient interior temperature by the end of the day.

l. As a measure of the importance of making a 6° F drop in temp inside the trailers, a study and report from ConEdison on moving the thermostat 6° F in a home would make a 39% savings in energy bill expense.

32. Condensation control

a. Not only does SUPER THERM cover and control the loss and gain of heat and protecting cold in ducting, due to the ability to control the surface temperatures, it controls the condensation that would normally develop due to the dew point occurring. SUPER THERM is a tested and certified water barrier as well as an insulation material therefore blocking the normal effect that relative humidity has with the ambient temperature in developing the dew point and condensation.

33. As reported by the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc) in their 90.1 Code for wrapping metal ducting and other metal structures. The R19-R21 Fiberglass wrap, as shown on a chart in the code, is effectively only a R 7.4 due to the inability of fiberglass to seal the surface and cover effectively. If this wrap is compressed into position as is normally the case when installed, the compression will reduce the R value by 40% or more again and thereby having an effective R value of only 4.4 for the 6 to 8 inches used.

a. SUPER THERM covers 100% of the area including supports and configurations. Not affected by compression nor moisture. Since fiberglass is designed to load the heat and absorb it, this is a major problem with heat transfer and loss as compared to SUPER THERM that is designed to prevent the "loading of heat" as the insulation method. If one blocks the loading of heat, then there is no heat to absorb, transfer and lose.

34. SUPER THERM covers all surfaces of a wall, roof or surface, which includes

the studs, braces and joist. Transfer of heat either being lost or gained is blocked through these areas. Unlike all the standard insulation materials that are applied between studs, braces and joist and allows heat transfer through these areas.

35. SUPER THERM applied over air ducts and A/C boxes on the tops of roofs will maintain the temperature inside the box to ambient instead of the 160° F it now experiences. Inside the box is where the coils are trying to unload heat. Makes the system work more efficient.

No other insulation type material has been field tested as extensively as SUPER THERM.

36. SUPER THERM covered over the exterior concrete surfaces of walls in a nine story apartment in Munich, Germany **dropped the heating cost by 30%.** SUPER THERM seals the concrete from air flow and moisture gain which are two of the problems with concrete surfaces and insulation.

37. Durability: SUPER THERM rechecked by an architectural firm in Tokyo. A roof ten years old was rechecked for performance and found to be identical to the heat blocking ability when new. The four ceramics in SUPER THERM are designed to block the loading of heat. This means that it is not just a reflector of heat but will not allow the loading of heat even when the surface becomes dirty as happened on the roof in an industrial area.

a. Later a section of roofing where SUPER THERM had been applied 15 years earlier was retested by the Japanese Institute of Technology and found **Solar reflectance maintained at 84.1% after 15 years in a harsh environment.**

b. ENERGY STAR testing on SUPER THERM: Beginning was 80%. After three years, it was 79.4%. Most reflective coatings and materials listed on the tested product listing had dropped by 10% to 40% in the three year period.

c. Independent testing performed in Japan on 21 reflective coatings and the

average beginning solar reflectance was 80.8%. After only 571 days (1.5 years), the solar reflectance of their surfaces had dropped to 54.8%. This is typical of reflective coatings in the world market.

38. WINTER: SUPER THERM holds heat inside the room in the winter by not loading the heat which would be absorbed into the wall to be transferred and lost to the cold. The ceramics will not load the heat and allow the normal transfer.

39. Stops mold and mildew development over its surface. Tested and field uses over concrete surfaces in car wash on bottom section of parking garage in the Munich Airport.

40. Sound Proofing: STC testing conducted by VTEC labs in NY found a rating of 50 at 800 to 1300 Hz. SUPER THERM applied at the standard thickness of 10 mils.

a. Typical STC Ratings: 2x4 or 24" centers, 3/8-5/8 inch wallboard, rock wool or fiberglass batting is 30-42.

b. National Building Code requires that partitions separating dwelling units meet an STC 50.

41. Certified as Environmentally Safe and Healthy and Energy Efficient with Eco-Effective Design

a. Cradle to Cradle Design Certification "Gold" by MBDC LLC, which is a product and process design firm dedicated to revolutionizing the design of products and services worldwide that was founded by William McDonough and Dr. Michael Braungart to promote and shape the "Next Industrial Revolution" through the introduction of a new design paradigm called Cradle to Cradle Design and the implementation of eco-effective design principles.

b. Qualifies for LEEDS Points (Platinum Rating) under the The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ - the nationally accepted benchmark for the design, construction, and operation of high performance green buildings.

SUPER THERM®

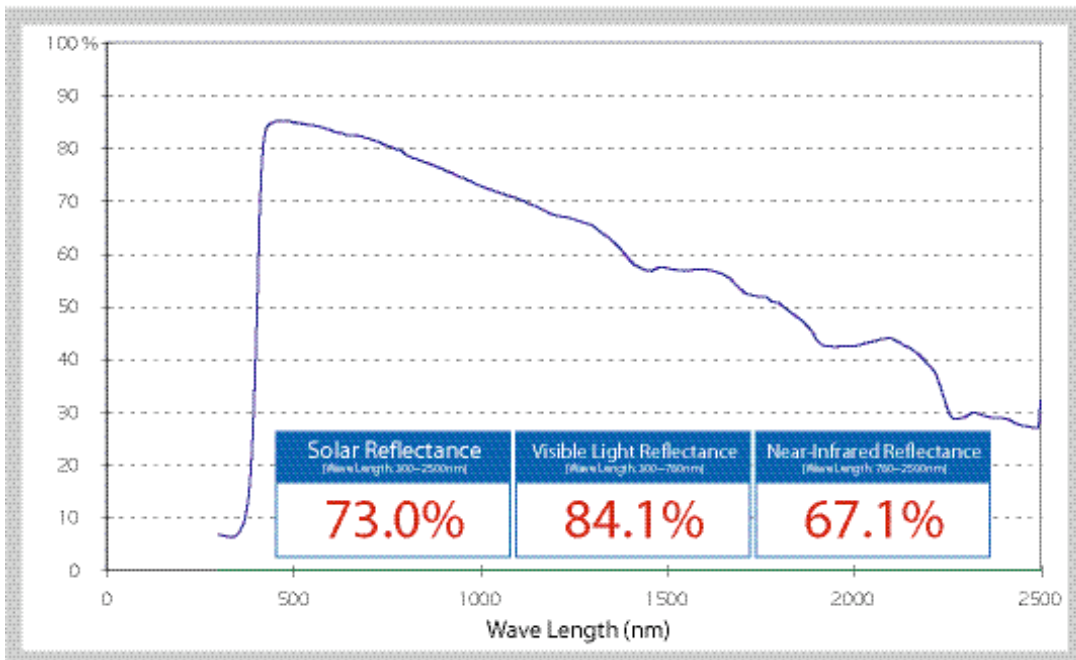
INTERNATIONAL TEST LISTINGS AND APPROVALS

MEETS THE HIGHEST STANDARDS

SUPER THERM® has been rigorously field tested and meets the highest standards. The unique formula is UL, FM, ABS, IMO and Coast Guard approved and a VOC Compliant water-based coating. SUPER THERM® has a Class A Fire Rating against flame and smoke. Plus, it is USDA approved for use in and around food preparation areas.

SUPER THERM® outperforms traditional insulation. It counters all three forms of heat radiation, convection and conduction. Traditional insulation only controls conduction. Experience the insulating power of SUPER THERM®.

SOLAR REFLECTANCE TEST AFTER 15 YEARS



The test piece was taken from a roof in January 2006 where SUPER THERM® was applied in 1989, and tested at Building Material Test Center in Japan.

The climate is very severe in this area with 38° C (100° F) in the summer, sand storms, very strong sun radiation, and -21° C (-5° F) in the winter with snow and ice.

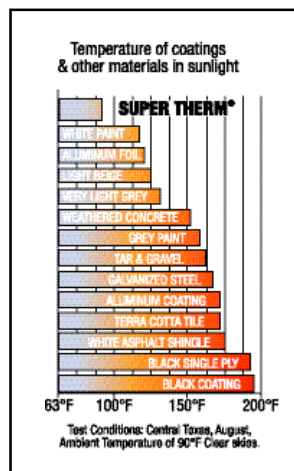
The reflectance of near infrared is 67.1%, but this is because the SUPER THERM® at that time did not contain the fourth ceramic, which was introduced in 2000 and designed to block infrared rays. Therefore, the result with the current SUPER THERM® will be better.

In Japan, university testing was performed on twenty one reflective coating in the market. Their average beginning reflectivity was 80%. After 591 days (1.5 years), reflectivity was reduced to 58%. This is an accurate view of most all reflective coatings in the world market.

SUPER THERM®'s solar reflectivity at the new stage was 92.2%, so the reduction in 15 years was less than 20%. (92.2-73=19.2) This result proves that SUPER THERM®'s durability in reflectivity is by far excellent.

SUPER THERM®'s solar reflectance after 15 years was 73%. The reduction of solar reflectance in 3 years tested for the Energy Star Program by the EPA was only 0.01%.

Tests prove it.
**SUPER THERM® is
the better option.**



	Super Therm®	Fiberglass	Cellulose Fillers	Ceramic Paints	Polyethylene Foam
RE19, one 10-mil coat (Under App.)	✓	10"	8"	5.5"	
RE19, one 10-mil coat (E-tester App.)	✓	✓	✓	✓	✓
68" Sound Blockage	✓	✓	✓	✓	✓
Rated as one of EnergyStar's best overall	✓	✓	✓	✓	✓
Approved by California Cool Roof program	✓	✓	✓	✓	✓
NSA tested	✓	✓	✓	✓	✓
Proven for both interior and exterior	✓	✓	✓	✓	✓
Class "A" rated "0" flame spread	✓	✓	✓	✓	✓
Passed 2000 hrs of salt spray testing	✓	✓	✓	✓	✓
USDA approved	✓	✓	✓	✓	✓
Mold and mildew resistant	✓	✓	✓	✓	✓
Blocks 99.9% of infrared rays	✓	✓	✓	✓	✓
Resists mold and mildew	✓	✓	✓	✓	✓
20 years, residential life expectancy	✓	✓	✓	✓	✓

INTERNATIONAL AREAS OF BUSINESS ACTIVITY

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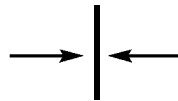
South America: Venezuela • Colombia • Brazil • Argentina • Chile

Central America: Mexico • Panama • Puerto Rico • Costa Rica

Africa: Egypt • Nigeria • Tanzania • South Africa • Angola

Australia • New Zealand • Mexico • Canada • U.S.A.

THICKNESS OF SUPER THERM®



(EQUAL TO)

THICKNESS OF TRADITIONAL FIBERGLASS INSULATION

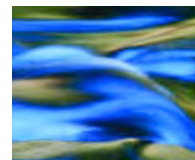


APPLY A R-19 EQUIVALENT RATING TO YOUR FACILITY WITH A SINGLE COAT!

With the ability to protect from all 3 methods of heat transfer, SUPER THERM® is proven to outperform traditional fiberglass insulation. In fact, a layer of SUPER THERM® no thicker than a single business card provides the same protection as 6 inches of fiberglass. And while a moisture content of 1.5% in fiberglass reduces its effectiveness by 35%, SUPER THERM® is specifically formulated to prevent moisture absorption.

SUPER THERM® is durable and versatile, with a 20-year lifespan under normal conditions. Neither temperature nor moisture will compromise its performance. SUPER THERM® outperforms and outlasts traditional insulation in lab tests and on the field.

SUPER THERM® is the most unique and effective insulation and weatherization material in the market.



Superior Products
International II, Inc®
sales@spicoatings.com
www.spicoatings.com

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Major Systems

Ceramic Coatings for Increased Insulation

Aided by ceramic coating, new insulating paint products bring huge energy savings to the market.

By [Benjamin Hardy](#)



Photo: [isbu-info.org](#)

Ceramic coating has been around for almost 20 years and is highly effective in preventing unnecessary heat loss or gain in residential and commercial structures. Inspired in part by the ceramic tiles that NASA uses on the Space Shuttle, a ceramic coating is a paint mixed with one or more ceramic compounds for application via [spray](#) or roller to exterior and interior surfaces. Depending on the ceramic compounds used (there are hundreds of varieties), this insulating product has the ability to prevent heat transfer and heat loading onto a structure. This means heat will not transfer into or out of a building.

Insulation and Emissivity

Unlike fiberglass insulation, whose R-value rating assumes heat loading by a building and simply measures the rate at which that heat is transferred, ceramic coatings are not given an R-value rating. Instead, they are rated by "emissivity," a measure of both their ability to reflect heat and the amount of heat that is loaded onto a surface.

"The true key to insulation is preventing heat load," says J.E. Pritchett, founder and developer of SuperTherm, a ceramic coating product produced by Superior Products International. The concept is simple: Why use fiberglass insulation to slow the transfer of heat into a building when you can just prevent that heat from ever loading onto the building in the first place? If heat is kept off the structure to begin with, that fiberglass insulation becomes unnecessary. It's a change in the way we think about insulating our homes against energy lost. "R rating is for the 20th century," says Pritchett.

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Blocking Heat Buildup

Blocking heat buildup is a complicated task. Heat comes in three forms: ultra-violet (UV), visible light, and infrared (IR). A quality ceramic coating will block all three, especially IR, which is responsible for roughly 57 percent of heat load on a building. "Some ceramic paints claim to block all heat caused by UV," says Pritchett, "but UV only accounts for three percent of heat load on a building."

Consumers should be careful to distinguish between purely reflective coatings and true insulating coatings. Reflective coatings only perform when clean and will not block all forms of heat, but a coating with insulative and reflective qualities will block more than one form of heat. "SuperTherm uses four ceramic compounds to block short-wave radiation, IR, and to block the conductivity of heat through the surface," claims Pritchett. "It's not just a reflective coating."

Blocking Heat Transfer

As an exterior surface coating, insulating ceramic paints or coatings can be applied to the roof and sides of a building. This includes roofing surfaces such as metal, felt, asphalt, aluminum, and sidings made of rubber, vinyl, and aluminum. Ceramic coatings can be used on the interior of a home, too.

"Since most of mechanical heat is IR heat, ceramic coatings can be used to prevent heat loss from inside a building," Pritchett says. A home interior coated in ceramic paint can therefore reduce energy costs due to heat loss in the colder months. "We estimate that a home can save up to 40 to 50 percent in energy costs using our product," Pritchett says. Payback on a product like SuperTherm, which retails for about \$100 per gallon, can come in as little as two years.

Some ceramic coatings feature additional properties, like preventing moisture migration. Some structures see up to 25 percent of HVAC costs coming from dehumidification needs, but a ceramic coating can also bring savings through moisture management. Additional features can include [mold and mildew control](#), sound attenuation properties, and fire resistance.

Ceramic Coatings vs. Fiberglass Insulation

Fiberglass is the giant in the insulation industry, and the R rating to which it conforms is ingrained in the minds of contractors, builders, and code inspectors. Insulating ceramic coatings offer an alternative to traditional batt insulation. "Fiberglass insulation is tested and rated at 73 degrees Fahrenheit, which is the ideal temperature for fiberglass," says Pritchett. Under harsher conditions, Pritchett suggests that fiberglass doesn't perform as well as its ratings predict.

Fiberglass is also rated in terms of thickness. "Six inches of fiberglass insulation might get an R-19 rating," says Pritchett, "but how many builders will cram that six inches of insulation into four inches of stud wall? That R-19 rating doesn't account for compression of the product." SuperTherm achieves an R-19 rating with one coat applied, and a rating of R-28.5 when the surface is coated on the exterior and interior. Ceramic coatings have yet to become code-approved and accepted as a sole means of insulating a home, but the demand for [increased energy efficiency](#) is likely to push these products to the front of the consumer market.

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4/12/2019

Ceramic Coatings for Increased Insulation - Bob Vila

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4/12/2019

Ceramic Coatings for Increased Insulation - Bob Vila

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SUPERTHERM[®]

Protecting industries with premium coatings



Achieve optimum cooling with a coating that blocks and repels radiational heat.



Exhibit D

Super Therm®

Experience Innovative Insulation



Heat Blocking, Not Reflection

The measurement of how fast heat loads or is absorbed and then the speed at which it transfers through the material is called the "R" value. This resistance factor slows but does not prevent the heat load and transfer. This is why these materials "must have more thickness" to provide any benefit.



■ 99% Infrared
■ Visual Light
■ Ultra Violet

Super Therm® does not absorb solar heat and does not require thickness — effectively eliminating a measurement of (R) value.

Super Therm® has four (4) ceramic compounds. Three of these compounds match the wave size of each of the solar radiation waves to block the heat load. The fourth ceramic has such low density that the heat cannot load into the surface of Super Therm® and therefore cannot be absorbed and transferred. This is why the surface of Super Therm® is not likely to be more than 2-10 degrees F over ambient air temperature in any climate. If heat load is blocked, there is no heat to be absorbed and transferred even when the surface becomes dirty. Field documentation shows no change in the performance of Super Therm® after 10 years, and only an 8% drop in blocking heat load after 15 years.



When it comes to extreme temperatures, Super Therm® redefines the science behind insulation and weatherization. Super Therm® features a blend of ceramic compounds that will reflect radiational heat away from protected areas when applied to a surface. By allowing only 5% heat

load on the surface facing the radiational heat source, Super Therm® achieves innovative heat reflection. These core properties of Super Therm® continue to attract industries needing premium insulation solutions that yield cost-saving, long-term energy efficiencies. From marine

and aviation to oil and gas, transportation, and residential, Super Therm® is being accepted and applied by the most competitive industries in the world. This widespread use is just one more way that SPI Coatings remain an obvious and trusted choice for real world coating solutions.

SUPER THERM® VS. TRADITIONAL INSULATION



Super Therm®

Super Therm® has a blend of four unique low-density ceramics that repel solar radiational heat by matching/blocking heat waves. Super Therm® resists the loading of surface heat over the envelope of a building to stop heat load before it starts. Traditional insulation ignores heat transfer through radiation and convection and does not repel heat produced by the full spectrum of sunlight. With Super Therm®, you can combat visual, ultraviolet and infrared light to block 95% of radiational heat load.

Super Therm® advantages over traditional insulation:

- Combats convection, conduction and radiation
- Repels heat through reflection
- More than 20 years of life expectancy
- Designed and tested under extreme temperatures (minus 60° to plus 140° F ambient air temperature)

- Ease of installation
- Blocks humidity and wind-driven rain
- Blocks wind and air infiltration

Traditional Insulation

Insulations such as cellulose, fiberglass, rock wool and polystyrene foam have remained unchanged for 50 years. These types of insulations allow 100% heat load and absorption and only slow conduction or heat transfer with small pockets of air. All are affected by moisture absorption which kills effective resistance. These inefficiencies are where Super Therm® presents innovative solutions for industries.

Disadvantages of traditional insulation:

- Combats only conductive heat
- No capability to repel heat
- Affected by moisture and air infiltration
- Designed and tested only for 75° F for the "R" value
- Loses thickness when compacted into space upon installation
- Positioned between building studs
- Causes corrosion under insulation

Super Therm® passed NASA testing with Best Test Result.

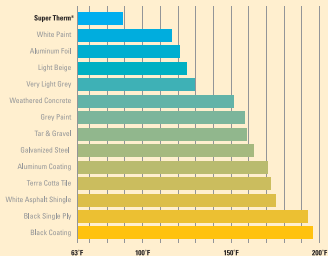


A Comparison of Popular Insulation Options

	88% Sound Blockage	One of Energy Star's Best Overall	California Cool Roof Approved	NASA Tested	Interior & Exterior Proven	Class "A" Fire Rated	10" Flame Spread	Passed 2,000 hrs. Salt Spray Testing	More than 20 Years Life Expectancy	Moisture Resistant	Blocks 98.5% of Infrared Rays	Resists Mold and Mildew	USDA Approved
Super Therm®	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved
Fiberglass	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved
Cellulose Filler	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved
Ceramic Paint	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible
Polystyrene Foam	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved

Approved Partially Approved Not Possible

Temperature of coatings and other materials in sunlight

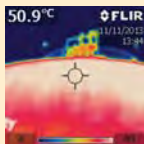


THERMAL STUDY JUAYMAH NGL SPHEROID TANKS



*Super Therm®
NG Tank Spheroid 203A*

*Existing Tank
NG Tank Spheroid 203B*



Saudi Aramco – November 2013

SUPER THERM® IN USE TODAY

Aviation

Tucson International Airport
Arizona, U.S.



*22% overall energy reduction
with 40% HVAC savings*

Oil and Gas

Mitsubishi Oil Terminal
Osaka, Japan



*Reduced evaporation of finished
petrochemicals*

Marine

Blue Chip Casino Ship
Indiana, U.S.

Offshore

GDF Suez
North Sea, U.K.

Residential

Residential Neighborhood
Arizona, U.S.



*Super Therm® provides sound
dampening and color options*

Transportation

Pacific Shipping
and Trucking

Telecommunications

Vodafone Group PLC

Tourism

Address Hotel
Dubai, U.A.E.



*52°C roof temperature before
application, 42°C after completion*

PROVEN ENERGY EFFICIENCY

Surface Temperature Performance

U.S. Department of Energy

- Surface conduction related to energy loads was reduced 46-52%
- Exterior surface temperature 47°F degrees cooler

Interior Temperature Performance

U.S. Department of Energy

- Super Therm® out-performed white paint
- 26% - 30% increase in energy efficiency

INDUSTRY COMPLIANT AND TRUSTED

- U.S. Green Building Certified
- MASDAR certification in UAE
- VOC compliant
- Class "A" Fire Rating
- DNV and ABS Approved
- USDA Approved

PROTECTING INDUSTRIES WITH PREMIUM COATINGS

Industries cannot rely on temporary efficiencies when delivering their products and systems. That's why SPI Coatings have been selected by numerous corporations and individuals. Our coatings are designed to save you money

because of their innovative performance and long-term durability. With an international presence in a wide diversity of markets, SPI continues to bring industries peace of mind when it comes to combating high energy costs and corrosion.

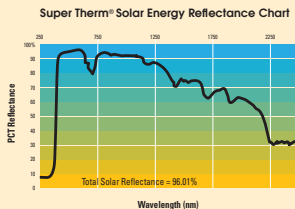
As operational problems become more complex, SPI keeps pushing the boundaries of effectiveness. It's a system of products refined from remarkably conclusive data and forged under the most rigorous conditions.



40 to 60% of total building energy costs directly relate to air conditioning expense. Beat the heat build-up with Super Therm®.

TIME TESTED SOLAR REFLECTIVITY

Super Therm® has the ability to endure severe conditions for extended time periods making it an efficient solution for a wide variety of industries. The results below reveal the tested effectiveness of Super Therm® after 15 years of performance.



In this study, the solar reflectance of Super Therm® after 15 years stood at 84%. By comparison, university testing in Japan was performed on 21 insulation coatings in the market. Their average beginning reflectivity was 80% and after 1.5 years their reflectivity was reduced to 58%. This sampling represents the clear advantage Super Therm® brings to the market for industries needing consistent and cost-effective thermal protection.

TOP COMPANIES USING SUPER THERM®

- Mitsubishi
- Nissan
- Panasonic
- General Dynamics
- Hoover Dam
- HEB Grocery Company
- Trucking - Refrigeration Trailers
- Major Oil Firms - Worldwide
- Halliburton Company
- Drydocks World
- Vodafone Group PLC
- Home Builders
- U.S. Army
- U.S. Air Force
- U.S. Navy

Certified Environmentally Safe and Eco-Effective – Cradle to Cradle Certified Product™ (Silver Certificate)

SUPERIOR PRODUCTS INTERNATIONAL PRESENCE

Asia	Europe	Middle East	South America	Central America	Africa	Australasia	North America
China	Azerbaijan	Oman	Argentina	Dominican Republic	Angola	Australia	Canada
India	Belgium	Saudi Arabia	Brazil	Honduras	Egypt	New Zealand	Mexico
Indonesia	France	UAE	Chile	Panama	Nigeria		U.S.A.
Japan	Germany		Colombia	Puerto Rico	South Africa		
Korea	Greece		Trinidad & Tobago		Tanzania		
Malaysia	Italy		Venezuela				
Singapore	Netherlands						
Taiwan	Poland						
Thailand	Russia						
The Philippines	Spain						
Vietnam	Turkey						
	Ukraine						

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