



THERMAFIBER® FIRESpan™ and FIRESpan SS Insulations

UL- and OPL-labeled* blankets with highly effective fire- and smoke-resistant qualities for tested curtain wall assemblies.

- Provide 1 and 2-hr. fire protection in a variety of rated exterior curtain wall assemblies.
- Available in unfaced felt (plain) or with a tough scrim-reinforced foil facing (FSP) that serves as a vapor retarder.
- Optional dark-colored insulation for backing glass spandrel panels.
- Two products, FIRESpan™ and FIRESpan™ SS, provide for a variety of fire-protection applications.
- Products especially designed for UL and OPL Design fire-containment-rated assemblies.

Description

THERMAFIBER® FIRESpan™ and FIRESpan™ SS Insulations are mineral-wool-type insulations that resist temperatures up to 2,000 °F (1,093 °C), thus offering superior fire protection in rated curtain wall assemblies. They are UL- and OPL-labeled products especially intended for tested UL and OPL Designs. These products are noncombustible per Standard NFPA 220 when tested in accordance with ASTM E 136, and are moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. They permit dry construction for all-year-round work. Also, these products are available plain or faced with FSP (scrim-reinforced foil) that serves as a vapor retarder, and in standard color or dark color for backing glass spandrel panels.

Two different products permit THERMAFIBER® FIRESpan™ Curtain Wall Insulations to be used in many different fire-containment assemblies of 1 and 2-hr. ratings.

Fire Containment

The first priority in building safety is containment of both fire and smoke to the area of origin. For mid- and high-rise buildings, especially, that means that fire and smoke must be prevented from spreading to the next floor. Since the floor assembly is typically a fire-rated system, a possible route for the fire spread is through and up the exterior curtain wall system. THERMAFIBER® Life-Safety Fire Containment Systems are assemblies designed to protect perimeters by combining THERMAFIBER® Safing Insulation, THERMAFIBER® FIRESpan™ Curtain Wall Insulation and 3M/Thermafiber FIRE BARRIER™ Spray, THERMAFIBER® SMOKE SEAL™ Compound or FIRECODE® Compound. All four model building codes (BOCA, SBCCI, ICBO and IBC) require that the gap at the slab edge/curtain wall interface be treated to maintain the same fire integrity rating as the floor-ceiling. THERMAFIBER® Life-Safety Fire Containment Systems have been tested in many UL- and OPL-listed systems and are accepted or recognized (ICBO ER-2331, California State Fire Marshal, OSHPD) as maintaining fire containment from floor to floor.

Installation (Aluminum-Framed Application)

Mechanically attach FIRESpan™ Insulation to vertical aluminum mullions with suitable mechanical fasteners approved by the architect. Adhesive attachments are not acceptable. Cover aluminum mullions with 1" or 2" thick, 6" or 8" wide THERMAFIBER® FIRESpan™ Insulation depending on the assembly specifications. Place backing/reinforcement members horizontally at the safing line and behind the outer surface of the curtain wall insulation to prevent bowing of the curtain wall insulation due to pressure applied from compression-fit safing insulation. Typical reinforcement members include hat channels and "L" and "T" angles.

Install THERMAFIBER® Safing Insulation, of proper width (2" to 8" max. opening), in safe-off area (foil side up, if required) between THERMAFIBER® FIRESpan™ Insulation and floor slabs, on safing clips spaced as required, 24" or 12" o.c. maximum, leaving no voids. Install safing wider than opening to ensure compression fit. Install proper topping material, such as THERMAFIBER® SMOKE SEAL™ Compound, FIRECODE® Compound or FIRE BARRIER™ Spray, as indicated in the specific test description or architectural specification.

In steel-stud-framed applications, screw-attach type X gypsum sheathing or cement board, 1/2" or 5/8" thick, to the exterior face of the studs. Friction-fit FIRESpan™ SS Insulation between steel studs.

Technical Data

Surface Burning Characteristics (According to ASTM E 84)

Product Designation	Flame Spread	Smoke Developed
FIRESpan/FIRESpan SS Regular (Unfaced)	15	0
FIRESpan/FIRESpan SS Foil-Faced	25	0

Products have a class A interior finish rating per NFPA 101, life safety code. Values apply to both standard color and dark curtain wall insulation.

Thermal Conductivity and Thermal Resistance (According to ASTM C 518)

		"k" @ 75°F (24°C) For insulation only							
Product	BTU · in./hr.	1" thick		1-1/2" thick		2" thick		2-1/2" thick	
Designation	· sq. ft. · °F	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾
FIRESPAN SS	0.25 ⁽³⁾	—	—	—	—	8.0	0.13	10.0	0.100
FIRESPAN	0.23 ⁽³⁾	4.3	0.23	6.5	0.15	8.7	0.11	10.9	0.092

*UL is an abbreviation for Underwriters Laboratories, Inc.; OPL is an abbreviation for Omega Point Laboratories, Inc.

Product Designation	"k" @ 75°F (24°C) For insulation only									
	BTU · in./hr. · sq. ft. · °F	3" thick		3-1/2" thick		4" thick		6" thick		
		R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	
FIRESpan™ SS	0.25 ⁽³⁾	12.0	0.083	14.0	0.071	16.0	0.062	24.0	0.042	
FIRESpan™	0.23 ⁽³⁾	13.0	0.076	15.2	0.066	17.4	0.057	—	—	

(1) R = thickness divided by "k." (2) U value shown is for insulation only; however, in practice U values represent the overall heat transmission of all components in an assembly (U = 1 divided by total R).

(3) Values apply to both standard color and dark curtain wall insulation.

Product Data	Standards Compliance	THERMAFIBER® FIRESpan™ and FIRESpan™ SS meet the following: ASTM C 665 - Federal Specification HH-I-521F—Curtain wall insulation as Types I and III, Class A, Category 1 (0.02 perm, tested in accordance with ASTM E 96 procedure). ASTM C 612-00 - Federal Specification HH-I-558B—Curtain wall insulation (all) as Types IA, IB (0.02 perm, tested in accordance with ASTM E 96 procedure); curtain wall insulation (FIRESpan™) as Types II, III, IVA and IVB (0.02 perm, tested in accordance with ASTM E 96 procedure); curtain wall (FIRESpan™ SS) as Type II. ASTM E 136 - Rated noncombustible as defined by NFPA Standard 220 when tested according to ASTM E 136. ASTM C 553 - THERMAFIBER® Insulations absorb less than 1% moisture by weight and volume. Curtain wall products are approved by: New York City Board of Standards & Appeals - 0.02 perm, foil-faced, tested in accordance with ASTM E 96 procedure (under BSA 214-73-SM & accepted by MEA-209-82). Also, MEA-189-93-M and MEA-190-93-M.
	Fire-Containment Tests	For more complete test information, see SA707, THERMAFIBER® Life-Safety Fire Containment Systems technical catalog, or UL and OPL Directories. Aluminum Spandrel Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-2002. Steel Stud-Framed/Gypsum Sheathing Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-1001. Glass Spandrel Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-2001; UL-Witnessed test, report dated 9-30-94.
	Composition and Materials	THERMAFIBER® Blankets are a mineral fiber material manufactured from slag, a by-product of iron ore reduction, and naturally occurring rock.
	Warranty	System performance following substitution of materials or compromise in assembly design cannot be certified and may result in failure of fire performance under certain conditions. Products and systems provided by Thermafiber LLC are warranted to be free from defects in material workmanship. Contact Thermafiber LLC for complete warranty details.
	Storage	Store in a cool, dry place.

Submittal Approvals:

Job Name				Date
Contractor				
Trademarks THERMAFIBER, FIRESpan and THE NAME IN MINERAL WOOL are trademarks of Thermafiber LLC. SMOKE SEAL and FIRECODE are trademarks of United States Gypsum Company. FIRE BARRIER Spray name is jointly held by Thermafiber LLC and 3M Fire Protection Products.	Note Products described here may not be available in all geographic markets. Consult your local sales office or representative for information.	Notice We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.	Safety First! Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.	Health Aspects Information about health aspects of using THERMAFIBER Curtain Wall Insulation products are thoroughly explained in INT279, 'Summary of Health & Safety Assessment & Recommended Work Practices' Booklet and INT117, 'Health & Safety Assessment & Recommended Work Practices, Second Edition' (complete report).



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Thermafiber- Technical Bulletin

Total Volatile Organic Compounds (TVOC) and Formaldehyde

Thermafiber Insulation products have been evaluated by an independent testing laboratory for emissions of total volatile organic compounds (TVOC), individual volatile organic compounds (IVOC), formaldehyde and other aldehydes using a product evaluation test protocol following requirements of ASTM Standard D 5116 and CAEEC 225 Section 01350 protocol (1,2).

Results of the evaluation showed Thermafiber products to meet the California purchase specifications for TVOC and general chemical emissions. Formaldehyde concentration of Thermafiber Insulation at 12 ppb meets or exceeds the California standard of 20 ppb max. for formaldehyde concentration.



MATERIAL SAFETY DATA SHEET THERMAFIBER® BONDED PRODUCTS

Thermafiber Inc.
3711 W. Mill Street Extended
Wabash, Indiana 46992

Page 1 of 2
Phone (260) 563-2111
Version Date: May 30, 2003
MSDS NO. 00001, Version 4

SECTION I PRODUCT IDENTIFICATION

PRODUCT(S): THERMAFIBER® Bonded Products

®Trademark of Thermafiber Inc.

SYNONYM: Insulation

CHEMICAL FAMILY: Slag wool.

SECTION II INGREDIENTS

MATERIAL	WT%	ACGIH TLV (mg/m ³)	OSHA PEL (mg/m ³)	CAS NUMBER
Slag wool fiber ¹	>95	10(T)/3(R) (NE)	15(T)/5(R) (NE)	65997-17-3
Phenolic resin	<5			9003-35-4

If laminated, contains the following adhesive:

Vinyl alcohol polymer <1 (NE) 9002-89-5
(T) - Total (R) - Respirable (NE) - Not Established

¹OSHA and ACGIH recommended exposure level is 1 fiber/cc and NIOSH recommended exposure level is 3 fibers/cc. This material is slag wool. Other generic terms that are used or have been used to classify this material include mineral wool, stone wool, man-made mineral fiber (MMMF), and man-made vitreous fiber (MMVF). A more recent generic term that has appeared in the literature to describe these glass-like materials is synthetic vitreous fiber (SVF).

SECTION III HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

ACUTE: The products are composed of mineral wool in a bound matrix. When these are cut or trimmed, especially with power tools, the resulting dust may cause transitory mechanical irritation to skin, eyes or respiratory tract.

EYES: Direct contact with eye can cause mechanical irritation.

SKIN: This material (in wet state or as dust) is not chemically harmful if it gets on the skin and is not immediately washed off. However direct contact of dust and mineral wool fibers with skin can cause skin irritation (mechanical) and itchiness.

INHALATION: Inhalation of dust can cause nose, throat, lungs and upper respiratory tract irritation. Persons exposed to dust may be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation.

INGESTION: No known effects.

CHRONIC: Persons with chronic or systemic skin or eye disease should use precautions and wear all personal protective equipment when working with this product.

SECTION IV FIRST AID MEASURES

EYES: In case of contact, immediately flush thoroughly with copious amounts of water occasionally lifting the lower and upper lids (to remove particulates). Get medical attention immediately. Contact lenses should not be worn when working with this product.

SKIN: Skin contact is not a chemical hazard. Mechanical action of fibers on skin can cause itchiness. Irritation of skin may occur with prolonged and repeated contact. Rinse with cool water, followed by washing with soap and warm water. A commercially available skin cream or lotion may be helpful to treat dry skin areas. Wash hands before eating or using restroom.

INHALATION: If exposed to excessive levels of dust, leave area of dust exposure and remain away until coughing and other symptoms

subside. Other measures are usually not necessary, however if conditions warrant, get medical attention.

INGESTION: No harmful or chronic effects expected. No specific recommendation. If gastric disturbance occurs, call physician.

TARGET ORGANS: Eyes, skin, lungs and respiratory system.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung disease such as, but not limited to, bronchitis, emphysema and asthma.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact. Note to physician: This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

SECTION V FIRE FIGHTING MEASURES

The products are non-combustible and do not pose a fire hazard. However, packaging material may burn.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, foam, dry chemical

Special Fire Fighting Procedures: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Unusual Fire and Explosion Hazards: None.

Special Fire Fighting Protective Equipment: Observe normal fire fighting procedures.

Flash Point (Method Used): Not applicable.

Upper and lower flammable limits in air: Not applicable.

Autoignition temperature: Not applicable.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide and trace gases.

SECTION VI ACCIDENTAL RELEASE MEASURES

CONTAINMENT: Not necessary. Treat as inert material.

CLEAN UP: Pick up large pieces. Use gloves to avoid skin irritation. Vacuum dust, preferably with an industrial vacuum cleaner with high efficiency air filter. If sweeping is necessary, use dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean up. These procedures will help minimize potential exposures.

DISPOSAL: Dispose in sanitary landfill in accordance with local, state and federal requirements.

SECTION VII HANDLING AND STORAGE

HANDLING: Use protective equipment to avoid irritation as described in Section 8.

STORAGE: Warehouse storage should be in accordance with manufacturer's recommendations. Material should be kept dry and protected from the elements.

SECTION VIII EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients (see Section 2) and to control dusting conditions.

If cutting or trimming with power equipment, dust collectors and local ventilation should be used.

Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust and fibers by using an industrial vacuum cleaner with high efficiency filter or wetting down area with water. Never use compressed air and avoid dry sweeping.

EYE PROTECTION: Wear safety glasses with sideshields or goggles to avoid eye irritation.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved dust respirator in poorly ventilated areas, where local exhaust is not feasible, if TLV is exceeded, and/or when dusty conditions exist. Avoid prolonged and repeated breathing of dust.

OTHER CLOTHING: Wear tight fitting goggles and gloves when dusty conditions exist. Wear long-sleeved, loose fitting clothing at the

neck and wrists and minimize skin contact. Wash work clothing separately from other clothing. Rinse washer thoroughly after use.

SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance and Odor:** Tan or off yellow in color with low odor
- **Physical State:** Solid
- **Boiling Point:** Not applicable
- **Freezing Point:** Not applicable
- **Melting Point:** 2100° F (1150° C)
- **Specific Gravity (H₂O=1):** Not applicable
- **Solubility in Water:** Insoluble
- **pH Range:** Not applicable
- **Vapor Pressure:** Not applicable
- **Evaporation Rate (in-Butyl Acetate=1):** Not applicable
- **Percent Volatile:** Not applicable
- **Volatile Organic Compounds:** Not applicable

SECTION X CHEMICAL STABILITY

STABILITY: Stable

REACTIVITY: Not reactive

INCOMPATIBILITY: Acids (gives off H₂S under certain acidic conditions)

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION: Oxides of carbon and smoke would be produced at high temperatures with thermal decomposition.

SECTION XI TOXICOLOGICAL INFORMATION

ACUTE DATA:

SLAG WOOL FIBER (65997-17-3)

Oral LD₅₀RAT: Not determined

Dermal LD₅₀RAT: Not determined

Skin Irritation: Mechanical Irritant

Eye Irritation: Mechanical Irritant

Contact with mineral wool fibers may cause temporary eye and skin irritation (mechanical). When products are handled continually, the skin irritation generally diminishes.

Chronic Data: Inhalation: In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as Group 3 (not classifiable as to carcinogenicity to humans).

SECTION XII ECOLOGICAL INFORMATION

This product is not expected to have an adverse effect on the ecology.

SECTION XIII DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261).

WASTE NUMBERS: No EPA Waste Numbers are applicable for this product's components.

SECTION XIV TRANSPORT INFORMATION

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

SECTION XV REGULATORY INFORMATION

CANADIAN REGULATIONS:

WHMIS: D2B

All components of this product are included in the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

USA REGULATIONS:

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

CARCINOGENICITY CLASSIFICATION OF INGREDIENTS:

Material	IARC	NTP
Man Made Vitreous	Group 3	None

In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as **Group 3 (not classifiable as to carcinogenicity to humans)**. IARC noted specifically: "no evidence of increased risks of lung cancer or mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials, and inadequate evidence overall of any cancer risk." This was a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of slag wool fibers.

SECTION XVI OTHER INFORMATION

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0 Other: N/A

HMIS Ratings: Health: 0 Fire: 0 Reactivity: 0

Personal Protection: Use eye and skin protection. Use NIOSH/MSHA - approved respiratory protection when necessary.

0 = Minimal Hazard 1 = Slight Hazard 2 = Moderate Hazard

3 = Serious Hazard 4 = Severe Hazard

Δ CAUTION:

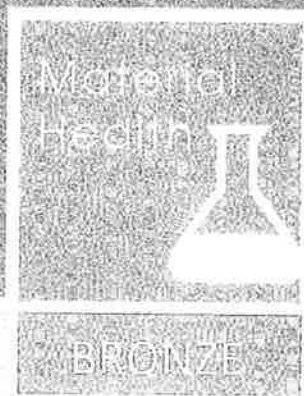
Dust exposure can cause temporary eye, skin and respiratory tract irritation. Avoid creating dust and install in well ventilated area. Cut and trim with razor knife or hand saw to minimize dust levels. Using power tools for cutting will generate high dust levels. Power tools should be equipped with dust collection system. Use NIOSH/MSHA-approved dust respirator. Avoid dust contact with eyes and skin. Wear eye protection and long-sleeve, loose fitting clothing closed at the neck and wrists. Wash work clothing separately from other clothing. Rinse washer thoroughly.

KEEP OUT OF REACH OF CHILDREN THIS PRODUCT CONTAINS NO ASBESTOS

FIRST AID: For skin irritation, rinse skin with cool water, followed by washing with soap and warm water. For eye irritation, flush eyes thoroughly with water for 15 minutes. If irritation continues, or product is swallowed, consult a physician. Additional product safety information is available on the Thermafiber web site, www.thermafiber.com or by calling (260) 563-2111.

Key/Legend

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstracts Service (Registry Number)
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NTP	National Toxicology Program
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
TLV	Threshold Limit Value



Thermafiber® Mineral Wool Insulation – Faced

ISSUED TO Owens Corning Sales, LLC

STANDARD 3.1

EXPIRES 8 September 2017

LEAD ASSESSMENT BODY

MBDC

ASSESSED APPLICATIONS

Manufacture, Installation, Use as insulation, Collection, Recycling, Landfilling, Incineration

PRODUCTS COVERED

Thermafiber® Mineral Wool Insulation – Faced

Includes all available facing materials

PRODUCT OPTIMIZATION SUMMARY

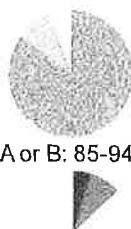
- ☒ *Cradle to Cradle Certified™* Banned List compliant
- ☒ Material Health optimization strategy developed
- ☐ No exposure from carcinogens, mutagens, or reproductive toxicants
- ☐ Meets VOC emissions testing requirements
- ☐ Product is fully optimized - does not contain any GREY or x-assessed chemicals
- ☐ Process chemicals have been identified and none are GREY or x-assessed

PERCENTAGE OF
 HOMOGENEOUS MATERIALS
 ASSESSED BY WEIGHT

100%

Inventory threshold for chemicals in each
 material = 100 ppm

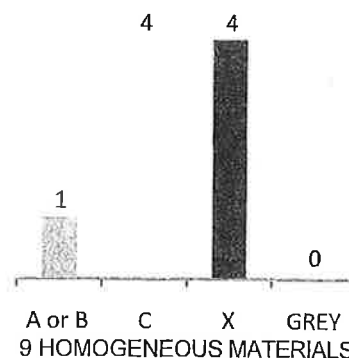
ASSESSMENT RATINGS
 BY WEIGHT



A or B: 85-94% C: 1.5-2%

X: 4.5-13% GREY: 0%
 % HOMOGENEOUS MATERIALS

PRODUCT
 OPTIMIZATION



Material Health Certificate Guide

The Material Health Certificate is awarded to products assessed against the requirements in the Material Health category of the *Cradle to Cradle Certified™* Product Standard. The Material Health achievement level (Basic, Bronze, Silver, Gold, or Platinum) is shown in the certificate's upper right corner. A Material Health Certificate does not indicate that a product is *Cradle to Cradle Certified™*, which requires assessment against all five Standard categories.

The *Cradle to Cradle Certified™* Material Health Assessment Methodology is a contextual assessment based on chemical hazard identification and qualitative exposure considerations during a product's final manufacture, use, and end-of-use. The exposure assessment is highly simplified and more conservative compared to a conventional, quantitative risk assessment.

Definitions of Administrative Fields

Field	Definition
Issued To	Company that sells the assessed product(s).
Assessed By	Accredited Assessment Body responsible for conducting the product assessment.
Expires	Date the certificate expires. Certificate renewal is required biennially.
Standard	Version of the Standard (Material Health subsection only) the product was assessed against.
Assessed Scenarios	Use and end-of-use scenarios that the assessor considered in the exposure portion of the Material Health assessment. Assessment results are only valid for these scenarios.
Products Covered	Products included in the scope of the certificate. Certificates may cover multiple product variations.

Definitions of Product Optimization Summary Fields

***Cradle to Cradle Certified™* Banned List compliant**

The product's materials are not known to contain chemicals on the Banned Lists of Chemicals above permitted thresholds.

Material Health optimization strategy developed

Plan developed to phase out x-assessed chemicals and assess GREY content.

No exposure from carcinogens, mutagens, or reproductive toxicants

Assessed materials do not contain carcinogens, mutagens, or reproductive toxicants with plausible exposure routes.

Meets VOC emissions testing requirements

The product meets the volatile organic compound (VOC) emissions testing requirements described in the Standard.

Does not contain any GREY or x-assessed chemicals; product is fully optimized

The product's materials contain chemicals with only a, b, or c risk ratings (no GREY or x). (Note: In the *Cradle to Cradle Certified™* Material Health Assessment Methodology, chemicals in each material are assigned a, b, c, x, or GREY risk ratings. Each material is then assigned an A, B, C, X, or GREY final assessment rating based on the risk ratings of its constituent chemicals. The following table explains the rating system.)

a or b (A or B)	Optimal
c (C)	Moderately problematic, but acceptable for use
	Highly problematic; targeted for phase out
GREY	Considered unassessed due to unknown identity or lack of toxicity information

Process chemicals have been identified and none are GREY or x-assessed

All process chemicals have been assessed and received an a, b, or c risk rating (no x-assessed or GREY).

Percentage Assessed by Weight

For single-material products, the cumulative percentage of assessed chemicals (a, b, c, and x). For other products, the cumulative percentage of assessed materials (A, B, C, and X). When a certificate represents a group of products, a percent range is shown.

Assessment Ratings by Weight

For single-material products, the percentage of a or b (shown in green), c (shown in yellow), and x (shown in red) assessed chemicals. For other products, the percentage of A or B (shown in green), C (shown in yellow), and X (shown in red) assessed materials. When a certificate represents a group of products, percent ranges are shown.

Product Optimization

Number of materials (or chemical substances for single-material products and multi-material product groups with uncountable color variations) assigned each assessment rating.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICAL	☐

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings
☐ Samples
 (_____ copies)
☐ LEED Submittal
☐ Other
- ☐ Certification /
 Qualifications
☐ Record Documents
☐ Product Data
- ☐ Coordination Drawing
☐ Calculations
☐ Schedules
☐ O&M Manuals

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE