



1 PERFORMANCE DASHBOARD

LCA & MATERIAL HEALTH RESULTS & INTERPRETATION

HOW WE MAKE IT GREENER

SM Transparency Catalog ► Isolatek International Showroom ► CAFCO® 300, 300 AC, 300 HS & 3000



CAFCO® 300 CAFCO 300 AC **CAFCO 300 HS CAFCO 3000**

The CAFCO® 300 series products are the most innovative, widely specified and used commercial density, Wet Mix Spray-Applied Fire Resistive Materials in the world. CAFCO 300 series products are Gypsum- based formulations that offer the most cost effective fire resistance performance per unit thickness of any commercial SFRM in the world.

The thermal performance advantages of CAFCO 300 results in reduced installed costs over any commercial density Wet Spray fire protection material, while providing industry leading physical performance and application efficiencies that are unsurpassed.



Performance dashboard



Features & functionality

CAFCO 300: Most widely used and thermally efficient wet-mix SFRM in the industry.

CAFCO 300 AC: Specially formulated to increase application productivity.

CAFCO 300 HS: Designed to satisfy 430 psf high rise bond strength requirement for buildings up to 420 ft in height.

CAFCO 3000: Formulated to maintain 1000 psf bond strength required for buildings over 420 ft in height.

Visit Isolatek for more product specifications:

CAFCO 300, CAFCO 300 AC, CAFCO 300 HS, **CAFCO 3000**

Environment & materials

Improved by:

Tested to meet (CDPH) Standard Method v1.1 & EPA Method 24 for VOC's

Post-consumer recycled content used

Certifications, rating systems & disclosures:

Declare, Red List Free

Health Product Declaration

Cellulosic - ANSI/UL263 (ASTM E119) - Fire Tests of **Building Construction and Materials**

UL Classification Mark

CSI MasterFormat® 07 81 00 **CAFCO SFRM Guide Spec**

For spec help, contact us or call 800-631-9600



Download all documents

See LCA, interpretation & rating systems

See materials, interpretation & rating systems







SM Transparency Report™ + Material Health Overview™

VERIFICATION

3rd party verified

Self-declared

LCA

3rd party reviewed

✓ NSE

Transparency Report

✓ NSF.

Material evaluation



Validity: 05/29/19 - 05/29/24 ISL - 05292019 - 001

This declaration was independently verified by NSF to ISO 21930:2007 and the ASTM PCR, and ISO 14025:2006.

NSF Certification, LLC

P.O Box 130140 789 N.Dixboro Road Ann Arbor, MI 48105, USA

734 769 8010



SUMMARY

Reference PCR

ASTM Spray-applied Fire-Resistive Materials, 03/17 – 02/22

Regions; system boundaries

North America; Cradle to gate

Declared unit: 1,000kg

LCIA methodology: TRACI 2.1

LCA software; LCI database

SimaPro Analyst 8.5.2.0 Ecolnvent 3.1, 2.2

LCA conducted by

Sustainable Minds

LCA public version

Isolatek International 41 Furnace Street

Stanhope, NJ 07874

800 631 9600

LCA & material health results & interpretation

CAFCO® 300, 300 AC, 300 HS & 3000

Life cycle assessment

Material health

Scope and summary

♥ Cradle to gate ○ Cradle to gate with options ○ Cradle to grave

Application

The CAFCO® 300 Series is a durable, gypsum based, wet mix, commercial density Spray-Applied Fire Resistive Material (SFRM) designed to provide fire protection to concealed floor and roof assemblies, steel beams, columns, and joists in building construction projects.

Declared unit

1,000 kg of spray-applied fire resistive material, packaging included.

Manufacturing data

Reporting period: January 2017 – December 2017

Location: Stanhope, NJ; Houston, TX; San Bernardino, CA

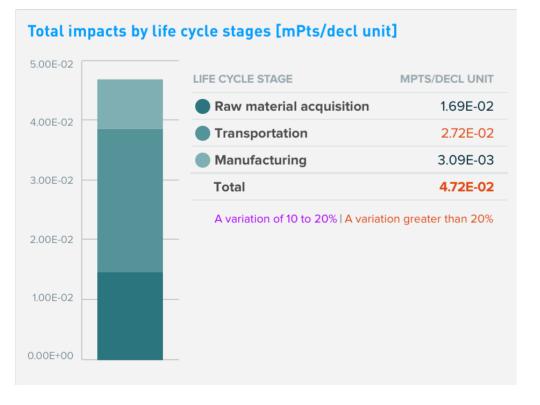
The amount of water required to be added during the mixing and application of 1,000 kg of dry product is 429 gallons. This water consumption will cause additional environmental impacts in the use phase, which is out of the scope of this assessment.

Default manufacturing scenarios

Production for the product series includes a Kraft paper bag for packaging. At the end of production, approximately 10% of vermiculite is sent to land fill when it does not "pop" in the manufacturing process. Vermiculite is used as a bulking agent in the production process.

Material composition greater than 1% by weight

PART	MATERIAL	AVG % WT.
Product Ingredient	Calcium sulfate	55.8%
Product Ingredient	Vermiculite	27.6%
Product Ingredient	Calcium carbonate	5.9%
Product Ingredient	Cellulose	5.2%
Product Ingredient	Bentonite clay	4.2%
Packaging	Kraft paper bag	1.4%



What's causing the greatest impacts

All life cycle stages

The transportation stage dominates the results for all impact categories except for acidification, respiratory effects, and smog where the material acquisition stage dominates. Following these two stages, the lowest impacts come from come from manufacturing stage.

Transportation stage

The impact of the transportation stage is mostly due to the calcium sulfate and vermiculite distances. These two raw materials have the greatest distances of the raw materials.

Sensitivity analysis

There are different raw material weights required for each product in the series. The different material weight directly affect the transportation, production, and end of life impacts.

Multi-product weighted average

Results represent the weighted average using production volumes for the products covered. Variations of specific products for differences of 10–20% against the average are indicated in purple; differences greater than 20% are indicated in red. A difference greater than 10% is considered significant.

How we're making it greener

Isolatek minimizes its waste portfolio by employing a variety of efforts, including the reuse of recycling of spent materials where feasible.

Isolatek offers the most thermally efficient materials on the market, meaning less material is needed to complete a project.

See how we make it greener

LCA results

LIFE CYCLE STAGE	RAW MATERIAL ACQUISITION	TRANSPORTATION	MANUFACTURING	TOTAL
Information modules: Included Excluded	A1 Raw Materials	A2 Transportation	A3 Manufacturing	A1-A3 Total
			Table and Table	

Impacts per declared unit	1.69E-02 mPts	2.72E-02 mPts	3.09E-03 mPts	4.72E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	CAFCO® 300 Series raw material production.	Truck and rail transportation used to transport raw materials to manufacturing site.	Energy and ancillary materials required to make the passive fire protection product.	Sum of the single point scores.

TRACI v2.1 results per declared unit

A variation of 10 to 20% | A variation greater than 20%

Ecological dama	,e						
Impact category	Unit						
Acidification	kg SO ₂ eq	?	1.80E+00	1.12E+00	3.19E-01	3.24E+00	
Eutrophication	kg N eq	?	1.56E-01	1.56E-01	2.24E-02	3.34E-01	
Global warming (Embodied carbon)	kg CO ₂ eq	?	1.99E+02	2.88E+02	8.02E+01	5.67E+02	
Ozone depletion	kg CFC-11 eq	?	2.54E-05	6.92E-05	1.00E-05	1.05E-04	

TRANSPORTATION

MANUFACTURING

TOTAL

Human health damage

LIFE CYCLE STAGE

Impact category	Unit					
Carcinogenics	CTU _h	?	1.98E-06	2.22E-06	2.26E-07	4.43E-06
Non-carcinogenics	CTU _h	?	3.38E-05	6.09E-05	1.68E-06	9.64E-05
Respiratory effects	kg PM _{2,5} eq	?	2.67E-01	1.96E-01	3.22E-02	4.95E-01
Smog	kg O ₃ eq	?	2.53E+01	2.34E+01	3.27E+00	5.19E+01

Additional environmental information

Impact category	Unit					
Ecotoxicity	CTU _e	?	1.50E+02	1.13E+03	1.23E+01	1.30E+03
Fossil fuel depletion	MJ, LHV	3	5.55E+02	5.83E+02	1.23E+02	1.26E+03

See the additional EPD content required by the ASTM Environment PCR on page 4 of the Transparency Report PDF.

RAW MATERIAL ACQUISITION

References

LCA Background Report

Isolatek Products LCA (public version), Isolatek 2019. SimaPro Analyst 8.5.2.0, Ecolnvent 3.1, 2.2 database.

PCR

ASTM PCR for Spray-Applied Fire Resistive Materials; Version 1.0, February 2022. PCR review conducted by Thomas Gloria, PhD (chair, t.gloria@industrial-ecology.com); Jeffrey Gould; and Karl Houser.

ISO 14025, "Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services".

Independent external verification of the declaration and data, according to ISO 14025.

Download PDF SM Transparency Report/Material Health Overview, which includes the additional EPD content required by the ASTM Environment PCR.

"Transparency Reports™ / environmental product declarations enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. TRs/EPDs of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore, cannot be used as comparative assertions unless the conditions defined in ISO 14025 Section 6.7.2. 'Requirements for Comparability' are satisfied." EPDs from different programs (using different PCR) may not be comparable. TRs/EPDs cannot be compared if they do not have the same functional unit, reference service life, and building service life.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified improved life-cycle environmental performance.

LEED BD+C: New Construction | v4 - LEED v4

Building product disclosure and optimization

Environmental product declarations

Industry-wide (generic) EPD ½ product ✓ Product-specific Type III EPD 1 product

LEED BD+C: New Construction | v4.1 - LEED v4.1

Building product disclosure and optimization

Environmental product declarations

Industry-wide (generic) EPD 1 product ✓ Product-specific Type III EPD 1½ product

Green Globes for New Construction and Sustainable Interiors Materials and resources

NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

C 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

Collaborative for High Performance Schools National Criteria **MW 7.1 – Environmental Product Declarations**

Third-party certified type III EPD 2 points

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

Industry average EPD .5 points ✓ Multi-product specific EPD .75 points () Product specific EPD 1 point



SM Transparency Report™ + Material Health Overview™

This declaration was independently

verified by NSF to ISO 21930:2007

VERIFICATION

3rd party verified

Validity: 05/29/19 - 05/29/24

ISL - 05292019 - 001

Self-declared

LCA

3rd party reviewed

NSF

Transparency Report **NSF Certification, LLC**

NSF. Material evaluation

P.O Box 130140 789 N.Dixboro Road Ann Arbor, MI 48105, USA 734 769 8010

and the ASTM PCR,

and ISO 14025:2006.

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2 LCA & MATERIAL HEALTH RESULTS & INTERPRETATION **HOW WE MAKE IT GREENER**

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LCA & material health results & interpretation

CAFCO® 300, 300 AC, 300 HS & 3000

Material health

Assessment scope and results

Declare™ **Inventory threshold: 100 ppm Declare level:** The Declare product database and label LBC Red List Free ? are used to select products that meet the LBC Compliant (?)

Click the label to see the full declaration.

LBC's stringent materials requirements,

streamlining the materials specification

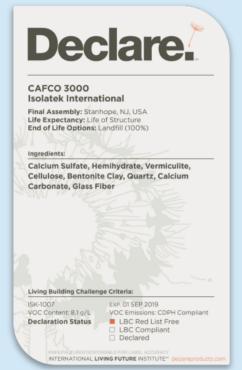


and certification process.



Declared ?





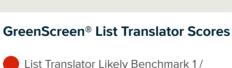
Health Product Declaration®

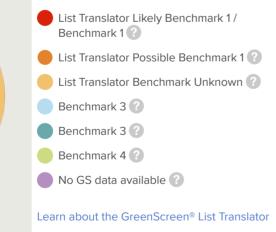
CAFCO 300 SERIES

Inventory threshold: 100 ppm Full disclosure known hazards: Yes

Based on the selected content inventory threshold:







Total VOC Content

Material (g/l): 0.0 Regulatory (g/l): 50.0 Does the product contain exempt VOCs: No Are ultra-low VOC tints available: N/A

CAFCO 3000

Inventory threshold: 100 ppm Full disclosure known hazards: Yes

Based on the selected content inventory threshold:

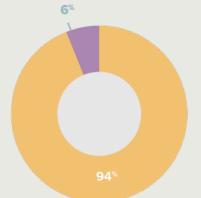








TOTAL INTENTIONAL INGREDIENTS



Total VOC Content

Material (g/l): 0.0 Regulatory (g/l): 50.0 Does the product contain exempt VOCs: No Are ultra-low VOC tints available: N/A

What's in this product and why

Declare level

Isolatek International takes pride in the fact that all of its Applied Fireproofing products are labeled as Declare[™] Red List Free. The Declare program holds manufacturers accountable for their ingredients used in their products and allows the specifiers, architects and others the ability to better understand the products' environmental and sustainable qualities through transparency.

What's in the product and why

The ingredients used to manufacture Isolatek International's CAFCO 300 Series products provide effective, thermally efficient, robust and resilient Applied Fireproofing products.

The in-place products have superior thermal efficiencies, resulting in lower thicknesses to meet specified design criteria providing efficiencies in material and labor.

Our products' primary components are gypsum, which is a naturally occurring element or Portland cement binder, which is obtained and processed from common natural materials, such as limestone and clay. The trade off with the cement -based products compared to the naturally occurring gypsum counterparts is their functional ability to better withstand the exterior elements or other abuses during the construction and life cycle of the structures in which they are installed. Both primary component binder types have widespread availability which are sourced locally near our various production facilities.

What's been done in the design and manufacture in consideration of the potential human health impacts in the use stage

Isolatek International's CAFCO 300 Series products contain recycled cellulose which constitutes up to 10% recycled content of the material by weight. CAFCO 300 Series products are packaged in recyclable kraft paper bags and shipped on wood pallets that can be reused or recycled.

CAFCO 300 Series products are designed to provide required fire resistance ratings on structural steel members and designed to last the lifetime of a building when applied in accordance with the specified design criteria, Isolatek's written Application Instructions, properly maintained after application and not damaged or altered in any way after installation.

Where it goes at the end of its life

Isolatek International's Applied Fireproofing products are designed to provide the required fire resistance ratings on the structural steel members to last the lifetime of the building when applied in accordance with the specified design criteria, our written Application Instructions and are not damaged or altered in any way after their installation.

Although Isolatek's Applied Fireproofing products are designed to last the lifetime of the building, the end life of the product is generally the result of a rehabilitation, which may require removal and replacement of the Applied Fireproofing materials. The removal depends upon the degree of the rehabilitation. Otherwise, the end life of the material is based on the end life of the structure in its entirety. The material is then processed along with the remainder of the structure, primarily as landfill material.

How we're making it healthier

- Isolatek International is committed to legal compliance and ethical business practices in all of our operations.
- Isolatek's vendors must act in accordance with the applicable statutory and international standards regarding environmental protection.
- Isolatek's vendors must minimize environmental pollution and make continuous improvements in environmental protection.
- Isolatek's vendors must set up or use a reasonable environmental management system.
- In Isolatek's purchase arrangements, vendors must observe all applicable laws of their country and international standards, including but not limited to laws and standards relating to the environment, as well as health and safety.

See how we make it greener

Evaluation programs

Declare

Declare labels are issued to products disclosing ingredient inventory, sourcing and end of life options. Declare labels are based on the Manufacturers Guide to Declare, administered by the International Living Future Institute.

How it works

Material ingredients are inventoried and screened against the Living Building Challenge (LBC) Red List which represents the 'worst in class' materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem.

The Health Product Declaration®

The HPD Open Standard provides a consistent, and transparent format to accurately disclose the material contents and associated hazard classifications for a building product.

How it works

Material ingredients are screened and categorized according to the hazards that international governmental bodies and toxicology experts have associated with them, based on two listings:

- Authoritative lists maintained or recognized by government bodies
- Screening lists, which include chemicals that government bodies determined need further scrutiny, as well as chemical lists not recognized by any government body.

References

Declare

CAFCO® 300

CAFCO® 300 AC

CAFCO® 300 HS

CAFCO® 3000

Manufacturer's Guide to Declare

A comprehensive guide providing information about the program, the assessment methodology, how to submit material data to obtain a Declare label and how they are used to meet the Health & Happiness and Materials Petals of the Living Building Challenge.

Health Product Declaration®

CAFCO® 300

CAFCO® 300 AC

CAFCO® 300 HS

CAFCO® 3000

Health Product Declaration Open Standard v2.1

The standard provides guidance to accurately disclose the material contents of a building product using a standard, consistent, and transparent format.

Rating systems

LEED BD+C: New Construction | v4 - LEED v4

2. Optimization

Building product disclosure and optimization

Material Ingredients

1. Reporting

Credit value options 1 product each

Living Building Challenge 3.0

Materials petals imperatives

✓ 10. Red List Free ○ 12. Responsible Industry ○ 13. Living Economy Sourcing

Well Building Standard®

Air and Mind Features

Air, 26. Enhanced Material Safety

All, 20. Ellitaticed Material Safety

Mind, 97. Material Transparency Mind, 98. Organizational Transparency

3. Supply Chain Optimization

Collaborative for High Performance Schools National Criteria

MW 10.1 — Building Product Health Related Information Reporting

✓ Product Health Related Information Report

1 point

1

SM Transparency Report™ + Material Health Overview™

VERIFICATION

Material evaluation

Self-declared



ISL - 12032018 - 001

The material health evaluation is self-declared and done in accordance with the HPD Open Standard 2.1

HPD Collaborative

401 Edgewater Place, Suite 600 Wakefield, MA 01880

www.hpd-collaborative.org

781.876.8871

The material health evaluation is selfdeclared and done in accordance with the Manufacturers Guide to Declare.

International Living Future Institute

501 East Madison St. Seattle, WA 98122

206 223 2028

INTERNATIONAL LIVING FUTURE INSTITUTE"

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LCA & MATERIAL HEALTH RESULTS & INTERPRETATION

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How we make it greener

RAW MATERIAL ACQUISITION

CAFCO® 300, 300 AC, 300 HS & 3000

Collapse all

See LCA results by life cycle stage

Reuse of recycled spent materials

Isolatek uses recycled cellulose in the production of the CAFCO® 300 Series products. CAFCO 300 contains up to 10% recycled cellulose.

Isolatek collaborates with vendors to provide neutral products that minimize environmental impact, conserves energy, reduces and diverts waste, and are sustainable.

These vendors, where possible, are strategically located in close proximity to our manufacturing facilities which minimized transportation costs.



MANUFACTURING



Regional Manufacturing

Isolatek makes a point to minimize energy in our plants, buildings and processes in order to conserve supplies, and minimize consumption of natural resources, especially non-renewable resources.

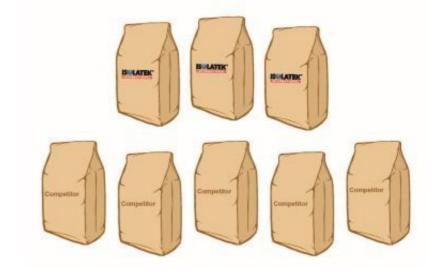


TRANSPORTATION



Optimized and recycled packaging

CAFCO 300 Series products are packaged in recyclable kraft paper bags and shipped on wood pallets that can be reused or recycled.



USE



Energy use optimization

Isolatek's materials also provide both NRC (Noise Reduction Coefficient) values and Thermal Resistance (R) values which allow for the reduction of the amount of energy needed for climate control, and reduce the need for additional materials required for soundproofing within the building envelope.

Extended set products are available that eliminates daily wash out, reducing clean water consumption and construction waste.

Reduced water use

Isolatek's materials are designed to use the least amount of water during the installation process, which results in less consumption of natural resources.





END OF LIFE



Durability

Although Isolatek's Applied Fireproofing products are designed to last the lifetime of the building, the end life of the product is generally the result of a rehabilitation, which may require removal and replacement of the Applied Fireproofing materials. The removal depends upon the degree of the rehabilitation. Otherwise, the end life of the material is based on the end life of the structure in its entirety. The material is then processed along with the remainder of the structure, primarily as landfill material.



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Additional EPD content required by: ASTM PCR Parts A and B for Spray-applied Fire-resistive Materials (SFRM)

CAFCO® 300 Series

Primary energy consumption, material resources consumption, and waste flows per declared unit

Parameter	Unit	A1	A2	А3	Total			
Primary energy consumption indicators								
Nonrenewable fossil	MJ, HHV	4.56E+03	4.53E+03	1.18E+03	1.03E+04			
Nonrenewable nuclear	MJ, HHV	2.27E+02	7.18E+01	1.29E+02	4.28E+02			
Renewable (solar, wind, hydroelectric, and geothermal)	MJ, HHV	8.85E+00	4.39E+00	1.79E+01	3.11E+01			
Renewable (biomass)	MJ, HHV	6.41E+02	2.67E+01	9.79E+00	6.77E+02			
Material resources consumption indicators								
Renewable material resources	kg	3.65E+01	9.02E-01	4.84E-01	3.79E+01			
Nonrenewable material resources	kg	1.16E+03	3.58E+01	2.28E+01	1.54E+03			
Net fresh water	L	1.32E+04	3.24E+03	2.53E+03	1.90E+04			
Waste flows								
Non-hazardous waste generated	kg	0	0	2.96E+01	2.96E+01			
Hazardous waste generated	kg	0	0	0	0			

Numbers shown in purple have a variation of 10 to 20% Numbers shown in red have a variation greater than 20%