



1 PERFORMANCE DASHBOARD

LCA & MATERIAL HEALTH RESULTS & INTERPRETATION

**HOW WE MAKE IT GREENER** 

SM Transparency Catalog ► Isolatek International Showroom ► CAFCO® BLAZE-SHIELD® II, II HS & HP



## **CAFCO® BLAZE-SHIELD® II** CAFCO BLAZE-SHIELD II HS **CAFCO BLAZE-SHIELD HP**

The CAFCO BLAZE-SHIELD series of products are the industry-leading commercial and medium density Dry Mix Spray-Applied Fire Resistive Materials.

The inorganic Portland cement-based formulations provide superior fire resistance for structural steel and concrete in commercial construction environments, particularly when exposure to severe weather conditions during the construction phase is necessary.





### Performance dashboard

#### **Features & functionality**

CAFCO BLAZE-SHIELD II: Commercial Density SFRM with exceptionally high recycled content, providing significant LEED credits.

CAFCO BLAZE-SHIELD II HS: Commercial Density SFRM formulated to satisfy IBC minimum bond strength requirement of 430 psf for buildings up to 420' in height.

CAFCO BLAZE-SHIELD HP: Medium Density formulation suitable to remain exposed to extreme weather during construction, providing flexibility to sequencing and scheduling of projects.

CAFCO BLAZE-SHIELD products are the only commercial and medium density products classified as "investigated for exterior use" by UL.

#### **Environment & materials**

#### Improved by:

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

Post-industrial 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** 

### Visit Isolatek for more product specifications:

CAFCO BLAZE-SHIELD II, CAFCO BLAZE-SHIELD II HS, CAFCO BLAZE-SHIELD HP

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** 

LCA

3rd party reviewed

**✓** NSF

**Transparency Report NSF.** 

3rd party verified

Material evaluation

Self-declared



Validity: 05/29/19 - 05/29/24 ISL - 05292019 - 002

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

LCA conducted by Sustainable Minds

Ecolnvent 3.1, 2.2

LCA public version

Isolatek International 41 Furnace Street

Stanhope, NJ 07874 800 631 9600

Contact us

## LCA & material health results & interpretation

CAFCO® BLAZE-SHIELD® II, II HS & HP

Life cycle assessment

Material health

#### Scope and summary

**♦ Cradle to gate** ○ Cradle to gate with options ○ Cradle to grave

### **Application**

CAFCO® BLAZE-SHIELD® products contain a unique inorganic, environmentally friendly, Portland cement- based formulation that provides superior fire resistance for structural steel and concrete in commercial construction environments.

These are the products of choice particularly when exposure to severe weather conditions during the construction phase is necessary, or when application efficiency, along with excellent thermal and acoustical insulation properties are desired.

CAFCO® BLAZE-SHIELD® II HS is a high strength commercial density, Portland cement based Spray-Applied Fire Resistive Material (SFRM) that is specially formulated to satisfy the International Building Code (IBC) bond strength requirement for buildings up to 420 ft in height.

#### **Declared unit**

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

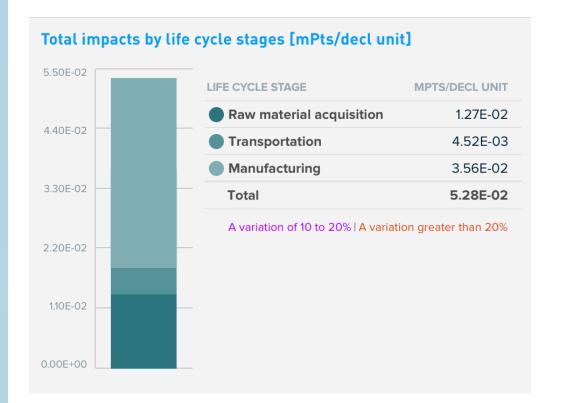
#### **Manufacturing data**

Reporting period: January 2017 – December 2017

**Location: Huntington, IN** 

The amount of water required to be added during the mixing and application of 1,000 kg of dry product is 334 gallons. This water consumption will cause additional environmental impacts in the use phase, which is out of the scope of this assessment.

#### Material composition greater than 1% by weight **MATERIAL** AVG % WT. **Product Ingredient Portland Cement** 18.4% **Product Ingredient** Fieldspar 17.4% **Product Ingredient** Slag 59.3% **Product Ingredient** Plaster of Paris 4.5% **Packaging** Film bag 0.3%



#### What's causing the greatest impacts

#### All life cycle stages

Overall, the raw material aquisition stage dominates the results for impact categories. Followed closely behind by the manufacturing stage. The overall lowest impacts come from the transportation stage.

#### Raw materials acquisition stage

The impact of the raw material acquisition stage is mostly due to the Portland cement and levy slag. This is because of the high material weights used in manufacturing.

#### Sensitivity analysis

There are no notable variations.

#### 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 our 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
			Taken and	

Impacts per declared unit	1.27E-02 mPts	4.52E-03 mPts	3.56E-02 mPts	5.28E-02 mPts	
Materials or processes contributing >20% to total impacts in each life cycle stage	CAFCO® BLAZE-SHIELD 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%

Impact category	Unit					
Acidification	kg SO <sub>2</sub> eq	?	1.13E+00	1.79E-01	1.68E+01	1.81E+01
Eutrophication	kg N eq	?	1.07E-01	2.55E-02	3.24E-01	4.56E-01
Global warming (Embodied carbon)	kg CO <sub>2</sub> eq	?	3.87E+02	4.78E+01	2.27E+02	6.61E+02
Ozone depletion	kg CFC-11 eq	?	1.76E-05	1.16E-05	1.52E-05	4.44E-05

TRANSPORTATION

### Human health damage

LIFE CYCLE STAGE

Impact category	Unit						
Carcinogenics	CTU <sub>h</sub>	?	9.35E-07	3.49E-07	7.16E-07	2.00E-06	
Non-carcinogenics	CTU <sub>h</sub>	?	1.94E-05	1.03E-05	6.49E-06	3.62E-05	
Respiratory effects	kg PM <sub>2.5</sub> eq	?	2.62E-01	3.24E-02	4.38E+00	4.67E+00	
Smog	kg O <sub>3</sub> eq	?	1.67E+01	3.63E+00	6.64E+01	8.68E+01	

### **Additional environmental information**

	Impact category	Unit					
	Ecotoxicity	CTU <sub>e</sub>	?	6.84E+01	1.93E+02	3.07E+01	2.92E+02
	Fossil fuel depletion	MJ, LHV	2	1.81E+02	9.72E+01	1.24E+02	4.02E+02

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

**MANUFACTURING** 

TOTAL

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** 

O 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)**

Multi-product specific EPD

.75 points

.5 points

Product specific EPD

Industry average EPD

1 point

## SM Transparency Report™ + Material Health Overview™

**VERIFICATION LCA ✓** NSF 3rd party reviewed

Transparency Report

**✓** NSF 3rd party verified

Material evaluation

Ø **Self-declared** 

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LCA conducted by Sustainable Minds

LCA public version

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

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## LCA & material health results & interpretation

CAFCO® BLAZE-SHIELD® II, II HS & HP

Material health

#### Assessment scope and results

#### Declare™

**Inventory threshold: 100 ppm** 

#### **Declare level:**

The Declare product database and label are used to select products that meet the LBC's stringent materials requirements, streamlining the materials specification and certification process.

LBC Red List Free ? LBC Compliant ?

Declared ?



Click the label to see the full declaration.

## CAFCO BLAZE-SHIELD



## Health Product Declaration®

## **CAFCO BLAZE-SHIELD II, II HS & HP**

Inventory threshold: 100 ppm Full disclosure known hazards: Yes

Based on the selected content inventory threshold:









Benchmark 1 ?



Learn about the GreenScreen® List Translator

## 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**

The Declare<sup>™</sup> 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. Isolatek International takes pride in the fact that all of our Applied Fireproofing products are labeled as Declare Red List Free.

#### What's in the product and why

Our products' primary components is 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. The primary component binder type has widespread availability which are sourced locally near our production facility.

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

Isolatek International's BLAZE-SHIELD products contain more recycled content by weight than any competing Applied Fireproofing product. BLAZE-SHIELD products contain 56 to 67% slag, a by-product of steel production, which would otherwise be land filled. These products are packaged in recyclable plastic film bags and shipped on wooden pallets that can be reused or recycled.

BLAZE-SHIELD products are designed to provide the required fire resistance ratings on structural steel members and designed to last the lifetime of the building when applied in accordance with 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
- 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 BLAZE-SHIELD** 

#### **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 BLAZE-SHIELD II
CAFCO BLAZE-SHIELD HP

CAFCO BLAZE-SHIELD II HS

## **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

Building product disclosure and optimization

**Material Ingredients** 

Credit value options 1 product each

✓ 1. Reporting 2. Optimization 3. Supply Chain Optimization

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

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

Collaborative for High Performance Schools National Criteria
MW 10.1 — Building Product Health Related Information Reporting

Product Health Related Information Report

1 point



## SM Transparency Report™ + Material Health Overview™

VERIFICATION

Material evaluation

Self-declared

ISL - 12032018 - 002

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.or

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 www.living-future.org

206 223 2028



Isolatek International

41 Furnace Street Stanhope, NJ 07874 www.isolatek.com

800 631 9600

Contact us

# Transparency Report

CAFCO® BLAZE-SHIELD® II, II HS & HP

See LCA results by life cycle stage

## Collapse all

## RAW MATERIAL ACQUISITION

How we make it greener



## Reuse of recycled spent materials

SM Transparency Catalog ► Isolatek International Showroom ► CAFCO® BLAZE-SHIELD® II, II HS & HP

Isolatek International's BLAZE-SHIELD products contain more recycled content by weight than any competing Applied Fireproofing product. BLAZE-SHIELD products contain 56 to 67% slag, a by-product of steel production, which would otherwise be land filled.

Isolatek collaborates with vendors to provide neutral products that minimize environmental impact, conserve energy, reduce and divert waste, and are sustainable.

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



## MANUFACTURING



## **Regional Manufacturing**

Isolatek International's CAFCO BLAZE-SHIELD series products are packaged in recyclable plastic film bags and shipped on wooden pallets that can be reused or recycled.



## **TRANSPORTATION**



## Optimized and recycled packaging

Isolatek International's CAFCO BLAZE-SHIELD series products are packaged in recyclable plastic film bags and shipped on wooden pallets that can be reused or recycled.



# USE



## **Energy use optimization**

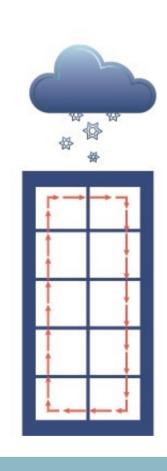
Isolatek's materials also provide both NRC (Noise Reduction Coefficient) values and Thermal Resistance (R) values which allow for the reduction of the amount of energy needed for climate control, and reduce the need for additional materials required for soundproofing within the building envelope.

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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**Transparency Report** 

3rd party verified **✓** NSF. Material evaluation

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SimaPro Analyst 8.5.2.0

LCA public version

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

**CAFCO® BLAZE-SHIELD® 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	2.54E+03	7.54E+02	6.19E+03	9.49E+03				
Nonrenewable nuclear	MJ, HHV	1.48E+02	1.17E+01	7.44E+02	9.04E+02				
Renewable (solar, wind, hydroelectric, and geothermal)	MJ, HHV	8.85E+00	7.13E-01	8.39E+00	1.80E+01				
Renewable (biomass)	MJ, HHV	3.26E+01	4.36E+00	8.12E+01	1.18E+02				
Material resources consumption indicators									
Renewable material resources	kg	1.53E+00	2.12E-01	3.85E+00	5.59E+00				
Nonrenewable material resources	kg	8.88E+02	5.89E+01	3.18E+02	1.26E+03				
Net fresh water	L	5.29E+03	5.28E+02	1.11E+04	1.69E+04				
Waste flows									
Non-hazardous waste generated	kg	0	0	0	0				
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%