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Promat



Cafco BLAZESHIELD®

Mineral Wool Cement Based Dry Mix Spray

construction applications



www.promat-spray.com

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INTRODUCTION

Cafco BLAZESHIELD® is a spray applied single package factory controlled premix, based on a mixture of mineral wool and cement binders, for internal use.

Cafco BLAZESHIELD® will not crack or spall under normal conditions of structural movement or where deflections are within 1/250 of the span. It will also resist dusting and erosion due to high velocity air movement in plenum chambers.

Cafco BLAZESHIELD® is therefore used for application on steel and concrete frames, metal decks and return air plenums, and can be sprayed around any complex shape.

Commercial projects will benefit from the use of Cafco BLAZESHIELD®.

Properties and performance	
Colour and finish	Off-white textured surface. May be tamped/cuffed or rolled for a smoother finish or oversprayed with a recommended hard setting finish
Minimum practical thickness	10mm
Theoretical coverage	210m ² /tonne at 18mm thickness
Cure	By hydraulic set
Initial set	24 hours at 20°C and 50% RH
Density	180-300 kg/m ³ depending on application
Bond impact	No cracks or delamination
Air erosion resistance	No erosion
Deflection effect	No cracks or delamination within normal code limits
Cohesion/adhesion	19.1kPa
Combustibility	Non-combustible
Smoke generation	Does not contribute to smoke generation
Thermal conductivity	0.043W/mK at 24°C
Corrosion resistance	Does not promote corrosion of steel
pH value	10
Sound absorption	Noise reduction coefficient (NRC) 0.75
Fire resistance	<p>Structures protected with Cafco BLAZESHIELD® have undergone extensive fire resistance tests in approved independent laboratories to recognised standards throughout the world, including:</p> <ul style="list-style-type: none"> • UK (BS 476: Parts 20-21: 1987 Appendix D) • France (August 1999 Ministry Decree) • Belgium (NBN S21-202) • USA (ASTM E119) <p>The fire resistance test results relate solely to the constructions tested and test conditions imposed. Promat provides computer based thickness calculations to meet specific fire resistance on receipt of details</p>

ADVANTAGES

- A durable, lightweight coating that offers fire protection for up to 240 minutes.
- A very effective thermal insulator, particularly when applied to the underside of a floor.
- An efficient sound absorbing material.

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FIRE PROTECTION THICKNESS

The thickness of the fire protection for a given period of fire resistance in a cellulosic type fire, relates to the A/V ratio of the section. A/V is the ratio of the heated perimeter exposed to fire to the cross-sectional area of steel.

All column and beam sections have their own specific A/V ratio. Please consult Promat to establish the A/V ratio for a particular beam or column section. TABLES 1 and 2 ascertain the thickness of Cafco BLAZESHIELD® that meets the required period of fire resistance for I-section beams and H-section columns.

These tables show the thickness requirements for Cafco BLAZESHIELD® under French testing standards. Thickness requirements under other testing standards are available from Promat on request.

For advice on thickness calculations for hollow sections, cellular beams, castellated sections, composite floors, upgrading of concrete slabs and more complex situations, please contact Promat.

A/V	Thickness for the required fire resistance					
	30 min	60 min	90 min	120 min	180 min	240 min
30	15mm	15mm	15mm	15mm	25mm	35mm
50	15mm	15mm	15mm	18mm	32mm	42mm
70	15mm	15mm	15mm	20mm	37mm	45mm
90	15mm	15mm	15mm	23mm	40mm	49mm
110	15mm	15mm	17mm	25mm	42mm	50mm
130	15mm	15mm	20mm	27mm	44mm	60mm
150	15mm	15mm	20mm	30mm	45mm	60mm
170	15mm	15mm	22mm	33mm	48mm	–
190	15mm	15mm	23mm	35mm	52mm	–
210	15mm	17mm	24mm	37mm	55mm	–
230	15mm	18mm	27mm	39mm	57mm	–
250	15mm	19mm	28mm	42mm	–	–
270	15mm	19mm	30mm	43mm	–	–
290	15mm	20mm	32mm	44mm	–	–
310	15mm	22mm	34mm	47mm	–	–
330	15mm	23mm	35mm	48mm	–	–

TABLE 1 Cafco BLAZESHIELD® thicknesses for I-section beams (3-sided exposure). Critical temperature 620°C, continuous concrete topping.

A/V	Thickness for the required fire resistance					
	30 min	60 min	90 min	120 min	180 min	240 min
30	15mm	15mm	15mm	20mm	30mm	48mm
50	15mm	15mm	15mm	22mm	38mm	52mm
70	15mm	15mm	17mm	24mm	42mm	55mm
90	15mm	15mm	20mm	27mm	44mm	–
110	15mm	15mm	22mm	30mm	47mm	–
130	15mm	17mm	24mm	35mm	50mm	–
150	15mm	18mm	25mm	37mm	53mm	–
170	15mm	18mm	27mm	38mm	57mm	–
190	15mm	19mm	30mm	40mm	–	–
210	15mm	20mm	32mm	43mm	–	–
230	15mm	22mm	33mm	44mm	–	–
250	15mm	23mm	34mm	47mm	–	–
270	15mm	24mm	37mm	48mm	–	–
290	15mm	24mm	37mm	48mm	–	–
310	15mm	26mm	40mm	52mm	–	–
330	15mm	27mm	43mm	57mm	–	–

TABLE 2 Cafco BLAZESHIELD® thicknesses for H-section columns (4-sided exposure). Critical temperature 550°C.



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SOUND INSULATION THICKNESS

Cafco BLAZESHIELD® has been extensively tested and used as a medium for absorbing sound, and being spray applied presents a monolithic surface.

The noise reduction coefficient (NRC) is the average absorption of sound in the 250-2000 Hertz (Hz) range. In TABLE 3, figures are also given for 125 Hz as this represents the pitch of the average male voice and has relevance to office design.

TABLE 3 Cafco BLAZESHIELD® thicknesses at density of 285kg/m³ and sound absorption.

Thickness	Substrate	Frequency						NRC rating
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
		Absorption coefficient						
13mm	Steel beam	0.25	0.58	0.77	0.98	1.10	1.13	0.85
19mm	Concrete slab	0.08	0.16	0.52	0.87	1.08	1.07	0.65

PREPARATION

Typical substrates	Primed and unprimed steel, concrete structures, metal decks and return air plenums
Substrate preparation	The substrate must be clean, dry and free from dust, loose millscale, loose rust, oil and any other condition preventing good adhesion Cafco BLAZESHIELD® can be applied to unprimed and primed steelwork. Prior to the application, primed steel and concrete should be prepared by the application of Cafco BONDSEAL® used as a keycoat

APPLICATION

Initial steps	Application of Cafco BLAZESHIELD® must be carried out by an applicator recognised by Promat
Methods	Mix Cafco BLAZESHIELD® with potable water at the nozzle of a spraying machine approved by Promat Cafco BLAZESHIELD® may be tamped/cuffed or rolled for a smoother finish or left with a spray texture
Limitations	Cafco BLAZESHIELD® may be applied when the substrate and air temperatures are at least 4°C and rising, and must be maintained for 24 hours before, during and 24 hours after application. Maximum substrate and air temperature is 50°C Substrate temperature should be at least 2°C above dew point temperature



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QUALITY ASSURANCE

Promat operates a quality system in accordance with BS EN ISO 9001: 2000 and has received full accreditation to these standards.

Operating to these standards means that all activities, which have a bearing upon quality, are set out in written procedures. Systematic and thorough checks are made on all materials and their usage. Test equipment is subjected to regular checks and is referred back to national standards.

The information given in this data sheet is based on actual tests and is believed to be typical of the product. No guarantee of results is implied however, since conditions of use are beyond our control.

HEALTH AND SAFETY

Adequate ventilation must be provided during use. Avoid contact with the skin and eyes by using eye protection, gloves, barrier cream and a face mask.

If the product comes into contact with the skin, wash immediately with soap and water. If the eyes are affected, flush with plenty of water and seek medical attention immediately.

A safety data sheet is available from Promat upon request.

Promat activities are conducted with due regard to all statutory requirements with appropriate safeguards against exposing employees and the public to health and safety risks.

PACKAGING

20kg bags.

STORAGE

Above ground and kept dry.

SHELF LIFE

Maximum 12 months.

ENVIRONMENTAL

Do not discharge into drains, watercourses or soil.

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