



# CAFCO® HEAT-SHIELD®

Spray Applied Thermal/Acoustical Treatment

CAFCO HEAT-SHIELD is a unique blend of inorganic mineral wool aggregate and proprietary binders that offers a combination of features not found in any other spray-applied thermal/acoustical product. CAFCO HEAT-SHIELD is ideally suited for light gauge steel panels, concrete slab construction, cold storage facilities, or when an R-20 thermal value is required.

## ACOUSTICAL PERFORMANCE

CAFCO HEAT-SHIELD can be effectively used for acoustical treatment, providing noise reduction coefficient (NRC) ratings up to 1.05. These acoustical performance ratings exceed that of competitive products tested in accordance with ASTM C-423.

## MAJOR SPECIFICATIONS

CAFCO HEAT-SHIELD complies with the requirements of the following specifications:

- ASTM Standard C-1014 "Spray-Applied Mineral Fiber Thermal or Acoustical Insulation"
- ASTM E1042 "Acoustically Absorptive Materials Applied by Trowel or Spray"

## THERMAL PROPERTIES

CAFCO HEAT-SHIELD provides a "k" factor of 0.26 at 75°F (0.037 W/mK at 24°C). This converts to an "R" value of 3.85 per inch of material. Thermal ratings have been tested in accordance with ASTM C-518.

## FIRE HAZARD CLASSIFICATION

CAFCO HEAT-SHIELD has been tested by Underwriters Laboratories Inc. (UL) in accordance with ASTM E84 (UL 723, and CAN/ULC S-102) and is Class I rated with the following Surface Burning Characteristics:

Flame Spread..... 0

Smoke Developed..... 10

CAFCO HEAT-SHIELD is classified as noncombustible when tested in accordance with ASTM E136 (CAN4-S114), a requirement of major building codes.

THICKNESS	BASE	Frequency (Hz)						NRC
		125	250	500	1000	2000	4000	
1/2" (13 mm)	Solid	0.07	0.10	0.43	0.67	0.80	0.92	0.50
1" (25 mm)	Solid	0.10	0.26	0.75	0.94	1.02	1.00	0.75
2" (50 mm)	Solid	0.25	0.68	1.13	1.24	1.16	1.19	1.05

	Without Insulation "R"	HEAT-SHIELD 1" (25 mm) "R"	HEAT-SHIELD 3" (75 mm) "R"
<b>WALL</b>			
Corrugated Metal	0.80	4.7	12.4
6" (150 mm) Poured Block	1.3	5.2	12.9
8" (200 mm) Concrete Block	1.9	5.8	13.5
8" (200 mm) Cinder Block	2.6	6.5	14.2
<b>ROOF</b>			
Corrugated Metal	0.80	4.7	12.4
2" (50 mm) LW Concrete	3.3	7.2	14.9
2" (50 mm) Poured Gypsum	2.8	6.7	14.4

# CAFCO HEAT-SHIELD Guide Specification

## GUIDE SPECIFICATION

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED.

- 1.1.1 Provide all labor, materials, equipment and services necessary for, and incidental to, the complete and proper installation of all sprayed insulation and related work as shown on the drawings or where specified herein, and in accordance with all applicable requirements of the Contract Documents.
- 1.1.2 The material and installation shall conform to the applicable building code requirements of all authorities having jurisdiction.

#### 1.2 QUALITY ASSURANCE.

- 1.2.1 Work shall be performed by a firm with expertise in the installation of thermal/acoustical insulation or similar materials. This firm shall be licensed or otherwise approved by the insulation manufacturer.

#### 1.3 RELATED SECTIONS.

- 1.3.1 Section 05100 - Structural Steel.
- 1.3.2 Section 05300 - Metal Decking.
- 1.3.3 Section 07200 - Insulation.
- 1.3.4 Section 07270 - Firestopping
- 1.3.5 Section 07811 - Fireproofing.
- 1.3.6 Section 07812 - Intumescent Coatings
- 1.3.7 Section 09200 - Lath and Plaster.
- 1.3.8 Section 09900 - Painting.

#### 1.4 REFERENCES.

- A. ASTM E84 - (UL723, CAN/ULC S-102) Surface Burning Characteristics of Building Materials.
- B. ASTM E136 - (CAN4-S114) (Noncombustibility) Behavior of Materials in a Vertical Tube Furnace at 750° C.
- C. ASTM C423 - Sound Absorption Coefficients by the Reverberation Room Method.
- D. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- E. ASTM C1014 - Spray Applied Mineral Fiber Thermal or Acoustical Insulation.
- F. ASTM E1042 - Acoustically Absorptive Materials Applied by Trowel or Spray.

#### 1.5 SUBMITTALS.

- 1.5.1 Manufacturer's Data: Submit Manufacturer's specifications, including certification as may be required to show material compliance with Contract Documents.
- 1.5.2 Test Data: Independent laboratory test results shall be submitted for all specified performance criteria.

#### 1.6 DELIVERY, STORAGE AND HANDLING.

- 1.6.1 Deliver materials to the project in manufacturer's unopened packages, fully identified as to trade name, type and other identifying data.
- 1.6.2 Store materials above ground, in a dry location, protected from the weather. Damaged packages found unsuitable for use should be rejected and removed from the project.

#### 1.7 PROJECT CONDITIONS.

- 1.7.1 When the prevailing outdoor temperature at the building is less than 40° F (4° C), a minimum substrate and ambient temperature of 40° F (4° C) shall be maintained prior to, during, and a minimum of 24 hours after application of sprayed insulation. If necessary for job progress, General Contractor shall provide enclosures with heat to maintain temperatures. Metal panel substrate temperatures must be maintained to prevent condensation during applications.
- 1.7.2 General Contractor shall provide ventilation to allow proper drying of the sprayed insulation during and subsequent to its application.
- 1.7.2.1 In enclosed areas, ventilation shall not be less than 4 complete air changes per hour.

#### 1.8 SEQUENCING/SCHEDULING.

- 1.8.1 All sprayed insulation work on a floor shall be completed before proceeding to the next floor.
- 1.8.2 The Contractor shall coordinate the scheduling of fire protection work to avoid delays in job progress.

### PART 2 - PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS.

- 2.1.1 The insulation material shall be manufactured under the CAFCO brand name, by authorized producers.

#### 2.2 MATERIALS.

- 2.2.1 Materials shall conform to the drawings, specifications and following test criteria:
- 2.2.1.1 Noncombustibility: When tested in accordance with ASTM E136 (CAN4-S114) the material shall be noncombustible.
- 2.2.1.2 Surface Burning Characteristics: When tested in accordance with ASTM E84 (UL273, CAN/ULC S-102) the material shall exhibit the following surface burning characteristics:

Flame Spread .....0  
Smoke Developed .....10

### PART 3 - EXECUTION

#### 3.1 PREPARATION.

- 3.1.1 All surfaces to receive insulation shall be free of oil, grease, loose mill scale, dirt, paints/primers or other foreign materials which would impair satisfactory bonding to the substrate. Manufacturer shall be contacted for procedures on handling primed/painted steel, concrete or other painted substrates. Any cleaning of surfaces to receive sprayed insulation shall be the responsibility of the General Contractor or Steel Erector, as outlined in the structural steel or steel deck section.
- 3.1.2 Clips, hangers, supports, sleeves and other attachments to the substrate are to be placed by others prior to the application of sprayed insulation.
- 3.1.3 The installation of ducts, piping, conduit or other suspended equipment shall not take place until the application of sprayed insulation is complete in an area.

- 3.1.4 The spray-applied insulation shall only be applied to steel deck which has been fabricated and erected in accordance with the criteria set by the Steel Deck Institute.
- 3.1.5 When roof traffic is anticipated, as in the case of periodic maintenance, roofing pavers shall be installed as a walkway to distribute loads.

#### 3.2 APPLICATION.

- 3.2.1 Equipment, mixing and application, shall be in accordance with the manufacturer's printed application instructions.
- 3.2.1.1 Potable water shall be used for the application of sprayed insulation materials.
- 3.2.2 The application of spray-applied insulation shall not commence until certification has been received by the General Contractor that surfaces to receive sprayed insulation have been inspected by the applicator and are acceptable to receive spray-applied insulation.
- 3.2.3 All unsuitable substrates must be identified and made known to the General Contractor and corrected prior to application of the spray-applied insulation.
- 3.2.4 Spray-applied insulation shall not be applied to steel floor decks prior to the completion of concrete work on that deck.
- 3.2.5 The application of spray-applied insulation to the underside of roof deck shall not commence until the roofing is completely installed and tight, all penthouses are complete, all mechanical units have been placed, and after construction roof traffic has ceased.
- 3.2.6 Proper temperature and ventilation shall be maintained as specified in 1.7.1, 1.7.2, and 1.7.2.1.
- 3.2.7 Provide masking, drop cloths or other suitable coverings to prevent overspray from coming in contact with surfaces not intended to receive spray-applied insulation.
- 3.2.8 CAFCO BOND-SEAL (Type EBS) must be applied as an adhesive to all approved substrates, prior to the application of HEAT-SHIELD. Refer to HEAT-SHIELD Application and Installation Manual for complete details.

#### 3.3 REPAIRING AND CLEANING.

- 3.3.1 All patching of and repair to spray-applied insulation, due to damage by other trades, shall be performed under this section and paid for by the trade responsible for the damage.
- 3.3.2 After the completion of the work in this section, equipment shall be removed and all surfaces not to be sprayed shall be cleaned to the extent previously agreed to by the applicator and General Contractor.



ISOLATEK INTERNATIONAL is registered with the AIA Continuing Education System (AIA/CES)



#### For Further Information

CAFCO Technical and Sales Representatives are always available to lend assistance. Additional printed materials, including Material Safety Data Sheets, and other product literature, are available upon request. For more information about our CAFCO line of sprayed fire protection, thermal and acoustical treatments, Intumescent Coatings, thermal barriers and CAFCO-BOARD® or for the name of the Sales Representative in your area, please contact:

In the United States: Isolotek International, Stanhope, New Jersey Tel: 800.631.9600 Fax: 973.347.9170

In Mexico & Central America: Cafco Mexico S.A. de C.V., Mexico D.F. Tel: 525.254.6683 Fax: 525.531.7826

In Andean Countries: Cafco Andina S.A., Santiago, Chile Tel: 562.719.0394

In Canada: Cafco Industries, Toronto (Ontario) Tel: 888.873.0003 Fax: 416.679.2933

In Asia/Pacific: Tel: 60.3.5121.3886 Fax: 60.3.5121.4886

For more detailed product information, visit our website at [www.cafco.com](http://www.cafco.com) or contact us at [technical@isolotek.com](mailto:technical@isolotek.com)



© ISOLATEK International All Rights Reserved

The performance data herein reflect our expectations based on tests conducted in accordance with recognized standard methods under controlled conditions. The applicator, general contractor, property owner and/or user MUST read, understand and follow the directions, specifications and/or recommendations set forth in Isolotek International's publications concerning use and application of these products, and should not rely merely on the information contained in this product data sheet. Isolotek International is not responsible for property damage, bodily injuries, consequential damages, or losses of any kind that arise from or are related to the applicator's, general contractor's, or property owner's failure to follow the recommendations set forth in Isolotek International's publications. The sale of these products shall be subject to the Terms and Conditions of Sale set forth in the Company's invoices.



Total Passive  
Fire Protection 6/11