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:

<table>
<thead>
<tr>
<th>Flame Spread</th>
<th>Smoke Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THICKNESS</strong></td>
<td><strong>BASE</strong></td>
<td><strong>BASE</strong></td>
<td><strong>BASE</strong></td>
<td><strong>BASE</strong></td>
<td><strong>BASE</strong></td>
<td><strong>BASE</strong></td>
</tr>
<tr>
<td>1/2” (13 mm)</td>
<td>Solid</td>
<td>0.07</td>
<td>0.10</td>
<td>0.43</td>
<td>0.67</td>
<td>0.80</td>
</tr>
<tr>
<td>1” (25 mm)</td>
<td>Solid</td>
<td>0.10</td>
<td>0.26</td>
<td>0.75</td>
<td>0.94</td>
<td>1.02</td>
</tr>
<tr>
<td>2” (50 mm)</td>
<td>Solid</td>
<td>0.25</td>
<td>0.68</td>
<td>1.13</td>
<td>1.24</td>
<td>1.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Thermal</strong></th>
<th><strong>Without Insulation</strong></th>
<th><strong>HEAT-SHIELD 1” (25 mm)</strong></th>
<th><strong>HEAT-SHIELD 3” (75 mm)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>WALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrugated Metal</td>
<td>0.80</td>
<td>4.7</td>
<td>12.4</td>
</tr>
<tr>
<td>6” (150 mm) Poured Block</td>
<td>1.3</td>
<td>5.2</td>
<td>12.9</td>
</tr>
<tr>
<td>8” (200 mm) Concrete Block</td>
<td>1.9</td>
<td>5.8</td>
<td>13.5</td>
</tr>
<tr>
<td>8” (200 mm) Cinder Block</td>
<td>2.6</td>
<td>6.5</td>
<td>14.2</td>
</tr>
<tr>
<td>ROOF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrugated Metal</td>
<td>0.80</td>
<td>4.7</td>
<td>12.4</td>
</tr>
<tr>
<td>2” (50 mm) LW Concrete</td>
<td>3.3</td>
<td>7.2</td>
<td>14.9</td>
</tr>
<tr>
<td>2” (50 mm) Poured Gypsum</td>
<td>2.8</td>
<td>6.7</td>
<td>14.4</td>
</tr>
</tbody>
</table>
1.5.1 Manufacturer's Data: Submit Manufacturer's SUBMITTALS.

1.3.8 Section 09900 - Painting.

1.3.7 Section 09200 - Lath and Plaster.

1.3.4 Section 07270 - Firestopping

1.3.3 Section 07200 - Insulation.

1.3.2 Section 05300 - Metal Decking.

1.3.1 Section 05100 - Structural Steel.

1.2 QUALITY ASSURANCE.

1.1.2 The material and installation shall conform to

1.1.1 Provide all labor, materials, equipment and

and removed from the project.

found unsuitable for use should be rejected

protected from the weather. Damaged packages

name, type and other identifying data.

formance criteria.

shall be submitted for all specified perform-

Contract Documents.

specifications, including certification as may be

B. ASTM E136 - (CAN4-S114)

D. ASTM C518 - Steady-State Heat Flux

C. ASTM C423 - Sound Absorption

E. ASTM C1014 - Spray Applied Mineral Fiber

F. ASTM E1042 - Acoustically Absorbent

 surfaces necessary for, and incidental to, the

of the installation of thermal/acoustical

or similar materials. This firm shall be

or otherwise approved by the

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

1.3.6 Section 07812 - Intumescent Coatings

1.3.9 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 - (CAN-S114)

(Noncombustibility) Behavior of Materials in a Vertical Tunnel Furnace at 750˚ C.

C. ASTM C423 - Sound Absorption

Coefficients by the Reverberation Room Method.

D. ASTM C518 - Steady-State Heat Flux


E. ASTM C1014 - Spray Applied Mineral Fiber

Thermal or Acoustical Insulation.

F. ASTM E1042 - Acoustically Absorbent 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, and 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 (CAN-S114) the material shall be noncombustible.

2.2.1.2 Surface Burning Characteristics: When tested in accordance with ASTM E84 (UL723, 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/primer 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 decks which have 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.

3.2.2 Potable water shall be used for the application of sprayed insulation materials.

3.2.3 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.

3.2.4 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.

For more detailed product information, visit our website at www.cafoo.com or contact us at technical@isolatek.com

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 Representatives in your area, please contact

In the United States: Isolatek 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: 525.254.6483 Fax: 525.531.7826

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

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

In Asia/Pacific: Tel: 60.3.5121.3868 Fax: 60.3.5121.4886

CAFCO HEAT-SHIELD Guide Specification

The performance data herein reflect our expectations based on tests conducted in accordance with recognized standard methods under controlled conditions. The contractor, general contractor, property owner and/or user must undertake and follow the directions, specifications and/or recommendations set forth in Isolatek International’s publications concerning use and application of these products, and should not rely merely on the information contained in this product data sheet. Isolatek International is not responsible for property damage, bodily injuries, consequential damages, or losses of any kind that arise from or are relied upon by the applicator, general contractor, or property owner’s failure to follow the recommendations set forth in Isolatek International’s publications. The use 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