CAFCO 400 is a portland cement based Spray-Applied Fire Resistive Material (SFRM). It is a medium density wet mix product, designed to provide fire protection for structural steel in commercial and high rise construction. The durable surface and portland cement based formulation of the product make it well suited for application in areas which may be subjected to higher levels of abuse and elevated humidity levels.

CAFCO 400 offers the best fire resistance performance per unit thickness of any commercial SFRM. This means less material is needed to achieve required fire ratings. With virtually no waste during installation, CAFCO 400 is cost effective, clean and neat in appearance.

CODE COMPLIANCES
CAFCO 400 satisfies the requirements of the following:
- IBC - International Building Code (ICC ESR-1649)
- UBC - Uniform Building Code
- New York City - MEA
- NBC - National Building Code of Canada

MAJOR SPECIFICATIONS
CAFCO 400 complies with the requirements of the following specifications:
- General Services Administration (GSA): AIA/SC/GSA:07811
- Department of the Navy NAVFACENGCOM Guide Specification NFHS 07810, Sprayed-On Fireproofing
- Veterans Administration (VA): H-08-1
- U.S. ARMY Corps of Engineers CEGS-07811

FIRE TEST PERFORMANCE
CAFCO 400 has been extensively tested for fire endurance by Underwriters Laboratories (UL) and Underwriters Laboratories of Canada (ULC) in accordance with ASTM E119 (UL 263, CAN/ULC-S101). These tests have resulted in ratings of up to 4 hours for:
- Floor Assemblies
- Beams
- Joists
- Columns
- Roof Assemblies

CAFCO 400 has also been tested in accordance with ASTM E84 (UL723,CAN/ULC-S102) and has the following Surface Burning Characteristics:
- Flame Spread: 0
- Smoke Developed: 0

THERMAL PROPERTIES
CAFCO 400 is also a thermal insulator. This benefit is important in reducing heat loss, particularly when the product is applied to the underside of a roof deck. The R-value added by CAFCO 400 may allow a reduction in roof insulation.

<table>
<thead>
<tr>
<th>Product</th>
<th>Conductivity (k)*</th>
<th>Resistance (R/inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAFCO 400</td>
<td>0.494 Btu/hr ft²</td>
<td>2.02</td>
</tr>
</tbody>
</table>

*When tested in accordance with ASTM C518

<table>
<thead>
<tr>
<th>Physical Performance</th>
<th>Characteristic</th>
<th>ASTM Method</th>
<th>Standard Performance*</th>
<th>Tested Performance**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>E805</td>
<td>22 psf (353 kg/m²)</td>
<td>25 psf (400 kg/m²)</td>
<td></td>
</tr>
<tr>
<td>Combustibility</td>
<td>E136</td>
<td>Noncombustible</td>
<td>Noncombustible</td>
<td></td>
</tr>
<tr>
<td>Cohesion/Adhesion</td>
<td>E736</td>
<td>434 psf (20.8 kPa)</td>
<td>8,556 psf (409.6 kPa)</td>
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</tr>
<tr>
<td>Deflection</td>
<td>E759</td>
<td>No Cracks or Delaminations</td>
<td>No Cracks or Delaminations</td>
<td></td>
</tr>
<tr>
<td>Bond Impact</td>
<td>E760</td>
<td>No Cracks or Delaminations</td>
<td>No Cracks or Delaminations</td>
<td></td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>E761</td>
<td>3,344 psf (351 kPa)</td>
<td>22,112 psf (1058.7 kPa)</td>
<td></td>
</tr>
<tr>
<td>Air Erosion Resistance</td>
<td>E859</td>
<td>Less than 0.025 g/m²</td>
<td>0.000 g/m² (0.000 g/m³)</td>
<td></td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>E937, MIL. Std. 810</td>
<td>Does Not Promote Corrosion of Steel</td>
<td>Does Not Promote Corrosion of Steel</td>
<td></td>
</tr>
<tr>
<td>Sound Absorption</td>
<td>C423</td>
<td>0.60 NRC 1/2&quot; (13mm) on deck and beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cone Calorimeter</td>
<td>E1354</td>
<td>No Flaming or Heat Release</td>
<td>No Flaming or Heat Release</td>
<td></td>
</tr>
<tr>
<td>Fungal Resistance</td>
<td>D21</td>
<td>No Growth After 28 Days</td>
<td>Passed</td>
<td></td>
</tr>
</tbody>
</table>

* Standard performance based on General Services Administration AIA/SC/GSA:07811. Refer to UL design for density requirement. For further information refer to the application manual.
** Values represent independent laboratory tests under controlled conditions.
CAFCO 400 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 fire protection 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 fire protection in similar materials. This firm shall be licensed or otherwise approved by the spray-applied fire resistive material manufacturer.

1.2.2 Before proceeding with the fire protection work, approval of the proposed material thickness and densities shall be obtained from the architect and other applicable authorities having jurisdiction.

1.3 Related Sections

1.3.1 Section 06100 – Structural Steel.

1.3.2 Section 06000 – Metal Decking.

1.3.3 Section 07200 – Insulation.

1.3.4 Section 07270 – Firestopping.

1.3.5 Section 07272 – Intumescent Coatings.

1.3.6 Section 09200 – Lath and Plaster.

1.3.7 Section 09900 – Painting.

1.3.8 Section 07812 – Intumescent Coatings.

1.3.9 Section 05300 – Metal Decking.

1.3.10 Sec 09000 – Lath and Plaster.

1.3.11 Section 09600 – Painting.

1.4 Submittals

1.4.1 Underwriters Laboratories of Canada (ULC) List of Submitters.

1.4.2 Underwriters Laboratories, Inc (UL) Fire Resistance Directory.

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. Packaging shall bear the UL labels for fire hazard and fire-resistance classifications.

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 for a minimum of 24 hours after application of spray-applied fire resistive material. If necessary for job progress, General Contractor shall provide enclosures and heat to maintain proper temperatures and humidity levels.

1.7.2 General Contractor shall provide ventilation to allow proper drainage of the sprayed fire protection during and subsequent to its application.

1.7.3 In enclosed areas, ventilation shall not be less than 4 complete air changes per hour.

1.8 Sequencing/Scheduling

1.8.1 All fire protection work on a floor shall be completed before proceeding to the next floor.

1.8.2 The Contractor must cooperate in the coordination and scheduling of fire protective work to avoid delays in job progress.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturers. The spray-applied fire resistive material shall be manufactured under the CAFCO® brand name, by authorized producers.

2.2 Materials

2.2.1 Materials shall be manufactured in accordance with CAFCO® Guide Specification, any applicable coding, or the specifications and/or recommendations set forth in the manufacturer’s publications.

2.2.2 The materials shall be suitable for application during the stages of the construction sequence, and shall be designed and installed to meet the design and manufacturer’s written recommendations.

2.2.3 Application of spray-applied fire resistive materials shall be made in accordance with the criteria set by the design and manufacturer’s written recommendations.

PART 3 – EXECUTION

3.1 Preparation

3.1.1 All surfaces to receive spray-applied fire resistive materials shall be free of oil, grease, loose mill scale, dirt, paint, coatings or other foreign materials which would impair satisfactory bonding to the surface. Materials to be sprayed shall be tested for thickness and density in accordance with recognized standard methods. Any cleaning of surfaces to receive sprayed fire protection shall be the responsibility of the General Contractor or Steel Erector, as outlined in the specified steel or metal deck section.

3.1.2 Clips, hangers, supports, sleeves and other attachments to the substrate shall be placed by others prior to the application of spray-applied fire resistive materials.

3.1.3 The spray-applied fire resistive material shall only be applied to steel deck which has been fabricated and erected in accordance with the criteria set by the Steel Deck Institute.

3.2 Application

3.2.1 All equipment, mixing and application shall be in accordance with the manufacturer’s written application instructions.

3.2.2 The application of spray-applied fire resistive material shall not commence until certification had been received by the General Contractor that surfaces to receive sprayed fire protection have been inspected by the applicator and are acceptable to receive spray-applied fire resistive material.

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 fire resistive material.

3.2.4 Spray-applied fire resistive materials shall not be applied to steel floor decks prior to the completion of concrete work on that floor deck.

3.2.5 The application of spray-applied fire resistive materials to the underside of steel deck shall not commence until the roofing is completely installed and tight, all penetrations 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 the manufacturer’s publications.

3.2.7 Provide masking, drop cloths or other suitable coverings to prevent overspray from coming in contact with surfaces not intended to be sprayed.

3.2.8 CAFCO BOND-SEAL (Type E/FB) adhesive shall be applied as per the appropriate UL/ULC fire resistance design and manufacturer’s written recommendations.

3.3 Repairing and Cleaning

3.3.1 Allpatching of and repair to spray-applied fire resistive material, 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 surface not to be sprayed shall be cleaned to the extent previously agreed upon by the applicator and General Contractor.

3.4 Inspection and Testing

3.4.1 The spray-applied fire resistive material shall be tested for thickness and density in accordance with one of the following procedures:


Product Availability

Isolatek International Spray-Applied Fire Resistive Materials are available to trained, licensed contractors around the world from strategically located production and distribution facilities in the U.S., Mexico, Europe and the Pacific Basin.

For more information about our CAFCO line of sprayed fire protection, thermal and acoustical treatments, Intumescent Coatings, thermal barriers and CAFCO-BOARD, please contact our Customer Service Department at (516) 732-3100.

For more information about our CAFCO line of sprayed fire protection, thermal and acoustical treatments, Intumescent Coatings, thermal barriers and CAFCO-BOARD for the name of the Sales Representative in your area, please contact us at:

www.cafco.com or contact us at technical@isolatek.com

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