CSI: DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 81 00—Applied Fireproofing

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee’s quality system.

Product: FLAMEOFF FIRE BARRIER PAINT
Listee: FLAMEOFF COATINGS, INC.

Evaluation: FlameOff Fire Barrier Paint is a water-based intumescent coating and was evaluated based on tested restrained and unrestrained structural steel beams consisting of building-material components described in the Assemblies Section, tested in accordance with the following standards:

- UL 263-11 (with revisions through June 2015), UL 263-11 and UL 263-03 (with revisions through October 2007), Standard for Fire Tests of Building Construction and Materials, Underwriters Laboratories, Inc.

Assemblies:
Steel Beam – Wide flange beams with the minimum sizes shown in Table 1. Beams shall be free of dirt, loose scale and oil before application of coatings.

Lightweight Concrete – Minimum compressive strength of 4890 lbf/in² (33.7 MPa) with minimum average unit weight of 110 lbf/ft³ (1762 kg/m³). The lightweight concrete poured to a depth of 2½ inches (63.5 mm), as measured to the top plane of the steel floor units.

Shear Connector – Stud with a minimum ¾-inch (19.1 mm) diameter headed type and minimum length of 3½ inches (88.9 mm); welded along the top flange of the steel beam through the steel floor units nominally spaced 6 inches (152.4 mm) on center.

Steel Welded Wire Mesh – Min. No 10 SWG uncoated steel welded wire mesh, 6 inches by 6 inches (152.4 mm x 152.4 mm). During the concrete placement, the welded wire mesh must be lifted to approximately the mid-depth of the concrete topping thickness.

Steel Floor Units – 2-inch (50.8 mm) deep fluted galvanized steel units with a minimum thickness of 0.039 inches (0.99 mm) by 36 inches (914.4 mm) wide by 4½ inches (1187 mm) long. The steel form units centered over each beam and attached to each beam with one ¾-inch (19.1 mm) diameter puddle weld on each side of each unit joint. Where the steel floor units overlap, each overlap must be screwed together at 18 inches (457.2 mm) from the centerline of each beam. Steel end closures [galvanized steel 1-inch wide by 2-inch long (25.4 mm by 50.8 mm)] must be welded to each floor unit crest with 1 ¼-inch wide fillet welds spaced 12 inches (304.8 mm) on center to cover the edges of the floor unit sections.

Primer Coating – Phenolic alkyd metal primer. Beams shall be primed with phenolic alkyd metal primer to a minimum thickness as indicated in Table 1.

Intumescent Coating – FlameOff Fire Barrier Paint water-based coating applied to the steel beams with phenolic alkyd metal primer to thicknesses as indicated in Table 1.

Mineral Wool Insulation (not shown) – Minimum density of 6.15 lbf/ft³ (98.5 kg/m³) with a nominal thickness of 2 inches (50.8 mm). The top surfaces of the beams where the steel floor unit crests are visible must be filled with mineral wool insulation plugs cut to 6-inch (152.4 mm) lengths. All void spaces between the steel beam and steel floor units must be friction-fitted with additional pieces of the mineral wool.

<table>
<thead>
<tr>
<th>Beam Rating, (hr)</th>
<th>Restrained or Unrestrained Beam Condition</th>
<th>Steel Beam Size, in. (mm)</th>
<th>W-Shaped only Min. Beam, W/D (M/D)</th>
<th>Primer Minimum dry film thickness, in. (mm)</th>
<th>Coating Minimum Thickness, in. (mm) including primer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UNRESTRAINED</td>
<td>W8X24 (W200 x 36)</td>
<td>0.70 (41.4)</td>
<td>0.003 (0.076)</td>
<td>0.063 (1.61)</td>
</tr>
<tr>
<td>1</td>
<td>UNRESTRAINED</td>
<td>W8X28 (W200 x 42)</td>
<td>0.82 (47.6)</td>
<td>0.003 (0.076)</td>
<td>0.063 (1.61)</td>
</tr>
<tr>
<td>1</td>
<td>RESTRAINED</td>
<td>W8X24 (W200 x 36)</td>
<td>0.70 (41.4)</td>
<td>0.003 (0.076)</td>
<td>0.063 (1.61)</td>
</tr>
<tr>
<td>1½</td>
<td>RESTRAINED</td>
<td>W8X24 (W200 x 36)</td>
<td>0.70 (41.4)</td>
<td>0.003 (0.076)</td>
<td>0.122 (3.09)</td>
</tr>
<tr>
<td>1½</td>
<td>RESTRAINED</td>
<td>W8X28 (W200 x 42)</td>
<td>0.82 (47.6)</td>
<td>0.003 (0.076)</td>
<td>0.063 (1.61)</td>
</tr>
</tbody>
</table>

Findings: The assemblies described in the Assembly Section and Table 1 of this report are unrestrained and restrained steel beam conditions and their beam ratings based on testing in accordance with UL 263/ASTM E119 and CAN/ULC-S101, as referenced in the applicable sections of the following code editions:

  Applicable Section: 703.2, 704.3 and 722.5.2.2

- National Building Code of Canada® 2015
  Applicable Sections: Volume 1- Division B: Section 3.1.7.
Identification:

1. Containers of the intumescent material bear the company name (FlameOff Coatings, Inc.) and address, product name (FlameOff Fire Barrier Paint), storage and shelf-life information, the ICC-ES listing report number (ESL-1162), and when applicable, the ICC-ES listing mark.

2. The report holder’s contact information is the following:

   FLAMEOFF COATINGS, INC.
   1100 NAVAHO DRIVE
   RALEIGH, NORTH CAROLINA  27609
   (888) 816-7468
   www.flameoffcoatings.com

Installation: The FlameOff Fire Barrier Paint shall be installed in accordance with the FlameOff Coatings, Inc.’s published installation instructions and applicable codes.

Conditions of Listing:

1. The listing report addresses only conformance with the standards and code sections noted above.

2. Approval of the product’s use is the sole responsibility of the local code official.

3. The listing report applies only to the materials tested and as submitted for review by ICC-ES.

4. The Assemblies Section describes each assembly using FlameOff Fire Barrier Paint is qualified for use in an interior structural steel beam fire-resistance-rated assembly.

5. The FlameOff Fire Barrier Paint described in this listing report is produced under a quality control program with inspections by ICC-ES.