

## SELECTION & SPECIFICATION DATA

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| <b>Generic Type</b>       | A single package, water based intumescent coating designed for the fire protection of interior structural steel.   |
| <b>Description</b>        | A/D Firefilm® III is a decorative, fiber free, thin film intumescent coating designed for the fire protection of steelwork for up to a 3 hour fire rating, depending on the design. The recommended use for this product is fireproofing of interior steel beams, columns, tubes, and pipes.   |
| <b>Features</b>           | <ul style="list-style-type: none"> <li>• UL/ULC, ITS and ICC-ES Listed – designs for many types of steel sections. Up to 3 hour fire ratings for both interior general purpose and interior conditioned space applications.</li> <li>• Decorative Finish – Gives a smooth, decorative finish. Compatible topcoats available in a wide range of colors.</li> <li>• Advanced fiber free formulation - dust free surface.</li> <li>• Durable finish – Provides a hard, impact and abrasion resistant surface.</li> <li>• Topcoat finishes smooth to slight orange peel.</li> <li>• Thin film coating – space saving smaller column footprints.</li> <li>• Low VOC content.</li> <li>• LEED compliant</li> </ul> |
| <b>Color</b>              | White  |
| <b>Finish</b>             | Smooth   |
| <b>Primer</b>             | A/D Firefilm® III must be applied over a compatible primer. If the steel has already been coated with an existing primer, refer to Carboline Technical Service for advice before applying A/D Firefilm® III. Contact Carboline Technical Service for a complete list of approved primers.  |
| <b>Wet Film Thickness</b> | 45 mils (1,143 microns) per coat<br><br>*During the drying process, the coating will shrink due to the evaporation of water. In order to calculate the wet film thickness required, the following formula can be used: <b>WFT=(DFT/Volume Solids)x100</b>  |
| <b>Dry Film Thickness</b> | 30 mils (0.8 mm) per coat<br><br>*AD Firefilm® III must be applied to the specified DFT and be dry before applying a topcoat. The dry film thickness shall be checked using an electronic or magnetic thickness gauge.   |
| <b>Solid(s) Content</b>   | By Volume 65%  |
| <b>VOC Values</b>         | <b>As Supplied</b> : 0.38 lb/gallon (45 g/L)   |
| <b>Limitations</b>        | Not for use in exterior environments or for interior steelwork that will be exposed to freeze/thaw cycling or long-term surface temperatures over 140°F (60°C) in normal use.  |
| <b>Topcoats</b>           | For interior conditioned space, topcoats are optional. For interior general purpose, Carboline approved topcoats are required. A/D Firefilm® III must be applied to the specified DFT and be dry before applying a topcoat. The choice of topcoat will depend on project requirements. Contact Carboline Technical Service for a complete list of approved topcoats.   |

## SUBSTRATES & SURFACE PREPARATION

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| <b>General</b> | All surfaces must be primed with compatible primer and be clean, dry and free of oil, grease, loose mill scale, dirt, dust or other materials which would impair the bond of A/D Firefilm® III to the substrate. |
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## PERFORMANCE DATA

| Test Method                    | Results   |
|--------------------------------|---|
| ASTM D2240 Hardness            | Shore D 65-70 (fully cured) Shore D 60 (for topcoating) |
| ASTM D2794 Impact              | 152 inch-lbs (1.75 kg-m)                                |
| ASTM D4060 Abrasion            | 103 mg loss @ 1,000 cycles                              |
| ASTM D4541 Bond Strength       | 550 psi (3.79 MPa)                                      |
| ASTM D4541 Bond Strength       | Typical Field Value 200 psi (1.38 MPa)                  |
| ASTM E761 Compressive Strength | 757 psi (5.2 MPa)                                       |
| ASTM E84 Surface Burning       | Class A   |
| Density                        | 89 pcf (1,425 kg/m³)                                    |

All values derived under controlled laboratory conditions unless otherwise noted.

## MIXING & THINNING

**Mixer** | Use 1/2" (12.7 mm) electric or air driven drill with a slotted paddle mixer (300 rpm under load).

**Mixing** | A/D Firefilm® III must be mixed using a 1/2" (12.7 mm) electric or air driven drill with a slotted paddle or Jiffy mixer blade. Mix material for a minimum of 5 minutes to achieve the necessary texture required before spraying.

**Thinning** | Do not thin.

## APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

**Airless Spray** | Use 1.0 gal. (3.7 L) per minute electric airless (minimum) to provide an operating pressure of 3,000 psi (204 bar). Must have 30 mesh inline filter installed. Remove rock catcher from siphon tube.

**Spray Gun** | Silver Gun with gun swivel, Contractor Gun (with filter removed) or equilavent

**Spray Tips** | 0.017-0.021" (Use Graco heavy duty RAC non diffuser tips and housing)

**Fan Size** | 4-10" (101-254 mm) depending on section being sprayed

**Hose Length** | 150' (45 m)

**Material Hose** | 3/8" (9.25 mm) I.D. minimum

**Whip Hose** | 1/4" (6.35 mm) I.D. minimum (optional)

## APPLICATION PROCEDURES

**General** | May be applied by spray, trowel, brush or roller. Spray application is recommended for the optimum production, coverage and finish. When applying by trowel, brush or roller, work from a small container and mix material frequently. The original pail should be kept tightly closed.

**Airless Spray** | A single coat, built up with a number of quick passes, allows greater control over quantities, thickness and finish. In most conditions, it is advantageous to apply two thin coats rather than one thick coat.

## APPLICATION PROCEDURES

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| <b>Application Rates</b>  | At an ambient temperature of 70°F (21°C), the following application rates are applicable:<br>Spray / trowel: 45 mils (1.14 mm) per coat (wet)<br>Brush / roll: 10 mils (0.25 mm) per coat (wet)<br>24 hour recoat time between coats   |
| <b>Wet Film Thickness</b> | Frequent thickness measurements with a wet film gauge are recommended during the application process to ensure uniform thickness.  |
| <b>Dry Film Thickness</b> | Final thickness must be measured using an electronic dry film thickness gauge. For method of thickness determination and tolerances refer to: AWCI Technical Manual 12-B (Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire Resistive Materials). |

## APPLICATION CONDITIONS

| Condition | Material     | Surface      | Ambient      | Humidity |
|-----------|--------------|--------------|--------------|----------|
| Minimum   | 70°F (21°C)  | 50°F (10°C)  | 50°F (10°C)  | 0%       |
| Maximum   | 100°F (38°C) | 125°F (52°C) | 110°F (43°C) | 85%      |

\*Steel surface temperature should be a minimum of 5°F (3°C) above the dew point. A/D Firefilm® III is sensitive to water and must be protected from exposure to weather and moisture. Protect from freezing.

## CURING SCHEDULE

| Surface Temp. | Dry to Recoat |
|---------------|---------------|
| 77°F (25°C)   | 24 Hours      |

\*For optimum curing, it is recommended to apply one coat at 45 mils (1.14 mm) wet per day. Drying time will vary with temperature and humidity conditions. Air movement and thinner coats will assist drying. The next coat of A/D Firefilm® III can be applied when the previous coat has a minimum Shore D hardness of 50 measured at 70°F (21°C). Material is ready to be topcoated when an average Shore D hardness of 60 is achieved. Consult Carboline Technical Service for specific details. Higher film thicknesses will require longer drying times for topcoating.

## CLEANUP & SAFETY

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| <b>Cleanup</b>     | Pump, Gun, Tips and Hoses and mixer should be cleaned at least once per day with water.  |
| <b>Safety</b>      | Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.  |
| <b>Overspray</b>   | All adjacent and finished surfaces shall be protected from damage and overspray.   |
| <b>Ventilation</b> | When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator. |

### MAINTENANCE

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| <b>General</b> | If coating becomes damaged, rebuild required thickness by spray or trowel. When dry, smooth and finish with approved topcoat to match. Damaged areas must be abraded back to a firm edge by sanding or scraping. Small areas can be filled using A/D Firefilm® III or A/D Firefilm® III Putty. The topcoat should be abraded back by 1" (25.4 mm) from the damaged area. The surface must be clean and dry before re-applying A/D Firefilm® III. The coating shall then be built back to the original thickness, allowed to dry, then overcoated with the specified topcoat or system. |
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### TESTING / CERTIFICATION / LISTING

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| <b>Underwriters Laboratories, Inc.</b> | A/D Firefilm® III has been tested in accordance with ASTM E-119 (UL 263) at Underwriter's Laboratories, Inc. A/D Firefilm® III is listed by UL and ULC:<br><b>Wide Flange Columns:</b> X639, X641, X642, X643, X645, X669, X670, Z608, Z610, Z612, Z626, Z627<br><b>HSS Columns:</b> X642, X645, X671, X672, X673, Z611, Z617, Z628, Z629, Z630<br><b>Beams/Floors:</b> N641, D941, D948, F906, F910, F912 |
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\*The product should be applied in accordance with the appropriate design.

|                 |   |
|-----------------|---|
| <b>Intertek</b> | A/D Firefilm® III has been tested in accordance with ASTM E-119 at Intertek Laboratories. A/D Firefilm® III is listed by Intertek for the following designs:<br><b>Wide Flange Columns:</b> AD/IMF 180-01<br><b>HSS Columns:</b> AD/IMF 90-01, AD/IMF 120-02, -03<br><b>Beams/Floors:</b> AD/IMF 120-01 |
|-----------------|---|

\*The product should be applied in accordance with the appropriate design.

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| <b>City of New York</b> | MEA No. 108-94-S-4 (Beams)<br>MEA No. 242-92-S-7 (Columns) |
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| <b>City of Los Angeles</b> | Report: RR25440 |
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|               |          |
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| <b>ICC-ES</b> | ESR-1973 |
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### PACKAGING, HANDLING & STORAGE

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|--------------------------------------|---|
| <b>Packaging</b>                     | 5 gallons (18.9 L)  |
| <b>Shelf Life</b>                    | 6 months (when kept at recommended storage conditions and in original unopened containers). |
| <b>Storage</b>                       | Store indoors in a dry environment between 33-100°F (1-38°C). Protect from freezing.        |
| <b>Shipping Weight (Approximate)</b> | 12 lb. (5.4 kg) per gallon (3.7 L)  |

## **WARRANTY**

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.