

SELECTION & SPECIFICATION DATA

Generic Type	A single package, water based intumescent coating designed for the fire protection of interior structural steel.
Description	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.
Features	<ul style="list-style-type: none"> • 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. • Decorative Finish – Gives a smooth, decorative finish. Compatible topcoats available in a wide range of colors. • Advanced fiber free formulation - dust free surface. • Durable finish – Provides a hard, impact and abrasion resistant surface. • Topcoat finishes smooth to slight orange peel. • Thin film coating – space saving smaller column footprints. • Low VOC content. • LEED compliant
Color	<p>White</p> <p>Contact your Carboline Representative for availability.</p>
Finish	Smooth
Primer	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.
Wet Film Thickness	<p>45 mils (1,143 microns) per coat</p> <p>*During the drying process, the coating will shrink due to the evaporation of water.</p>
Dry Film Thickness	<p>30 mils (0.8 mm) per coat</p> <p>*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.</p>
VOC Values	As Supplied : 0.17 lb/gallon (20 g/L)
Limitations	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.
Topcoats	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

General	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. The general requirement for interior steel is SSPC-SP2 or SP3. Contact Carboline Technical Service for recommendations and specific primer requirements.
----------------	--

SUBSTRATES & SURFACE PREPARATION

Painted/Primed Structural Steel

Existing coatings must attain a minimum 3A rating in accordance with ASTM D3359 Method A, X cut adhesion test. If acceptable, clean and lightly abrade in accordance with SSPC-SP2 or SP3 to roughen and de-gloss the surface. If not acceptable, the coating must be removed and areas re-primed with a compatible primer. If primer coating has acceptable adhesion, but is not compatible or compatibility is unknown, a tie-coat primer can be applied as a bonding or barrier coating. Contact Carboline Technical Service for a list of approved tie-coat primers and specific primer requirements.

Primer recoat intervals may vary from the published product datasheet when using under intumescent fireproofing products. Consult Carboline Technical Service for recommended cure times before applying Carboline intumescent products.

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

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
CAN/ULC-S102, Surface Burning	FS-0 & SD-35
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 a minimum 30 mesh inline filter installed (Carboline recommends using a 60 mesh inline filter). Remove rock catcher from siphon tube.

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

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

Fan Size | 6-10" (152-254 mm) depending on section being sprayed

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.

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 Rates	At an ambient temperature of 70°F (21°C), the following application rates are applicable: Spray / trowel: 45 mils (1.14 mm) per coat (wet) Brush / roll: 10 mils (0.25 mm) per coat (wet) 24 hour recoat time between coats
Wet Film Thickness	Frequent thickness measurements with a wet film gauge are recommended during the application process to ensure uniform thickness.
Dry Film Thickness	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.

TESTING / CERTIFICATION / LISTING

Underwriters Laboratories, Inc.	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 for the following designs: Wide Flange Columns: X639, X641, X642, X643, X645, X669, X670, Z608, Z610, Z612, Z626, Z627 HSS Columns: X642, X645, X671, X672, X673, Z611, Z617, Z628, Z629, Z630 Beams/Floors: N641, D941, D948, F906, F910, F912 *The product should be applied in accordance with the appropriate design.
Intertek	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: Wide Flange Columns: AD/IMF 180-01 HSS Columns: AD/IMF 90-01, AD/IMF 120-02, -03 Beams/Floors: AD/IMF 120-01 *The product should be applied in accordance with the appropriate design.
City of New York	MEA No. 108-94-S-4 (Beams) MEA No. 242-92-S-7 (Columns)
City of Los Angeles	Report: RR25440
ICC-ES	ESR-1973

CLEANUP & SAFETY

Cleanup	Pump, Gun, Tips and Hoses and mixer should be cleaned at least once per day with water.
Safety	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.
Overspray	All adjacent and finished surfaces shall be protected from damage and overspray.
Ventilation	When used in enclosed areas, thorough air circulation must be used during and after application until the coating is dried.

MAINTENANCE

General	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. 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.
---------	---

PACKAGING, HANDLING & STORAGE

Packaging	5 gallons (18.9 L)
Shelf Life	6 months (when kept at recommended storage conditions and in original unopened containers).
Storage	Store indoors in a dry environment between 33-100°F (1-38°C). Protect from freezing.

PACKAGING, HANDLING & STORAGE

Shipping Weight (Approximate)	64 lb. (29 kg) per 5 gallon pail (18.9 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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.