

Selection & Specification Data

Generic Type	A single package, solvent based intumescent coating designed for the fire protection of interior structural steel.
Description	Nullifire® S606 is a decorative 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 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 – provides a smooth, decorative finish. Compatible topcoats available in a wide range of colors. • Durable finish – provides a hard, dust free surface resistant to normal wear. • Thin film coating – offers an economical solution to alternative fireproofing. • VOC compliant • Easy repair – if damaged it can be repaired easily using material as putty.
Color	Pale pink
Finish	Smooth
Primer	Nullifire® S606 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 Nullifire® S606. Contact Carboline Technical Service for a complete list of approved primers.
Fireproofing Topcoats	For interior conditioned space, topcoats are optional. For interior general purpose, Carboline approved topcoats are required. Nullifire® S606 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.
Wet Film Thickness	45.0 (1.14 mm) per coat *During the drying process, the coating will shrink due to the evaporation of solvent. In order to calculate the wet film thickness required, the following formula can be used: $WFT = (DFT / \text{Volume Solids}) \times 100$
Dry Film Thickness	30.0 mils (0.8 mm) per coat *Nullifire® S606 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.
Solids Content	By Volume 67%
Theoretical Coverage Rate	1075 ft ² at 1.0 mils (26.4 m ² /l at 25 microns) 36 ft ² at 30.0 mils (0.9 m ² /l at 750 microns) Allow for loss in mixing and application.
VOC Values	As Supplied 2.84 lbs/gal (340 g/l)

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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.
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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 Nullifire® S606 to the substrate.
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Performance Data

Test Method	Results
ASTM D2240 Hardness	Shore D - 65-70 (fully cured) Shore D - 25 (for topcoating)
ASTM D2794 Impact	67.5 in./lbs.
ASTM D4541 Bond Strength	350 psi (2.4 MPa) minimum
ASTM D695 Compressive Strength	1,150 psi (7.9 MPa)
ASTM E84 Surface Burning	Class A
Density	85 pcf (1.36 g/cm ³)

*All values derived under controlled laboratory conditions.

Mixing & Thinning

Mixer	Use 1/2" (12.7 mm) electric or air driven drill with a slotted paddle mixer (300 rpm under load).
Mixing	Nullifire® S606 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 equivalent
Spray Tips	0.021" - 0.029" (Use Graco heavy duty RAC non diffuser tips and housing)
Fan Size	4" - 10" (101 mm - 254 mm) depending on section being sprayed
Hose Length	150' (45 m)
Material Hose	3/8" (9.5 mm) I.D. minimum
Whip Hose	1/4" (6.3 mm) I.D. minimum (optional)

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Nullifire® S606

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)	32 °F (0 °C)	32 °F (0 °C)	0%
Maximum	105 °F (41 °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. Heavy rain or water running over the surface of recently applied Nullifire® S606 can cause surface patterning if the material has not formed a skin.

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 (1,143 microns) wet per day. Drying Time will vary with temperature and humidity conditions. Material is ready to be topcoated when an average Shore D hardness of 25 is achieved. Consult Carboline Technical Service for specific details. Air movement and thinner coats will assist drying. Higher film thicknesses will require longer drying times for topcoating.

Cleanup & Safety

- Cleanup** Pump, Gun, Tips and Hoses and mixer should be cleaned at least once per day with: Plasite Thinner #19, Thinner #2, Toluene, MEK, MIBK or Xylene.
- Safety** Follow all safety precautions on the Nullifire® S606 Material Safety Data Sheet. It is recommended that personal protective equipment be worn, including spray suits, gloves, eye protection and respirators when applying Nullifire® S606.
- Overspray** All adjacent and finished surfaces shall be protected from damage and overspray.
- Ventilation** In enclosed areas, ventilation shall not be less than 4 complete air exchanges per hour until the material is dry.

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 Nullifire® S606. The coating shall then be built back to the original thickness, allowed to dry, then overcoated with the specified topcoat or system.

Testing / Certification / Listing

- Underwriters Laboratories, Inc.** Nullifire® S606 has been tested in accordance with ASTM E-119 (UL 263) at Underwriter's Laboratories, Inc. Nullifire® S606 is listed by UL and ULC for the following designs:
Wide Flange Columns: X632
Tube Columns: X633
Pipe Columns: X634
Restrained and Unrestrained Beams: N610
Beams (Protected Deck): D785
Beams (Unprotected Deck): D936

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

- City of New York** Nullifire® S606 has been found acceptable for use in Class I and Class II buildings in accordance with report number:
MEA 174-00-M
MEA 175-00-M
MEA 97-00-M

- City of Los Angeles** Report: RR25464

Packaging, Handling & Storage

- Shelf Life** 18 months (when kept at recommended storage conditions and in original unopened containers).
- Shipping Weight (Approximate)** 12 lbs. (5.4 kg) per gallon (3.7 L)
- Flash Point (Setaflash)** 86°F (30°C)
- Storage** Store indoors in a dry environment between 32°F - 105°F (0°C - 40°C)
- Packaging** 5 gallons



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