

SELECTION & SPECIFICATION DATA

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| Generic Type | Water borne intumescent fire protective coating. |
| Description | Firefilm 70-60 HF is a thin film coating for protection for protection of indoor steel constructions. |
| Features | <ul style="list-style-type: none"> • Fully tested and approved for UNI EN 13381-8 for cellulosic fire for 30,60 and 90 minutes fire duration. • Easy to apply be spray, roller or brush. • Gives a smooth matt finish. Compatible top coat of a variety of colours are available if a decorative finish is required. • Very low VOC. Contains no substances of very high concern. • Asbestos free • Can be used in area with limited ventilation. • Easy to repair |
| Color | White |
| Primer | The steel must be primed with a compatibel primer and be clean, free of oil, grease, fat, lose mill scale that can affect the adhesion of Firefilm to the substrate. Carboguard E-19 Primer or Carbomastic 18 FC are approved primers. |
| Wet Film Thickness | Brush <1000 µm Spray <1200 µm |
| Dry Film Thickness | Brush <700 µm Spray <850 µm |
| Solid(s) Content | 72 ± 2% |
| Theoretical Coverage Rates | 0,7 l/m ² at 0,5mm DFT (700 g/m ² at 0,5mm DFT) |
| VOC Value(s) | 21 g/ltr. |
| Limitations | Not recommended for steel constructions exposed for long term temperature above 60 C°. |
| Topcoats | Top coat must be approved by Carboline and must be approved by Carboline. Firefilm 70-60 HF must be applied in specified dry film thickness before application of top coat. Selection of top coat will be project specific. Carboline approved top coats: <ul style="list-style-type: none"> • Carbocrylic 3359 TC • Carbocrylic 1295 HS • Carboxane 2000 Topcoat |
| Specific Gravity | 1.35 ±0.02 g/cm ³ |

SUBSTRATES & SURFACE PREPARATION

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| General | Should be applied onto a clean, undamaged, dry and primed steel surface. Certain types of primers can cause char adhesion problems in a fire. In particular, thermoplastic primers must be avoided. In case of overcoating of zinc rich primers please consult Carboline. |
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Firefilm 70-60 HF

PRODUCT DATA SHEET



SUBSTRATES & SURFACE PREPARATION

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| Steel | Ensure the steel is dry and free from contact with rain or condensation during the application and drying of Firefilm 70-60 HF. If primers is allowed to get wet, it is likely to be damages - blistering and wrinkling may occur. |
| Galvanized Steel | Galvanised steel requires a special pre-treatment and application of an approved primer. Contact Carboline technical support for advice. |

MIXING & THINNING

Thinning | Firefilm 70-60 HF shall not be thinned. To be thoroughly mechanically stirred prior to use.

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.

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| General | Airless spray equipment is recommended and should match these guidelines |
| Airless Spray | Pressure: min 2.500 – 3.000 psi (175 – 210 Kg/cm ²) Nozzle: 0,019" – 0,021"(0,48 – 0,53 mm) Spray fan: 20° - 40° Hose diameter: 10 mm (3/8") internal diameter Hose length: Max. 60 meters, in-line filters should not normally be used. |
| Brush & Roller (General) | <ul style="list-style-type: none">• When applying by brush, use enough coating to avoid brush marks.• Usage of a short haired roller will give a slightly textured surface. |

APPLICATION PROCEDURES

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| Airless Spray | Firefilm 70-60 HF may be applied up to a max. WFT of 1.2mm in a single spray coat comprising of several quick passes. Achieving max. loadings will depend on site conditions. Build up thickness to achieve loading required in several quick passes. It may be possible to apply two coats in one day particularly if the atmospheric temperature is above 20°C and relative humidity below 70%. However, before doing this, ensure that the previously applied coat is dry, particularly in the web/flange junction. |
| Wet Film Thickness | During application the wet film thickness must be controlled regularly by a wet film gauge to secure correct thickness. (" comb "). The film gauge must be applied by 90° angles into the wet film and the last measuring "measuring tooth" indicates the thickness applied. |
| Brush & Roller | <ul style="list-style-type: none">• For brush application use a "laying on" technique to avoid heavy brush marking• Maximum wet film per coat when applied using a brush or roller is 1 mm. A short piled roller will produce a light textured finish• During application, measure the wet film thickness frequently with the WFT gauge provided to ensure correct thickness is being applied• To use the gauge, insert the teeth into the wet coating. The last tooth to be coated indicates the wet film thickness achieved• In the event of over or under applications, adjustments to the loading rates of subsequent coats will be required. |

APPLICATION CONDITIONS

| Condition | Material | Surface | Ambient | Humidity |
|-----------|------------|------------|------------|----------|
| Minimum | 5°C (41°F) | 5°C (41°F) | 5°C (41°F) | 0% |

Relative humidity should be below 80% for successful application. Steel surface temperature should be a minimum of 3°C above dew point.

CURING SCHEDULE

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| Curing Details | <p>Drying Times: High humidity and low air movement or low steel temperatures can result in condensation on the steelwork causing prolonged drying times and possibly poor basecoat adhesion.</p> <p>Re-coat Times: Indications of recoat or top sealing times taking into account loading areas and application methods are given in the "Application Guideline" for the product.</p> <ul style="list-style-type: none"> -Brushing or rolling adds about 20% to drying time (compared to spraying) -Drying times are doubled at 5°C or at over 75% relative humidity. -Final drying time before topsealing is a minimum of 16 hours -Recoat time figures are based on constant conditions, fluctuations up or down will give variations to the drying time. If overnight condensation causes wetting a further full drying period should be allowed. |
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CLEANUP & SAFETY

Cleanup | Spray equipment can be cleaned using water only.

TESTING / CERTIFICATION / LISTING

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| General | <p>Firefilm 70-60 HF is tested at EXOVA Warrington fire Laboratory, Warrington, UK and has been approved for indoor usage in category Z2.</p> <p>EXOVA Warringtonfire, Warrington, UK Firefilm 70-60 HF has been tested for steel structures after European regulations. Steel Structure: UNI EN 13381-8:2010, certification n° ETA-12/0596 The product shall be applied in accordance with Carboline instructions.</p> |
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PACKAGING, HANDLING & STORAGE

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| Shelf Life | 6 months when stored as recommended in original unopened container |
| Storage | Store in secure, dry warehouse conditions between 5°C and 35°C |
| Packaging | Supplied in 25 kg drums |

Firefilm 70-60 HF

PRODUCT DATA SHEET



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.