



Construction

SprayFilm WB3

Data Sheet C/F/P-3

Use with:

SprayFilm WB3 is a water based intumescent coating consisting of polyvinyl acetate resins and fillers for the fire protection of structural steel.

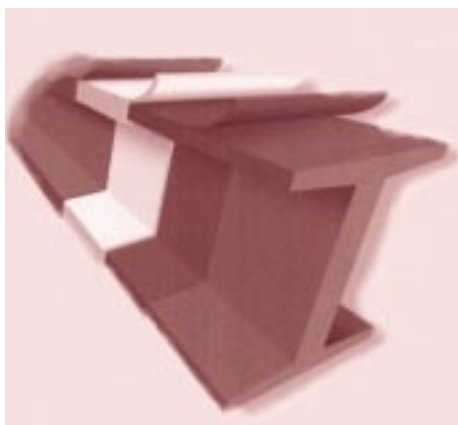
SprayFilm WB3 is preferably spray applied with airless paint equipment for speed and quality of finish. Brush and roller application is also possible.

SprayFilm WB3 is applied directly to the contour of primed I and H section columns and beams, and hollow sections, to provide fire protection for up to 120 minutes. In a fire, a chemical reaction takes place, causing the SprayFilm WB3 to expand and form an insulating layer which prevents the temperature of the steel rising to a critical level.

SprayFilm WB3 can be sealed and protected with a decorative topcoat.

Its advantages are:

- *Up to 120 minutes fire resistance to BS 476 Part 21*
- *Up to 3 hours fire resistance to ASTM E119, NFPA 251*
- *Durable and decorative finish*
- *Steelwork may be left exposed to view*
- *Chemical and abuse resistant*
- *Can be topcoated to match surroundings*
- *Easy application and clean up with water*
- *Fast drying time*



Properties and performance

Colour and finish

White with a slight sheen.

Maximum thickness per coat

Spray: 1.6mm wet film thickness.
Brush: 0.76mm wet film thickness.

For airless spraying, several thin coats as opposed to one heavy coat will give greater control over finish and thickness.

Theoretical coverage

Approximately 25m² per pail at 0.5mm dry film thickness.

Practical coverage is dependent on surface texture and application technique.

Number of coats

One or more, as required.

Cure

By air drying.

Drying time

Approximately 6 hours at 20°C and 50%RH for 0.4mm wet film thickness.

Solids by weight

72% +/- 2.

Nominal density

1.33kg/ltr.

Properties and performance (cont)

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|---------------------|--|
| Surface burning | Flame spread 5, smoke development 35 when tested to ASTM E84. |
| Durometer hardness | 80 shore D when tested to ASTM D2240. |
| Impact resistance | 18kg/m when tested to ASTM D2794. |
| Abrasion resistance | 0.6505g/1000 cycles when tested to ASTM D4060. |
| pH value | 8.0 ± 0.2 at 25°C. |
| Fire resistance | Structures protected with SprayFilm WB3 have undergone fire resistance tests in approved independent laboratories to recognised standards throughout the world including: Canada& US (to ASTM E119 and ASTM E84) *UK (to BS 476 Part 21) <i>Assessed in accordance with ASFP "Fire Protection for Steel buildings" procedures. As referenced in Approved document B of the Building Regulations 1991.</i> |

Fire protection thickness

Establishing the correct thickness

The thickness of the fire protection for a given period of fire resistance in a cellulosic type fire, relates to the Hp/A ratio of the section. Hp/A is the ratio of the heated perimeter exposed to fire to the cross-sectional area of steel.

All column and beam sections have their own specific Hp/A ratio. Refer to the 'Technical Introduction' to establish the Hp/A ratio for a particular beam or column section, or contact Cafco International. Then use the SprayFilm WB3 Thickness Chart to ascertain the required thickness.

For advice on thickness calculations for I and H section beams and columns, castellated sections, composite floors, upgrading of concrete slabs and more complex situations, please contact Cafco International.

Preparation

Substrate preparation

Before applying SprayFilm WB3 to structural steel, the steel must be primed with a suitable primer, approved by Cafco International and applied in full compliance with the manufacturer's recommendations.

Primers compatible with SprayFilm WB3 are generally of the following types:

- Epoxypolyamide
- Zinc Rich Epoxy*
- Vinyl modified epoxy
- Alkyd
- Phenolic resin modified alkyd

Organic and inorganic Zinc Silicate Primers are not recommended for use with SprayFilm WB3.

Contact Cafco International for confirmation of primer compatibility.

**If left exposed for long periods Zinc Rich Epoxies may form a layer of zinc salts on the surface. These salts must be completely removed before applying SprayFilm WB3. Contact Cafco International Technical Department for further advice.*

Primed surface must be free from grease, oil, rust, dirt, or any other contaminant that may inhibit the bonding of the SprayFilm WB3 to the primer.

Application

Methods

SprayFilm WB3 is supplied ready for use and should not be diluted. The primer thickness should be measured and recorded prior to the application of the SprayFilm WB3, in order to accurately check the thickness of the SprayFilm WB3 during and after application. Stir the SprayFilm WB3 thoroughly with a drill type mixer prior to application by either airless spray, brush or roller. Protect from rain and high humidity during application and drying. A SprayFilm WB3 application manual is available on request.

Thickness checking during application

To ensure the correct thickness is being applied, frequent measurements should be taken using a wet film thickness gauge. To determine approximate dry film thickness (dft) based on wet film thickness (wft), multiply wft by 0.72. For example, 1.3mm wft x 0.72 = 0.936mm dft.

Final thickness check

Take a dry film thickness reading as soon as the coating is fully cured (minimum 7 days). An Elecometer 211 permanent magnetic banana gauge or electronic electromagnetic type may be used. Ensure primer thickness is deducted from final thickness reading.

If SprayFilm WB3 is left exposed for extended periods, it must be protected from rain and high humidity or sealed with a topcoat appropriate for the environmental conditions.

Topcoating

General considerations

In exposed and semi-exposed interior environments, the applied SprayFilm WB3 should be coated with a compatible finish coat, in order to give the desired colour and seal the SprayFilm WB3.

The topcoat system must be suitable for the environment in which it is to be used, and should be a good quality, long oil alkyd, silicone, acrylic latex or polyurethane type. All topcoats should be applied in accordance with the topcoat manufacturer's recommendations.

Ensure that the SprayFilm WB3 is thoroughly dry before application of topcoat.

Typically, allow a minimum of 7 days for the SprayFilm WB3 to fully cure before application of any topcoat system.

Consult Cafco International for confirmation of topcoat compatibility.

Packaging, storage, shelf life

Packaging

25kg plastic pails.

Storage

Indoors in dry conditions between 10°C and 38°C.

Protect from frost, excessive heat and strong radiant sunlight.

Shelf life

Maximum 10 months in original sealed containers.

Environmental

Do not discharge into drains, watercourses or soil.

Health and safety

Cafco International's activities are conducted with due regard to all statutory requirements with appropriate safeguards against exposing employees and the public to health and safety risks.

A full copy of Cafco International's Health, Safety and Environmental Policy document is available on request.

See Safety Datasheet (including COSHH Regulations) Code Reference **Saf-71**.

Quality assurance

Cafco International operates a quality system in accordance with BS EN ISO 9001: 2000, and has received full accreditation by BSI to these standards.

Operating to these standards means that all activities, which have a bearing upon quality, are set out in written procedures. Systematic and thorough checks are made on all materials and their usage. Test equipment is subjected to regular checks and is referred back to national standards.

The information given in this datasheet is based on actual tests and is believed to be typical of the product. No guarantee of results is implied however, since conditions of use are beyond our control.

Further information



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