



Steelmaster 70 WB

DATASHEET



Steelmaster 70 WB is a specially formulated Halogen-Free waterbased intumescent coating for the fire protection of structural steel in dry internal environments.

Product Features

- Suitable for dry internal "C1" environments.
- Low odour/1998 EPA Compliant.
- Accepted for "on-site" application.
- Excellent application characteristics and aesthetic appearance.
- Can be applied by spray, brush or roller.
- Complements CDM regulations.
- Manufactured to ISO 9002.
- Tested to BS 476 Part 21.
- No Sealercoat required for C1 environments.

General Information

Storage Temperature	Minimum 5°C, maximum 35°C
Shelf Life	6 months in sealed containers (at 20°C) Protect from frost and freezing conditions
Pack Size	25 kilo units
Pot-Life	Indefinite (single pack)
Colour	White only
Drying	Air-dry
Appearance When Dry	Matt

Technical Information

Flash Point	Above 63°C (Setaflash)
Specific Gravity	Approximately 1.30 kg/litre
Volume Solids	70% ± 3%
VOC	30g/litre
Loading Requirements	In order to establish the DFT required for the specified period of fire resistance, it is necessary to first calculate the Hp/A values (also known as A/V values). The DFT can then be calculated from the Steelmaster 70 WB loading tables.



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DFT per coat in microns	250	300	400	500*	700*
WFT per coat in microns	357	429	571	714	1000
(Approximate weight in grams)	475	570	759	949	1330
Theoretical spreading rate (m ² /litre)	2.80	2.33	1.75	1.40	1.00

*Achievable by airless spray only. For DFT above 800 microns, a minimum of two coats will normally be required by airless spray.

The maximum achievable in a single coat by brush is 571 microns wet/400 microns dry.

The maximum achievable in a single coat by roller is 357 microns wet/250 microns dry.

Exceeding the maximum film thickness indicated could result in cracking on drying.

DFT = Dry Film Thickness

WFT = Wet Film Thickness

Surface Preparation

Prior to application of a compatible primer, the substrate must be abrasive blast-cleaned in accordance with standard ISO 850-1:1988.

Cleanliness Sa2.5. Roughness 50 to 85 microns Ry5. Coating should occur before degradation of the surface takes place (normally within 4 hours).

If oxidation takes place, the steel must be re-prepared. The surface must be dry and free of dust, salts, grease and any other contaminants immediately before coating.

Compatible primer should be applied and overcoated in accordance with the manufacturer's instructions.

Certain types of primers must be avoided as they can cause adhesion problems. These include chlorinated rubbers and bituminous primers.

The use of intumescent coatings over galvanised substrates is not recommended.

If a zinc-rich primer has been used or is to be used, it is advisable to seal with a suitable tie-coat prior to delivery to site. If the steel is exposed to the atmosphere (without tie-coat), zinc salts may form on the steel. If these salts are not adequately removed, they may cause adhesion problems for any subsequent coatings applied. Removal of the salts can be achieved by high-pressure washing prior to the application of Steelmaster 70 WB.

Consult Jotun's Technical Department for advice on compatible primers.

Site Conditions During Application (Summary)

The steelwork should be protected from rain or condensation during the application and drying of Steelmaster 70 WB. If Steelmaster 70 WB is allowed to get wet, it is likely to be damaged – blistering and wrinkling may occur.

Steelmaster 70 WB can only be applied when the air and steel temperature is above 5°C but below 40°C. Relative humidity should be below 80% for successful application. The temperature of the substrate must also be at least 5°C above the dew-point on a rising thermometer.



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Application Methods

Mixing

Stir thoroughly before use until the product is homogeneous.

Application

May be applied by airless spray (brush/roller small areas only).

Airless Spray Application

Pump Ratio	Minimum 45:1
Pressure At Tip	Minimum 20Mpa (200kp/cm ² 2800 psi)
Tip Size	17-25 thou (0.43-0.63mm)
Tip Angle	20°-40°
Filters	In line gun or pump filters should not normally be used
Hose Diameter	(ID) 10mm
Hose Length	Maximum 60 metres

Brush/Roller Application

For brush application, use a "laying on" technique to avoid heavy brush marking. A short piled roller will produce a light textured finish.

Thinning / Cleaner	Thinning must be avoided – the product is supplied ready for use. Incorporation of water could result in film defects. Equipment should be cleaned immediately with fresh water.
Surface Temperature	Minimum 5°C, maximum 40°C. The temperature of the substrate must also be at least 5° above the dew-point.
Relative Humidity	Maximum 80%

(See comments under "recoat times")



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Recoat Times In Hours

Indications of approximate recoat times (i.e. overcoating Steelmaster 70 WB with itself) taking into account the following loadings:

Hours per brush application @ 571 microns wet (approximately 742 grams)/400 microns dry
Hours per spray application @ 1000 microns wet (approximately 1300 grams)/700 microns dry

The following figures also represent approximate drying times.

		30% RH	50% RH	70% RH
10°C	Brush	3 hours	4 hours	6 hours
	Spray	6 hours	8 hours	12 hours
23°C	Brush	2 hours	3 hours	4 hours
	Spray	4 hours	6 hours	8 hours
35°C	Brush	1 hour	2 hours	3 hours
	Spray	2 hours	4 hours	6 hours

Note

This information is assuming good air movement and ventilation. If there is little or no air movement, re-coating times will be approximately twice the figure indicated above.

Drying times are doubles at 5°C or at over 70% RH.

No more than two coats by spray and four coats by brush/roller in any 24-hour period.

Please ensure, however, that the previous coat(s) are fully dry in all areas before recoating.

High humidity and low air movement or low steel temperatures can result in condensation on the steelwork causing prolonged drying times and possibly poor adhesion between Steelmaster 70 WB and the primer. When end use is for dry internal situations, there is no requirement for a top sealer. However, a top sealer may be considered for aesthetic reasons. Final drying time before application of the topsealer is a minimum of 36 hours. For best results, the top sealer should be applied within 14 days.

Wet Film Thickness Checks

Wet film reading should be taken regularly during application, using an aluminium or metal wet film thickness comb. The readings should be regarded as a guide only to enable the applicator to establish a technique for achievement of the required dry film thickness specification. During multi-coat operations, wet film readings will prove unreliable when applying subsequent coats of Steelmaster 70 WB.

Dry Film Thickness Checks

Take dry film thickness readings (DFTs) as soon as the coating is sufficiently hard to allow readings without indenting the surface.

All DFT specifications are mean values, and the DFT of the primer must be deducted from the readings to give the dry film thickness of the intumescent coating only.

Do not apply topseal until all the readings are in accordance with the specified thickness.

Ensure that the Steelmaster 70 WB is completely dry before applying topseal (if required).

Topseal

Once the specified intumescent DFT has been achieved, the topseal can be applied. For most projects, we recommend the use of Water Fine Top Sealer (water-based acrylic) at a DFT of 50 microns.



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Maintenance

Any damaged areas should be fully abraded back to a sound surface. The abraded surface must be clean and dry before re-applying (refer to the section entitled "Site Conditions During Application").

Health And Safety

Please observe the precautionary notices displayed on the container. Apply under well-ventilated conditions. Do not breath or inhale spray mist/vapours. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately. For detailed information on the health and safety information with precautions for use of this product, please refer to the appropriate Material Safety Data Sheet.

The forgoing information is believed to be accurate at the time of preparation of this document, and is provided in good faith. However, no warranty or representation with respect to such information is intended or given.
