

Technical Data Sheet

BM066 FIRESHIELD ULTRA UNIVERSAL

1. PRODUCT DESCRIPTION

Fireshield Ultra Universal Intumescent Basecoat is a single pack solvent-based intumescent coating for fire protection of both internal and external structural steelwork. Fireshield Ultra Universal is very pale green in colour. Fireshield Ultra Universal can provide up to 2 hours fire protection. A Certificate of Performance and Installation is available on request.

2. APPLICATION CHECK LIST

The following application instructions are for on-site applications only. Ensure that:

- The primer is compatible with Fireshield Ultra Universal and has been applied correctly.
- The over coating period for the primer has not been exceeded.
- All damage to the primer has been repaired and re-primed.
- Site and weather conditions are within specification.
- Fireshield Ultra Universal is stored correctly.
- Surface is clean, dry and free from contamination.
- Correct spray equipment is available, if appropriate.
- Application instructions have been read prior to commencement of work.
- Equipment should be free from contaminants and dried material.
- Wet film gauge.

3. SURFACE PREPARATION

Fireshield Ultra Universal should be applied onto a clean, undamaged, dry and suitably primed steel surface. Certain types of primers can cause adhesion problems and should be avoided. These include:

- Chlorinated rubbers
- Bitumen

Galvanized surfaces should be prepared by an application of T-wash or mordant solution followed by a compatible primer. The primer should be applied in accordance with the manufacturer's instructions. If a zinc rich primer is used, it is advisable to seal this with a suitable tie coat prior to shipment to site. If the steel is left exposed to the atmosphere with just a zinc rich primer, surface salts may build up on the steel. These salts, if not adequately removed, may cause adhesion problems for any subsequent coating applied. Removal of the salts can be achieved by high-pressure washing. If adequate removal of the salts cannot be guaranteed, a suitable tie coat may have to be applied prior to the Fireshield Ultra Universal.

Bolloms should be consulted for technical advice when over coating of existing paints are specified for use. For Zinc Rich primers, which are generally porous, the application of a sealer such as Torlife TP Sealer is essential.

4. PRODUCT SPECIFICATION

Specific Gravity: 1.37 ± 0.02
Volume Solids: 68% ± 2%
VOC: EU limit value for this product (cat A/i): 500 g/l . This product contains max 370 g/l VOC
Theoretical Coverage: Every litre per square metre applied wet results in a DFT of 0.68mm (680 microns).
Available in 5L and 10L units.

5. SITE CONDITIONS DURING APPLICATION

Fireshield Ultra Universal can be used on both internal and external structures. It can be applied onto dry steelwork when air temperatures are between 0°C and 35°C.

Humidity should preferably be below 80%. If humidity is over 80% care must be taken to avoid condensation forming on the steel.

Steel surface temperature should be a minimum of 3C above the dew point.
Please note that rain may cause surface patterning if the material has not formed a skin. Heavy rain or water running over the surface can damage recently applied (6 - 8 hours) coating and hence it should be protected if this is a potential risk.

6. APPLICATION METHOD

Fireshield Ultra Universal is supplied ready for use and must not be thinned but should be thoroughly stirred prior to use. The following methods and rates of application are available. Achieving maximum loadings will depend on site conditions.

Method	Maximum Loading WFT Per Coat @ 20°C	Comments
Airless spray finish	1.1 L/m ² 1.10mm	Fast application and best finish
Lambswool Roller & Brush	0.55 L/m ² 0.55mm	Roller - Textured finish brush – marks may remain

Airless Spraying:

A single spray built up with several quick passes allows greater control over quantities and finish. It may be possible to apply 2 coats of Fireshield Ultra Universal in one day, particularly if the air temperature is above 20°C and there is good air movement (2m/sec). However before doing this ensure that the previously applied coat is dry particularly in the web/flange junctions.

Airless spray equipment is recommended and should match these guidelines:

Operating Pressure: At least 3500 psi (250 kg/cm²)

Tip Size: 19 – 23 thou (0.48 – 0.58mm)

Fan Angle: 20° - 40°

Hose Diameter: 10mm (3/8")

Hose Length: Max. 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.

Clean equipment with TH99 Thinners or Xylene.

7. THICKNESS REQUIREMENTS

During application, measure the wet film thickness frequently wet film gauge to ensure the correct thickness is being applied.

To use a wet film gauge, insert the teeth into the wet basecoat. 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.

8. LOADING TABLE

Horizontal Beams: 620° C / 592° C for 120 minutes only						
Fire Resistance	Exposure	Lightest Section that can be protected		m ² /litre	WFT	DFT
		Maximum Section Factor	Minimum Flange Thickness			
30 Minutes	4-Sided	320 m ⁻¹	6.8 mm	0.89	1.12	0.76
	3-Sided	320 m ⁻¹	6.8 mm	1.33	0.75	0.51
60 Minutes	4-Sided	320 m ⁻¹	6.8 mm	0.29	3.50	2.38
	3-Sided	320 m ⁻¹	6.8 mm	0.40	2.53	1.72
90 Minutes	4-Sided	260 m ⁻¹	9.6 mm	0.12	8.28	5.63
	3-Sided	270 m ⁻¹	7.8 mm	0.18	5.53	3.76
120 Minutes	4-Sided	185 m ⁻¹	13.7 mm	0.12	8.31	5.65
	3-Sided	185 m ⁻¹	11.4 mm	0.12	8.31	5.65

Vertical Columns: 550° C						
Fire Resistance	Exposure	Lightest Section that can be protected		m ² /litre	WFT	DFT
		Maximum Section Factor	Minimum Flange Thickness			
30 Minutes	4-Sided	320 m ⁻¹	6.8 mm	0.89	1.12	0.76
60 Minutes	4-Sided	320 m ⁻¹	6.8 mm	0.29	3.50	2.38
90 Minutes	4-Sided	290 m ⁻¹	8.4 mm	0.10	10.41	7.08
120 Minutes	4-Sided	220 m ⁻¹	11.5 mm	0.10	10.40	7.07

4 Sided Square & Rectangular Hollow Sections: 530° C					
Fire Resistance	Lightest Section that can be protected		m ² /litre	WFT	DFT
	Maximum Section Factor	Minimum Wall Thickness			
30 Minutes	320 m ⁻¹	3.6 mm	0.37	2.71	1.84
60 Minutes	215 m ⁻¹	6.3 mm < 90 x 90 5.0 mm ≥ 90 x 90	0.20	4.90	3.33
90 Minutes	100 m ⁻¹	12.5 mm	0.21	4.85	3.30

4 Sided Circular Hollow Sections: 500° C					
--	--	--	--	--	--

	Lightest Section that can be protected				
Fire Resistance	Maximum Section Factor	Minimum Wall Thickness	m ² /litre	WFT	DFT
30 Minutes	320 m ⁻¹	3.6 mm	0.42	2.37	1.61
60 Minutes	220 m ⁻¹	5.0 mm ≥ 60.3 ø	0.21	4.78	3.25
90 Minutes	120 m ⁻¹	10 mm	0.20	4.88	3.32

9. DRYING TIMES

Drying of Fireshield Ultra Universal is dependent upon a number of factors including:

- Temperature
- Air movement
- Humidity
- Thickness of coating
- Method of application

High humidity and low air movement or low steel temperatures will increase drying times.

When applying loadings in excess of 3000g/m² the drying times will be extended and depending on atmospheric conditions the time between Basecoat and Top Coat may be up to 5 days for lower loadings or up to 15 days for maximum loadings.

When high loadings are specified, it is preferable to apply a greater number of thinner coats (say 1000g/m²) allowing each to dry thoroughly before overcoating. This allows each individual coat to dry before overcoating and reduces the final drying time before Top Coating can be carried out.

Brush or roller application may add up to 20% extra to the drying times compared to spraying.

10. FINAL THICKNESS CHECK

Take dry film thickness (DFT) readings as soon as the coating is sufficiently hard to allow a reading to be made without indenting the surface.

DFT's may be taken using equipment such as an Elcometer 211 permanent magnetic type (banana gauge) or an electronic electromagnetic type.

Ensure that the DFT of the primer is deducted from the reading of the basecoat.

Do not apply Top Coat until the readings are in accordance with the specified thicknesses.

11. APPLICATION OF TOP COAT

Once the Fireshield Ultra Universal Basecoat has been applied to the specified DFT and is fully dry, it can be overcoated with Bolloms Flameguard Ultra Gloss.

If a top coat is not required immediately it can be left up to 12 months exposed without top coat once the Basecoat has dried fully.

If left for extended periods, some cleaning down and surface preparation may be required before finally applying Top Coat.

For long term durability and external use, top coat is required.

Due to the number of factors affecting drying times, the Fireshield Ultra Universal Basecoat should always be checked before application of top coat.

12. STORAGE

Fireshield Ultra Universal should be stored between 0°C and 35°C. Shelf life is 12-15 months in sealed containers.

13. HEALTH and SAFETY

Please refer to H&S Data Sheet for BM0660002 Fireshield Ultra Universal

Bollom manufactured and marketed in the UK by:

Tor Coatings Ltd., Portobello Industrial Estate, Shadon Way, Birtley, County Durham. DH3 2RE.

T: +44(0)191 410 6611 F: +44(0)191 492 0125 E: enquiries@tor-coatings.com

www.bollomfire.co.uk