

BROSTEEL ULTRA 60



Brosteel Ultra 60 - TDS - April 2009
Revision 2

1. Product Description

Brosteel Ultra 60 is a white thin film intumescent coating for the fire protection of internal structural steelwork.

Brosteel Ultra 60 can provide up to 60 minutes fire resistance.

2. Application Check List

The following instructions are for on-site application only. For off-site application, refer to Tor Coatings.

Ensure that:

- The primer is compatible with Brosteel Ultra 60 and has been applied correctly.
- The overcoating period for the primer has not been exceeded.
- The correct primer is used for galvanised steel.
- All damage to the primer has been repaired & re-primed.
- Site and weather conditions are within specification.
- Brosteel Ultra 60 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.
- Ensure different basecoats are not applied on the same section of steel.
- Equipment should be clean and free from contaminants or dried material.
- Wet film gauges are available for use.

3. Surface Preparation

Brosteel Ultra 60 should be applied onto a clean, undamaged, dry and primed steel surface.

Certain types of primers can cause adhesion problems and should be avoided. These include:

- Chlorinated rubbers
- Bitumen
- Thermoplastic primers

Tor Coatings have carried out compatibility testing on a wide range of primers and can be contacted on +44 (0)191 410 6611 for confirmation of compatibility with Brosteel Ultra 60.

Galvanised surfaces should be prepared by an application of T-wash or mordant solution followed by a compatible non-saponifiable 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 or travel 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 application of the Brosteel Ultra 60.

Tor Coatings should be consulted for technical advice when zinc

rich primers or the overcoating of existing paints are specified for use.

4. Product Specification

Specific Gravity: 1.35

Volume Solids: 72% ± 2%

VOC: 15 g/litre

Theoretical Coverage: 0.7 litres/m² @ 0.5mm DFT

Note: The volume solids content of this material has been measured in accordance with the method laid down in ISO 3233: 1998.

5. Site Conditions During Application

Brosteel Ultra 60 is recommended for application and use on dry protected structural steel only. If the basecoat is allowed to get wet, it is likely to be damaged – blistering and wrinkling may occur.

Brosteel Ultra 60 should only be applied when the air and steel temperatures are above 5°C. Relative humidity should be below 80% for successful application. Steel surface temperature should be a minimum of 3°C above the dew point. Ensure the steel is dry and free from contact with rain or condensation during the application and drying of Brosteel Ultra 60.

6. Application Methods

Brosteel Ultra 60 must be thoroughly mechanically stirred prior to use.

Airless Spraying:

Brosteel Ultra 60 may be applied up to a maximum wet film thickness (WFT) of 1.2mm single spray coat comprising of several quick passes. Achieving maximum 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 of Brosteel Ultra 60 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 junctions.

The airless spray equipment recommended is a Graco King unit (or equivalent) with a pump ratio no less than 45:1.

Operating Pressure: 2500 - 3000psi (175 - 210 kg/cm²)

Tip Size: 19 - 25 thou

Fan Angle: 20° - 40°

Hose Diameter: 10mm (3/8") (Internal Diameter)

Hose Length: Max. 60 metres

Brush/Roller Application:

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 1.0mm. A short piled roller will produce a light textured finish.

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7. Thickness Requirements

During application, measure the wet film thickness frequently with a WFT gauge to ensure the correct thickness is being applied. To use the 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. Drying Times

Drying of Brosteel Ultra 60 is dependent upon a number of factors including:

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

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.

9. Recoat Times In Hours

Indications of recoat or finishing times taking into account loading areas and application methods are given below:

Hours per application (0.3mm wft) - Thin coat

Hours per application (0.6mm wft) - Medium coat

Hours per application (1.2mm wft) - Thick coat



| R/H | Spray | 10°C | | 20°C | | 30°C | |
|-----|--------|-----------|----------|-----------|----------|-----------|----------|
| | | Still Air | Air Flow | Still Air | Air Flow | Still Air | Air Flow |
| 30% | Thin | 4.5 hrs | 2.25 hrs | 3.75 hrs | 1.5 hrs | 2.25 hrs | 1.5 hrs |
| | Medium | 6.25 hrs | 3.75 hrs | 5.25 hrs | 3 hrs | 4.5 hrs | 2.25 hrs |
| | Thick | 9 hrs | 4.5 hrs | 6 hrs | 3.75 hrs | 6 hrs | 3 hrs |
| 50% | Thin | 56 hrs | 3 hrs | 4.5 hrs | 2.25 hrs | 3 hrs | 1.5 hrs |
| | Medium | 9 hrs | 4.5 hrs | 6.25 hrs | 3.75 hrs | 6 hrs | 3 hrs |
| | Thick | 12 hrs | 6 hrs | 9 hrs | 4.5 hrs | 7.5 hrs | 3.75 hrs |
| 70% | Thin | 11.25hrs | 6 hrs | 9 hrs | 4.5 hrs | 6 hrs | 3 hrs |
| | Medium | 15 hrs | 9 hrs | 15 hrs | 6.25 hrs | 12 hrs | 5.25 hrs |
| | Thick | 18 hrs | 12 hrs | 18 hrs | 9 hrs | 15 hrs | 6 hrs |

- 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 finishing is a minimum of 16 hours.
- These 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.

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 a magnetic pull off gauge, electronic dry film gauge, or a measure of sample flake with Micrometer.

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

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

11. Application of Finish

Once DFT's have been achieved as specified, a finish can be applied, either for decoration or protection against moisture. A range of finishes are available, please consult Tor Coatings for an approved list of finishes.

Ensure the Brosteel Ultra 60 is completely dry before applying finish.

12. Maintenance

Damaged areas should be abraded back to a sound surface. The surface should then be clean and dry before re-applying. Once repaired finish should be re-applied.

13. Storage

Brosteel Ultra 60 should be stored internally between 5°C and 30°C. Do not store below 5°C. At temperatures above 25°C, the shelf life will be reduced. Shelf life is normally 9 months in sealed containers (see Date of Manufacture).

14. To Order

In the U.K., Brosteel Ultra 60 can be ordered directly from Tor Coatings on +44 (0)191 410 6611.

In other countries, Brosteel Ultra 60 can be purchased through a network of Distributors, details of which can be obtained from Tor Coatings.

15. Technical Assistance

Further assistance can be obtained by calling the Technical Hotline +44 (0)191 410 6611 or by e-mail enquiries@tor-coatings.com.

16. Health and Safety

Please refer to material safety data sheets - these are available upon request.

DISCLAIMER: The information contained herein is to the best of our knowledge true and accurate and is given in good faith but without warranty. It is our recommendation that a trial area is first coated to ensure the product is satisfactory to individual requirements. Material safety data sheets are available upon request.

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Bollom Fire Protection - A Division of Tor Coatings Limited,
 Portobello Industrial Estate, Birtley, Chester-le-Street, Co. Durham, DH3 2RE.

Tel: +44 (0)191 410 6611 Fax: +44 (0)191 492 0125

E-mail: enquiries@tor-coatings.com