

Nullifire S605 - Intumescent Basecoat

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1. PRODUCT DESCRIPTION

S605 Intumescent Basecoat is a single pack solvent-based intumescent coating for fire protection of both internal and external structural steelwork. S605 is very pale green in colour.

S605 can provide up to 2 hours fire protection.

2. APPLICATION CHECK LIST

The following application instructions are for on-site applications only; for off-site applications, refer to Nullifire Ltd.

Ensure that:

- The primer is compatible with S605 and has been applied correctly.
- The overcoating 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.
- S605 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 gauges are available for use.

3. SURFACE PREPARATION

S605 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

Nullifire have carried out compatibility testing on a wide range of primers and can be contacted on +44 (0) 24 7685 5000 for confirmation of compatibility with S605.

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 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 S605.

Nullifire should be consulted for technical advice when zinc rich primers and overcoating of existing paints are specified for use.

4. PRODUCT SPECIFICATION

Specific Gravity:	1.37 ± 0.02
Volume Solids:	68% ± 2%
VOC:	333 g/litre
Theoretical Coverage:	0.73 litres/m ² @ 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.

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5. SITE CONDITIONS DURING APPLICATION

Nullifire S605 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

S605 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	Remarks
	S605	
Airless spray finish	1500 g/m ² 1.10mm	Fast application and best finish
Lambswool Roller & Brush	750 g/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 S605 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/cm ²)
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.

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7. THICKNESS REQUIREMENTS

During application, measure the wet film thickness frequently with the gauge provided 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 S605 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 Topseal 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 topsealing can be carried out.

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

9. 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 Nullifire DFR-1 recorder.

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

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

10. APPLICATION OF TOPSEAL

Once the S605 Basecoat has been applied to the specified DFT and is fully dry, it can be overcoated with Nullifire TS615 Topseals and Carboxane 2000.

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

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

For long term durability and external use, Topseal is required.

Due to the number of factors affecting drying times, the S605 Basecoat should always be checked before application of Topseal.

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11. MAINTENANCE

Damaged areas should be abraded back to a sound surface preferably by wet abrasion. The surface should then be clean and dry before re-applying. System S Filler may be used for repairing scratches and chips. Once repaired topseal should be re-applied. Refer to Nullifire System S Maintenance Plan.

12. STORAGE

S605 should be stored between 0°C and 35°C. Shelf life is 12-15 months in sealed containers.

13. TO ORDER

In the U.K., S605 Basecoat can be ordered directly from Nullifire, Coventry on +44 (0) 24 7685 5000.

In other countries, S605 Basecoat can be purchased through a network of Distributors, details of which can be obtained from Nullifire or from our Web site on <http://www.nullifire.com>.

14. TECHNICAL ASSISTANCE

Further assistance can be obtained by calling the Technical Hotline or by e-mail - protect@nullifire.com.

Contract Support is available on request.

Nullifire run a Training School in the U.K. for applicators. Full information can be obtained from Nullifire Ltd.

15. HEALTH and SAFETY

Please refer to H and S Data Sheet Ref: S605-MSDS date: May 2003.

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