

# Nullifire - System W Intumescent Coating

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## 1. PRODUCT DESCRIPTION

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System W is a waterborne intumescent coating, which provides spread of flame protection to internal natural timber surfaces. There should be no direct contact with water or condensation or where the relative humidity can exceed 90%.

## 2. APPLICATION CHECK LIST

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Ensure that:

- Site and weather conditions are within specification.
- The moisture content of the timber is acceptable.
- The compatibility of timber and/or stain is adequate.
- Any existing finish is removed and the surface is neutralised – do not use turpentine or white spirits, use methylated spirits and warm soapy water.
- The timber is clean, dry and free from contaminants.
- Any wood filler used is fully cured.
- Good quality brushes are used.
- 2 coats of Topseal are used on areas of high wear.
- If there is a risk of damp voids behind ceilings/panelling, the back faces of timber are topsealed to avoid moisture permeating through timber into basecoat.
- You have the correct basecoat/topseal combination i.e. Clear System – “milky” Basecoat and Pigmented System – White Basecoat.
- Correct storage facilities are available.
- Application instructions have been read prior to commencement of work.

## 3. SURFACE PREPARATION

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As System W is a waterborne product, it relies for adhesion on the natural porosity of timber. If the timber has an existing sealer or coating, adhesion will be affected. These should be stripped or sanded off completely.

It is essential that the timber be within a stable environment, clean, dry and free from all contaminants that will affect the drying of a waterborne coating.

Oily or resinous timbers (e.g. pine, teak, iroko etc) should be washed with methylated spirits prior to application of System W. Any knots must have the exuded resin removed and then sealed with a knotting product, neutralised and allowed to dry.

Surfaces finished with an artificial veneer or finish are not suitable, as long term adhesion is unlikely to be successful.

If a surface is in doubt or the preparation is being queried please refer to Nullifire's Technical Department.

## 4. DECORATIVE PENETRATING STAINS

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The following stains are acceptable for pre-treatment of timber and Glulam beams subject to the products being applied in accordance with the manufacturer's instructions. It is recommended that fourteen days drying should be allowed before overcoating and a maximum of one coat (50 microns) of the following stains should be applied.

Akzo Nobel Decorative Coatings - Crown Wood Stain  
Akzo Nobel Woodcare - Sadolin Classic  
Akzo Nobel Woodcare - Sadolin Harmoni  
Akzo Nobel Woodcare - Sadolin Wood effects  
Ronseal - Colron dye

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## 5. SITE CONDITIONS DURING APPLICATION

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The moisture content of the timber should be, as near as possible to the level it will stabilise at in use.

This will normally be <12%. At moisture levels >15%, the coating is unlikely to dry satisfactorily and blooming may occur.

System W should be applied when the air and surface temperatures are >5°C and <35°C throughout its application. The relative humidity must be <75% for the same period.

## 6. APPLICATION METHOD

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A light abrasion with silicone (wet and dry) paper or a wipe with methylated spirits will help to key the basecoat before commencing.

Check the correct loading of basecoat from the table below. The total DFT is critical rather than the number of coats:

Product	Class No	DFT mm	WFT mm	Loading g/m <sup>2</sup>	No Coats
Clear Basecoat	Class 1	0.14	0.23	300 (150/coat)	1
	Class 0	0.21	0.35	450 (225/coat)	2
Clear Topseal	-	0.03	0.08	85	1
Pigmented Basecoat	Class 1	0.14	0.32	400 (200/coat)	1
	Class 0	0.14	0.32	400 (200/coat)	1
Pigmented Topseal	-	0.03	0.09	100	1

System W can be applied by brush, roller or spray.

In general, products must not be thinned. For any advice on thinning, please contact the Technical Desk. Products should be thoroughly stirred both prior to application and during use. When not in use, the containers should be resealed to prevent evaporation and any water, which has settled on top of the product, should not be poured off.

All equipment should be washed out after use with warm water (for clear topseal, use xylene).

### Brush Application:

Load natural fine bristle brushes with only sufficient material to give a WFT of 0.15 – 0.16mm for basecoat (200g/m<sup>2</sup>) and 0.08 – 0.09mm for topseal.

### Roller Application:

A roller gives a faster application but should be laid off with a brush. Short pile lambswool rollers are recommended.

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## Spray:

Airless spraying is ideal for large flat areas and the coverage is achieved by several quick passes. The following data should be used as a guideline with variations being made to suit local conditions.

<b>Operating Pressure:</b>	2500 - 3500psi (176 - 211 kg/cm <sup>2</sup> )
<b>Tip Size:</b>	9 – 13 thou (0.23 – 0.33 mm)
<b>Fan Angle:</b>	40°
<b>Hose Diameter:</b>	10mm ID ( <sup>3</sup> / <sub>8</sub> "
<b>Clear Basecoat Volume Solids:</b>	60%
<b>Pigmented Basecoat Volume Solids:</b>	44%

It may be an advantage to wet the timber lightly prior to application to aid "wetting" of the surface.

## 7. THICKNESS REQUIREMENTS

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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.

Once dry, the coating can be measured with a "Destructive Paint Inspection Gauge" by Elcometer Limited.

## 8. DRYING TIMES

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Drying of System W is dependent upon a number of factors including:

- Temperature
- Air movement
- Humidity

High humidity and low air movement or low temperatures can result in condensation forming and/or prolonged drying times. The basecoat must be thoroughly dry before topsealing.

Both the basecoats and topseals will be touch dry within one hour and fully dry for overcoating within 4 - 6 hours at 20°C and 60% relative humidity. Overcoating should not be carried out prior to the previous coat being fully dry, especially topsealing where a period of 24 - 48 hours may be required. However excessive periods between coats can lead to curing problems.

These figures are based upon constant conditions – fluctuations up or down will give variations to the drying times. If condensation does form accidentally, a further full drying period should be allowed.

## 9. MAINTENANCE

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The original decorative finish is provided by the topseal and in order to retain its fire performance overcoating must be carried out with the same material. This is normally carried out in line with the maintenance cycle of that particular building.

To re-apply the topseal, remove all the dirt and grease by washing down, leave to dry and lightly abrade surface with silicone (wet and dry) paper.

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## 10. STORAGE

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System W should be stored between 5°C and 35°C.

Shelf life - 12 months.

## 11. TO ORDER

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

In other countries, System W 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>.

## 12. TECHNICAL ASSISTANCE

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Further assistance can be obtained by calling the Technical Hotline or by e-mail - [protect@nullifire.com](mailto: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.

## 13. HEALTH and SAFETY

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Please refer to H and S Data Sheet Ref: S602/3-MSDS date: May 2003.

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