**Issued To:**

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**Issued By:**   **Chris Partington**

**Date:**   **4 December 2020**

**Project Name:**

**Project Location:**

**Structural Elements for Protection:**

Internal Steelwork fire rated 90 minutes, Non-Visible Environment up to C1

**Specified Fire Resistance Level 90**/--/--

**Specified Environments:** C1

**AS1851 Guidelines the intumescent system should have annual Inspection and maintenance as required**

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**Surface Preparation and Application**

**Pre-treatment:**

Degrease surface using biodegradable degreasing solution as per AS 1627.1 to remove all grease, oils, fats, etc. Remove all salt deposits and degreaser residue by low pressure water washing (upwards of 300 bar) using potable water. Grind all sharp edges and corners to a radius of 2mm. Remove all weld slag, spatter, and grind all welds and high spots smooth.

**Steel Preparation:**

Abrasive blast all surfaces to a minimum Sa 2½ blast as per AS1627.4. A surface profile of 40-70 microns shall be achieved. Remove all blast residue. All blasted surfaces shall be coated immediately, before any flash rusting or contamination occurs. Substrate must be sound, clean and dry before application of coatings.

**Galvanized Steel:**

Galvanizing requires a roughened surface for optimum adhesion/performance of epoxy primers. Remove any contaminants per SP1, AS 1627.1; ensure there are no chemical treatments that may interfere with adhesion; and mechanical abrade using bristle blaster or sweep abrasive blast the surface to establish a suitable roughness (typically 40 microns). Avoid aggressive preparation that may remove the zinc coating.

Cleaned and roughened galvanizing should be coated immediately after preparation, particularly in humid conditions above 50% RH.

Do not allow adhesion-compromising zinc hydroxide to form before application.

**Off/On-Site Intumescent Coating Application**

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| **Nullifire SC902**  **Finish Standard Required** | **Location** | **Finish Required** |
| **Internal Steelwork Non-Visible**  **FRL up to 90 minutes C1** | **To Be Confirmed by Client.** |

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|  | PRODUCT | DATA SHEET NO. | MINIMUM FILM THICKNESS (MICRONS) | | FRL | APPLICATION METHOD | SPOT/ FULL/ STRIPE COAT | THINNER REQUIRED |
| DRY | WET |
| Primer Coat | Intercure 200 | Intercure  200 | 75 Microns Dry Film Thickness | | N/A | Airless Spray | FULL | As per TDS |
| Intumescent Coat | Nullifire SC902 | Nullifire  SC902 | AS PER LOADING SCHEDULE | | 90/--/-- | Airless Spray | FULL | 100% Xylene |
| Optional  Topcoat | Interthane 870 | Interthane  870 | 75 Microns Dry Film Thickness | | N/A | Roller/Brush/Spray | FULL | As per TDS |
| NOTES | Level of Finish to be approved by the Architect prior to the start of the project  Optional topcoat required if the steelwork is to be left in an open construction phase for longer for 4 months maximum  A stripe coat of Intercure 200 at 75 microns dft should be applied after the primer to all corner, edge, joints etc | | | | | | | |

**\*Intumescent coating warranty documentation can only be requested prior to commencement of works**

**Intumescent Coating:** Apply Nullifire SC902 to meet the DFT requirement for the fire rating specified and in accordance with the product loading schedule provided. Refer to Permax for surface preparation of RHS, SHS and CHS members.

**Technical Note:** An intumescent coating expands in a fire scenario, please consult Permax prior to fixing any material directly to, or hard up against the coated substrate.

**Note:** Galvanized bolts require no further preparation other than solvent de-greasing. **(Intumescent bolt caps are also an approved system for fire protection for bolted connections – compliant to AS1530.4-2014 – contact Permax for additional details)**

**Note:** Existing structural steelwork that has been identified as being previously coated with lead-based paint is not suitable for an intumescent coating to be applied to. Lead based paint must first be completely removed by an approved method carried out by a suitably qualified contractor.

**Note:** Nullifire SC902 can only be installed by approved applicators. Applicators also need to hold the necessary qualifications to enable certification of the installed system in accordance with the relevant State regulations.

**Notes**

All materials, primer, intumescent, topcoat shall be obtained from– Nullifire / Azko Nobel

All corners, edges, bolted connections, difficult access should have a stripe coat

All products should be applied as per technical data sheets and application guides

Two topcoats may be required to achieve level of finish and full opacity

Level of intumescent and coating finish should be approved before full application

The intumescent coating shall have been assessed in accordance with the requirements of AS 1530.4 and AS 4100

The potential for heat transfer from unprotected structural steel into protected structural steel must be considered. It is normally considered good practice to protect the adjoining 500mm of ‘unprotected’ structural steel to limit unwanted heat transfer.

All systems should be stored and the project design to be free from ponding and pooling water

All intumescent coating products used shall be documented in the independent NATA laboratory assessment (i.e. Branz)

All bolted connections should be suitably protected with fire rated bolt caps (Assessed to AS1530.4) refer to Permax for supply

The intumescent system should have annual Inspection and maintenance as per AS1851guidelines

An independent 3rd party inspector should be employed on the project

**NULLIFIRE SC902 – TECHNICAL DATA**

**KEY BENEFITS**

* Fast cure, early weather resistance, shower proof within 1 hour.
* Achieves external durability with an approved top seal.
* Cures below 0° and fully dry by the following day.
* Self-priming system tolerant of light rusting to steel, up to 2 weeks post blasting.
* High build potential with all ratings in one application.
* **Fire rating up to 120 minutes assessed in accordance with AS1530.4- 2014 and AS4100-1998**

**Product Description**

Nullifire SC902 is a fast track on-site low VOC, single application, high build system, based on patented technology.

**Usage / Purpose**

Nullifire SC902 provides a fast curing effective structural fire performance, for steelwork up to 120 minutes fire rating.

**Finish**

A lightly textured smooth finish. A compatible top-seal can be applied if a decorative finish is required.

**Colours**

**Part A** White **Part B** Black **Mixed** White **Cured** White

**Packaging**

Part A & Part B supplied in 25kg kit.

**Environmental Consideration**

Low VOC and no solvent entrapment or prolonged solvent odour once fully cured. Cetec VOC Content Test Certificate CV140407a to Green Building Council of Australia Green Star Office Design Specification V3 IEQ-13

**Availability / Approved Applicators**

Only available to Permax approved contractors

(Refer to Permax for approved applicators.)

**USAGE GUIDELINE**

**Surface Preparation**

* No primer required for most internal and semi-exposed environments (refer to Permax for specification advice).
* All surfaces to be coated should be clean, dry and free from loose friable materials and any other contaminants likely to impair adhesion. Steelwork should be blast cleaned in dry atmospheric conditions using abrasive of suitable type and size, free from fines, moisture and oil. **The system is not suitable for use over single pack primers.** For use over galvanised surfaces or other substrates please contact Nullifier Australia.

**Application Conditions**

* Ensure adequate through ventilation during application.
* Application temperature range 0° to 35+°, relative humidity <95% and steel surface temperature at least 2°C above dew point temperature.

**Application Equipment**

* Airless Spray Unit – (Refer to Permax for advice regarding appropriate equipment)

**Application Advice**

* For application advice contact Permax

**Coverage Rates**

* Theoretical coverage of 1,750 g/m² based on an applied 1.00mm dry film thickness.

**Cleaning**

* Flushing of equipment should be carried out within 90 minutes of mixing the final kit using Xylene containing **No** alcohol or water.

**Storage**

* Store in a secure, dry warehouse conditions between 0°C and +35°C

**Health & Safety Precautions**

Product Health and Safety Data Sheets must be read and understood before use.

**Technical Service**

Please contact Permax for technical advice.

**Guarantee / Warranties are available but the specific project requirements should be discussed with Permax / Nullifire prior to the project starting otherwise it will not be able to be issued.**

**TECHNICAL INFORMATION**

**Property Result**

Composition A Low VOC, high build formulation based on advanced hybrid technology.

**Performance**

“Prohesion” Cyclic Corrosion Test to ASTM G85:2009 Annex A5

At 1000 hours Maximum extent of undercut corrosion 6.00mm from scribe mark.

Note: The above test was carried out on a primer-less steel substrate.

**Properties Typical Values**

Specific Gravity Part A 1.55 ± 0.02

Part B 0.99 ± 0.01

Part C 1.49 ± 0.02

Volume Solids 85% ± 3%

VOC 137 g/litre

Viscosity Part A 220 ± 10% (Spindle 7@50 rpm)

Part B 9 ± 10% (Spindle 7@50 rpm)

Part C 110 ± 10% (Spindle 7@50 rpm)

Pot Life 60 minutes