

Nullifire SC902 Intumescent Coating Specification – Fire Rated Steel

Specification No.:

Issued To:

Company:

Company Address:

Issued By:

Date:

Project Name:

Project Location :

Structural Elements for Protection:

Internal Steelwork fire rated up to 120 minutes, Non-Visible Environment up to C1
Internal Steelwork fire rated up to 120 minutes. Visible Environment up to C2
External Steelwork fire rated up to 120 minutes. Visible Environment up to C3

Internal Steel Work – Non fire rated non-visible up to C1
Internal Steelwork – Non fire rated Visible Environment up to C2
External Steelwork – Non fire rated Visible Environment up to C3

Specified Fire Resistance Level: 120/--/--

Specified Environments: C1,C2 and C3

AS2312 Guidelines durability to first major maintenance, 25+ Years

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

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 Sa 2½

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

Nullifire SC902 Finish Standard Required		Location				Finish Required		
		Internal Steelwork Non-Visible FRL up to 120 minutes C1				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/FULL/STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Nullifire PM536	Nullifire PM536	100 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As per TDS
Stripe Coat	Nullifire PM536	Nullifire PM536	75 Microns Dry Film Thickness		N/A	Brush / Roller	STRIPE	As per TDS
Intumescent Coat	Nullifire SC902	Nullifire SC902 TDS	AS PER LOADING SCHEDULE		120/--/--	Airless Spray	FULL	100% Xylene
Optional Topcoat	Nullifire TS331	Nullifire TS331	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 6 months maximum							

Nullifire SC902 Finish Standard Required		Location				Finish Required		
		Internal Steelwork Visible FRL up to 120 minutes up to C2				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/FULL/STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Nullifire PM536	Nullifire PM536	100 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As per TDS
Stripe Coat	Nullifire PM536	Nullifire PM536	75 Microns Dry Film Thickness		N/A	Brush/Roll	STRIPE	As per TDS
Intumescent Coat	Nullifire SC902	Nullifire SC902 TDS	AS PER LOADING SCHEDULE		120/--/--	Airless Spray	FULL	100% Xylene
Compatible Topcoat	Nullifire TS331	Nullifire TS331	75 Microns Dry Film Thickness		N/A	Roller/Brush/Spray	FULL	As per TDS

Compatible Topcoat	Nullifire TS331	Nullifire TS331	75 Microns Dry Film Thickness	N/A	Roller/Brush/Spray	FULL	As per TDS
NOTES	Level of finish to be approved by Architect prior to start of project Topcoat also required if the steelwork is to be left in an open construction phase for longer for 6 months maximum						

Nullifire SC902 Finish Standard Required		Location				Finish Required		
		External Steelwork Visible FRL up to 120 minutes Max C3				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/FULL/STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Nullifire PM506	Nullifire PM506	75 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As per TDS
Stripe Coat	Nullifire PM506	Nullifire PM506	50 Microns Dry Film Thickness		N/A	Brush / Roller	STRIPE	As per TDS
INTERMEDIATE	Nullifire PM536	Nullifire PM536	75 Microns Dry Film Thickness		N/A	Airless Spray	Full	As per TDS
Intumescent Coat	Nullifire SC902	Nullifire SC902 TDS	AS PER LOADING SCHEDULE		120/--/--	Airless Spray	FULL	100% Xylene
Compatible Topcoat	Carboxane 2000	Carboxane 2000	75 Microns Dry Film Thickness		N/A	Roller/Brush/Spray	FULL	As per TDS
Compatible Topcoat	Carboxane 2000	Carboxane 2000	75 Microns Dry Film Thickness		N/A	Roller/Brush/Spray	FULL	As per TDS
NOTES	Level of finish to be approved by Architect prior to the start of project Topcoat also required if the steelwork is to be left in an open construction phase for longer for 6 months maximum							

		Location				Finish Required		
		NON-FIRE RATED Internal Steelwork Non-Visible C1				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/FULL/STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Nullifire PM536	Nullifire PM536	100 Microns Dry Film Thickness		N/A	Airless Spray	Full	As per TDS
Stripe Coat	Nullifire PM536	Nullifire PM536	75 Microns Dry Film Thickness		N/A	Brush / Roller	STRIPE	AS per TDS

		Location				Finish Required		
		NON-FIRE RATED Internal Steelwork Visible C2				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/ FULL/ STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Nullifire PM536	Nullifire PM536	100 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As per TDS
Stripe Coat	Nullifire PM536	Nullifire PM536	75 Microns Dry Film Thickness		N/A	Brush / Roller	STRIPE	As per TDS
Top Coat	Nullifire TS331	Nullifire TS331	75 Microns Dry Film Thickness		N/A	Roller/Brush/Airless Spray	FULL	As per TDS
NOTES	Two topcoats maybe required depending upon color / shade chosen in order to achieve full opacity Level of finish to be approved by Architect prior to the start of project							

		Location				Finish Required		
		NON-FIRE RATED External Steelwork Visible (C3)				To Be Confirmed by Client.		
	PRODUCT	DATA SHEET NO.	MINIMUM FILM THICKNESS (MICRONS)		FRL	APPLICATION METHOD	SPOT/ FULL/ STRIPE COAT	THINNER REQUIRED
			DRY	WET				
Primer Coat	Carbozinc 859	Carbozinc 859	75 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As per TDS
Stripe Coat	Carbozinc 859	Carbozinc 859	50 Microns Dry Film Thickness		NA	Brush/Roller	STRIPE	As Per TDS
Intermediate Coat	Carbogurd 690	Carboguard 690	200 Microns Dry Film Thickness		N/A	Airless Spray	FULL	As Per TDS
Top Coat	Carboxane 2000	Carboxane 2000	75 Microns Dry Film Thickness		N/A	Roller/Brush/Airless Spray	FULL	As per TDS
NOTES	Two topcoats maybe required depending upon color / shade chosen in order to achieve full opacity Level of finish to be approved by Architect prior to the start of project							

Nullifire and Carboline are product brands incorporated into the global brands portfolio of RPM International Inc. a world leader in speciality coatings and sealants. The products listed above have been tested and approved for use with Nullifire SC902.

Any substitution of primers and topcoats needs to be approved by Permax prior to application to avoid compatibility issues and compromising any warranty that may be related to the project.

***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 one supplier – Nullifire / Carboline

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 AS1851 guidelines

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

APPROVED PRIMERS (2 Pack)

Nullifire PM 506*

Nullifire PM 405*

Nullifire PM 536*

Carboline Carboguard 690*

Dulux Duremax GPE ZP

Akzo Nobel Intercure 200

APPROVED PRIMER (Single Pack)

Resene Quick Dry Primer †

† used as a tie coat over Nullifire SC902 prior to application of Resene top seals

APPROVED TOP SEALS (2 Pack)

Nullifire TS 134*

Nullifire TS 331*

Nullifire TS 949*

Carboxane 2000*

Dulux Weathermax HBR

Akzo Nobel Interthane 870

APPROVED TOP SEALS (Single Pack)

Resene SpaceCote**

Resene Lustacryl**

Resene Enamacryl**

* Nullifire and Carboline are product brands incorporated into the global brands portfolio of RPM International Inc. A world leader in speciality coatings and sealants. The products listed above have been tested and approved for use with Nullifire SC902.

** A selected range of Resene high performance single pack waterborne cross linked acrylic coatings have been tested and approved for use with Nullifire SC902.

These products, when included in coating system specifications issued by Permax are deemed to be supported under any project specific warranty provided in conjunction with the specification.

Any substitution of primers and topcoats from the main specification needs to be approved by Permax prior to application to avoid compatibility issues and compromising any warranty that may be related to the project.

NOTE: Refer to Permax for approval of compatible primers and top seals other than those listed above.

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
----------	------------