

SC902

Product Compliance and Performance Statement

Purpose

This document is designed to provide general guidance in regards to the compliance and performance of the Nullifire SC902 product (Series SC900) as applied to structural steel work requiring fire protection. The following topics are covered:

- Compliance
- Longevity and Performance
- Construction Phase Durability
- Maintenance
- Survey/inspection

Please note that our repair procedure is covered in a separate guidance document.

If there are areas which are not specifically covered by this document please contact Nullifire Australia for further information or advice.

Compliance

The Nullifire SC902 product (Series SC900) has been assessed in accordance with the Australian fire test standard AS1530.4-2005 and the Australian steel structures standard AS4100-1998 using the EN 13381-8:2010 method. BRANZ reports FAR3997, 4257 and 4292. Testing in accordance to comply with the NCC Part A2.2.

In addition, the following certifications have also been achieved – BS476: Part 20/21; EN 13381: Part 8; EN13823 (SBI); Cellular Beams to EN13381: Part 9 and ASFP; Concrete Core Fill Hollow Section Steel Testing to EN13381: Part 6, Certifire Approved

Longevity and Performance

Series SC900 products are manufactured using inert, stable materials, and when applied in accordance with our application instructions and maintained correctly, their intumescent properties will be retained for the lifetime of the building. Damaged surfaces that are not repaired in accordance to recommended procedures may invalidate any material claims.

The above statement is based on Nullifire Ltd extensive knowledge and experience in both manufacturing and testing of intumescent coatings gained over the past 35 years, and is further supported by specific testing of the Nullifire Series SC900 products. This rigorous testing regime includes the following:-

- Assessment ETAG 018-2: 2011 - Approved for the following environment classifications :-
X: Exposed – Fully external steelwork, exposed perimeter steel, open construction site (requires top seal)*
Y: Semi-Exposed – Perimeter steel e.g. car parks, undercrofts, under canopies (top seal if required for cleanability/appearance or UV exposure).
Z1: Humid Internal (RH > 85%) – Steel in plant rooms, basements, warehouse and production (top seal if required for cleanability/appearance).
Z2: Dry Internal (RH < 85%) – Steel in commercial buildings, hospitals, schools, airports etc. (top seal if 'exposed to view').
**Application of two coats of an approved urethane top seal, with a nominal final dry film thickness of 100 microns, and providing it is applied in accordance with our written application notes, full exterior durability will be achieved.*
- Assessment ETAG 018-2: 2011 – Tested and passed in accordance with the test procedure as defined in ETAG 018-2 Clause 5.7.2.1 for application directly to galvanized steel substrates as well as brush cleaned rusty steel substrates.

SC902

Product Compliance and Performance Statement

- “Prohesion” Cyclic Corrosion Test to ASTM G85:2009 Annex A5 – At 1000 hours total exposure in accordance with BS EN ISO 12944-6 test procedures for water condensation /neutral salt spray the maximum extent of undercut corrosion was 6mm from the scribe mark. **Note: This test was carried out a primer-less substrate.**

With reference to an internal environment i.e. Z1, Z2, we can further confirm that the Series SC900 system has passed ETAG 018 semi-exposed condition Y, without the use of a primer or top coat system. As would be expected, without being subjected to the more aggressive conditions that the coating system would experience in an external environment, the statement ‘lifetime of the building’ for situations where the coating system is installed in an internal environment, is applicable.

Construction Phase Durability

Series SC900 coatings will resist weathering for up to 6 months without top sealing. If exposure to UV is high then the earlier application of a top seal is recommended.

Maintenance

Whilst “life to first maintenance” is an expression commonly used within the Building Industry, it is not relevant to Series SC900 coatings when “maintenance” is taken to mean complete removal and replacement of a system. Intumescent coatings unless damaged in any way do not require completely replacing during the lifetime of the building. “Maintenance” in this document generally refers to local repair of any damage, not removal/replacement of the whole coating system.

Where repairs are necessary please refer to our repair procedure document. Where a client wishes to change the colour of the applied coating or merely refresh the appearance, the following guidance should be followed:

- Always ensure that an approved compatible top seal system is used.
- If previously un-top sealed, ensure the surfaces are clean, dry, free from contamination and apply the top seal system in accordance with the manufacturer’s product data.
- If previously top sealed, abrade the surface to create a keyed surface and reduce the thickness of the applied top seal, to avoid overbuild on the total top seal thickness.
- Ensure the surfaces are clean, dry, free from contamination and apply the top seal system in accordance with the manufacturer’s product data.

Inspection

The frequency of inspection will depend on a number of factors relating to the coatings:

- Whether they are internal or external
- Whether exposed internally or hidden behind partitions, suspended ceilings etc.
- The importance of the Series SC900 as a decorative finish
- The location of the coated steel in relation to sources of potential physical damage e.g. factory floor, warehouse, supermarket, loading bay etc.
- Environmental conditions i.e. humidity levels, temperature, exposure to moisture etc.

SC902

Product Compliance and Performance Statement

Internal and external exposed steel

Steel, which is accessible, should be inspected during the maintenance cycle of the building, usually every 3-5 years.

Small scratches or dents in the surface of the top seal coat are not serious and can be left until the next maintenance period if desired. Damage that breaches the coating system through to the substrate should be addressed and repaired as necessary.

If the coated steelwork is located in an area where it is more likely to be subjected to localised damage or chemical attack such as a supermarket, factory floor etc, inspection should be carried out on a yearly basis, and repairs carried out as necessary.

The final stable environment of the building will also have an effect. Coated steel in a building with high humidity levels or extremes of temperature would need to be inspected more frequently and maintained accordingly.

Internal hidden steel

Coated steel, which is hidden behind partitioning/suspended ceilings, would obviously be difficult to inspect on a regular basis. In an office type environment where the steel is concealed behind ceiling panels or partitions, the likelihood of physical or environmental damage to the coatings is considerably reduced. Damage to the coatings caused by unforeseeable circumstances i.e. electrical fires, burst pipes etc should be apparent and must be addressed and repaired as soon as possible during any refurbishment process.