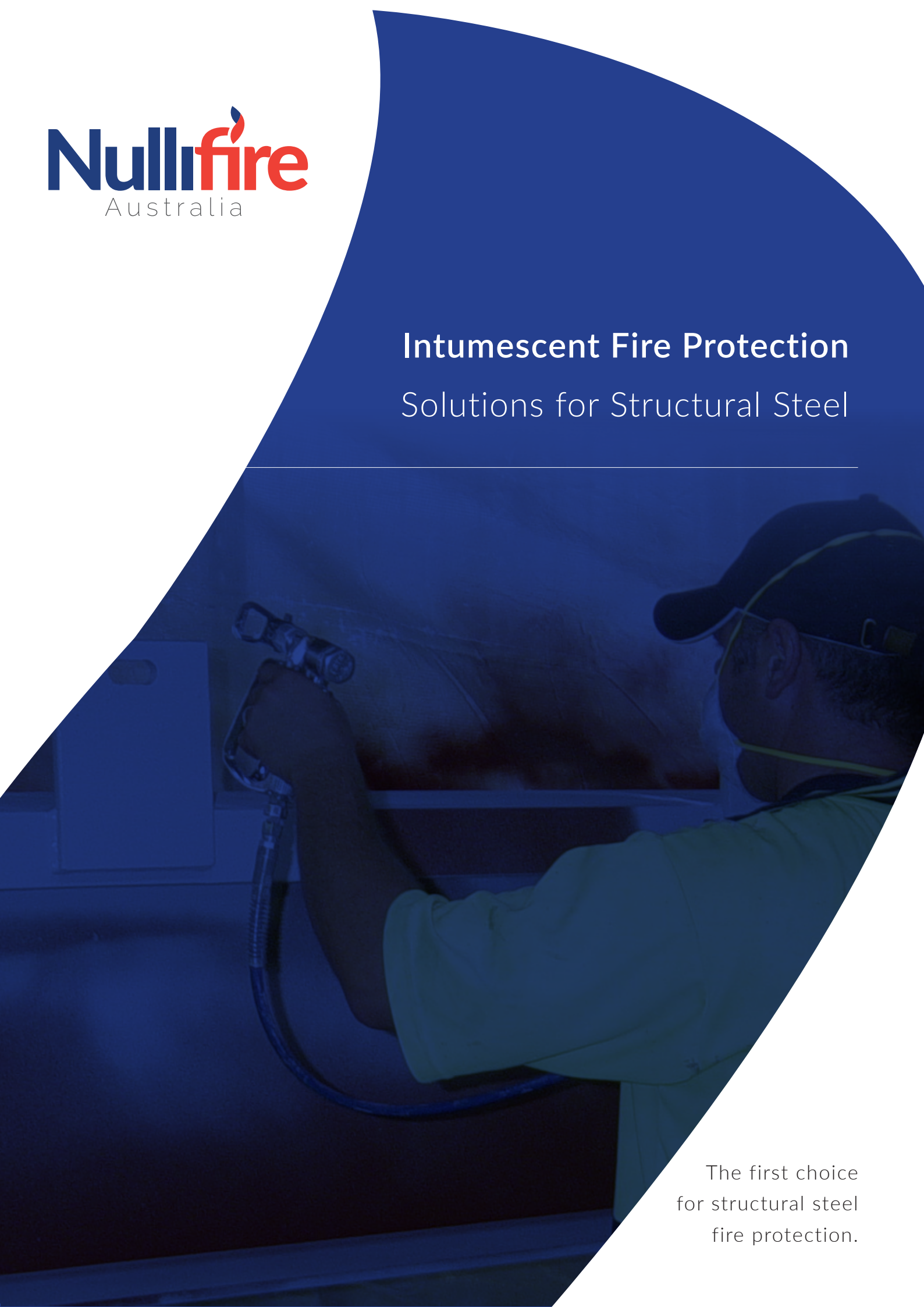




# Intumescent Fire Protection Solutions for Structural Steel

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The first choice  
for structural steel  
fire protection.

The ability to correctly select and specify products is crucial to preserving life and protecting structures.

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When seeking a cost effective structural steel fire protection solution for your project, there can be a number of important factors to consider

### TYPES OF FIRE

Fires can be classified as either Cellulosic or Hydrocarbon. The difference between them in relation to fire protection is how quickly each reaches its maximum temperature range. While structural steel cannot burn, it can lose strength and is prone to warping as it increases in temperature. Under classic 'cold design' rules, steel can suffer structural failure at just 550°C.

**Hydrocarbon Fires** are fuelled by hydrocarbon compounds such as gas and petrol. They typically occur in oil and gas production facilities or petrochemical installations.

**Cellulosic Fires** are fuelled by cellulosic materials such as timber, fabrics, furniture and paper. They mainly occur in buildings such as offices, hospitals, shopping centres and residential buildings.

### FIRE RESISTANCE LEVELS (FRLs)

Section C of the National Construction Code (NCC) requires all load bearing building elements to have adequate fire protection. Fire Resistance Levels (FRLs) are used as the performance indicator throughout the Building Code of Australia (BCA) and the Australian Standards.

The Australian Standard defines the FRL as the performance indicator of various building elements in minutes, which is determined by

subjecting a representative specimen to the standard time – temperature curve regime as set out by AS1530.4.

### STEEL SELECTION

The correct steel size and thickness must be selected in order to meet certain FRLs. Decisions should be based on test evidence that specifies which Hp/A is needed to achieve the required FRL.

The 'Hp/A' is the ratio of the fire exposed perimeter to the cross-sectional area of the steel, and governs the heating rate of the steel during a fire event.

Designing for a balance between achieving the required loads and exceeding the required Hp/A will give the best result in regards to structural adequacy, fire safety and overall project cost.

### ADVANCES IN PASSIVE FIRE PROTECTION

The new technology intumescent coatings can be painted directly on to internal, semi-exposed and external steelwork. To achieve a specific FRL, a coating thickness is specified for the type of steel section based on the calculated Hp/A. When exposed to temperatures of around 180°C or more, the intumescent swells, increasing in volume and decreasing in density.

This process creates a thick layer of inorganic 'char' which thermally insulates the steelwork from reaching its failure temperature for the specified FRL e.g. 30, 60, 90 or 120 minutes. This time frame allows fire fighters to enter the building, extinguish the fire and prevent premature collapse of the structure.

Nullifire is with you  
from product selection  
and specification to  
installation and verification.

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### **NULLIFIRE AUSTRALIA TECHNICAL SUPPORT SERVICES**

Nullifire Australia delivers a new level of support to industry professionals who are seeking information on structural steel fire protection. Our expert technical and structural engineering department can provide you with an optimisation solution based on your specific structural loadings and fire performance requirements. This optimisation can reduce overall project costs, prevent delays and streamline the application, delivery and erection process for onsite and offsite projects.

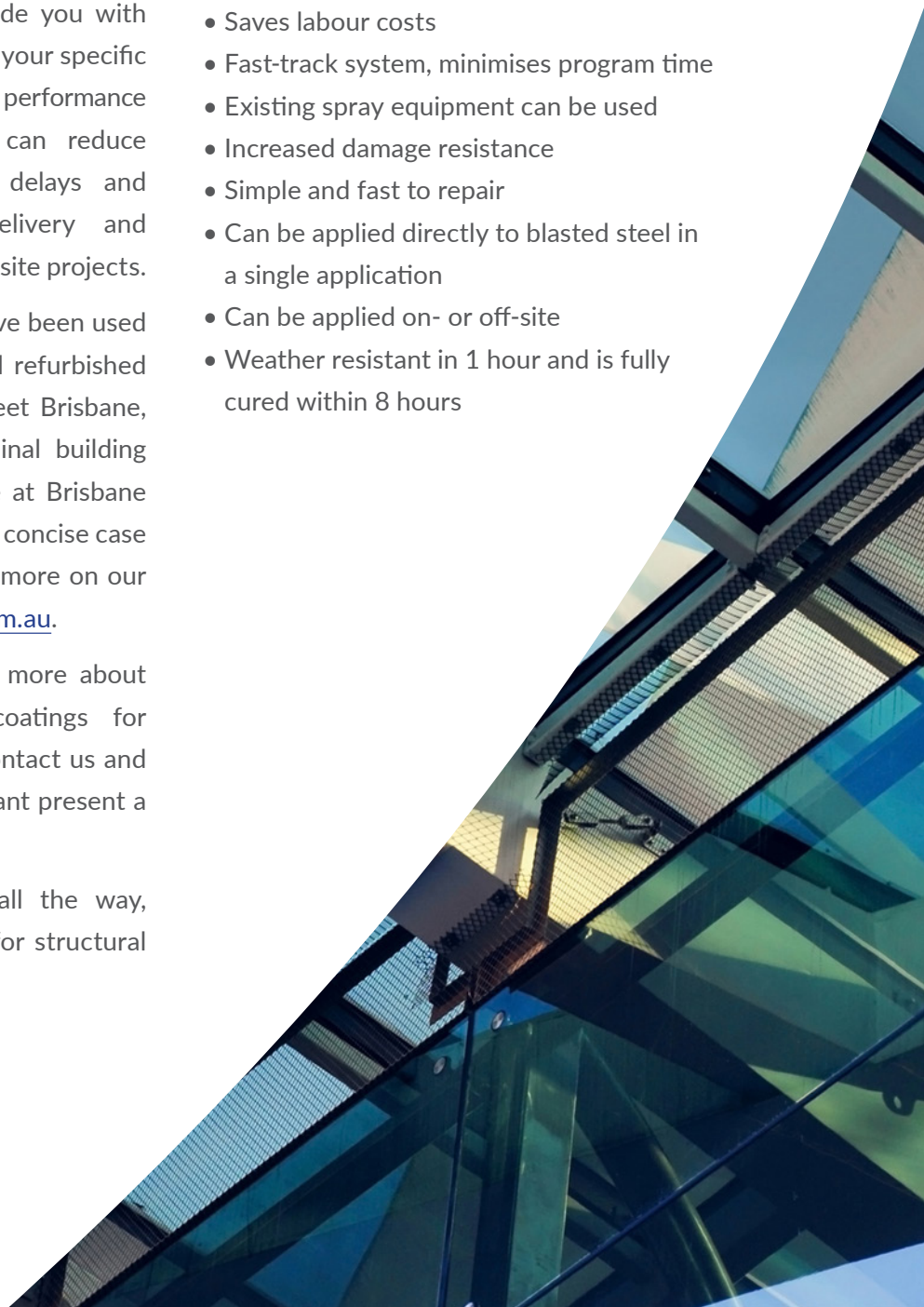
Nullifire products and services have been used in a number of new, existing and refurbished projects including; 111 Eagle Street Brisbane, the Melbourne Airport T4 Terminal building and the Air New Zealand lounge at Brisbane International Airport. You will find concise case studies about these projects and more on our website: [www.nullifireaustralia.com.au](http://www.nullifireaustralia.com.au).

If you are interested in learning more about specification of intumescent coatings for structural steel fire protection, contact us and we can arrange to have a consultant present a CPD workshop at your premises.

Nullifire Australia is with you all the way, providing the ultimate solutions for structural steel fire protection.

### **THE BENEFITS OF NULLIFIRE HYBRID TECHNOLOGY**

- No Isocyanates
- Low VOC formulation
- Low hazard, low odour
- Compatible with high-end primers and top coats
- Very surface tolerant, cures in low temperatures and high humidity
- Saves labour costs
- Fast-track system, minimises program time
- Existing spray equipment can be used
- Increased damage resistance
- Simple and fast to repair
- Can be applied directly to blasted steel in a single application
- Can be applied on- or off-site
- Weather resistant in 1 hour and is fully cured within 8 hours





# Nullifire SC902

## Intumescent Steel Coating

The 'next generation' of structural steel fire protection.

UP TO  
**120**  
MINS

### KEY BENEFITS SUMMARY

- Designed for off- or on-site use
- Fast cure, even at 0°C, touch dry in one hour
- Early weather resistance, shower proof within one hour
- High build potential with all ratings possible in one application
- Self-priming system tolerant of light rusting to steel, up to two weeks post blasting
- Fire rating up to 120 minutes - assessed in accordance with Australian Standards AS1530.4-2005 and AS4100-1998 by a Registered Testing Authority recognized under the IANZ agreement.

**SC902** is a low VOC, one coat, high build system, based on patented technology.

### PRODUCT INFORMATION

- **Usage/Purpose**  
It provides a fast cure effective structural fire performance, for steelwork, up to a 120 minute fire rating.
- **Finish**  
A light textured finish 'off the gun'. Can be applied to a smooth matt finish. A compatible top seal can be applied if a decorative finish is required.
- **Environmental Considerations**  
Low VOC and no solvent entrapment or prolonged solvent odour.
- **Availability**  
Only available to Nullifire specialist contractors direct from Nullifire Australia (see back of brochure for contact details).
- **Packaging**  
Part A and Part B supplied as a 25kg kit
- **Colour**  
Part A: White  
Part B: Translucent black  
Mixed: Off-white  
Cured: Off-white

## TECHNICAL DATA

PROPERTY	RESULT
Composition	A low VOC, high build formulation based on advanced hybrid technology
<b>PERFORMANCE</b>	
'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	
European Technical Assessment (ETA) has been issued on the basis ETAG 018 Fire Protective Products Part 1: General and Part 2: Reactive Coatings for Fire Protection of Steel Elements. Nullfire SC902 has been approved for use in the following environments :-	
Type Z2 – Internal Conditions	
Type Z1 – Internal with High Humidity	
Type Y – Internal and Semi-Exposed Conditions	
Type X – All Conditions (inc. external)	
Certification tested to	BS476 Part 2 - 1987 and EN13381:Part 8 assessed to Australian standards AS1530.4-2005 and AS4100-1988
Building Classification	C1, C2 and C3 environments
<b>PROPERTIES (TYPICAL VALUES)</b>	
Specific Gravity	Part A: 1.55 ±0.02 Part B: 0.99 ±0.01 Mixed: 1.46 ±0.02
Volume Solids	85% ±3%
VOC	137 g/litre
Mix Ratio	By Weight 100:12 By Volume 5.6:1
Pot-life or Sprayable Life	60 minutes
Theoretical Coverage	1,750 g/m <sup>2</sup> based on an applied 1.00mm dry film thickness
Storage	Store in secure, dry warehouse conditions between +0°C and +35°C
Shelf Life	Greater than 6 months when stored as recommended in original unopened container

# Nullifire S707

Intumescent Base Coat  
Water based intumescent  
protecting your steel, and  
protecting the environment.

UP TO  
**60**  
MINS

## KEY BENEFITS SUMMARY

- Very low VOC
- CE marked product
- SVHC free formula
- Compatible with a range of primers and top seals
- Can provide up to 90 minute fire protection in some applications
- Market leading product with a long history of successful applications
- Water based intumescent coating suitable for internal use on structural steelwork engineered for up to 60 minute fire resistance

**S707-60** Intumescent Basecoat is a white thin film intumescent coating for the fire protection of internal structural steelwork.

## PRODUCT INFORMATION

- **Usage/Purpose**  
S707-60 provides effective structural fire protection, for steelwork, from 30 minutes up to a 90 minute fire rating (for selected heavy steel sections).
- **Finish**  
Can be applied to a smooth matt finish. A compatible top-seal can be applied if a decorative finish is required.
- **Environmental Considerations**  
Very low VOC. Contains no substances of very high concern.
- **Availability**  
Only available from Nullifire Australia (see back of leaflet for contact details).
- **Packaging**  
Supplied in 25kg drums
- **Colour**  
White



## TECHNICAL DATA

PROPERTY	RESULT
Composition	A very low VOC, multi-coat, water-based formulation
Certification	Assessed in accordance with Australian standards AS1530.4-2005 and AS4100-1998
Building Classification	C1 and C2 environments (internal only)
PROPERTIES (TYPICAL VALUES)	
Specific Gravity	1.35 ±0.02
Volume Solids	72% ±2%
VOC	14 g/litre
Theoretical Coverage	700 g/m <sup>2</sup> based on an applied @ 0.5mm dry film thickness
Storage	Store in secure, dry warehouse conditions between +5°C and +35°C
Shelf Life	Greater than 6 months when stored as recommended in original unopened container

New generation  
'hybrid' intumescent  
coating for structural  
steel fire protection.

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In 2013, Nullifire engineered the world's first hybrid intumescent, Nullifire SC900 Series. Today, Nullifire is the global leader in 'hybrid' intumescent technology, and in Australia it is the market leader for intumescent coatings for structural steel fire protection.

#### **TECHNICAL PARTNERSHIP**

In an exclusive partnership, Nullifire Australia and Wattyl have established a working relationship to offer a range of coating solutions incorporating the Nullifire SC902 intumescent base coat system. Wattyl Protective Coatings provide high performance finishes engineered to enhance the integrity and aesthetics of composite coating systems for structural steel fire protection.

Our partnership with Wattyl also allows us to offer you access to an expanded team of dedicated technical specialists. They are able to assist you through every phase of your project: from initial design and specification, through to supply and finally application.

#### **GUARANTEE / WARRANTY**

As a supplier only, Nullifire Australia has no control over the method or conditions of application of product and consequently no warranties expressed or implied are intended to be given as to the coverage or performance of the products mentioned or referred to herein and no liability will be expected for any loss, damage or physical injury resulting from the use or application of the information, data or products mentioned or referred to herein.

No liability can be accepted for the information provided in this leaflet although it is published in good faith and believed to be correct. Nullifire Australia reserves the right to alter product specifications without prior notice, in line with Company policy of continuous development and improvement.



Speak to the experts  
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