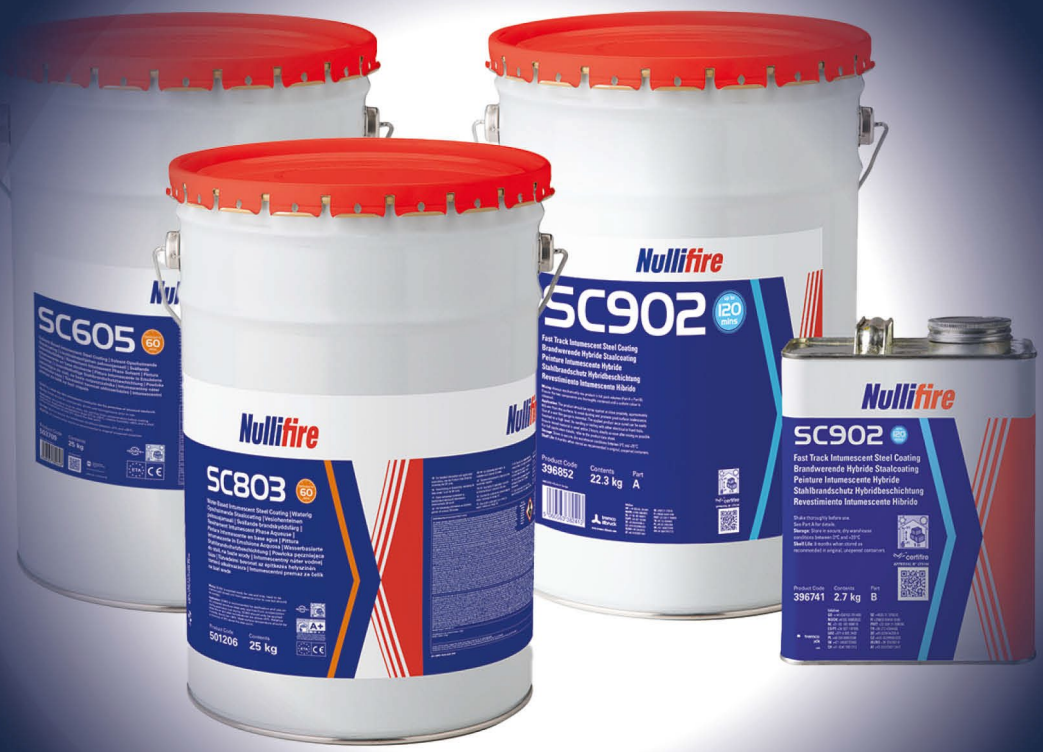
NULLIFIRE

Fire protection coatings for steel

TECHNICAL DATA SHEET



CE

ETA

ALFASEAL® GROUP

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Fire protection coatings for steel

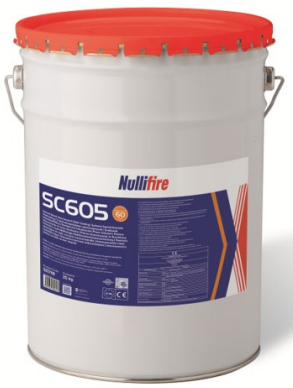
TECHNICAL DATA SHEET

PRODUCT DESCRIPTION

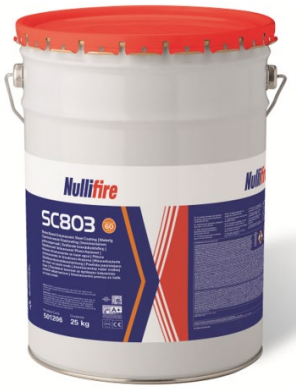
NULLIFIRE products are designed for fire protection of steel structures. The product type should be selected depending on the required fire resistance class of the structural element and the conditions of use. Types of products offered:

- **NULLIFIRE SC605** is a thin-layer, solvent-based acrylic fire-resistant coating for the protection of steel structures with fire resistance up to 90 minutes.
- **NULLIFIRE SC803** is a water-based intumescent coating for fire protection of steel structures with fire resistance up to 90 minutes. The surface has a matt, uniform structure and can be decorative.
- **NULLIFIRE SC902** is a single-layer, hybrid fire-resistant coating with multiple application possibilities. Thanks to its fast setting, the product provides effective fire protection for steel elements for up to 120 minutes. The surface has a matt, uniform structure and can be decorative.

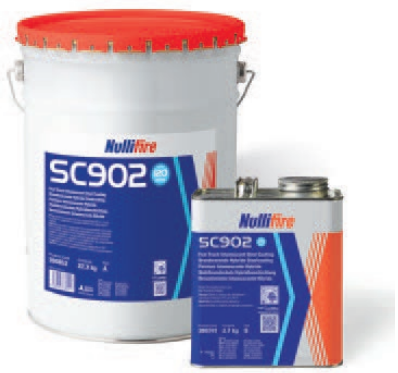
SC605



SC803



SC902



APPLICATION

NULLIFIRE SC605:	Beams and columns with an 'I' cross-section, as well as columns and recessed beams, openwork beams, concrete-filled recesses and solid bars Corrosion class: C1 / C2 / C3/ C4 Environmental class: X
NULLIFIRE SC803:	H-shaped or I-shaped structural sections for columns and beams, and round-profile column sections. Corrosion class: C1 / C2 / C3 Environmental class: Y
NULLIFIRE SC902:	H-shaped or I-shaped structural columns and beams, as well as round-profile columns. Corrosion class: C1 / C2 / C3 / C4 / C5 Environmental class: X

AVAILABILITY

Product name	Color	Delivery form		Item number
NULLIFIRE SC605	White	Bucket	25 kg	7006052500
NULLIFIRE SC803	White			7008032500
NULLIFIRE SC902	White	Bucket	22,3 kg	7009022230
	Black	Container	2,7 kg	7009020270

COMPLIANCE

EAD 350402-00-1106

EN 13381-6 | EN 13381-8 | EN 13381-9 | EN 13381-10

European technical assessment:

NULLIFIRE SC605: ETA 21/0683

NULLIFIRE SC803: ETA 20/1210

NULLIFIRE SC902: ETA 20/1216

TRANSPORT AND STORAGE

Transport and store (in the original, unopened packaging) in a safe, dry place at a temperature between +0°C and +25°C.

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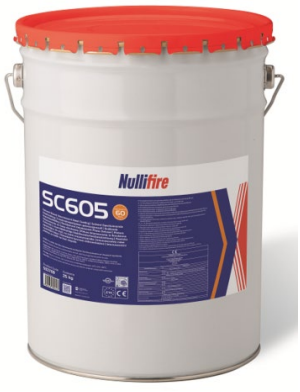
TECHNICAL DATA

Product	NULLIFIRE SC605	NULLIFIRE SC803	NULLIFIRE SC902
Specific weight	1,33 ± 0,02 kg/l	1,38 ± 0,02 kg/l	Component A 1,55 ± 0,02 kg/l Component B 0,99 ± 0,01 kg/l Mixed components 1,46 ± 0,02 kg/l
Density of solid parts	72 % ± 3 %	69 % ± 3 %	85 % ± 3 %
Consumption	1.846 g/m^2 based on dry film thickness of 1.00 mm	2,012 g/m^2 based on dry film thickness of 1,00 mm	1,718 g/ based on dry film thickness of 1,00 mm
Average drying time (at 20°C)	Setting time: ~ 60 minutes Application of a new layer: ~ after 6 hours	Drying time depends on: - temperature - air circulation - air humidity - application method	Gelling time (time required to transition from liquid to gel state): 90–120 minutes (at approx. 20°C) Open time (time during which spraying is possible): 60–120 minutes (at approx. 20°C)
Terms of use	Application temperature +5°C to +35°C, relative humidity < 85% and steel surface temperature at least 3°C above the dew point	from +5°C to +40°C	Temperature range during coating application from -5°C to +35°C, relative air humidity up to 95% and steel surface temperature at least 3°C above the dew point.
Shelf life	12 months	9 months	12 months

USE OF NULLIFIRE SC605

1. **PREPARATORY WORK**. Before applying the recommended primer, remove all mill scale and obtain an undamaged surface with a thickness of at least 50 microns and a cleanliness level of Sa 2.5. **NULLIFIRE SC605** should be mechanically mixed until a homogeneous consistency is obtained. It is not recommended to add thinners. If necessary, add max. 2% xylene (FC150).
   - **NULLIFIRE SC605** should be applied to a primed, clean, dry and undamaged steel surface of class Sa 2.5
   - Ensure adequate ventilation during application
   - Meet the following conditions: application temperature +5°C to +35°C, relative humidity < 85% and steel surface temperature at least 3°C above the dew point
2. **COATING APPLICATION**. It is recommended to use airless spray equipment with the following operating parameters: working pressure: min. 3100 psi, nozzle size: 0.019-0.025 inches, fan angle: 20°–40°, hose diameter: 10 mm (3/8") (internal diameter), hose length: max. 30 metres, no filter should be used. Recommended max. wet film thickness for 1 coat: 1 mm. This thickness is recommended to achieve optimum film thickness and drying balance.
3. **CLEANING**. Fresh paint can be removed with xylene (FC150). Dried paint can be removed with a paint scraper. Spray equipment must only be cleaned with xylene (FC150).



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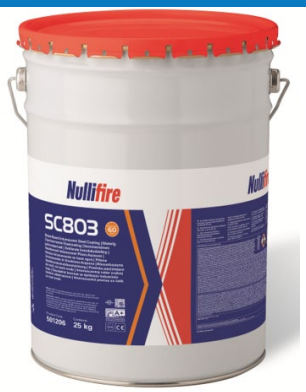
USE OF NULLIFIRE SC803



1. **PREPARATORY WORK.** The use of **NULLIFIRE SC803** is recommended only on primed, clean, dry and undamaged surfaces of building structures.

   - **NULLIFIRE SC803** should only be applied to structures when the air and steel temperatures are above 5°C. For effective application, the relative air humidity should be below 80% and the steel surface temperature should be ≥ 3°C above the dew point.
   - Ensure that the steel is dry during application and drying and that no water vapour condenses on the surface. If the intumescent coating is exposed to moisture, blisters or folds often form on the surface.
   - **NULLIFIRE SC803** should not be applied directly to galvanised surfaces or to primer coatings containing zinc dust.

2. **COATING APPLICATION.** We recommend using a Graco Mark V unit or equivalent. We recommend using an airless pump with the following operating parameters: working pressure: 180-200 bar (175-200 kg/cm^3), nozzle size: 19-21 inches, fan angle: 20-40°, hose diameter: 10 mm (3/8") (inner diameter), hose length: max. 60 metres, do not use a filter.
   - **NULLIFIRE SC803 is sold ready for use and does not require dilution. However, the product must be thoroughly mixed mechanically before use.**
   - **Spraying equipment can only be cleaned with water.**

3. **APPLICATION.**

   Spray painting:
   - **NULLIFIRE SC803** should be applied to a maximum wet film thickness of WFT, 1 mm in a single coat with multiple quick sprays. The maximum film thickness depends on the ambient conditions.
   - The required layer thickness (Appendix 1 to the TDS) should be achieved slowly with several strokes. At ambient temperatures above 20°C and relative humidity below 70%. Two layers of **SC803** can be applied on the same day. Make sure that the previous layer is completely dry over the entire surface.
   - Machine or roller application.
   - To avoid very visible brush marks and optimise the amount applied, use the appropriate technique ('Auflege' technique) when applying with a brush.
   - The maximum wet layer thickness for machine or roller application is 1 mm. A lambskin roller can be used to achieve a surface with a delicate texture.
   - During application, regularly check the wet layer thickness using a wet layer thickness gauge. If the applied layer is too thick or too thin, adjust the subsequent layers accordingly.

When applying with a brush or roller, the drying time is approximately 20% longer (compared to spray application).

- Frequency of applying subsequent layers (Layer thicknesses: low – 0.3 mm, medium – 0.6 mm, high – 1.2 mm)

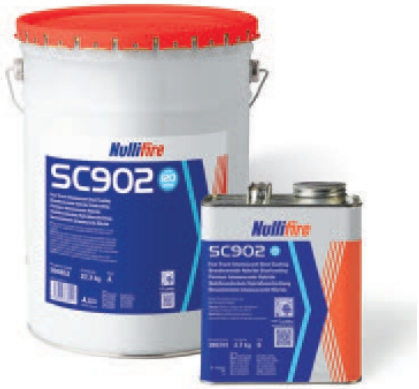
Spraying / Perpetually / Air flow / low/medium/high

R/H	Natryskiwanie	10°C		20°C		30°C	
		Bezwietrznie	Strumień powietrza	Bezwietrznie	Strumień powietrza	Bezwietrznie	Strumień powietrza
30%	niskie	4 1/2 h	2 1/2 h	3 3/4 h	1 1/2 h	2 1/4 h	1 1/2 h
	średnie	6 1/4 h	3 3/4 h	5 1/4 h	3 h	4 1/2 h	2 1/4 h
	wysokie	9 h	4 1/2 h	6 h	3 3/4 h	6 h	3 h
50%	niskie	6 h	3 h	4 1/2 h	2 1/4 h	3 h	1 1/2 h
	średnie	9 h	4 1/2 h	6 1/4 h	3 3/4 h	6 h	3 h
	wysokie	12 h	6 h	9 h	4 1/2 h	7 1/2 h	3 3/4 h
70%	niskie	11 1/4 h	6 h	9 h	4 1/2 h	6 h	3 h
	średnie	15 h	9 h	15 h	6 1/4 h	12 h	5 1/4 h
	wysokie	18 h	12 h	18 h	9 h	15 h	6 h

4. **COATING APPLICATION.** Once the recommended dry layer thickness has been achieved, the topcoat can be applied in accordance with the ETA approval.

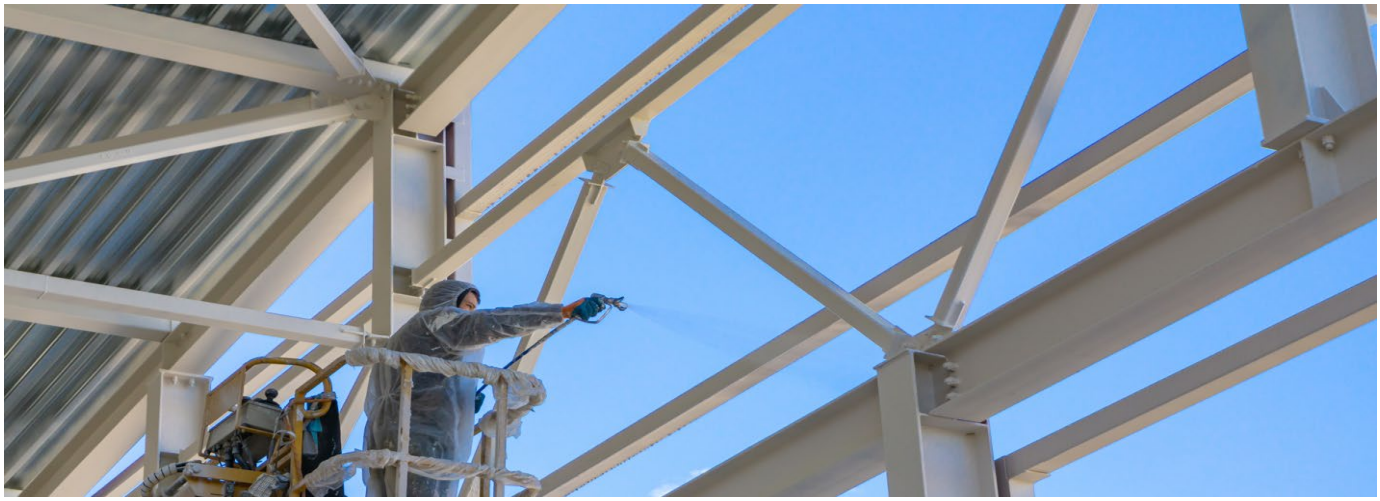
USE OF NULLIFIRE SC902

1. **PREPARATORY WORK.** The surface intended for application of **NULLIFIRE SC902** must be clean, dry and free of loose, flaking elements, as well as other contaminants that may adversely affect adhesion.
   - No priming is necessary after proper surface preparation
   - Sand the steel in dry weather conditions using a suitable abrasive free of dust, moisture and oil Sand according to surface preparation grade SA 2.5
   - Ensure adequate ventilation during application
   - Meet the following conditions: application temperature -5°C to +35°C, relative humidity < 95% and steel surface temperature at least 3°C above the dew point.



2. **COATING APPLICATION.** We recommend using a Graco Mark V, WIWA Phoenix 6552 or equivalent unit. Recommended performance data: working pressure: 200 bar, nozzle size: 19-27 inches, fan angle: ± 40° (adjusted to the size of the coated element), hose diameter: 10 mm (3/8'), recommended hose tip reduction: 6.35 mm (1/4'), device filter with a mesh size of 60 or without a filter.
3. **MIXING.** Mix the products from the containers of the complete set (component A+B) using mechanical mixing. Both components should be mixed thoroughly until a homogeneous consistency is obtained. Mixing proportions:
   - By volume: 5.6 : 1 | By weight: 100 : 12

   Note: the hardener is sensitive to moisture.
4. **APPLICATION**. Apply the product from a distance of approximately 600 mm from the surface to prevent misting during spraying and to allow the coating to bond with the surface in an optimal manner. To control the application of the product, it is essential to use a wet film thickness gauge. If the application of the coating is interrupted for more than 15 minutes, it is necessary to flush the system with a xylene-type solvent.
5. **CLEANING**. Before each use, the spray system must be thoroughly cleaned using a suitable xylene-based product, so as to remove any dirt or water from the hose lines. Ideally, the system should be flushed for 5-10 minutes immediately after use. Do not use cleaning agents containing alcohol or water.
6. **APPLYING THE COATING**. Once the dry layer has reached the required thickness, the top coat can be applied. Before applying the top coat, **NULLIFIRE SC902** must be completely cured.



Coating systems may only be used by trained professional users.

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