

Centre Scientifique et Technique du Bâtiment

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European Technical Assessment

ETA-22/0114 of 10/10/2022

English translation prepared by CSTB - Original version in French language

General Part

Nom commercial du kit
Trade name of the kit

NuMPF 5190F, MPF.120, NuSTRUCT 5190, NuSTRUCT 5191,
structPART 5190

Famille de produit
Product family

Produits de protection au feu :

**Kits et produits rigides, semi-rigides ou souples pour la
protection au feu**

Fire protective products:

Fire protective board, slab and mat products and kits

Titulaire
Manufacturer

NUVIA PROTECTION
1306 route d'Argent
38510 Morestel
France

Usine de fabrication
Manufacturing plant

NUVIA PROTECTION
1306 route d'Argent
38510 Morestel
France

Cette évaluation contient
This Assessment contains

6 pages incluant 2 pages d'annexes qui font partie intégrante de
cette évaluation.

*6 pages including 2 pages of annexes which form an integral part
of this assessment.*

Base de l'ETE
Basis of ETA

DEE 350142-00-1106
EAD 350142-00-1106

Cette évaluation remplace
This Assessment replaces

ATE 14/0451 délivrée le 27/02/2015
ETA 14/0451 issued on 27/02/2015

Specific Part

1 Technical description of the product

The kit is a mineral wool based system designed for the fire protection of structural steel elements.

The construction of the kit is as follows:

The primary protection material, alkali-earth-silicate (AES) based mineral wool referenced NuMINE 6140F (MS.120), is mechanically fixed onto steel profiles with 1,5 mm fixing clamps, and adhesively fixed using a refractory adhesive referenced NuMINE 6210F (F.ACTIVE) at a rate of 4,5 kg/m².

A second layer of mineral wool can be applied onto the first, with adhesive application rate of 4,5 kg/m².

The system is finished by wrapping a silicone glass fiber tissue (referenced NuCOAT 7110I (SILCO)) around the wool, and waterproofing the joints with a silicone-based mastic (referenced NuCOAT 3310I (75.A)).

2 Specification of the intended use

2.1 Intended use

According to the use categories defined by EAD, the intended use of the kit is to protect load-bearing steel elements (type 4).

The performances stated in Section 3 and in the Annex pages are only valid if the product is used according to the conditions and specifications given in Annex B.

2.2 Type of use

The fire protective kit can be used for the following environmental conditions:

Type of use	Environmental conditions
Type Z ₂	Intended for internal use
Type Z ₁	Intended for internal use, in high humidity environments ¹

2.3 Assumed working life

Provisions made in this European Technical Assessment are based on an assumed intended working life of 25 years, provided that the assembled product is subjected to appropriate use and maintenance in accordance with this ETA.

The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works².

Indications given regarding the working life cannot be interpreted as a guarantee given by the manufacturer or his representatives nor by EOTA nor by the Technical Assessment Body issuing this ETA based on EAD 350142-00-1106, but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works. They are also not appropriate to serve as a basis to deliver performance of the product for essential characteristics related to the basic requirement 7 for construction works.

¹ This type of use applies for internal humidity class 5 in accordance with EN ISO 13788.

² The real working life of a product incorporated in a specific type of works depends on the environmental conditions to which that type of works is subjected, as well as on the particular conditions of the design, execution, use and maintenance of that type of works. Therefore, it cannot be excluded that in certain cases, the real working life of the product may also be shorter than referred to above.

3 Performance of the product and references to the methods used for this assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class according to EN 13501-1: B-s1,d0
Resistance to fire	Class according to EN 13501-2: See Annex B
Durability and serviceability	Dimensional stability
	NuMINE 6140F According to EN 1604: $\Delta\varepsilon_l = 0,3\%$ $\Delta\varepsilon_b = 0,2\%$ $\Delta\varepsilon_d = 1,4\%$

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	The manufacturer has presented a written declaration precisating that the product and/or the components of the product do not contain any substances that are classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the “indicative list on dangerous substances” of the Expert Group on Dangerous Substances EGDS ³ .
Water vapour permeability	No performance assessed

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Mechanical resistance and stability	No performance assessed

³ In addition to the specific conditions relative to content, emission and/or release of dangerous substances in this ETA, other requirements for products with the same intended use may exist (for example, transposition of European legislation and national laws, regulations and administrative provisions). In order to address the provisions of the Construction Products Regulation, these requirements must also be respected, when and where they apply.

3.4 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal insulation	No performance assessed
Water vapour permeability	No performance assessed

4 Assessment and verification of constancy of performance (AVCP)

According to the Decision 1999/454/EC of the European Commission⁴, the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following Table applies.

Product	Intended use	Level or class	System
Fire protective products (including coatings)	Fire stopping and fire sealing products	any	1

5 Technical details necessary for the implementation of the AVCP system, as planned in the relevant EAD

Technical details necessary for the implementation of the Assessment and verification of constancy of performance (AVCP) system are laid down in the control plan deposited at Centre Scientifique et Technique du Bâtiment.

The control plan including confidential informations, it is not included in the published part of this ETA.

The manufacturer shall, on the basis of a contract, involve a notified body approved in the field of fire stopping and sealing products for issuing the certificate of conformity CE based on the control plan.

The Notified Body shall visit the factory at least twice a year for surveillance of the manufacturer.

The original French version is signed by

Anca Cronopol

Head of the Structure, Masonry, Partition Division

⁴ Official Journal of the European Communities L 178/52 of 14.7.1999

Annex A: Product description



FIELD PROTECTION OF STRUCTURES AND EQUIPMENT
 APPLICATION PROTECTION OF STRUCTURES

PRODUCT SHEET

NuSTRUCT 5190 Protection of metal structures



The NuSTRUCT 5190 system is a flexible fireproof, and airtight protection, adaptable to all profiles. It is used as a fire protection on a metal structure in order to guarantee its mechanical properties during a fire.

Key benefits

- Guarantees the mechanical performance of the protected structure under fire ISO 834: R120
- Watertightness against water spraying
- Anti-propagation of a fire
- Decontaminable
- Flexible protection
- Adaptable to the environment, compression possible
- Repairable

Performances

- Guarantees the mechanical performance of the protected structure under fire ISO 834: R120
- Watertightness against water spraying
- Seismic resistance according to HN-20-E-53
- Anti-propagation of a fire
- LOCA according to NF T 30903
- Decontaminable
- Resistant to water and aggressive liquids EN ISO 2812

Technical data

- Surface mass : from 12 to 20kg/m2
- Thickness : from 38 to 80mm

Application

- The NuSTRUCT 5190 system consists of several components and is installed manually

References

- CEA / CEA DAM
- Orano

Ref.: E_NVA_PROD_2021 / 31592-2/000 / Error excepted. Technical changes reserved.

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Supporting your energy

NuMPF 5190F, MPF.120, NuSTRUCT 5190, NuSTRUCT 5191, structPART 5190

Product description

Annex A

Annex B: Resistance to fire classification

This Annex relates to the use of the kit for the fire protection of “H” or “I”-shaped beams and column profiles, and hollow section beams and column profiles. The precise scope is given in Table 1 and Table 2 which show the protection provided by the kit to provide classification R90 to R240 for various design temperatures and section factors. A summary of the salient features of the testing and assessment are shown below.

The product is assessed on the basis of:

1. Testing in accordance with the provisions of EN 13381-4.
2. Adopting the regression analysis defined in Annex E of EN 13381-4.

The data presented in the tables of this Annex refers to both beams (three-sided fire exposure) and columns (four-sided fire exposure).

The kit can be applied on raw steel (even with corrosion), painted steel, galvanized steel, stainless steel without surface preparation.

The data for “H” and “I”-shaped sections applies also to other shaped steel sections that have re-entrant details such as channels, angles and tees.

Protection provided by the single layer system to I- and H-section beams and column profiles and hollow section beam and columns profiles									
Protection provided to structural sections up to section factor of (m ⁻¹)									
Time (min)	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C	750°C
90	1623	1846	-	-	-	-	-	-	-
120	158	215	332	450	704	1033	1846	-	-
180	56	66	78	126	153	176	206	232	293
240	-	-	44	73	85	96	109	122	145

Table 1: Performance of single layer system

Protection provided by the double layer system to I- and H-section beams and column profiles and hollow section beam and columns profiles									
Protection provided to structural sections up to section factor of (m ⁻¹)									
Time (min)	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C	750°C
90	-	-	-	-	-	-	-	-	-
120	1846	-	-	-	-	-	-	-	-
180	235	265	295	333	385	429	471	522	582
240	122	137	152	169	189	209	229	252	280

Table 2: Performance of double layer systems

NuMPF 5190F, MPF.120, NuSTRUCT 5190, NuSTRUCT 5191, structPART 5190

Resistance to fire classification

Annex B