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CLASSIFICATION REPORT
1105/24–530–5–EN

Classification of fire resistance performance in accordance with the Commission delegated Regulation (EU) 2024/1681 of 6 March 2024 with regard to SIST EN 13501-2:2023 of a NPS® Basic beam as support for 320 mm thick hollow core slab

Orderer:	**Tecnostrutture S.r.l.** **Via Antonio Meucci 26, IT-30020 Noventa di Piave (VE), Italy**
Order/contract:	**P 10074/24 dated 5th December 2024**
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Date:	24. 9. 2025

Digitalno podpisano:
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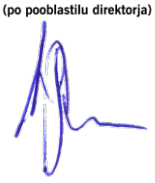
(po pooblastilu direktorja)



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1. Introduction

This classification report defines the resistance to fire classification assigned to NPS® Basic beam as support for 320 mm thick hollow core slab following procedures given in the Commission delegated Regulation (EU) 2024/1681 of 6 March 2024 with regard to SIST EN 13501-2:2023.

2. Information about the product

2.1 General

The NPS® Basic beam as support for 320 mm thick hollow core slab prevents spread of fire from room of origin considering resistance to fire performance characteristics stated in the Table 2.2 in the Commission delegated Regulation (EU) 2024/1681 of 6 March 2024 and Clause 5 and 7.3.3 of SIST EN 13501-2:2023.

2.2 Product description

All dimensions in this classification report are in millimetres if not stated otherwise.

2.2.1 Composition of the product

The composition of NPS® Basic beam as support for 320 mm thick hollow core slab is fully described below and is the following:

- NPS® Basic beam of cross-section dimensions 500 × 345 made of steel S460J0 (top bars) and S355J0 (diagonal bars and bottom plate of thickness 15 mm); the side formworks made of 3 mm thick steel plate of S235J0 steel grade;
- NPS® Basic beam of cross-section dimensions 300 × 340 made of steel S355J0 (top bars, diagonal bars and bottom plate of thickness 10 mm);
- two sets of reinforcing cages of cross-section dimensions 190 × 320 made of steel B500B rebars of 4 longitudinal bars of 12 mm diameter and 8 mm stirrups spaced 250 mm one from another;
- steel tying rebars of diameter 12 mm: seven rebars 1400 mm long and seven 1200 mm long;
- sixteen steel tying rebars of diameter 12 mm and length of 1440 mm;
- three hollow core slab panels, of concrete strength class C45/55, EPD-32 ZND of cross-section dimensions 1200 × 320;
- neoprene strip of thickness 10 mm and width 50 mm;
- concrete of strength class C30/37 XC1, XC3 of class S5 with maximum aggregate size 16 mm.

2.2.2 Sealing materials

Gaps and cavities between the test specimen and the restraint test frame were sealed with ceramic wool.

2.2.3 Fixing of the product

The sample was positioned on the restraint test frame, being supported by roller supports in four NPS® Basic beams' edge points.

2.2.4 Joint fixing

Hollow core slabs were fixed to the NPS® Basic beams with steel tying rebars and two corbels along the hollow core slab's longitudinal side.

2.2.5 Span length

The exposed span length of the NPS® Basic beam was 4010 mm.

The NPS® Basic beam as support for 320 mm thick hollow core slab is fully described in the test report provided in support of classification detailed in clause 3.1.

2.3 Test reports

No	Laboratory	Name of sponsor	Test reports No.	Test method
[1]	ZAG	Tecnostrutture S.r.l.	1105/24–530–2–EN	SIST EN 1365-2:2014

2.4 Test results

The NPS® Basic beam as support for 320 mm thick hollow core slab is symmetrical around the axis that is perpendicular to both NPS® Basic beams.

Test report	Parameter	Results
[1]	Loading conditions	Point loaded in 5 points, each 9.5 tones
	Loadbearing capacity (R) - Limiting deflection ($D = L^2/(400 \times d)$) = 136 mm - limiting rate of deflection ($dD/dt = L^2/(9000 \times d)$) = 6.0 mm/min	101 minutes no failure 101 minutes no failure 101 minutes no failure
	Integrity (E) - sustained flaming on the unexposed side - ignition of cotton pad - cracks or openings in excess of given dimensions	101 minutes no failure 101 minutes no failure 101 minutes no failure 101 minutes no failure
	Insulation (I) - mean temperature rise >140 K - maximum temperature rise >180 K (fixed thermocouples) - maximum temperature rise >180 K (roving thermocouple)	101 minutes no failure 101 minutes no failure 101 minutes no failure -
	Radiation (W) - time to exceed 15 kW/m^2	- -
	Mechanical action (M)	-
	Direction of fire exposure	-

3. Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with the Table 2.2 of the Commission delegated Regulation (EU) 2024/1681 of 6 March 2024 with regard to Clause 7.3.3 of SIST EN 13501-2:2023.

3.2 Classification

The NPS® Basic beam as support for 320 mm thick hollow core slab is classified according to the following combinations of performance parameters and classes as appropriate. No other classification is allowed.

RE	15	20	30	45	60	90
REI	15	20	30	45	60	90

Fire resistance classification: RE 90 / REI 90

3.3 Field of application

This classification is valid for NPS® Basic beam as support for 320 mm thick hollow core slab.

According to SIST EN 1365-2:2014 are the test results directly applicable to similar untested NPS® Basic beam as support for 320 mm thick hollow core slab, provided the following is true:

3.3.1 With respect to the structural building member:

- the maximum moments and shear forces, which when calculated on the same basis as the test load, shall not be greater than those tested.

Any other changes are not permitted.

4. Limitations

This classification document does not represent type approval or certification of the product.

5. Additional statements

Standard SIST EN 13501-2:2023 is identical to EN 13501-2:2023.

Standard SIST EN 1365-2:2014 is identical to EN 1365-2:2014.

Person undertaking classification: dr. Urška Blumauer, mag. inž. grad.

Person authorising this report: Aleksander Bergant, dipl. inž. str.