

CLASSIFICATION OF FUNCTION IN FIRE IN ACCORDANCE WITH DIN 4102-12, STN 92 0205 and ZP-27/2008 PAVUS with direct field of application

FIRES-CR-XXX-10-AUPE

Name of the product: EUROSAFE JE-H(St)H E30/E60

Sponsor: FTC – Fabricca Trentina Conduuttori S.R.L.
Via Pineta 21B
38068 Rovereto
Italy

Prepared by: FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak republic

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1. INTRODUCTION

This classification report defines the function in fire classification assigned to product: Cables EUROSAFE JE-H(St)H E30/E60 in accordance with the procedures given in DIN 4102 – 12: 1998-11, STN 92 0205 and ZP-27/2008 PAVUS.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The product, cables EUROSAFE JE-H(St)H E30/E60, is defined as a cables with circuit integrity maintenance.

2.2 PRODUCT DESCRIPTION

Product comprised from communication non-halogen cables and supporting systems OBO – cable trays, ladders and ceiling ledges with accessories.

Cables

Used cables by test: EUROSAFE JE-H(ST)H 1 x 2 x 0,6 mm (6 x)
EUROSAFE JE-H(ST)H 1 x 2 x 0,9 mm (6 x)

Supporting systems

Supporting systems was made by cable trays, ladders and ceiling ledges produced by OBO Bettermann. Cable ladders (type L60VS/F40) were connected by junctions (type AVL 60 FS) and fixed at booms (type AW30/41) by clips (type LKS 40 FS). Booms were fixed to ceiling hangers U (type US 7K/60) by screws M 12 x 110 (type 12530/110). Distance washer (type DSK/61) was placed in the ceiling hanger at point of fixation of booms. Cable ladders were fixed to fire-proof bridle (type BSB) (near ceiling hangers from outside) through junction (type ABL) by threaded bar M 12 (type 2078/M12) with pads (type DIN 966/M12) and nuts (type DIN 934/M12). Fire proof bridle was fixed to the ceiling by wall dowel (type FAZ 12/10).

Trays (type SKS 630 FS) were jointed by corner junctions (type RWVL 60 FS) and by the ledge (type SSL/E90/30). Trays were fixed at booms (type AW 30/31) by screws M6 x 12 (type 12510/12). Trays were jointed by junction (type ABR) from outside at point of hanger. Other component parts were the same as with ladders.

Cable ladders and trays were fixed by three hangers spaced 1200 mm. Joints were placed between hangers in the middle.

Ceiling profile ledges (type 1268 SL) 600 mm long were fixed by 3 dowels per ledge (type FNA/M6x30). The distance between dowels was from 230 mm to 250 mm. The distance between ledges was 300 mm. Cables were fixed on ledges and ladders by clips BBS (type 2056 M/12,) in which longitudinal saddles were inserted each 600 mm.

All types of used materials are taken from catalogue BSS Fire protection systems of electric cables and conductors from firm OBO Bettermann.

Cable penetration through the wall of test furnace was sealed by mineral wool Sibral.

Load capacity: load bearing system was loaded with maximal tolerance according to the standard:

- trays with 10 kg/m
- ladders with 20 kg/m.

Linear ballast made of 400 mm long steel pieces was used as equivalent load.

More detailed information about product construction is shown in drawings which form an integral part of test report. Drawings were delivered by sponsor.



3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	FIRES, s.r.o., Batizovce, SR	FTC – Fabbrica Trentina Conduttori S.R.L., Rovereto, Italy	FIRES FR 014/06 CS(E)	15. 02. 2006	DIN 4102-12: 1998-11

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test.

3.2 TEST RESULTS

No. / Test method	Specimens	Results
[1] DIN 4102-12	Specimen 33A – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	56 minutes
	Specimen 33B – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	57 minutes
	Specimen 34A – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	62 minutes
	Specimen 34B – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	65 minutes
	Specimen 35A – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	75 minutes
	Specimen 35B – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	75 minutes
	Specimen 36A – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	80 minutes no failure
	Specimen 36B – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	63 minutes
	Specimen 37A – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	64 minutes
	Specimen 37B – cable EUROSAFE JE-H(ST)H 1x2x0,9 mm	60 minutes
	Specimen 38A – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	60 minutes
	Specimen 38B – cable EUROSAFE JE-H(ST)H 1x2x0,6 mm	55 minutes

[1] The test was discontinued in 81st minute at the request of test sponsor.

Specimens S33 – S38 were tested by one-phase voltage supply 1 x 110V with bulbs 240V / 60 W. Circuit breakers with rating 3 A were used.



4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 3.2 of DIN 4102 – 12:1998-11, clause 3.2 STN 92 0205:2010 and clause 11 ZP-27/2008 PAVUS.

4.2 CLASSIFICATION ACCORDING TO DIN 4102-12

The product, cables EUROSAFE JE-H(St)H E30/E60 are classified according to the classes:

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,6 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(ST)H 1x2x0,6 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	E 30	E 30
	EUROSAFE JE-H(ST)H 1x2x0,6 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	E 30	E 30
	EUROSAFE JE-H(ST)H 1x2x0,6 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	E 60	E 60

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,9 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(ST)H 1x2x0,9 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	E 60	E 60
	EUROSAFE JE-H(ST)H 1x2x0,9 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	E 60	E 60
	EUROSAFE JE-H(ST)H 1x2x0,9 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	E 60	E 60



4.3 CLASSIFICATION ACCORDING TO STN 92 0205

The product, cables EUROSAFE JE-H(St)H E30/E60 are classified according to the classes:

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,6 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(St)H 1x2x0,6 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	PS 45	PS 45
	EUROSAFE JE-H(St)H 1x2x0,6 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	PS 45	PS 45
	EUROSAFE JE-H(St)H 1x2x0,6 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	PS 60	PS 60

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,9 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(St)H 1x2x0,9 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	PS 60	PS 60
	EUROSAFE JE-H(St)H 1x2x0,9 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	PS 60	PS 60
	EUROSAFE JE-H(St)H 1x2x0,9 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	PS 60	PS 60

4.4 CLASSIFICATION ACCORDING TO ZP-27/2008 PAVUS

The product, cables EUROSAFE JE-H(St)H E30/E60 are classified according to the classes:

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,6 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(St)H 1x2x0,6 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	P 30-R	P 30-R
	EUROSAFE JE-H(St)H 1x2x0,6 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	P 30-R	P 30-R
	EUROSAFE JE-H(St)H 1x2x0,6 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	P 60-R	P 60-R

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable $n \times 2 \times \geq 0,9 \text{ mm}$ $n \geq 1$
EUROSAFE JE-H(St)H E30/E60	EUROSAFE JE-H(St)H 1x2x0,9 mm	Trays SKS 630 FS. Consoles in spacing of 1200 mm (OBO).	P 60-R	P 60-R
	EUROSAFE JE-H(St)H 1x2x0,9 mm	Ladders L60VS/F40. Consoles in spacing of 1200 mm (OBO).	P 60-R	P 60-R
	EUROSAFE JE-H(St)H 1x2x0,9 mm	Ledges 1268 SL with clips BBS 2056 and holder 2058/LW(OBO) in spacing of 600 mm.	P 60-R	P 60-R



4.5 FIELD OF APPLICATION

This classification is valid for the following end use applications:

- § test results of cables are applicable also for another tested standard bearing systems with class of functional resistance at least the same as class of used cables;
- § classification for type of tested cable (by cross-sections and number of conductors) is valid only for tested cable types, number and cross-sections of conductors;
- § classification for cable is valid for all numbers and cross-sections of tested cable type;
- § maximal span of supports of cable trays and ladders must be 1200 mm;
- § test results of cables at ladders or in trays attached at ceiling are applicable also for cables placed in bearing system fixed to wall, while this construction was tested with maximal loading according to standard;
- § test results of testing cables on the ceiling apply also to cables mounted horizontally on walls;
- § test results are applicable only for systems without connection elements (e.g. junction box, branch bar).

5. LIMITATIONS

Load-bearing construction elements for fixing of cable systems must be proved for at least the same fire resistance compare to classified function in fire of cable system.

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

The classification is valid provided that the product, field of application and standards and regulations are not changed.

Approved:

Signed:

Ing. Štefan Rástocký
leader of the testing laboratory

Miroslav Hudák
technician of the testing laboratory