CLASSIFICATION OF FUNCTION IN FIRE
FIRES-CR-069-16-AUPE

Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H

Reg. No. 041/S-159

The Experts on Fire Safety

CLASSIFICATION OF FUNCTION IN FIRE IN ACCORDANCE WITH DIN 4102-12: 1998-11

with direct field of application

FIRES-CR-069-16-AUPE

Name of the product:	Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H
Sponsor:	Celina Bitner Zaklady Kablowe BITNER ul. Józefa Friedleina 3/3 30-009 Kraków Poland
Prepared by:	FIRES, s.r.o. Osloboditeľov 282 059 35 Batizovce Slovak Republic
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Test method:	DIN 4102 – 12
Type of test:	Accredited
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1. INTRODUCTION

This classification report defines the function in fire classification assigned to element Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H at cable bearing system BAKS in accordance with the procedures given in DIN 4102-12: 1998-11.

This products have already been classified by FIRES, s.r.o. and number of previous classification of function in fire is FIRES-CR-106-06-AUPE, issued on 20. 07. 2006 with validity until 20. 07. 2011.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H at cable bearing system BAKS, is defined as a power and communication cables with integrity maintenance in case of fire.

2.2 PRODUCT DESCRIPTION

Product comprised from fire resistant halogen free power and communication cables at cable bearing system.

Power cables (N)HXH, (N)HXCH - safety cables are used in all locations where a special protection against fire and fire damage is necessary for human life and equipment and where strict safety regulations have to be met and where large emergency running time is necessary. They may be used indoor and outdoor, but not directly in earth and water. They are considered as protectively insulated.

Communication cables JE-H(St)H – safety installations cables are used for transmission od signals and measuring data in control circuits, in locations where a particular protection against fire and fire damage for human life and equipment is necessary. Installation cables are not admissible for power installation purposes and direct burial.

Used cables and cable bearing system by test:

Used cables by test:	(N)HXH - 4x1,5 RE E30	(12x)
	(N)HXH - 4x50 RM E30	(8x)
	(N)HXCH - 4x1,5 RE/ 1,5 E30	(4x)
	(N)HXCH - 4x10 RE/ 10 E30	(4x)
	(N)HXCH - 4x50 RM/ 25 E30	(8x)
	JE-H(St)H 2x2x0,8 E30	(12x)

Used bearing systems by tests:
Bearing system BAKS – cable trays KCOP, cable ladders DGOP, ceiling ledges SDOC with clips UKO1, clips UDF, UEF, cable holder OZMO and OZO with accessories (consoles, booms, hangers, threaded rods, dowels etc.). Producer BAKS Kazimierz Sielski, Poland.

More detailed information about product construction is shown in the drawings which form an integral part of test reports [1]. Drawings were delivered by sponsor.

3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsors	Test report No.	Date of the test	Test method
[1]	Fires s.r.o., Batizovce, SR	Celina Bitner Zaklady Kablowe BITNER Kraków, Poland	FIRES-FR-054-06-AUNE	25. 05. 2006	DIN 4102 – 12: 1998-11

3.2 TEST RESULTS

Test report No. /Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] DIN 4102-12	1	(N)HXH - 4x50 RM E30	1	90 minutes no failure / interruption
	2	(N)HXH - 4x50 RM E30	1	90 minutes no failure / interruption
	3	2 cables (N)HXH - 4x1,5 RE E30	1	49 minutes
	4	2 cables (N)HXCH - 4x1,5 RE/1,5 E30	1	90 minutes no failure / interruption
	5	(N)HXH - 4x50 RM E30	2	90 minutes no failure / interruption
	6	(N)HXH - 4x50 RM E30	2	90 minutes no failure / interruption
	7	2 cables (N)HXH - 4x1,5 RE E30	2	47 minutes
	8	2 cables (N)HXCH - 4x1,5 RE/1,5 E30	2	31 minutes
	9	(N)HXCH - 4x50 RM/25 E30	3	70 minutes
	10	(N)HXCH - 4x50 RM/25 E30	3	70 minutes
	11	(N)HXCH - 4x50 RM/25 E30	4	90 minutes no failure / interruption
	12	(N)HXCH - 4x50 RM/25 E30	4	90 minutes no failure / interruption
	13	2 cables (N)HXH - 4x1,5 RE E30	5	27 minutes
	14	(N)HXCH - 4x10 RE/10 E30	5	66 minutes
	15	(N)HXCH - 4x10 RE/10 E30	5	66 minutes
	16	2 cables (N)HXH - 4x1,5 RE E30	6	52 minutes
	17	(N)HXCH - 4x10 RE/10 E30	6	61 minutes
	18	(N)HXCH - 4x10 RE/10 E30	6	61 minutes
	19	2 cables (N)HXH - 4x1,5 RE E30	7	58 minutes
	20	2 cables (N)HXCH - 4x1,5 RE/1,5 E30	7	46 minutes
	21	(N)HXH - 4x50 RM E30	8	90 minutes no failure / interruption
	22	(N)HXH - 4x50 RM E30	8	90 minutes no failure / interruption
	23	(N)HXCH - 4x50 RM E30	8	77 minutes
	24	(N)HXCH - 4x50 RM E30	8	77 minutes
	25	(N)HXH - 4x50 RM E30	9	90 minutes no failure / interruption
	26	(N)HXH - 4x50 RM E30	9	90 minutes no failure / interruption
	27	(N)HXCH - 4x50 RM E30	9	90 minutes no failure / interruption
	28	(N)HXCH - 4x50 RM E30	9	90 minutes no failure / interruption
	29	2 cables (N)HXH - 4x1,5 RE E30	9	51 minutes
	30	(N)HXCH - 4x1,5 RE/1,5 E30	9	55 minutes
	31	(N)HXCH - 4x1,5 RE/1,5 E30	9	55 minutes
	33	JE-H(St)H 2x2x0,8 E30	3	41 minutes
	34	JE-H(St)H 2x2x0,8 E30	3	40 minutes
	35	JE-H(St)H 2x2x0,8 E30	4	23 minutes
	36	JE-H(St)H 2x2x0,8 E30	4	16 minutes
	37	JE-H(St)H 2x2x0,8 E30	5	30 minutes
	38	JE-H(St)H 2x2x0,8 E30	5	40 minutes
	39	JE-H(St)H 2x2x0,8 E30	6	34 minutes
	40	JE-H(St)H 2x2x0,8 E30	6	30 minutes
	41	JE-H(St)H 2x2x0,8 E30	7	33 minutes
	42	JE-H(St)H 2x2x0,8 E30	7	34 minutes
	43	JE-H(St)H 2x2x0,8 E30	9	42 minutes
	44	JE-H(St)H 2x2x0,8 E30	9	40 minutes

[1] The test was discontinued in 95th minute at the request of test sponsor.

Specimens S1 – S31 were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Specimens S33 – S44 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.

4.2 CLASSIFICATION

The element, Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H at cable bearing system BAKS - cable trays KCOP, cable ladders DGOP, ceiling ledges SDOC with clips UKO1, clips UDF, UEF, cable holder OZMO and OZO with accessories (consoles, booms, hangers, threaded rods, dowels etc.) is classified according to the following combinations of performance parameters and classes as appropriate.

Used cables by test [1] are classified as follows:

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)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable trays KCOP 300H60/3N. Consoles WPCE 800 fixed by dowels PSRO M10x80. Booms WMCO 300 with holders UPWO and threaded rods PGM10 with holders USOV. Consoles in spacing of 1200 mm. Loading 10 kg.m^{-1}. **Track No. 1 and 3.**	**E 30**	n x ≥1,5 mm^2 n ≥ 2 **E 30**
	(N)HXH - 4x50 RM E30 CERAMIC		**E 90**	
(N)HXCH E30 CERAMIC	(N)HXCH - 4x1,5 RE/1,5 E30 CERAMIC		**E 90**	n x ≥1,5/1,5 mm^2 n ≥ 2 **E 60**
	(N)HXCH - 4x50 RM/25 E30 CERAMIC		**E 60**	
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**E 30**	n x 2 x ≥ 0,8 mm n ≥ 2 **E 30**
(N)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable ladders DGOP 400H60/3N. Consoles WPCE 800 fixed by dowels PSRO M10x80. Booms WMCO 400 with holders UPWO and threaded rods PGM10 with holders USOV. Consoles in spacing of 1200 mm. Loading 20 kg.m^{-1}. **Track No. 2 and 4.**	**E 30**	n x ≥1,5 mm^2 n ≥ 2 **E 30**
	(N)HXH - 4x50 RM E30 CERAMIC		**E 90**	
(N)HXCH E30 CERAMIC	(N)HXCH - 4x1,5 RE/1,5 E30 CERAMIC		**E 30**	n x ≥1,5/1,5 mm^2 n ≥ 2 **E 30**
	(N)HXCH - 4x50 RM/25 E30 CERAMIC		**E 90**	
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**Without classification**	**Without classification**

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)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable clips UEF fixed by dowels SRO M6x30. Clips in spacing of 300 mm. Ceiling mounting. **Track No. 5.**	**Without classification**	**Without classification**
(N)HXCH E30 CERAMIC	(N)HXCH - 4x10 RE/10 E30 CERAMIC		**E 60**	**Without classification**
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**E 30**	n x 2 x ≥ 0,8 mm n ≥ 2 **E 30**
(N)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable clips UDF fixed by dowels SRO M6x30. Clips in spacing of 300 mm. Ceiling mounting. **Track No. 6.**	**E 30**	**Without classification**
(N)HXCH E30 CERAMIC	(N)HXCH - 4x10 RE/10 E30 CERAMIC		**E 60**	**Without classification**
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**E 30**	n x 2 x ≥ 0,8 mm n ≥ 2 **E 30**
(N)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable holders OZMO Holders fixed by dowels SRO M6x30. Holders in spacing of 300 mm. Ceiling mounting. **Track No. 7.**	**E 30**	**Without classification**
(N)HXCH E30 CERAMIC	(N)HXCH - 4x1,5 RE/1,5 E30 CERAMIC		**E 30**	**Without classification**
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**E 30**	n x 2 x ≥ 0,8 mm n ≥ 2 **E 30**
(N)HXH E30 CERAMIC	(N)HXH - 4x50 RM E30 CERAMIC	Cable holders OZO Holders fixed by dowels SRO M6x30. Holders in spacing of 600 mm. Ceiling mounting. **Track No. 8.**	**E 90**	**Without classification**
(N)HXCH E30 CERAMIC	(N)HXCH - 4x50 RM/25 E30 CERAMIC		**E 60**	**Without classification**
(N)HXH E30 CERAMIC	(N)HXH - 4x1,5 RE E30 CERAMIC	Cable clips UKO1 in the ledges SDOC 600. Ledges fixed by dowels PSRO M8x75. Clips and ledges in spacing of 300 mm. Ceiling mounting. **Track No. 9.**	**E 30**	n x ≥1,5 mm^2 n ≥ 2 **E 30**
	(N)HXH - 4x50 RM E30 CERAMIC		**E 90**	
(N)HXCH E30 CERAMIC	(N)HXCH - 4x1,5 RE/1,5 E30 CERAMIC		**E 30**	n x ≥1,5/1,5 mm^2 n ≥ 2 **E 30**
	(N)HXCH - 4x50 RM/25 E30 CERAMIC		**E 90**	
JE-H(St)H E30 CERAMIC	JE-H(St)H - 2x2x0,8 E30 CERAMIC		**E 30**	n x 2 x ≥ 0,8 mm n ≥ 2 **E 30**

The element, Power and communications cables Celina Bitner Zaklady Kablowe BITNER, type – (N)HXH, (N)HXCH, JE-H(St)H at cable bearing system BAKS - cable trays KCOP, cable ladders DGOP, ceiling ledges SDOC with clips UKO1, clips UDF, UEF, cable holder OZMO and OZO with accessories (consoles, booms, hangers, threaded rods, dowels etc.) are classified to classes according to achieved test results of tested cables at tracks. Other classification is not allowed.

4.3 FIELD OF APPLICATION

This classification is valid for the following end use applications:

- § throughout the period during which circuit integrity is to be maintained, neighbouring building components shall not have a negative effect on circuit integrity;
- § classification for type of 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;
- § although testing is only carried out on cables arranged horizontally, test results also apply to cables arranged either diagonally or vertically (e.g. risers), as long as the cable system is supported in transitional areas (i.e. where it switches from a horizontal to a vertical arrangement) in such a manner that the cables will not slip or kink at corners;
- § test results of function in fire test of cables tested at standard supporting construction are also applicable for tested standard supporting construction of other producers;
- § test results of function in fire test of cables tested at standard supporting construction are also applicable for cables of other producers tested at standard supporting construction;
- § test results of function in fire test of cables at nonstandard supporting construction are valid only for tested construction with particular tested cable type and are also applicable for supporting construction with smaller spacing of consoles and smaller loading;
- § test results of cables tested in cable trays or ladders are applicable also for cable trays and ladders with particular construction with smaller width as tested with particular smaller loading;
- § test results of cables tested at cable trays or ladders are applicable also for another products trays and ladders (cross, elbow, T-bend, bends and etc.);
- § maximal length of increasing routing shall be 3500 mm with consistent horizontal placing of cable with minimal length of 300 mm (apart from cable bending) and with maximal spacing of clips of 300 mm, eventually the cables are stabilized by cable transmissions at floor or ceiling with particular fire resistance;
- § for vertical systems, the test results obtained for cables mounted singly on the ceiling using single clips apply**.** Brackets of proven suitability may also be used, as long as their spacing is equal to that of the single clips tested;
- § results of testing single cables on the ceiling apply also to cables mounted horizontally on walls;
- § results of testing bunched cables on a ladder or tray also apply to support construction attached to a wall. However, such constructions required proof of suitability by means of a test certificate or other document issued by an accredited testing laboratory;
- § 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.
The construction contractor is solely responsible for proper preparation.

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:

Ing. Štefan Rástocký
leader of the testing laboratory

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Signed:

Miroslav Hudák
technician of the testing laboratory