

CLASSIFICATION OF FUNCTION IN FIRE FIRES-CR-070-16-AUPE

**Power and communications cables TECHNOKABEL,
type – NHXH, NHXCH, HTKSH, HTKSHekw, JE-H(St)H**

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CLASSIFICATION OF FUNCTION IN FIRE IN ACCORDANCE WITH DIN 4102-12: 1998-11 with direct field of application

FIRES-CR-070-16-AUPE

Name of the product: Power and communications cables TECHNOKABEL,
type – NHXH, NHXCH, HTKSH, HTKSHekw, JE-H(St)H

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Tested property: Function in fire
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 TECHNOKABEL, type – NHXH, NHXCH, HTKSH, HTKSHekw and 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-020-08-AUPE, issued on 14. 03. 2008 with validity until 14. 03. 2013.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Power and communications cables TECHNOKABEL, type – NHXH, NHXCH, HTKSH, HTKSHekw and 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 BAKS.

Power cables NHXH, NHXCH - fire resistant power cables, insulated and sheathed with halogen free compounds, are intended for power supply to fire protection equipment which is to operate in fire conditions (e.g. water pumps in fire extinguishing systems, smoke removing fans).

Halogen free cables shall be applied in locations where, in case of fire, higher safety for human beings and expensive electronic equipment is required.

Functions of the cables are maintained – power is supplied to equipment which must operate in fire conditions and during firefighting. The cables are flame retardant and their smoke emission is low, emitted fumes are non toxic and non corrosive. The cables are suitable for indoor and outdoor installations.

Communication cables HTKSH, HTKSHekw, JE-H(St)H – fire resistant and halogen free cables are intended for installation in alarm, signalling, transmission, sound warning and similar systems, also for data processing systems and for analogue or digital data transmission in industrial electronics and control applications in objects of sharp fire protection requirements, particularly in fire alarm and fire automatic control systems.

Halogen free cables are applied in locations where, in case of fire, higher safety for human beings and expensive electronic equipment is required.

Functions of the cables are maintained – data are transmitted and power is supplied to equipment which must operate in fire conditions and during firefighting (e.g. emergency lighting). The cables are flame retardant and their smoke emission is low, emitted fumes are non toxic and non corrosive.

Used cables and cable bearing system by test:

<u>Used cables by test:</u>	NHXH 4x1,5 RE FE180 PH30/E30-E60	(2 x)
	NHXH 4x50 RM FE180 PH30/E30-E60	(12 x)
	NHXCH 4x1,5/1,5 RE FE180 PH30/E30-E60	(4 x)
	NHXCH 4x50/25 RM FE180 PH30/E30-E60	(8 x)
	NHXH 4x1,5 RE FE180 PH90/E90	(18 x)
	NHXH 4x50 RM FE180 PH90/E90	(8 x)
	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	(14 x)
	NHXCH 4x50/25 RM FE180 PH90/E90	(6 x)
	HTKSH 1x2x0,8 FE180 PH90/E30-E90	(12 x)
	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	(8 x)
	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	(22 x)

Used bearing systems by tests:

Bearing system BAKS – cable trays KCOD and KCOJ, cable mesh trays KDSO, cable ladders DGOD and 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	TECHNOKABEL S.A., Warszawa, Poland	FIRES-FR- 012-08-AUNE	17. 01. 2008	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	2 cables NHXCH 4x50/25 RM FE180 PH90/E90	14	90 minutes no failure / interruption
	2	2 cables NHXCH 4x1,5/1,5 RE FE180 PH90/E90	14	90 minutes no failure / interruption
	3	2 cables NHXH 4x1,5 RE FE180 PH90/E90	14	90 minutes no failure / interruption
	4	2 cables NHXCH 4x50/25 RM FE180 PH30/E30-E60	11B	55 minutes
	5	2 cables NHXH 4x50 RM FE180 PH90/E90	14	90 minutes no failure / interruption
	6	2 cables NHXCH 4x50/25 RM FE180 PH30/E30-E60	14	84 minutes
	7	2 cables NHXH 4x50 RM FE180 PH30/E30-E60	14	32 minutes
	8	2 cables NHXH 4x50 RM FE180 PH30/E30-E60	11B	48 minutes
	9	2 cables NHXCH 4x1,5/1,5 RE FE180 PH30/E30-E60	11A	90 minutes no failure / interruption
	10	2 cables NHXH 4x1,5 RE FE180 PH90/E90	11A	90 minutes no failure / interruption
	11	2 cables NHXCH 4x1,5/1,5 RE FE180 PH90/E90	10	90 minutes no failure / interruption
	12	2 cables NHXH 4x1,5 RE FE180 PH90/E90	10	90 minutes no failure / interruption
	13	2 cables NHXCH 4x50/25 RM FE180 PH30/E30-E60	10	90 minutes no failure / interruption
	14	2 cables NHXH 4x50 RM FE180 PH30/E30-E60	10	90 minutes no failure / interruption
	15	2 cables NHXCH 4x1,5/1,5 RE FE180 PH90/E90	9	90 minutes no failure / interruption
	16	2 cables NHXH 4x1,5 RE FE180 PH90/E90	9	90 minutes no failure / interruption
	17	2 cables NHXCH 4x1,5/1,5 RE FE180 PH90/E90	8	90 minutes no failure / interruption
	18	2 cables NHXH 4x1,5 RE FE180 PH90/E90	8	90 minutes no failure / interruption
	19	NHXH 4x1,5 RE FE180 PH90/E90	6	90 minutes no failure / interruption
	20	NHXH 4x1,5 RE FE180 PH90/E90	6	90 minutes no failure / interruption
	21	NHXH 4x50 RM FE180 PH90/E90	6	90 minutes no failure / interruption
	22	NHXH 4x50 RM FE180 PH90/E90	6	90 minutes no failure / interruption
	23	NHXH 4x50 RM FE180 PH30/E30-E60	6	31 minutes
	24	NHXH 4x50 RM FE180 PH30/E30-E60	6	15 minutes
	25	NHXH 4x1,5 RE FE180 PH30/E30-E60	6	90 minutes no failure / interruption
	26	NHXH 4x1,5 RE FE180 PH30/E30-E60	6	90 minutes no failure / interruption
	27	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	7	90 minutes no failure / interruption
	28	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	7	41 minutes
	29	NHXCH 4x50/25 RM FE180 PH90/E90	7	90 minutes no failure / interruption
	30	NHXCH 4x50/25 RM FE180 PH90/E90	7	86 minutes
	31	2 cables NHXCH 4x50/25 RM FE180 PH30/E30-E60	7	59 minutes
	32	2 cables NHXCH 4x1,5/1,5 RE FE180 PH30/E30-E60	7	25 minutes
	33	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	5	90 minutes no failure / interruption
	34	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	5	90 minutes no failure / interruption
	35	NHXH 4x50 RM FE180 PH30/E30-E60	5	90 minutes no failure / interruption
	36	NHXH 4x50 RM FE180 PH30/E30-E60	5	90 minutes no failure / interruption
	37	NHXCH 4x50/25 RM FE180 PH90/E90	5	15 minutes
	38	NHXCH 4x50/25 RM FE180 PH90/E90	5	9 minutes
	39	2 cables NHXH 4x1,5 RE FE180 PH90/E90	13	90 minutes no failure / interruption
	40	NHXH 4x50 RM FE180 PH90/E90	3	90 minutes no failure / interruption
	41	NHXH 4x50 RM FE180 PH90/E90	3	90 minutes no failure / interruption
	42	NHXH 4x1,5 RE FE180 PH90/E90	3	90 minutes no failure / interruption
	43	NHXH 4x1,5 RE FE180 PH90/E90	3	90 minutes no failure / interruption
	44	NHXH 4x50 RM FE180 PH90/E90	4	90 minutes no failure / interruption



Test report No. /Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] DIN 4102-12	45	NHXXH 4x50 RM FE180 PH90/E90	4	90 minutes no failure / interruption
	46	NHXXH 4x1,5 RE FE180 PH90/E90	4	90 minutes no failure / interruption
	47	NHXXH 4x1,5 RE FE180 PH90/E90	4	90 minutes no failure / interruption
	48	NHXXH 4x50 RM FE180 PH30/E30-E60	2	49 minutes
	49	NHXXH 4x50 RM FE180 PH30/E30-E60	2	52 minutes
	50	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	2	90 minutes no failure / interruption
	51	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	2	90 minutes no failure / interruption
	52A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	14	90 minutes no failure / interruption
	52B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	14	90 minutes no failure / interruption
	53A	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	5	27 minutes
	53B	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	5	25 minutes
	54A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	11A	90 minutes no failure / interruption
	54B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	11A	90 minutes no failure / interruption
	55A	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	11A	81 minutes
	55B	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	11A	60 minutes
	56A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	11A	90 minutes no failure / interruption
	56B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	11A	90 minutes no failure / interruption
	57A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	10	90 minutes no failure / interruption
	57B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	10	76 minutes
	58A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	10	90 minutes no failure / interruption
	58B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	10	90 minutes no failure / interruption
	59A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	13	76 minutes
	59B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	13	79 minutes
	60A	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	13	75 minutes
	60B	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	13	90 minutes no failure / interruption
	61A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	13	90 minutes no failure / interruption
	61B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	13	90 minutes no failure / interruption
	62A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	12	71 minutes
	62B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	12	57 minutes
	63A	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	12	9 minutes
	63B	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	12	74 minutes
	64A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	3	85 minutes
	64B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	3	83 minutes
	65A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	3	26 minutes
65B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	3	27 minutes	
66A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	4	65 minutes	
66B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	4	80 minutes	
67A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	4	90 minutes no failure / interruption	
67B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	4	90 minutes no failure / interruption	
68A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	9	90 minutes no failure / interruption	
68B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	9	90 minutes no failure / interruption	
69A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	8	90 minutes no failure / interruption	
69B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	8	90 minutes no failure / interruption	
70A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	1	90 minutes no failure / interruption	
70B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	1	90 minutes no failure / interruption	
71A	HTKSH 1x2x0,8 FE180 PH90/E30-E90	1	90 minutes no failure / interruption	
71B	HTKSH 1x2x0,8 FE180 PH90/E30-E90	1	90 minutes no failure / interruption	
72A	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	2	90 minutes no failure / interruption	
72B	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	2	90 minutes no failure / interruption	

[1] The test was discontinued in 93rd minute at the request of test sponsor.

Specimens S1 – S51 were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W. Specimens S52 – S72 were tested by one-phase voltage supply 1 x 110V with LED diodes 3V /0,03W. 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 TECHNOKABEL, type – NHXH, NHXCH, HTKSH, HTKSHekw and JE-H(St)H at cable bearing system BAKS - cable trays KCOD and KCOJ, cable mesh trays KDSO, cable ladders DGOD and 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 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
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	Cable trays KCOD 400H60/3N. Consoles WPCO 800 fixed by dowels PSRO M10x80. Booms WMCO 400 with holders UPWO and threaded rods PGM10 with holders USOV. Consoles in spacing of 1500 mm. Loading 10 kg.m ⁻¹ . Track No. 1.	E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90	Cable trays DGOP 400H60/3N. Consoles WPCO 800 fixed by dowels PSRO M10x80. Booms WMCO 400 with holders UPWO and threaded rods PGM10 with holders USOV. Consoles in spacing of 1500 mm. Loading 20 kg.m ⁻¹ . Track No. 2.	E 90	Without classification
NHXH FE180 PH30/E30-E60	NHXH 4x50 RM FE180 PH30/E30-E60		E 30	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable trays KCOJ 400H60/3E. Consoles combined of supporting profiles CWP/CWOP40H40/05E and two threaded rods PGM8E with holders USOVE. Consoles in spacing of 1500 mm. Loading 10 kg.m ⁻¹ . Track No. 3.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	NHXH 4x50 RM FE180 PH90/E90		E 90	
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 E 60
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		Without classification	Without classification
			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	
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable trays DGOD 400H60/3E. Consoles combined of supporting profiles CWP/CWOP40H40/05E and two threaded rods PGM8E with holders USOVE. Consoles in spacing of 1500 mm. Loading 20 kg.m ⁻¹ . Track No. 4.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90	
	NHXH 4x50 RM FE180 PH90/E90		E 90		
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 E 60	
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90	
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		Cable mesh trays KDSO 400H60/3N. Consoles combined of supporting profiles CWP/CWOP40H40/05 and two threaded rods PGM8 and dowels TRSO M8. Consoles in spacing of 1200 mm. Loading 20 kg.m ⁻¹ . Track No. 5.	E 90	Without classification
	NHXCH 4x50/25 RM FE180 PH90/E90			Without classification	
NHXH FE180 PH30/E30-E60	NHXH 4x50 RM FE180 PH30/E30-E60	E 90		Without classification	
HTKSHekw FE180 PH90/E30-E90	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90	Without classification		Without classification	
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable mesh trays KDSO 400H60/3E. Consoles combined of supporting profiles CWP/CWOP40H40/05E and two threaded rods PGM8E with holders USOVE. Consoles in spacing of 1200 mm. Loading 20 kg.m ⁻¹ . Track No. 6.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90	
	NHXH 4x50 RM FE180 PH90/E90		E 90		
NHXH FE180 PH30/E30-E60	NHXH 4x1,5 RE FE180 PH30/E30-E60		E 90	Without classification	
	NHXH 4x50 RM FE180 PH30/E30-E60		Without classification		
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		Cable mesh trays KDSO 400H60/3E. Consoles combined of supporting profiles CWP/CWOP40H40/05E and two threaded rods PGM8E with holders USOVE. Consoles in spacing of 1200 mm. Loading 20 kg.m ⁻¹ . Track No. 7.	E 30	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 30
	NHXCH 4x50/25 RM FE180 PH90/E90			E 60	
NHXCH FE180 PH30/E30-E60	NHXCH 4x1,5/1,5 RE FE180 PH30/E30-E60	Without classification		Without classification	
	NHXCH 4x50/25 RM FE180 PH30/E30-E60	E 30			



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
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable clips UEF fixed by dowels SRO M6x30. Clips in spacing of 600 mm. Ceiling mounting. Track No. 8.	E 90	Without classification
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		E 90	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable holders OZMO. Holders fixed by dowels SRO M6x30. Clips in spacing of 600 mm. Ceiling mounting. Track No. 9.	E 90	Without classification
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		E 90	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable clips UKO1 in the ledges SDOC 600. Ledges fixed by dowels PSRO M8x75. Clips and ledges in spacing of 600 mm. Ceiling mounting. Track No. 10.	E 90	Without classification
NHXH FE180 PH30/E30-E60	NHXH 4x50 RM FE180 PH30/E30-E60		E 90	Without classification
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		E 90	Without classification
NHXCH FE180 PH30/E30-E60	NHXCH 4x50/25 RM FE180 PH30/E30-E60		E 90	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 E 60
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable holders OZOE. Holders fixed by dowels SRO M6x30. Holders in spacing of 600 mm. Ceiling mounting. Track No. 11A.	E 90	Without classification
NHXCH FE180 PH30/E30-E60	NHXCH 4x1,5/1,5 RE FE180 PH30/E30-E60		E 90	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
HTKSHekw FE180 PH90/E30-E90	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 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
NHXH FE180 PH30/E30-E60	NHXH 4x50 RM FE180 PH30/E30-E60	Cable holders OZO. Holders fixed by dowels SRO M6x30. Holders in spacing of 600 mm. Ceiling mounting. Track No. 11B.	E 30	Without classification
NHXCH FE180 PH30/E30-E60	NHXCH 4x50/25 RM FE180 PH30/E30-E60		E 30	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90	Cable mesh trays KDSO 60H60/3N. Consoles combined of hangers WKSO60 and threaded rods PGM6 and dowels TRSO M6. Consoles in spacing of 1200 mm. Loading 1,5 kg.m ⁻¹ . Track No. 12.	E 30	n x 2 x ≥ 0,8 mm n ≥ 1 E 30
HTKSHekw FE180 PH90/E30-E90	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90		Without classification	Without classification
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable mesh trays KDSO 60H60/3E. Consoles combined of hangers WKSO60E and threaded rods PGM6E and dowels TRSO M6. Consoles in spacing of 1200 mm. Loading 1,5 kg.m ⁻¹ . Track No. 13.	E 90	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 E 60
HTKSH FE180 PH90/E30-E90	HTKSH 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
HTKSHekw FE180 PH90/E30-E90	HTKSHekw 1x2x0,8 FE180 PH90/E30-E90		E 60	n x 2 x ≥ 0,8 mm n ≥ 1 E 60
NHXH FE180 PH90/E90	NHXH 4x1,5 RE FE180 PH90/E90	Cable clips UKO1 in the ledges SDOC 600. Ledges fixed by dowels PSRO M8x75. Clips and ledges in spacing of 600 mm. Ceiling mounting. Track No. 14.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	NHXH 4x50 RM FE180 PH90/E90		E 90	
NHXCH FE180 PH90/E90	NHXCH 4x1,5/1,5 RE FE180 PH90/E90		E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	NHXCH 4x50/25 RM FE180 PH90/E90		E 90	
NHXH FE180 PH30/E30-E60	NHXH 4x50 RM FE180 PH30/E30-E60		E 30	Without classification
NHXCH FE180 PH30/E30-E60	NHXCH 4x50/25 RM FE180 PH30/E30-E60		E 60	Without classification
JE-H(St)H FE180 PH90/E30-E90	JE-H(St)H 1x2x0,8 FE180 PH90/E30-E90		E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90

The element, Power and communications cables TECHNOKABEL, type – NHXH, NHXCH, HTKSH, HTKSHekw and JE-H(St)H at cable bearing system BAKS - cable trays KCOD and KCOJ, cable mesh trays KDSO, cable ladders DGOD and 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



Signed:

Miroslav Hudák
technician of the testing laboratory