

FUNCTIONAL RESISTANCE IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-091-24-NURE

**Cable supporting system NIEDAX with power
and communication halogen-free cables PRAKAB**

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FUNCTIONAL RESISTANCE IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION IN ACCORDANCE WITH DIN 4102-12: 1998-11

FIRES-JR-091-24-NURE

Name of the product: Cable supporting system NIEDAX with power and communication halogen-free cables PRAKAB

Sponsor: Niedax GmbH & Co. KG
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1. INTRODUCTION

This expert judgement report with classification defines the functional resistance in fire classification assigned to element Cable supporting system NIEDAX with power and communication halogen-free cables PRAKAB in accordance with the classes given in DIN 4102-12: 1998-11.

The test was carried out according to standard STN 92 0205 and meets requirements of DIN 4102-12: 1998-11. The basic difference between these standards lies in the measurement and control of the temperature in the test furnace. According to STN 92 0205, plate thermometers in accordance with EN 1363-1 are used. According to DIN 4102-12: 1998-11, common thermocouples are used; thermocouples with this design were used for this measurement until the issue of EN 1363-1. Measurement with plate thermometers to EN 1363-1 represents a stricter method of temperature control in the test furnace compared to thermocouples used before publication of EN 1363-1. Therefore, it is possible to use the results of a test according to STN 92 0205 for classification of tested cables according to DIN 4102-12: 1998-11, but not conversely. Different results identified in consequence of stricter test conditions can lead to reduced classification of tested cables what is accepted as enhanced security in practice.

This expert judgement report defines field of application which is outside the field of direct application according test standard. This expert judgement expresses the opinion of the FIRES and is based on the experience or internal rules of FIRES.

This product has already been classified by FIRES, s.r.o. and number of previous fire resistance expert judgement report with classification is FIRES-JR-137-18-NURE (issued on 23. 01. 2019) with validity until 23. 01. 2024. Document FIRES-JR-091-24-NURE replaces expert judgement report with classification FIRES-JR-137-18-NURE.

This document is issued without changes against the prior document. Only name of product RLVC 60.400 was corrected to RL 110.400 on the 12th page, whereupon the manufacturer declared that this is the identical product as a tested.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Cable supporting system NIEDAX with power and communication halogen-free cables PRAKAB, is defined as a cable supporting system for power and communication halogen free cables with circuit integrity maintenance.

2.2 PRODUCT DESCRIPTION

Product comprised of cable supporting system NIEDAX (cable trays, mesh trays, ladders with accessories) with halogen-free power and communication cables PRAKAB.

Cable supporting system of Niedax:

Cable tray RLVC 60

Cable tray is made of steel sheet thickness 0,75 mm, 0,8 mm or 0,9 mm thick. Height of side wall is 60 mm and maximum tested width is 400 mm. Trays are fixed together by integrated plug-in connectors and nut bolts (FLM 6x12) or alternatively by connectors RVV50 with nut bolts. Maximum tested loading is 20kg.m⁻¹. Tested cable trays are RLVC 60.100 and RLVC 60.400.

Cable tray RL 110

Cable tray is made of steel sheet thickness 0,8 mm, 0,9 mm or 1,0 mm thick. Height of side wall is 110 mm and maximum tested width is 400 mm. Trays are fixed together by connectors (RV 110.400) with nut bolts (FLM 6x12). Maximum tested loading is 20kg.m⁻¹. Tested cable tray is RL 110.400.

Cable mesh tray MTC 54

Cable mesh tray is made of longitudinal steel wires either \varnothing 3,9 mm or \varnothing 4,8 mm and transverse steel wires \varnothing 3,9 mm, \varnothing 4,8 mm or \varnothing 5,8 mm. Height of side wall is 54,0 mm and maximum tested width of cable mesh



tray is 400 mm. Mesh trays are fixed together by integrated plug-in connectors or alternatively by nut bolts GRHKM 6x15. Maximum tested loading is 15kg.m⁻¹. Tested mesh tray is MTC 54.400.

Cable ladder KL 60

Cable ladder is made of steel sheet thickness 1,5 mm and spacing of transoms is 150 mm. Cross-section dimensions of transoms are (30 x 15 x 1,5) mm. Height of side wall is 60 mm and maximum tested width of cable ladder is 600 mm. Cable ladders are fixed together by two side connectors (KLVB 60/4) with nut bolts (FLM8x13, 4 pcs per connector). Maximum tested loading is 20kg.m⁻¹. Tested ladders are KL 60.415 and KL 60.615.

Cable ladder STL 60

Cable ladder is made of steel sheet thickness 1,5 mm and spacing of transoms is 300 mm. Cross-section dimensions of transoms are (30 x 15 x 1,5) mm. Height of side wall is 60 mm and maximum tested width of cable ladder is 400 mm. Cable ladders are fixed together by two side connectors (KLVB 60/4) with nut bolts (FLM8x13, 4 pcs per connector). Maximum tested loading is 20kg.m⁻¹. Tested ladder is STL 60.403.

C-profile 2970

Profile with dimensions (30 x 15) mm is made of bent steel sheet 1,5 mm thick. Profile is used for fixing of cables to ceiling and wall by cable clips.

C-profile 2987

Profile with dimensions (48 x 22) mm is made of bent steel sheet 1,75 mm thick. Profile is used for suspension of trays and ladders.

C-profile 2986

Profile with dimensions (40 x 22) mm is made of bent steel sheet 2,0 mm thick. Profile is used for suspension of trays and ladders.

Console HU 5050

Console consists of base plate with dimensions (140 x 80 x 5) mm and support with dimensions (50 x 50 x 2,5) mm. Console is used for gripping of brackets to ceiling.

Bracket KTA

Bracket consists of two parts – base plate (from 4,0 to 6,0 mm thick) and bent steel sheet (from 1,5 to 2,0 mm thick) welded together. Brackets are used for fixation of trays and ladders.

Support TAH

Support consists of two parts and is made of bent steel sheet 4,0 mm thick and 30 mm wide. Support is used for suspension of trays and ladders.

Trapezoidal hanger DBT 40

Hanger is made of bent steel sheet 1,5 mm thick.

Spacer HDS

Spacer is made of bent steel sheet 1,5 mm thick with dimensions (80 x 43) mm. Spacers are used for reinforcement of consoles at place of brackets fixation.

Adjustable connection bracket AWG 110/140

Bracket with dimensions (140 x 110) mm is made of steel sheet 4,0 mm thick and is used in combination with U-profile for fixation of cable trays/ladders to wall.

U-profile U 5050

Profile with dimensions (50 x 50) mm is made of perforated bent steel sheet 2,5 mm thick.

U-profile U 50/...

Profile with dimensions (50 x 22) mm is made of perforated bent steel sheet 2,0 mm thick.

Corner angle WWU 150/8

Corner angle with dimensions (60 x 60) mm is made of bent steel sheet 5,0 mm.

**Support bracket WA**

Bracket with dimensions (52 x 52) mm is made of bent steel sheet 2,0 mm thick.

Cable clip SAS

Cable clip consists of two parts made of bent steel sheet from 1,2 to 2,0 mm thick and is used for fixation of cables to ceiling or wall.

Barrier strip RW 35

Barrier strip with dimensions (24 x 30) mm is made of bent steel sheet 0,75 mm thick and is used for separation of cables at cable ladders.

Cable clamps "B"

Cable clamp consists of two parts made of bent steel sheet from 1,5 to 2,0 mm thick and is used for fixation of cables to ceiling or wall.

Cable hanger SHS

Closed cable hanger with dimensions (105 x 129 x 82) mm is made of steel sheet 1,25 mm thick and is used for fixation of cables to wall or ceiling.

All parts of cable supporting systems are made of galvanized steel according to EN ISO 1461.

Steel chains were used for additional loading of tracks.

Cables

Halogen-free cables are used for applications in public buildings, where fire would present a significant hazard to human life as a result of emission of toxic gasses and dense smoke hampering the evacuation or when the losses caused by the corrosive acid gasses would be higher than other damage caused by fire.

Cables used by test:Power cables:

PRAFlaDur 90 (N)HXH FE180 E 90, E 90, E90 0.6/1 kV

PRAFlaDur 1-CSKH-V180 P15-R - E 60, PH 120-R, P75090-R, PS15 - PS60, 0.6/1 kV

Communication cables:

PRAFlaGuard F SSKFH-V180 P15-R - E 90, PH 120-R, P75090-R, PS15 - PS90

PRAFlaGuard FTP TCSPKFH-V180 P15-R - E 90, PH 120-R, P75090-R, PS15 - PS90

PRAFlaGuard SPF TCSPKFH-V180 P15-R - E 90, PH 120-R, P75090-R, PS15 - PS90

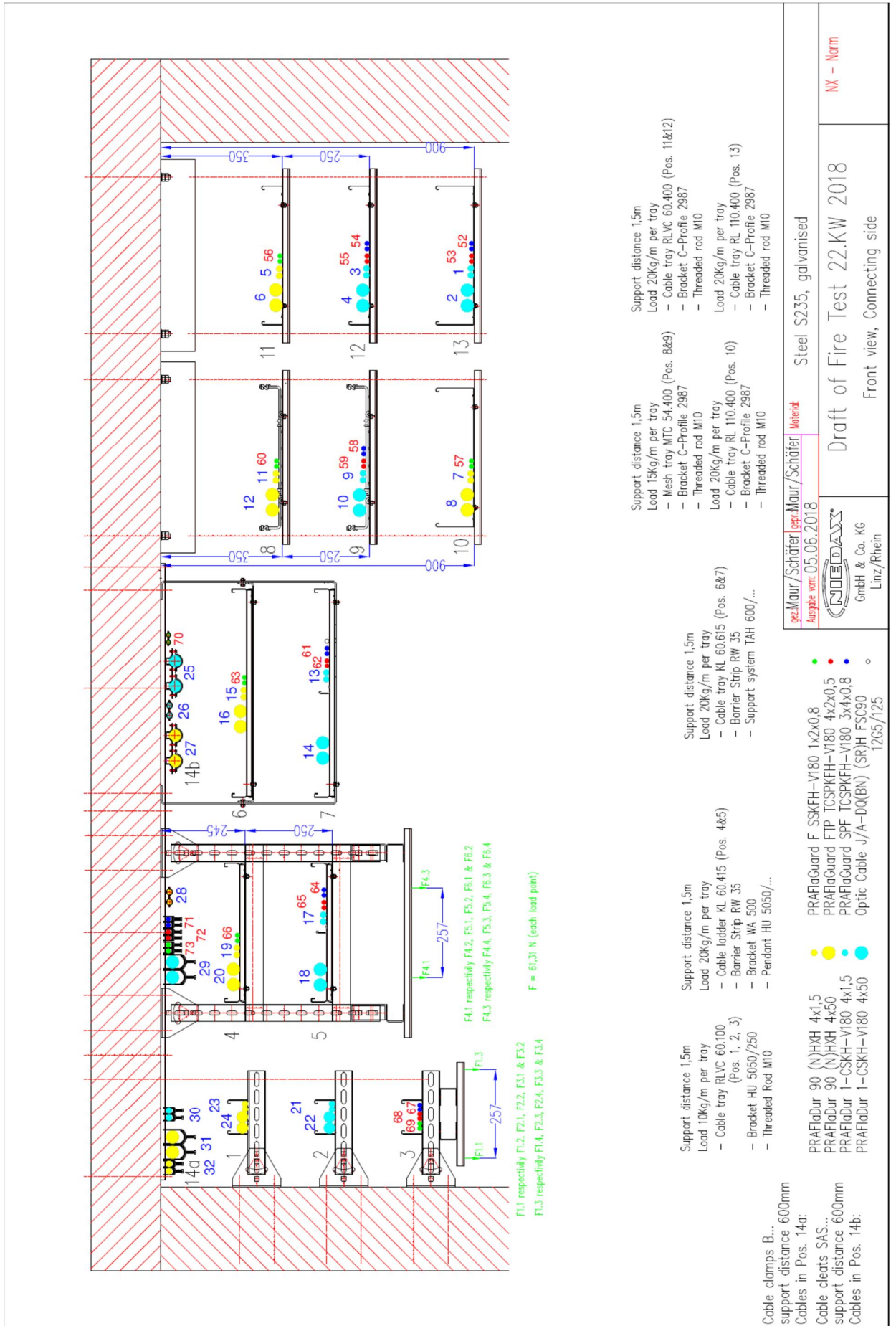
The length of cables was 5,2 m and 4,0 m from that was exposed to fire.

Cable penetration through the wall of test furnace was sealed by mineral wool and sprayed insulation material Tecwool.

More detailed information about product construction is shown in the drawings which form an integral part of test report [1] according to chapter 3.1 of this document.

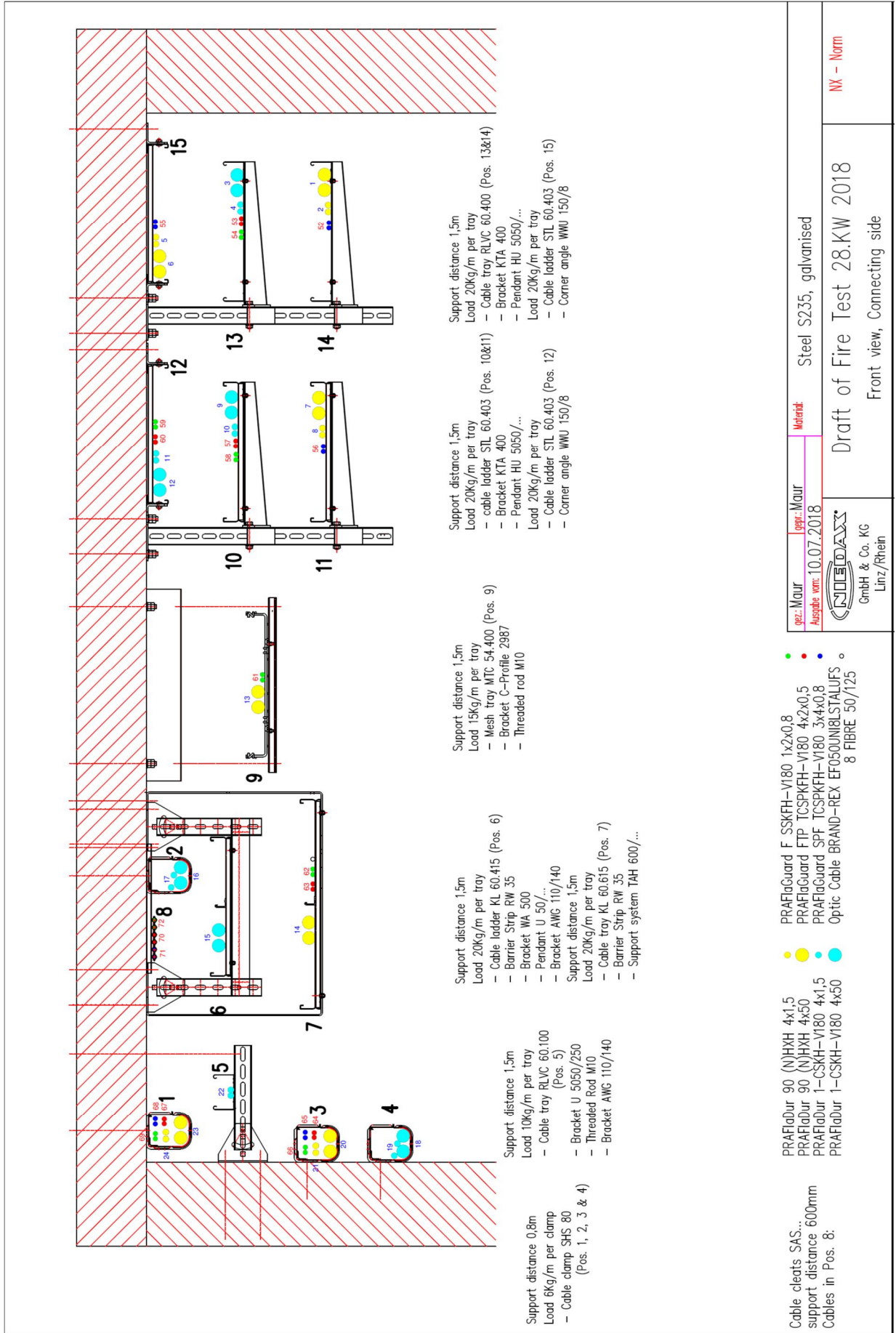


Constructions tested by test [1]:





Constructions tested by test [2]:



<p>gez.: Maur</p> <p>Ausgabe vom: 10.07.2018</p>	<p>app.: Maur</p> <p>Material: Steel S235, galvanised</p>
<p>Draft of Fire Test 28.KW 2018</p> <p>Front view, Connecting side</p>	
<p>NX - Norm</p>	

- PRAFIaGuard F SSKH-V180 1x2x0,8
- PRAFIaGuard FP TCSPKFH-V180 4x2x0,5
- PRAFIaGuard SPF TCSPKFH-V180 3x4x0,8
- Optic Cable BRAND-REX EF050UNIBLSTALUFS 8 FIBRE 50/125
- PRAFIaDur 90 (N)HXH 4x1,5
- PRAFIaDur 90 (N)HXH 4x50
- PRAFIaDur 1-CSKH-V180 4x1,5
- PRAFIaDur 1-CSKH-V180 4x50



3. TEST REPORTS AND EXTENDED APPLICATION REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS AND EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	FIRES, s.r.o., Batizovce, SR	Niedax GmbH & Co. KG, Linz am Rhein, DE	FIRES-FR-112-18-AUNE	31. 05. 2018	STN 92 0205
[2]			FIRES-FR-150-18-AUNE	12. 07. 2018	

Note: The test was carried out according previous version of test standard. Current version of test standard is: STN 92 0205: 2014/Z1: 2019. Change of the standard does not have influence on the test results summarized in the test report.

3.2 TEST RESULTS

No./ Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] STN 92 0205: 2014	1	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	13	90 minutes no failure / interruption
	2	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	3	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	12	90 minutes no failure / interruption
	4	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	5	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	11	90 minutes no failure / interruption
	6	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	7	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	10	90 minutes no failure / interruption
	8	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	9	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	9	90 minutes no failure / interruption
	10	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		76 minutes
	11	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	8	90 minutes no failure / interruption
	12	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		60 minutes
	13	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	7	66 minutes
	14	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	15	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	6	90 minutes no failure / interruption
	16	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		59 minutes
	17	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	5	90 minutes no failure / interruption
	18	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		59 minutes
	19	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	4	90 minutes no failure / interruption
	20	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	21	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	2	45 minutes
	22	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	23	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV	1	90 minutes no failure / interruption
	24	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	25	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	14b	90 minutes no failure / interruption
	26	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
	27	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	28	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
	29	2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	14a	90 minutes no failure / interruption
	30	2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
	31	2 cables PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
	32	2 cables PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption



No./ Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] STN 92 0205: 2014	52	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	13	90 minutes no failure / interruption
	53	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	54	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	12	90 minutes no failure / interruption
	55	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	56	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	11	90 minutes no failure / interruption
	57	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	10	90 minutes no failure / interruption
	58	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	9	90 minutes no failure / interruption
	59	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	60	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	8	67 minutes
	61	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	7	90 minutes no failure / interruption
	62	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		9 minutes
	63	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	6	22 minutes
	64	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	5	90 minutes no failure / interruption
	65	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	66	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	4	90 minutes no failure / interruption
	67	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	3	90 minutes no failure / interruption
	68	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	69	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		90 minutes no failure / interruption
	70	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	14b	35 minutes
	71	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	14a	90 minutes no failure / interruption
	72	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8		90 minutes no failure / interruption
	73	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		90 minutes no failure / interruption
	[2] STN 92 0205: 2014	1	2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	14
2		2 cables PRAFlaDur 90 (N)HXH 4x1,5 RE 0.6/1 kV	53 minutes	
3		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	13	90 minutes no failure / interruption
4		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
5		2 cables PRAFlaDur 90 (N)HXH 4x1,5 RE 0.6/1 kV	15	90 minutes no failure / interruption
6		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV		43 minutes
7		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	11	30 minutes
8		2 cables PRAFlaDur 90 (N)HXH 4x1,5 RE 0.6/1 kV		61 minutes
9		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	10	90 minutes no failure / interruption
10		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		85 minutes
11		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	12	90 minutes no failure / interruption
12		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV		90 minutes no failure / interruption
13		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	9	90 minutes no failure / interruption
14		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	7	90 minutes no failure / interruption
15		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	6	90 minutes no failure / interruption
16		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	2	90 minutes no failure / interruption
17		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
18		2 cables PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV	4	90 minutes no failure / interruption
19		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV		76 minutes
20		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	3	36 minutes
21		2 cables PRAFlaDur 90 (N)HXH 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption
22		2 cables PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV	5	90 minutes no failure / interruption
23		2 cables PRAFlaDur 90 (N)HXH 4x50 RM 0.6/1 kV	1	42 minutes
24		2 cables PRAFlaDur 90 (N)HXH 4x1,5 RE 0.6/1 kV		90 minutes no failure / interruption

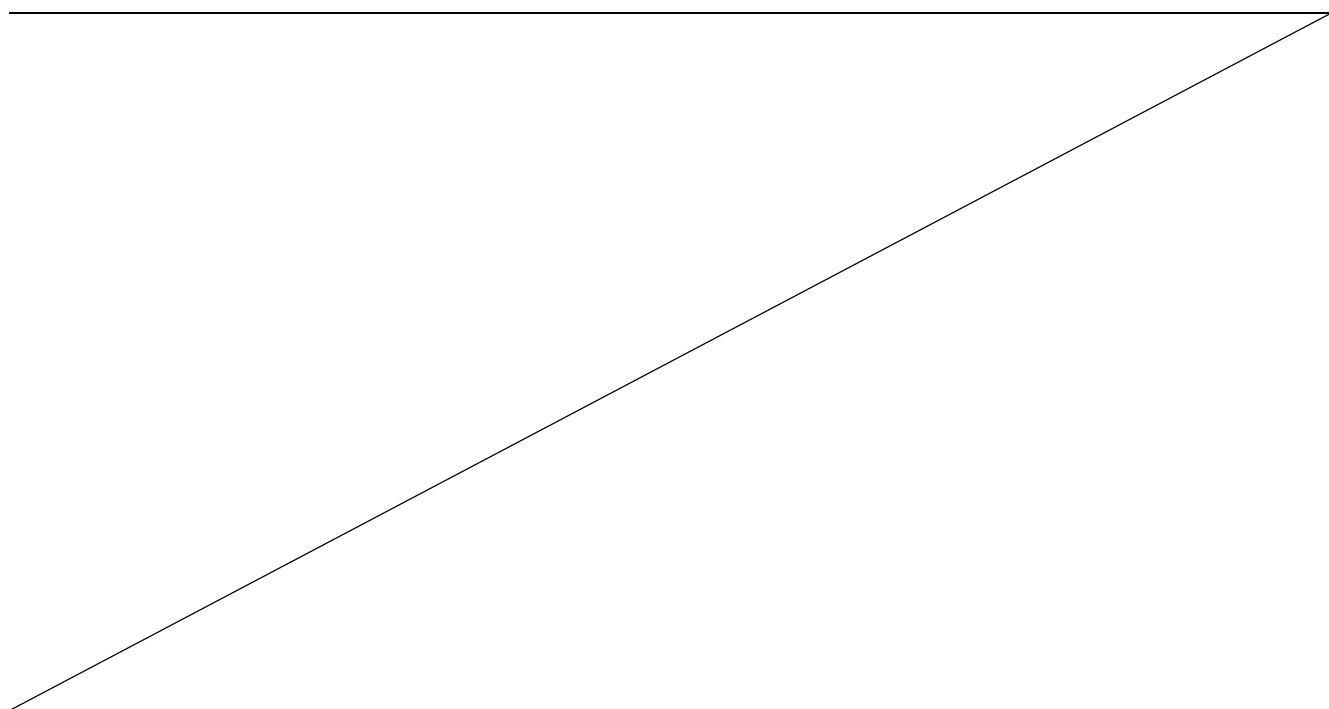


No./ Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[2] STN 92 0205: 2014	52	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	14	90 minutes no failure / interruption
	53	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5	13	90 minutes no failure / interruption
	54	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		37 minutes
	55	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	15	90 minutes no failure / interruption
	56	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8	11	90 minutes no failure / interruption
	57	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5	10	90 minutes no failure / interruption
	58	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		25 minutes
	59	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	12	20 minutes
	60	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5		90 minutes no failure / interruption
	61	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	9	90 minutes no failure / interruption
	62	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	7	8 minutes
	63	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5		8 minutes
	64	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5	3	90 minutes no failure / interruption
	65	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8		34 minutes
	66	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		36 minutes
	67	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5	1	51 minutes
	68	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8		90 minutes no failure / interruption
	69	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8		57 minutes
	70	2 cables PRAFlaGuard FTP TCSPKFH-V180 4x2x0,5	8	90 minutes no failure / interruption
	71	2 cables PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8		90 minutes no failure / interruption
72	2 cables PRAFlaGuard F SSKFH-V180 1x2x0,8	90 minutes no failure / interruption		

[1], [2] The tests were discontinued in 94th minute upon request of the test sponsor

Specimens S1 – S51 were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
 Specimens S52 – S75 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 CLASSIFICATION ACCORDING TO DIN 4102-12: 1998-11

The element, **Cable supporting system NIEDAX with power and communication halogen-free cables PRAKAB**, is classified according to the following combinations of performance parameters and classes as appropriate.

Used cables of company PRAKAB PRAŽSKÁ KABELOVNA s.r.o. 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)	Classification for cable	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0,6/1 kV [1]	Cable tray RLVC 60.100. Adjustable connection bracket AWG 110/140, profile U5050 and threaded rod M10. Plastic distance plates used between bracket and wall. Brackets in spacing of 1500 mm. Maximum loading 10kg.m ⁻¹ . Wall installation. Non-standard tracks: No. 1 – 3 [1]. ¹⁾ No. 5 [2].	E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0,6/1 kV [1]		E 90	E 90	
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0,6/1 kV [2]		E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 1-CSKH-V180 4x50 RM 0,6/1 kV [1]		E 90	E 90	
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [1]		E 90	n x 2 x ≥ 0,8 mm n ≥ 1	
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0,6/1 kV [1]		Cable ladder KL 60.415. Consoles combined of two connection brackets AWG 110/140, two profiles U 50/... and horizontal bracket WA 500. Consoles suspended to ceiling. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 4 and 5 [1]. ²⁾ No. 6 [2].	E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0,6/1 kV [1]			E 90	E 90
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0,6/1 kV [1]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0,6/1 kV [2]			E 90	E 90
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [1]			E 90	n x 2 x ≥ 0,8 mm n ≥ 1
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]	E 90		n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]	E 90		n x 2 x ≥ 0,8 mm n ≥ 4	

1) Additional supporting construction for lighting devices is constructed under track. Construction consists of two U-profiles (U 5050) fixed longitudinally with track to brackets by nut bolts (FLM 10x25). Profiles are fixed together by 12 nut bolts (FLM 10x25) and reinforced by steel plates 2,0 mm thick. Maximum weight of lighting device 25kg.

2) Additional supporting construction for lighting devices is constructed under track. Construction consists of two U-profiles (U 5050) fixed longitudinally with track to consoles by nut bolts (FLM 10x25) and shelf bracket (TRV 40). Profiles are fixed together by 12 nut bolts (FLM 10x25) and reinforced by steel plates 2,0 mm thick. Maximum weight of lighting device 25kg.



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections)	Classification for cable	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0,6/1 kV [1]	Cable ladder KL 60.615. Consoles TAH-D 600 fixed to ceiling through plastic plates. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 6 and 7 [1]. No. 7 [2].	E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0,6/1 kV [2]		E 90	E 90	
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0,6/1 kV [1]		E 60	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 1-CSKH-V180 4x50 RM 0,6/1 kV [1]		E 90	E 60	
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3 E 90	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0,6/1 kV [1]		Cable mesh tray MTC 54.400. Consoles combined of C-profile 2986 and threaded rods M10. Consoles suspended to supporting construction ¹⁾ by trapezoidal hangers DBT40 and threaded rods M8. Consoles in spacing of 1500 mm. Maximum loading 15kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 8 and 9 [1] No. 9 [2]	E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0,6/1 kV [2]			E 90	E 90
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0,6/1 kV [1]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0,6/1 kV [1]			E 60	E 60
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [2]			E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]			E 90	n x 4 x ≥ 0,8 mm n ≥ 3 E 90
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]			E 90	n x 2 x ≥ 0,8 mm n ≥ 4 E 90
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0,6/1 kV [1]	Cable tray RLVC 60.400. Consoles combined of C-profile 2986 and threaded rods M10. Consoles suspended to supporting construction ¹⁾ by trapezoidal hangers DBT40 and threaded rods M8. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 11 and 12 [1]		E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0,6/1 kV [1]			E 90	E 90
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0,6/1 kV [1]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0,6/1 kV [1]			E 90	E 90
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [1]			E 90	n x 2 x ≥ 0,8 mm n ≥ 1 E 90
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3 E 90	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4 E 90	

¹⁾ Supporting construction is made of segments of steel sheets 1,2 mm thick bent to wave 550 mm long. Individual segments are fixed to ceiling by 4 pcs of anchors in spacing of 1500 mm.



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections)	Classification for cable	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [1]	Cable tray RL 110.400. Consoles combined of C-profile 2987 and threaded rods M10. Consoles suspended to ceiling. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Non-standard tracks: No. 10 and 13 [1]	E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [1]		E 90	E 90	
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [1]		E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [1]		E 90	E 90	
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [1]		E 90	n x 2 x ≥ 0,8 mm n ≥ 1	
PRAFlaGuard SPF TCSPKFH-V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH-V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [1]		Track is made of C-profiles 2970 fixed to ceiling in spacing of 600 mm. Cables are fixed to profiles by cable yoke clamps type "B". Non-standard track: No. 14a [1]	E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [1]			E 90	E 90
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [1]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [1]			E 90	E 90
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [1]			E 90	n x 2 x ≥ 0,8 mm n ≥ 1
PRAFlaGuard SPF TCSPKFH-V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [1]	E 90		n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH-V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [1]	E 90		n x 2 x ≥ 0,8 mm n ≥ 4	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [1]	Track is made of C-profiles 2970 fixed to ceiling in spacing of 600 mm. Cables are fixed to profiles by cable clips SAS. Non-standard tracks: No. 14b [1] No. 8 [2]		E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [1]			E 90	E 90
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [1]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [1]			E 90	E 90
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [2]			E 90	n x 2 x ≥ 0,8 mm n ≥ 1
PRAFlaGuard SPF TCSPKFH-V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH-V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4	



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections)	Classification for cable	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [2]	Tracks are made of closed cable hangers SHS 80 fixed to ceiling in spacing of 800 mm. Maximum loading 6kg.m ⁻¹ . Non-standard tracks: No. 1 and 2 [2]	E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [2]		E 30	E 30	
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [2]		E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [2]		E 90	E 90	
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [2]		E 30	n x 2 x ≥ 0,8 mm n ≥ 1 E 30	
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3 E 90	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]		E 30	n x 2 x ≥ 0,8 mm n ≥ 4 E 30	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [2]		Tracks are made of closed cable hangers SHS 80 fixed to wall in spacing of 800 mm. Maximum loading 6kg.m ⁻¹ . Non-standard tracks: No. 3 and 4 [2]	E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [2]			E 30	E 30
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [2]			E 60	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [2]			E 90	E 60
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [2]			E 30	n x 2 x ≥ 0,8 mm n ≥ 1 E 30
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]	E 30		n x 4 x ≥ 0,8 mm n ≥ 3 E 30	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]	E 90		n x 2 x ≥ 0,8 mm n ≥ 4 E 90	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [2]	Cable ladder STL 60.403. Consoles HU 5050, brackets KTA 400 and spacers HDS 5050. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 10 and 11 [2]		E 60	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [2]			E 30	E 30
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [2]			E 60	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [2]			E 90	E 60
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]			E 90	n x 4 x ≥ 0,8 mm n ≥ 3 E 90
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4 E 90	



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections)	Classification for cable	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [2]	Cable tray RLVC 60.400. Consoles HU 5050, brackets KTA 400 and spacers HDS 5050. Consoles in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Suspended installation. Non-standard tracks: No. 13 and 14 [2]	E 30	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [2]		E 30	E 30	
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [2]		E 90	n x ≥ 1,5 mm ² n ≥ 1	
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [2]		E 90	E 90	
PRAFlaGuard F SSKFH-V180	PRAFlaGuard F SSKFH-V180 1x2x0,8 [2]		E 30	n x 2 x ≥ 0,8 mm n ≥ 1	
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]		E 90	n x 4 x ≥ 0,8 mm n ≥ 3	
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]		E 90	n x 2 x ≥ 0,8 mm n ≥ 4	
PRAFlaDur 90 (N)HXH FE180 0,6/1 kV	PRAFlaDur 90 (N)HXH FE180 4x1,5 RE 0.6/1 kV [2]		Cable ladder STL 60.403 fixed to ceiling at up-side down position by corner angles WWU 150/8. Cables fixed to ladder by cable clamps type B spaced each 300 mm. Fixation in spacing of 1500 mm. Maximum loading 20kg.m ⁻¹ . Ceiling installation. Standard tracks: No. 12 and 15 [2]	E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 90 (N)HXH FE180 4x50 RM 0.6/1 kV [2]			E 30	E 30
PRAFlaDur 1-CSKH-V180 0,6/1 kV	PRAFlaDur 1-CSKH-V180 4x1,5 RE 0.6/1 kV [2]			E 90	n x ≥ 1,5 mm ² n ≥ 1
	PRAFlaDur 1-CSKH-V180 4x50 RM 0.6/1 kV [2]			E 90	E 90
PRAFlaGuard SPF TCSPKFH- V180	PRAFlaGuard SPF TCSPKFH-V180 3x4x0,8 [2]			E 90	n x 4 x ≥ 0,8 mm n ≥ 3
PRAFlaGuard FTP TCSPKFH- V180	PRAFlaGuard FTP TCSPKFH-V180 4x2x0,8 [2]	E 90		n x 2 x ≥ 0,8 mm n ≥ 4	

The element, **Cable supporting system NIEDAX with power and communication halogen-free cables PRAKAB** with circuit integrity maintenance classes are classified to classes according to achieved test results of tested cables at tracks. Other classification is not allowed.

4.2 FIELD OF APPLICATION

This classification is valid for the following end use applications:

- throughout the period during which circuit integrity is to be maintained, neighboring building components shall not have a negative effect on circuit integrity;
- although testing is only carried out on cables arranged horizontally, test results also apply to cables arranged either diagonally or vertically (e.g. in 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;
- where risers are used, circuit integrity classification only applies if the cable is effectively supported (i.e. with a spacing of supports of 3 500 mm or less and the distance between cable clips is ≤ 300 mm). Figure 5 of standard DIN 4102-12 shows a suitable means of mounting cables on risers. Cables may also be stabilized by a seal at penetrations in floors, provided that the sealant material is of a suitable material class, or using clips of proven suitability. The suitability of any design other than that shown in figure 5 may only be assessed by an accredited test laboratory;



- 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;
- test results of testing single cables on the ceiling apply also to cables mounted horizontally on walls;
- test 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.

4.3 FIELD OF APPLICATION BEYOND THE APPLICATION DEFINED IN STANDARD

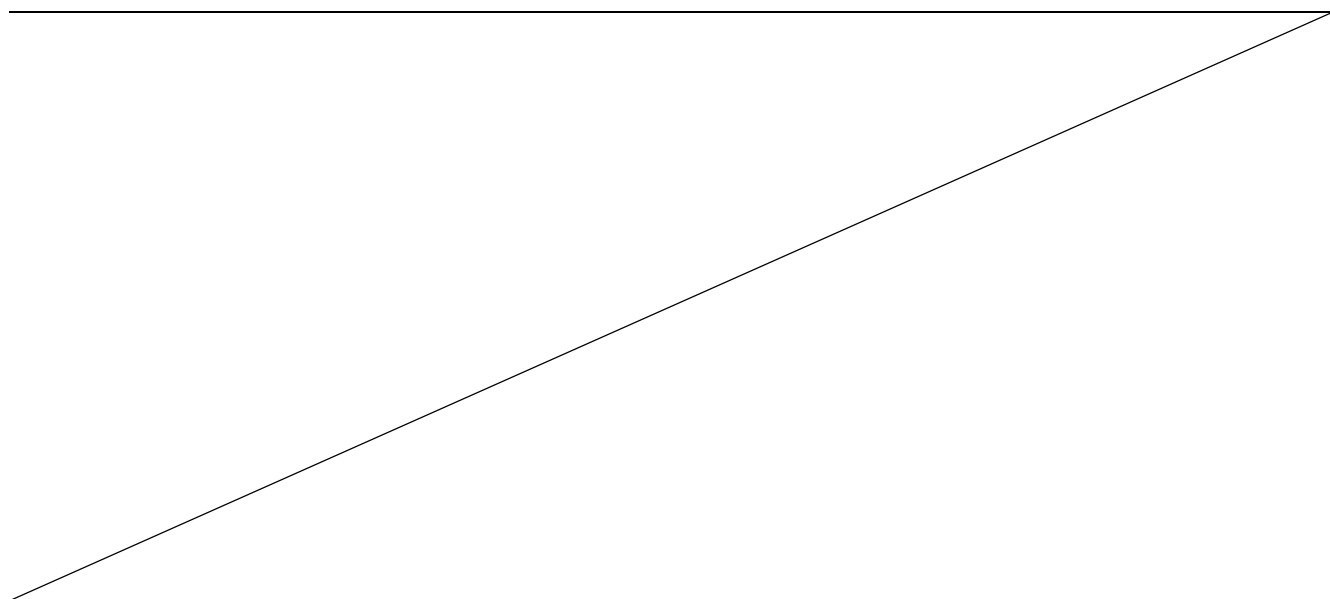
- classification for type of tested cable (by cross-sections of conductors) is valid only for tested cable types and cross-sections of conductors;
- classification for type of cable is valid for all numbers and cross-sections of tested cable type;
- test results of cable systems placed on a non-standard support structures are directly applied only to the tested cable systems;
- 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.);
- direct application of test results is possible also to other methods of joining of cable trays and cable ladders than shown of DIN 4102-12 provided they are assessed by an accredited testing laboratory;
- test result obtained from testing of cables with five or four conductors applies also to cables of the same type with smaller or greater number of conductors;
- test results obtained for cable system with cable trays are directly applicable also for usage of cable trays coverings; the coverings shall be ensured against movement with a proper manner. The weight of the cover must be added to the total load
- test results obtained for products used for connection of cables may be directly applied also to an application with cable products from another manufacturer which were tested following this standard and that constructional realisation was assessed by an approved testing laboratory;
- test results of electrical installation boxes with five terminals can be directly applied to a smaller number of terminals.

4.4 LABELING OF CABLE TRACK

Contractor marks cable system by attachment of label which must contain the following informations:

- name of responsible person, who installed the system;
- name of cable system as it is stated in this judgement;
- class of circuit integrity maintenance and classification report number;
- real value of mechanical loading of cable system by cables
- date of assembly of cable system.

If the track is long, it is appropriate to repeat the labeling approximately every 50 m.





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 by:

Ing. Marek Gorlický
Head of the Testing Laboratory

Prepared by:

Ing. Slavomír Hudák
Technician of the Testing Laboratory

