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FIRE TESTING INSTITUTE

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# **CERTIFICATION REPORT**

**č. P-2024/0094**

## **1 NAME OF THE CERTIFIED PRODUCT**

**KOPOS cable support systems**

**Cable runways with circuit integrity maintenance under fire conditions**

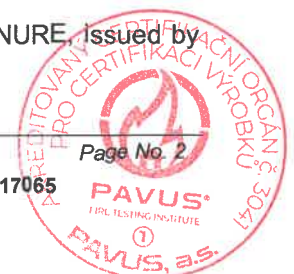
**Manufacturer: KOPOS KOLÍN a.s., Havlíčkova 432, Kolín IV, 280 02 Kolín, Czech Republic, ID 61672971**

**Place of manufacture: KOPOS KOLÍN a.s., Havlíčkova 432, Kolín IV, 280 02 Kolín, Czech Republic**



## 2 DOCUMENTS USED FOR CERTIFICATION

- [1] Application form for performance actions by Authorized body, on 7.2.2024
- [2] Test report No. FIRES-FR-027-09-AUNS, issued by FIRES s.r.o., on 12.3.2009
- [3] Test report No. FIRES-FR-139-09-AUNS, issued by FIRES s.r.o., on 11.12.2009
- [4] Test report No. FIRES-FR-172-10-AUNS, issued by FIRES s.r.o., on 3.11.2010
- [5] Test report No. FIRES-FR-194-10-AUNS, issued by FIRES s.r.o., on 9.12.2010
- [6] Test report No. FIRES-FR-220-11-AUNS, issued by FIRES s.r.o., on 21.11.2011
- [7] Test report No. FIRES-FR-088-12-AUNS, issued by FIRES s.r.o., on 30.5.2012
- [8] Test report No. FIRES-FR-156-12-AUNS, issued by FIRES s.r.o., on 27.8.2012
- [9] Test report No. FIRES-FR-204-12-AUNS, issued by FIRES s.r.o., on 27.11.2012
- [10] Test report No. FIRES-FR-104-14-AUNS, issued by FIRES s.r.o., on 21.6.2014
- [11] Test report No. FIRES-FR-238-14-AUNS, issued by FIRES s.r.o., on 23.1.2015
- [12] Test report No. FIRES-FR-130-15-AUNS, issued by FIRES s.r.o., on 24.6.2015
- [13] Test report No. FIRES-FR-228-15-AUNS, issued by FIRES s.r.o., on 26.1.2016
- [14] Test report No. FIRES-FR-270-16-AUNS, issued by FIRES s.r.o., on 16.1.2017
- [15] Test report No. FIRES-FR-166-17-AUNS, issued by FIRES s.r.o., on 7.11.2017
- [16] Test report No. FIRES-FR-178-17-AUNS, issued by FIRES s.r.o., on 5.12.2017
- [17] Test report No. Pr-18-2.005, issued by PAVUS a.s. AZL 1026 Veselí nad Lužnicí, on 15.1.2018
- [18] Test report No. FIRES-FR-104-18-NURS2, issued by FIRES, s.r.o., on 10.7.2018
- [19] Test report No. FIRES-FR-217-18-AUNS, issued by FIRES, s.r.o., on 21.11.2018
- [20] Test report No. FIRES-FR-205-19-AUNS, issued by FIRES, s.r.o., on 30.10.2019
- [21] Test report No. FIRES-FR-153-20-AUNS, issued by FIRES, s.r.o., on 14.12.2020
- [22] Test report No. FIRES-FR-246-21-AUNS, issued by FIRES, s.r.o., on 14.12.2021
- [23] Test report No. FIRES-FR-202-22-AUNS, issued by FIRES, s.r.o., on 3.5.2023
- [24] Test report No. FIRES-FR-327-22-AUNS, issued by FIRES, s.r.o., on 20.12.2022
- [25] Test report No. FIRES-FR-041-23-AUNS, issued by FIRES, s.r.o., on 3.5.2023
- [26] Test report No. FIRES-FR-223-23-AUNS, issued by FIRES, s.r.o., on 10.11.2023
- [27] Test report No. 20659036-30, DMT-31/97, issued by DMT GmbH & Co. KG, Dortmund, Německo, on 21.12.2016
- [28] Test report No. 8118211813, DMT-31/157, issued by DMT GmbH & Co. KG, Dortmund, Německo, on 17.9.2020
- [29] Function in fire expert judgement report with classification No. FIRES-CR-115-15-AUPS, issued by FIRES, s.r.o., on 10.7.2015
- [30] Function in fire expert judgement report with classification No. FIRES-CR-170-10-AUPS, issued by FIRES, s.r.o., on 16.12.2010
- [31] Function in fire expert judgement report with classification No. FIRES-JR-016-22-NURE, FIRES, s.r.o., s.r.o., on 1.2.2022
- [32] Function in fire expert judgement report with classification No. FIRES-JR-019-22-NURE, issued by FIRES, s.r.o., on 7.3.2022
- [33] Function in fire expert judgement report with classification No. FIRES-JR-028-22-NURE, issued by FIRES, s.r.o., on 22.6.2022
- [34] Function in fire expert judgement report with classification No. FIRES-JR-025-22-NURE, issued by FIRES, s.r.o., on 24.5.2022
- [35] Function in fire expert judgement report with classification No. FIRES-JR-031-22-NURE, issued by FIRES, s.r.o., on 9.1.2023
- [36] Function in fire expert judgement report with classification No. FIRES-JR-034-22-NURE, issued by FIRES, s.r.o., on 9.1.2023
- [37] Function in fire expert judgement report with classification No. FIRES-JR-102-23-NURE, issued by FIRES, s.r.o., on 17.7.2023



- [38] Function in fire expert judgement report with classification No. FIRES-JR-105-23-NURE, issued by FIRES, s.r.o., on 7.11.2023
- [39] Function in fire expert judgement report with classification No. FIRES-JR-186-19-NURS, issued by FIRES, s.r.o., on 21.11.2019
- [40] Function in fire expert judgement report with classification No. FIRES-JR-193-19-NURS, issued by FIRES, s.r.o., on 10.12.2019
- [41] Function in fire expert judgement report with classification No. FIRES-JR-096-19-NURS, issued by FIRES, s.r.o., on 17.7.2019
- [42] Function in fire expert judgement report with classification No. FIRES-JR-150-20-NURS, issued by FIRES, s.r.o., on 15.12.2020
- [43] Function in fire expert judgement report with classification No. FIRES-JR-004-21-NURS, issued by FIRES, s.r.o., on 2.2.2021
- [44] Function in fire expert judgement report with classification No. FIRES-JR-075-23-NURE, issued by FIRES, s.r.o., on 29.5.2023
- [45] Function in fire expert judgement report with classification No. FIRES-JR-113-22-NURE, issued by FIRES, s.r.o., on 31.8.2022
- [46] Function in fire expert judgement report with classification No. FIRES-JR-134-23-NURS, issued by FIRES, s.r.o., on 14.11.2023
- [47] Function in fire expert judgement report with classification No. FIRES-JR-105-21-NURE, issued by FIRES, s.r.o., on 28.1.2022
- [48] Function in fire expert judgement report with classification No. FIRES-JR-168-22-NURE, issued by FIRES, s.r.o., on 20.12.2022
- [49] Function in fire expert judgement report with classification No. FIRES-JR-022-22-NURE, issued by FIRES, s.r.o., on 18.3.2022
- [50] Function in fire expert judgement report with classification No. FIRES-JR-086-22-NURE, issued by FIRES, s.r.o., on 30.6.2022
- [51] Function in fire expert judgement report with classification No. FIRES-JR-085-24-NURE, issued by FIRES, s.r.o., on 14.3.2024
- [52] Classification report No. PK9-03-17-913-C-4, issued by PAVUS, a.s. - PCB 3041, on 21.3.2024
- [53] Allgemeines bauaufsichtliches Prüfzeugnis P-1041 DMT-DO, issued by DMT GmbH & Co. KG, Dortmund, Německo, on 14.4.2021
- [54] Technical report – Measurement of optical attenuation of cable samples during a fire test, issued by Vysoká škola báňská, Technická univerzita Ostrava on 9.9.2020
- [55] Technical assessment of use of PRAFlaDur +1-CSKH-V180 cables with constructions tested with PRAFlaDur 1-CSKH-V180 cables, issued by PAVUS a.s. on 4.4.2018
- [56] Technical assessment of use of PRAFlaDur® +, PRAFlaDur® 90 +, PRAFlaGuard® + F and PRAFlaGuard® + FTP cables, issued by PAVUS a.s. on 27.8.2018
- [57] Overview of tested cable runways with circuit integrity maintenance under fire conditions with classification according to DIN 4102-12 – KOPOS cable support systems, issued by PAVUS, a.s., on 29.4.2024
- [58] Reaction to fire classification No. PK-17-144, issued by CSI, Praha on 7.12.2017
- [59] Reaction to fire classification No. PK-17-145, issued by CSI, Praha on 7.12.2017
- [60] Report on assessment of factory production control system at the manufacturer No. Z220240099/D, issued by PAVUS, a.s. - AO 216, on 12.4.2024
- [61] Certification report No. P-2021/0097 on 24.8.2021, issued by PAVUS, a.s. - PCB 3041
- [62] Certificate No. C-2021/0097 on 24.8.2021, issued by PAVUS, a.s. – PCB 3041
- [63] DIN 4102-12 Fire behaviour of building materials and building components – Part 12: Circuit integrity maintenance of electric cable systems; requirements and testing
- [64] ČSN 73 0810 Fire protection of buildings – General requirements
- [65] ČSN 73 0895 Fire protection of buildings – Circuit integrity maintenance of cable systems under fire conditions – Requirements, testing, classification Px-R, PHx-R and application of the test results
- [66] EN 1363-1 Fire resistance tests – Fire resistance tests
- [67] EN 13501-1 Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests



[68] Commission Decision 2000/605/EC amending Decision 96/603/EC establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products

### 3 TECHNICAL PRODUCT SPECIFICATION, INTENDED USE IN CONSTRUCTION AND PERFORMANCE – DECLARATION OF MANUFACTURER

#### 3.1 TECHNICAL DESCRIPTION OF THE PRODUCT AND ITS IDENTIFICATION

The subject of classification are cable runways with circuit integrity maintenance under fire conditions – KOPOS cable support systems with the cables of PRAKAB PRAŽSKÁ KABELOVNA, s.r.o., NKT s.r.o., Kabelovna Kabex a.s., ELKOND HKK, a.s., CICM s.r.o., Prysmian Kablo s.r.o., Dätwyler Cables GmbH, Kabelwerk Eupen AG, Klaus Faber AG, TOP CABLE S.A., Zakłady Kablowe BITNER Sp. z o.o., Technokabel S.A., Tele-Fonika Kable S.A., Studer Cables AG and Kablo Vrchlábí s.r.o.

The cable runways are carried out as standard and nonstandard constructions.

Standard cable ladder construction according to DIN 4102-12 shall have a maximum width of 400 mm and side height of 60 mm, a sheet thickness of 1.5 mm with rungs spacing of 150 mm. If the rungs spacing is 300 mm, a sheet metal with a width of 150 mm shall be placed on every rung. The support spacing is 1 200 mm and the maximum mechanical load is 20 kg/m. Other constructions are nonstandard.

Standard cable tray construction according to DIN 4102-12 shall have a maximum width of 300 mm and side height of 60 mm, a sheet thickness of 1.5 mm with  $(15 \pm 5)$  % perforation of the whole area, support spacing of 1 200 mm and a maximum mechanical load of 10 kg/m. Other constructions, including wire cable trays, are nonstandard.

A standard cable clamp according to DIN 4102-12 can be either a clamp attached to rails at the ceiling or individual clamp attached directly to the building construction. The width of the cable clamp shall be  $(15 \pm 5)$  mm. The cables shall be attached every 300 mm. Other constructions are nonstandard.

Circuit integrity maintenance test results of cables accommo on the standard cable bearing construction of one manufacturer are transferable to the tested standard cable bearing constructions of the given type of a different manufacturer. Transfer of test results between nonstandard constructions is not allowed.

The tests were carried out according to ČSN 73 0895:2016 and comply with the requirements of DIN 4102-12:1998. The diversion in the test according to these standards is especially in measuring and controlling the furnace temperature. According to ČSN 73 0895:2016, plate thermocouples according to EN 1363-1 are used. According to DIN 4102-12:1998, thermocouples used until the publication of EN 1363-1 are used. Measurements with plate thermocouples according to EN 1363-1 may be considered a more strict method of temperature control.

#### 3.1.1 MARS CABLE TRAYS

##### **NKZI cable trays**

Made of galvanized or hot-dip galvanized sheet metal with a thickness of 0.7 mm, 0.75 mm, 0.8 mm, 1.00 mm or 1.25 mm. The side height is 50 mm or 100 mm. The width of the tray is 62 mm up to 500 mm. The side and bottom of the tray are perforated. The integrated coupling is a part of the cable tray. The cable trays are connected using 2 to 6 NSM 6x10 screws. The maximum load of the cable tray is 20 kg/m.

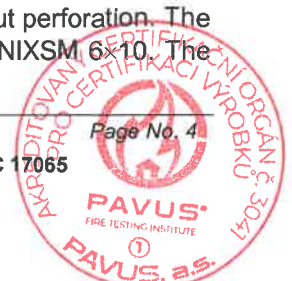
The NKZI cable trays may be fitted with tray covers V 250 made from a galvanized sheet metal with a thickness of 0.55 mm. Standard and profiled (crosswise and lengthwise) tray covers were used.

##### **NKZIN cable trays**

Made of galvanized sheet metal with a thickness of 0.7 mm, 0.75 mm, 0,8 mm, 1.0 mm and 1.25 mm. The side height is 50 mm or 100 mm. The width of the tray is 62 mm up to 250 mm. The side and bottom of the tray are solid without perforation. The integrated coupling is a part of the cable tray. The cable trays are connected using 2 to 6 NSM 6x10 screws. The maximum load of the cable tray is 20 kg/m.

##### **NIXKZN cable trays**

Made of stainless sheet metal with a thickness of 0.8 up to 1.0 mm. The side height is 50 mm or 100 mm and max. width of the tray is 500 mm. The cable tray sides and bottom are solid without perforation. The cable trays are connected using NIXS 50 or NIXS 100 and NIXSMP 8x12 screws or NIXSM 6x10. The maximum load of the cable tray is 20 kg/m.





### **NKZN cable trays**

Made of sheet metal with a thickness of 1.5 mm. The side height is 50 mm or 100 mm. The width of the tray is 250 mm. The cable trays are solid without perforation. The trays with a side height of 50 mm are connected using NS8 50×250 or NS50 coupling and NSMP 8×12 screws. The trays with a side height of 100 mm are connected using NS8 100×250 coupling with NSMP 8×12 screws. The maximum load of the cable trays is 10 kg/m.

### **NKZ cable trays**

Made of sheet metal with a thickness of 1.5 mm. The side height is 50 mm or 100 mm. The width of the tray is 250 mm. The cable tray sides and bottom are perforated. The trays with a side height of 50 mm are connected using NS 50×250 coupling and NSM 6×10 screws. The trays with a side height of 100 mm are connected using NS 100×250 coupling and NSM 6×10 screws. The maximum load of the cable trays is 10 kg/m.

## **3.1.2 JUPITER CABLE TRAYS**

### **KZ cable trays**

Made of galvanized sheet metal with a thickness of 1.5 mm. The side height is 60 mm and the width of the tray max. 300 mm. The cable tray sides and bottom are perforated. The trays are connected using KSBS 300 coupling and 24 pieces of NSM 6×10 screws. The maximum load of the cable trays is 40 kg/m.

### **KZI cable trays**

Made of galvanized sheet metal with a thickness of 0.75 mm, 1.0 mm and 1.25 mm. The side height is 60 mm and the width of the tray is max. 600 mm. The cable tray sides and bottom are perforated. The integrated coupling is a part of the cable tray. The cable trays are connected using 6 pieces NSM 6x10 screws according to the cable tray width. The maximum load of the cable tray is 20 kg/m.

### **KZIN cable trays**

Made of sheet metal with a thickness of 0.75 mm, 1.0 mm and 1.25 mm. The side height is 60 mm and the maximum width of the tray is 300 mm. The cable tray sides and bottom are solid without perforation. The cable trays are connected using an integrated coupling and 2 – 6 NSM 6×10 screws according to the tests. The maximum load of the cable tray is 10 kg/m.

## **3.1.3 WIRE CABLE TRAYS**

### **DZ wire cable tray**

Made of steel wire with a thickness of 3.9 mm up to 4.6 mm according to the cable tray width. The side height is 60 mm and max. width of the cable tray is 600 mm. Grid size is 50×100 mm. Cable trays are connected using 2 DZSP/B + DZSU/B coupling (on the sides) and 5 DZS/B screws (on the bottom). The maximum load of the wire cable tray is 10 kg/m.

### **DZI wire cable tray**

Made of steel wire with a thickness of 3.9 mm up to 4.6 mm according to the cable tray width. The side height is 60 mm and max. width of the cable tray is 600 mm. Grid size is 50×100 mm. The cable trays are connected using an integrated coupling. The maximum load of the wire cable tray is 20 kg/m.

## **3.1.4 CABLE LADDERS**

### **KL cable ladders**

Made of galvanized sheet metal. The thickness of the sides is 1.5 mm and the rungs thickness is 1.0 mm to 1.25 mm. The side height is 60 mm and 110 mm. The width of the ladder is 150 to 600 mm. The rungs are spaced 300 mm. The sides are perforated. The ladders are connected using S 60×200 or S 110×200 couplings (for the ladder width 600 mm) and NSM 6x10 screws (4-8 pcs for 1 coupling). The maximum load of the cable ladder is 30 kg/m.

### **KL ... PO cable ladders**

Made of galvanized sheet metal. The thickness of the sides is 1.5 mm and the rungs thickness is 1.0 mm to 1.25 mm. The side height is 60 mm. The width of the ladder is 150 to 400 mm. The rungs are spaced 150 mm. The sides are perforated. The ladders are connected using KPBSKL coupling with 12 NSM 6x10 screws. The maximum load of the cable ladder is 20 kg/m.



### 3.1.5 CABLE clamps

#### **OMEGA 52xx cable clamps**

Clamps are made of sheet metal with a thickness of 1.5 mm and a width of  $15 \pm 5$  mm. Clamps are divided into 2 parts and connected using 2 M5 screws. They are attached to the ceiling or wall by means of die-cast anchors, concrete screws, metal dowels for aerated concrete. They can also be shot with suitable nails. The load is given by inserted cables.

#### **DOBRMAN 52XX D cable clamps**

Clamps are made of sheet metal with a thickness of 1.0 mm and 1.5 mm and a width of  $15 \pm 5$  mm. Clamps are divided into 2 parts and connected using 2 M5 screws. They are attached to the ceiling or wall with an M6 thread and anchor, threaded rods or threaded head screws. The load is given by inserted cables.

#### **67xx PO, 67XX, a 67XXD cable clamps**

Cable simple and double clamps are made of sheet metal with a thickness of 0.8 mm, 1.0 mm, 1.2 mm and 1.5 mm and a width of  $15 \pm 5$  mm. They are attached to the ceiling or wall using SB 6,3×35 concrete bolts or M6 anchors. They can also be shot with suitable nails. The load is given by inserted cables.

#### **SD3 group cable holder**

The group cable holders are made of 0.75 mm thick sheet metal, the dimensions of the holder are 87×35×40 mm. They are attached to the ceiling or wall by shooting nails. The maximum load of the holder is 4,8 kg/m.

#### **PKC1 cable clamps**

Made of sheet metal with a thickness of 1 mm, 1.5 mm and 2.0 mm and a width of  $15 \pm 5$  mm. They are used for fixing the cables to ladders or individual supporting profiles (NP, MP).

### 3.1.6 PIPES

#### **Halogen-free rigid pipes 15xxHF, 40xxHF and 80xxHF**

Halogen-free rigid pipes are made of halogen-free material type A<sup>\*)</sup> with a thickness of 1 mm to 3 mm (according to the pipe diameter). The symbols xx mark the pipe diameter – from 16 to 63 mm. They are attached to the ceiling or wall using OMEGA 52xx clamps with a maximum spacing of 600 mm.

Halogen-free rigid pipes 15xxHF are plastic pipes with low mechanical resistance with a diameter of 16 mm to 63 mm. Halogen-free pipes 40xxHF has medium mechanical resistance and a diameter of 16 mm to 63 mm and a thickness of 1 mm to 2 mm (according to the pipe diameter). Pipes 80xxHF has a high mechanical resistance and a diameter of 16 to 63 mm and a thickness of 2 mm to 3 mm (according to the pipe diameter).

NOTE: Pipes with 16 mm diameter are marked xx16 EHF (e.g. 1516 EHF), where E stands for the European series of pipes and HF stands for halogen-free material. Other tube diameters are marked only HF (e.g. 1520HF, 1532HF).

#### **Steel pipes 60xx**

Steel pipes 60xx are made of sheet metal with a thickness of 1.1 to 1.4 mm (6016E), 1.5 to 1.8 mm (6020, 6025, 6032, 6040, 6042 and 6050) and 1.8 mm (6063). The ends of the pipes are treated with threads for pipes connection. The pipes are connected using 316E/1 to 363/1 (313/3 to 342/3) couplings and are attached to the ceiling using OMEGA clamps.

### 3.1.7 PARAPET AND TRUNKINGS

#### **PK...HF parapet trunking with PEP 60/K steel divider**

Made of halogen-free plastic material type A<sup>\*)</sup> with a max. size of 110×70 mm and with the divider made of the sheet metal with a thickness of 0.5 mm and a size of 44×39 mm

#### **Halogen-free trunking**

Plastic trunkings are made of halogen-free plastic material type A<sup>\*)</sup> with a max. size of 40×20 mm. The trunkings are anchored to the ceiling or wall with a spacing of 600 mm using M6 anchors with 67xx series clamps.

### 3.1.8 WIRING BOXES

#### **KSK wiring boxes**

Made of halogen-free type material B<sup>\*)</sup> and are designed to connect or branch cables with circuit integrity maintenance under fire conditions. They are fitted with a ceramic terminal block and are provided with softened bushings with IP 66 protection for cable entry.



The lid is closed by two or four stainless steel screws. To connect the cable cores in the boxes, ceramic clamps (single, double or multi-pole) are used or fastened by means of screws on the trapeze, which is anchored via spacers through the back wall of the box to the building structure. Ceramic terminals can be supplemented with 1 or more ground terminals. The KSK boxes are equipped with softened inlets (membrane passages) and there is no need for bushings. The KSK boxes can be equipped with terminals designed for cable cores with a cross section from 0.5 to 16 mm<sup>2</sup>.

The fastening of KSK boxes to the load-bearing structure must be carried out by anchoring elements which are able to transmit the tensile and shear forces corresponding to the cable tray load due to the actual weight of the cables in the considered fire scenario.

Variant of KSK boxes:

Item	Configuration	Item	Configuration	Item	Configuration
KSK 80	PO	KSK 125	PO	KSK 175	PO
KSK 80	PO6	KSK 125	PO6J	KSK 175	PO6J
KSK 80	PO10	KSK 125	PO10J	KSK 175	PO10J
KSK 80	PO4J	KSK 125	PO4J	KSK 175	PO16J-5
KSK 80	PO6J	KSK 125	PO6	KSK 175	PO6
KSK 80	PO10J	KSK 125	PO6P	KSK 175	PO6P
KSK 80	PO6P	KSK 125	PO10	KSK 175	PO10
KSK 80	PO10P	KSK 125	PO10P	KSK 175	PO10P
KSK 100	PO4J	KSK 125	PO6J-5	KSK 175	PO10J-5
KSK 100	PO6J	KSK 125	2PO6	KSK 175	2PO6
KSK 100	PO10J	KSK 125	2PO6P	KSK 175	2PO6P
KSK 100	PO	KSK 125	PO10J-5	KSK 175	PO6J-5
KSK 100	PO6	KSK 125	2PO10	KSK 175	2PO10
KSK 100	PO6P	KSK 125	2PO10P	KSK 175	2PO10P
KSK 100	PO10	KSK 125	PO16	KSK 175	PO16
KSK 100	PO10P	KSK 125	PO16J	KSK 175	PO16J
KSK 100	2PO6	KSK 125	2PO16	KSK 175	2PO16
KSK 100	2PO6P	KSK 125	2PO16P	KSK 175	2PO16P
KSK 100	2PO10	KSK 125	PO16P	KSK 175	PO16P
KSK 100	2PO10P	KSK 125	DPO	KSK 175	DPO
KSK 100	DPO	KSK 125	PO4J-5	KSK 175	PO4J-5

Boxes marked PO are designed for power cables, boxes marked DPO are designed for communication cables. The boxes are identical in construction and material, they differ only in size.

#### Wiring boxes with thermal fuse:

These boxes are equipped with a thermal fuse, which can disconnect the end string from the main distribution in the event of a short circuit risk from the terminal. The fuse thermal value is 150 °C, the maximum current load is given by the manufacturer depending on the cable cross-section. Multiple thermal fuses can be placed in one box.

*Note: \*) Simplified designation to indicate the type of product/material whose composition is known by the certification body.*

### **3.1.9 SUPPORTING RAILS, PROFILES AND TIGHTENING BELTS**

#### **NP supporting profiles**

Supporting profiles are made of sheet metal with a thickness of 1.2 mm. The bottom is perforated for mounting. The supporting profiles are intended as a supporting construction for fixing the cables using the PKC1 cable clamps to a ceiling or a wall.



### **5820 supporting rails**

Supporting rails 5820 are made of sheet metal with a thickness of 0.7 mm and the size is 10×20 mm. The bottom is perforated for mounting. The supporting rails are intended as a supporting construction for fixing the cables to the substrate using the metal SPK 200x4,6.

### **SPK 200x4,6 tightening belts**

The stainless steel tightening belt is used for fixing the cable to the support rail or to the threaded rod.

## **3.1.10 ACCESSORIES**

### **Cable tray cover**

The cover is made of sheet metal with a thickness of 0.55 mm. The typical length is 2 m. Fastening to the cable tray is carried out using VU and NVU fixtures (2 per meter).

### **NPS wall bracket**

The wall bracket is made of sheet metal with a thickness of 2.0 mm. The top and side are perforated for mounting. Wall bracket is intended as a support for cable trays wall installation.

### **SPL light ceiling profile**

The ceiling profiles consist of 122.5×122.5 mm foot with a thickness of 4 mm and a 41.5×21 mm profile with a thickness of 1.5 mm. The length is from 200 to 1 500 mm. The foot and the profile have punched out holes for fixing and mounting. It is intended for cable trays fastening to a ceiling or to the wall.

### **SPS ceiling profile**

The ceiling profiles consist of welded or individual foot with a thickness of 3 to 4 mm and a 41×41 mm profile with a thickness of 1.5 to 2.5 mm. The length is from 200 to 2 000 mm. The foot and the profile have punched out holes for fixing and mounting. It is intended for cable trays fastening to a ceiling or to the wall.

### **DS holder**

The holder is made of sheet metal with a thickness of 2.0 mm. The DS medium holder length is from 118 to 618 mm. The head plate is fastened to the horizontal part using 1 screw. The holder is intended for supporting cable trays and ladders. It is attached to the ceiling profile or to the wall.

### **DT heavy holder**

The length of the DT heavy holder is from 120 to 420 mm. The head plate is welded to the horizontal part of the holder. The sheet thickness is 2 mm. The holder is intended for supporting cable trays and ladders. It is attached to the ceiling profile or to the wall.

### **DT+DT OKO standard heavy holder with a clip**

The DT bracket can be fitted with a separate DT OKO clip at the end for attaching the ZT threaded rod. The length of the DT OKO holder is 118 mm, the thickness of the plate is 3 mm. It has 2 holes on the side for attachment to the DT holder using screws M8×16.

### **DSU adjustable bracket**

The foot and the fixture are made of sheet metal with a thickness of 3.0 mm. The horizontal part of the bracket is made of sheet metal with a thickness of 2.0 mm. The foot is perforated for adjusting the angle of the bracket to 45° and the top of the horizontal part of the bracket is perforated for mounting.

### **MP mounting profile**

The 41×21 and 41×41 mm profile is made of sheet metal with a thickness of 1.5 mm – 2.5 mm. The MP mounting profiles are intended as a support for installation of cable trays and ladders when mounted on threaded rods.

### **INOXMP mounting profile**

Profile 41×21 is made of stainless sheet metal thickness of 2.5 mm.

### **DZDS wall support**

The support is made of sheet metal with a thickness of 2.0 mm. It is intended for fastening the wire cable trays to the wall. On the surface of the wall support are placed fastening noses that when bent fasten the cable tray to the holder.

### **KPS cable clamp cover**

The cable clamp cover is used to relieve the longitudinal pull on vertical cable routes. The height of the cover is 160 mm, the depth is 200 mm and the width is max. 730 mm. The outer plates are made of PROMATECT L500 material 40 mm thick. At the inlet and outlet of the cables there is a sealing on each side of the cover made of two 40 mm thick mineral wool plates with a weight of 140 kg/m<sup>3</sup>. The outer side of the mineral wool boards and part of the cables are painted with PROMASTOP-CC primer up to



a minimum height of 100 mm (layer thickness after drying min. 1 mm). The cover is fixed to the substrate by 2x M8 threaded rods and concrete anchors (depending on the size of the cover). The cover can be used for cable fixing clips on the rising routes made of the cable trays and also on rising routes formed by separate cable clips.

**KLSU wall ladder bracket**

The bracket is made of sheet metal with a thickness of 1.5 mm. The bracket is perforated for mounting. It is intended for fastening cable trays to the wall.

**LTS holder**

The holder is made of sheet metal with a thickness of 1.8 mm. The top is perforated for mounting. It is intended to be placed on the wall or the ceiling profile.

**ZT and INOXZT threaded rods**

Threaded rods ZT are made of steel, threaded rods INOXZT are made of stainless steel.

**PKDZ1 cable clamp**

PKDZ1 cable clamp is used for attaching cables in wire trays.

The results of the cable trays and ladders tests can be applied to all components of the cable system used to change the direction, dimension or termination of the section (elbows, T-pieces, crossings, etc.).

A description of the individual cable runways, the cables used and the relevant classification are given in the relevant test reports, expert opinions, classification reports and in document [57] Clause 2 of this document.

**3.2 DEFINITION OF USE OF PRODUCT IN CONSTRUCTION INCLUDING EVENTUAL LIMITING**

Cable runways with circuit integrity maintenance under fire conditions – *KOPOS cable support systems* are used to ensure the safe installation of cables in buildings with the required maintenance under fire conditions.

**3.3 PERFORMANCE DECLARED BY THE MANUFACTURER**

The classification for circuit integrity maintenance of cable runways under fire conditions is given in document [57] Clause 2 of this document

**4 TECHNICAL REQUIREMENTS OF THE CERTIFIED PRODUCT – REQUIREMENTS OF TECHNICAL REGULATIONS, TECHNICAL STANDARDS OR OTHER DOCUMENTS**

Monitored/declared performance	Technical document	Required/declared level
Circuit integrity maintenance of cable runways under fire conditions	DIN 4102-12	E 30 to E 90
Reaction to fire	ČSN 73 0810 EN 13501-1	Steel elements: A1 Wiring boxes: E Pipes, parapets and trunkings: E

**5 PERFORMANCE VERIFIED BY TESTS, EXPERT ASSESSMENT AND OTHER FINDINGS**

The following tests were carried out to determine and evaluate the characteristics of the product:

**Monitored/declared performance**

Circuit integrity maintenance of cable runways under fire conditions: document [2 – 57], Clause 2 of this Certification report

Reaction to fire: document [58, 59] Clause 2 of this Certification report  
Commission Decision 96/603/EC, as amended



## 6 CONFORMITY ASSESSMENT OF THE PERFORMANCE OF THE CERTIFIED PRODUCT WITH THE PERFORMANCE DECLARED BY THE MANUFACTURER AND THE REQUIRED TECHNICAL REGULATIONS, TECHNICAL STANDARDS OR OTHER DOCUMENTS

Results of verification of the monitored properties:

Monitored/declared performance	Determined (requirement)/classification standard	Required/declared level	Observed/classification	Conformity Assessment
Circuit integrity maintenance of cable runways under fire conditions	DIN 4102-12	E 30 to E 90	<ul style="list-style-type: none"> <li>- Cable trays MARS</li> <li>- Cable trays JUPITER</li> <li>- Wire cable trays</li> <li>- Cable ladders</li> <li>- Cable clamps</li> <li>- Pipes</li> <li>- Parapets and trunkings</li> <li>- Wiring boxes</li> <li>- Supporting rails, profiles and tightening belts</li> <li>- Accessories</li> </ul> <p style="text-align: center;"><b>E 30 to E 90</b></p>	<b>Conforms <sup>1)</sup></b>
Reaction to fire	ČSN 73 0810 EN 13501-1	Steel elements: A1 Wiring boxes: E Pipes, parapets and trunkings: E	Steel elements: <b>A1</b> Wiring boxes: <b>E</b> Pipes, parapets and trunkings: <b>E</b>	<b>Conforms <sup>2)</sup></b>
<p><sup>1)</sup> Conforms according to the test results in [2 – 57] Clause 2 of this Certification report.</p> <p><sup>2)</sup> Conforms according to the test results in [58, 59] Clause 2 of this Certification report.</p>				

## 7 ASSESSMENT OF THE PREMISS OF THE MANUFACTURER FOR CONTINUOUS QUALITY COMPLIANCE OF THE CERTIFIED PRODUCT

The following documents were submitted:

- Report on assessment of the factory production control system at the manufacturer No. Z220240099/D, issued by PAVUS, a.s., AO 216, on 12.4.2024

Surveillance at the manufacturer was performed on 5<sup>th</sup> April 2024.

## 8 JUSTIFICATION FOR ISSUING THE CERTIFICATE

### 8.1 PROOF OF COMPLIANCE OF PRODUCT PROPERTIES WITH DIN 4102-12 AND OTHER REGULATIONS AND THE MANUFACTURER'S TECHNICAL DECLARATION

The conformity of the specified product characteristics with the requirements laid down in the technical standards and regulations and with the manufacturer's declaration given in full in Clause 3 of this Protocol has been demonstrated by the tests, expert opinions and examination carried out.

## 8.2 EVIDENCE OF A FACTORY PRODUCTION CONTROL SYSTEM

The conclusion of the documents submitted is that the manufacturer's system for managing the production of products is sufficiently effective.

On the basis of these findings, the relevant product certificate may be issued.

## 9 CONDITIONS OF THE CERTIFICATE VALIDITY

- 9.1 The manufacturer shall provide customers with technical documentation, instructions for use, safety data sheet, storage and usability conditions.
- 9.2 The manufacturer shall immediately report any changes concerning the characteristics of the certified product, the legal personality of the entities referred to in Clause 1, the documents referred to in this certificate and the use of the product to Certification Body No. 3041 no later than the date on which such changes occur.
- 9.3 The manufacturer shall maintain the validity of the documents used in the certification procedure.
- 9.4 Use of the certificate is only possible under the conditions specified in Clause 5 of this Certification report. These conditions shall be stated in the technical documentation.
- 9.5 The manufacturer shall allow the Product Certification Body to supervise the proper functioning of the product control and check compliance with the specified requirements for products at least once every 12 months. The Certification Body No. 3041 shall issue a report on the evaluation of the surveillance or compliance control to the client.

*This Certification Report is drawn up on 11 pages and is issued in two original numbered copies. Copy No. 1 shall be given to the manufacturer, copy No. 2 shall be kept in the archives of the Certification Body No. 3041. Each page of the Certification Report shall be marked with the stamp of Certification Body No. 3041. The protocol is issued in conjunction with Certificate No. C-2024/0094.*

In Prague on 2<sup>nd</sup> May 2024

  
**Zuzana Aldabaghová**  
Author of report

  
**Jaroslav Kopečný**  
Executive of the CB for product certification 3041

