MERKUR 2

CATALOGUE 2018

GENERAL CATALOGUE OF WIRE MESH CABLE TRAYS SYSTEM

MERKUR 2

ARKYS®

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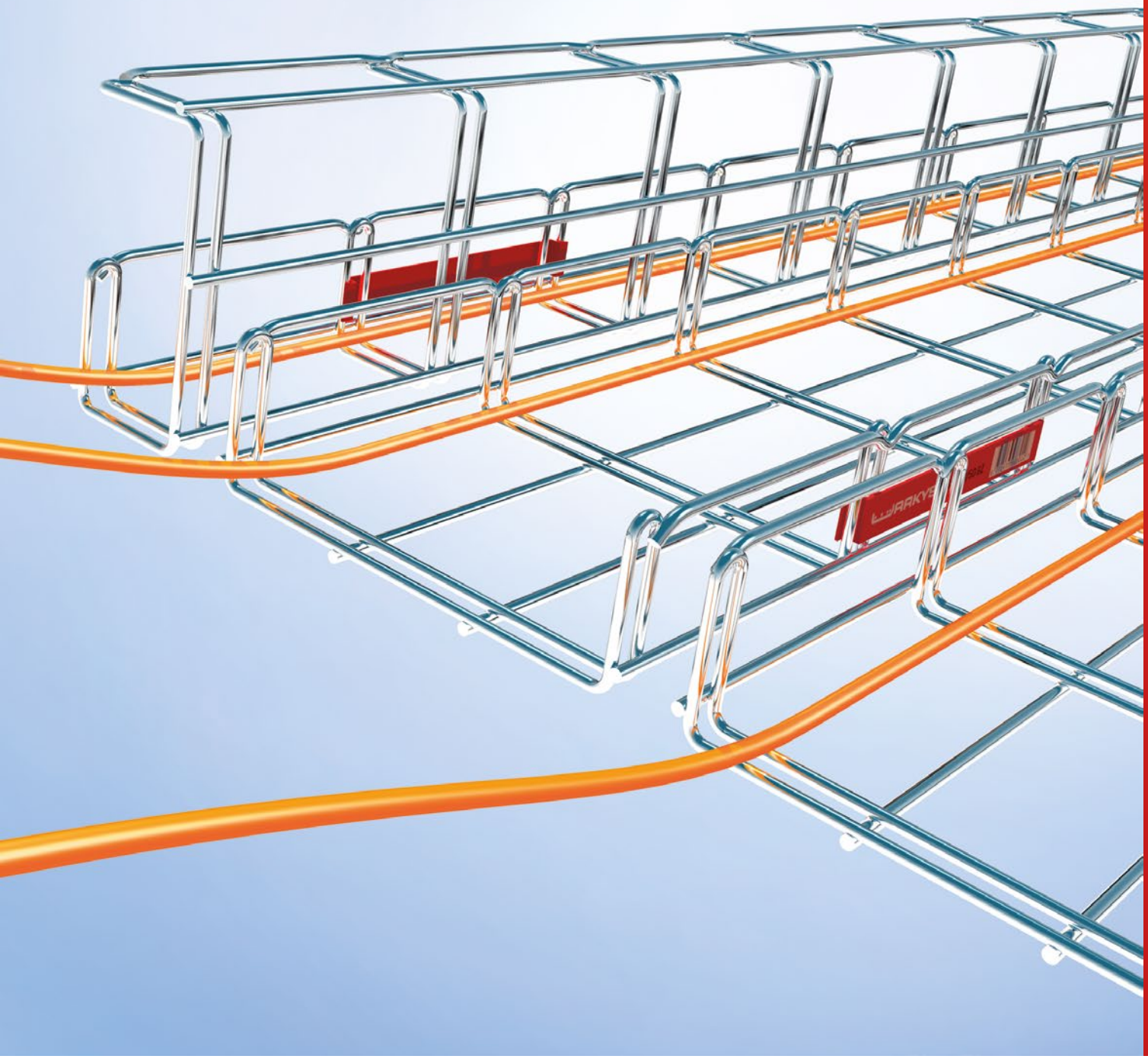

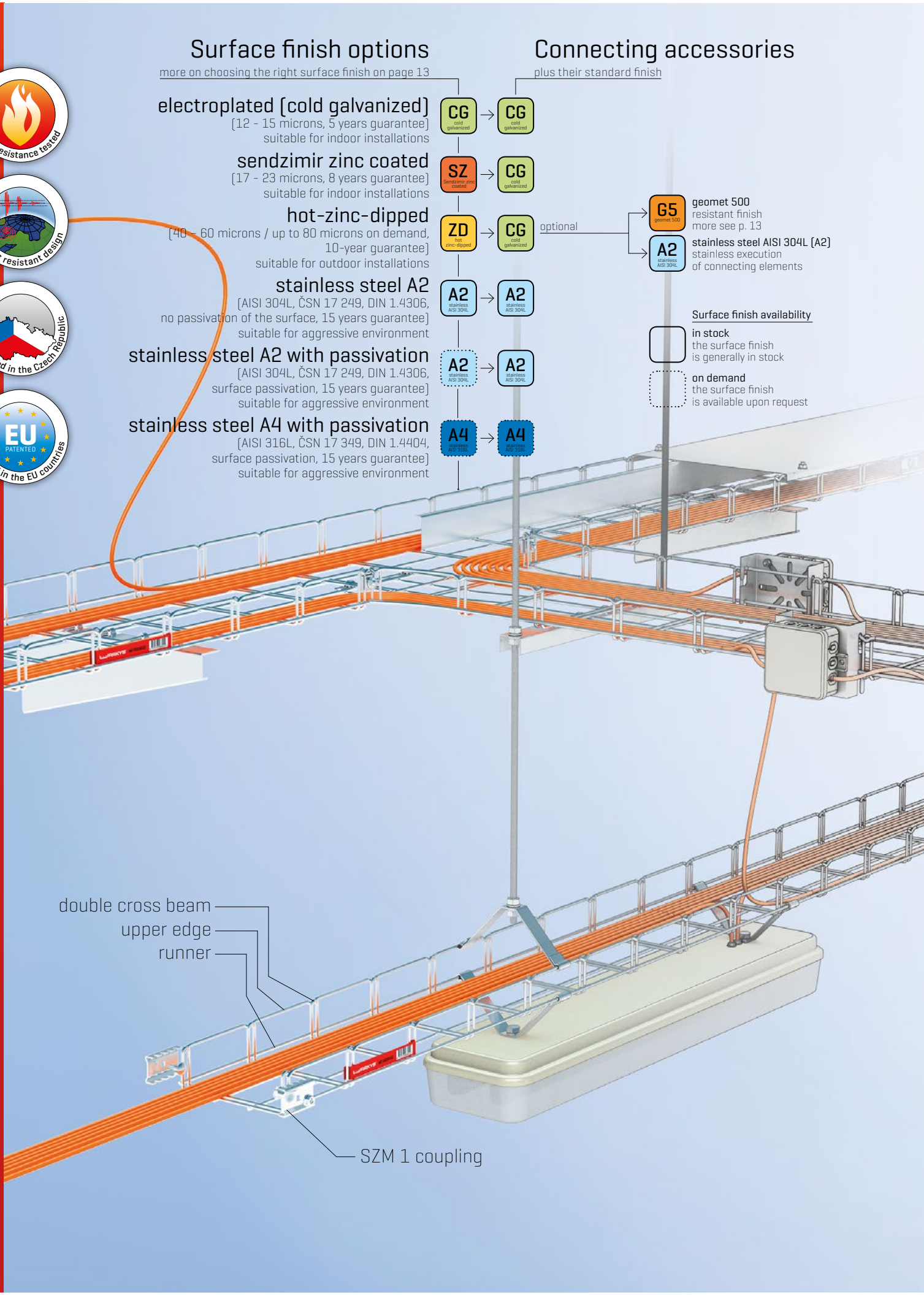
Surface finish options
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Connecting accessories
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electroplated (cold galvanized)
[12 - 15 microns, 5 years guarantee]
suitable for indoor installations
CG
cold galvanized
CG
cold galvanized
sendzimir zinc coated
[17 - 23 microns, 8 years guarantee]
suitable for indoor installations
SZ
Sendzimir zinc coated
CG
cold galvanized
hot-zinc-dipped
[40 – 60 microns / up to 80 microns on demand, 10-year guarantee]
suitable for outdoor installations
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[AISI 304L, ČSN 17 249, DIN 1.4306, no passivation of the surface, 15 years guarantee]
suitable for aggressive environment
A2
stainless AISI 304L
A2
stainless AISI 304L
stainless steel A2 with passivation
[AISI 304L, ČSN 17 249, DIN 1.4306, surface passivation, 15 years guarantee]
suitable for aggressive environment
A2
stainless AISI 304L
A2
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stainless steel A4 with passivation
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suitable for aggressive environment
A4
stainless AISI 316L
A4
stainless AISI 316L
Surface finish availability
in stock
the surface finish
is generally in stock
on demand
the surface finish
is available upon request
Fire resistance tested
Seismic resistant design
Manufactured in the Czech Republic
EU
PATENTED
Patented in the EU countries
double cross beam
upper edge
runner
SZM 1 coupling

Modern cable mesh trays

MERKUR 2 Cable mesh trays are designed for the assembly of high current cable routes for light circuits and motive current distribution, low current circuits, measuring and control systems as well as other media. The parts of the MERKUR 2 Cable mesh tray system are made of steel wire with galvanic zinc coat or dipped zinc finish, or of stainless steel wire AISI 304. Thanks to their simple construction and ease of assembling the MERKUR 2 mesh trays are suitable both for indoor and outdoor applications. Their finish should be chosen in accordance with the environment and the purpose of the given mesh tray system.

The MERKUR 2 cable mesh tray system has been developed upon the basis of the successful MERKUR system. With its well over 16 years of operation it has gathered ample service experience for various purposes under diversified conditions. MERKUR 2 has brought the design of cable mesh tray solutions to a new level, increasing the potential of its implementation and enhancing the functionality of the whole cable distribution system.

Very easy and fast assembly

Thanks to the low weight of the M2 mesh tray, its high variability and flexibility, its efficient route branching and crossing options, the installation is very easy and fast. All this is supported by the novel SZM 1 coupling that makes the connection of tray parts sturdy and reliable.

Higher loading capacity

By using the patented technology of double cross beams in combination with the optimised distribution of the bearing wires the new M2 type mesh tray improves the loading capacity of its forerunner M1 by full 40%.

This feature makes the M2 mesh trays more rigid and resistant, broadening the scope of their application.

Cable friendly

The rounded-off design of the mesh tray (double cross beam and upper edge) contributes to the ease of assembly, while reducing the risk of cable damage during the installation.

High electric load

The "open" wire construction of the M2 mesh tray with its excellent passage of air enables more effective cable cooling than the "closed" mesh trays that are made of sheet metal. It is possible to achieve higher current capacity of the routes with such improved cooling.

Simple cable branching

The M2 mesh tray allows cable branching without using any bushings, which results in both labor and cost reduction.

Next to no maintenance

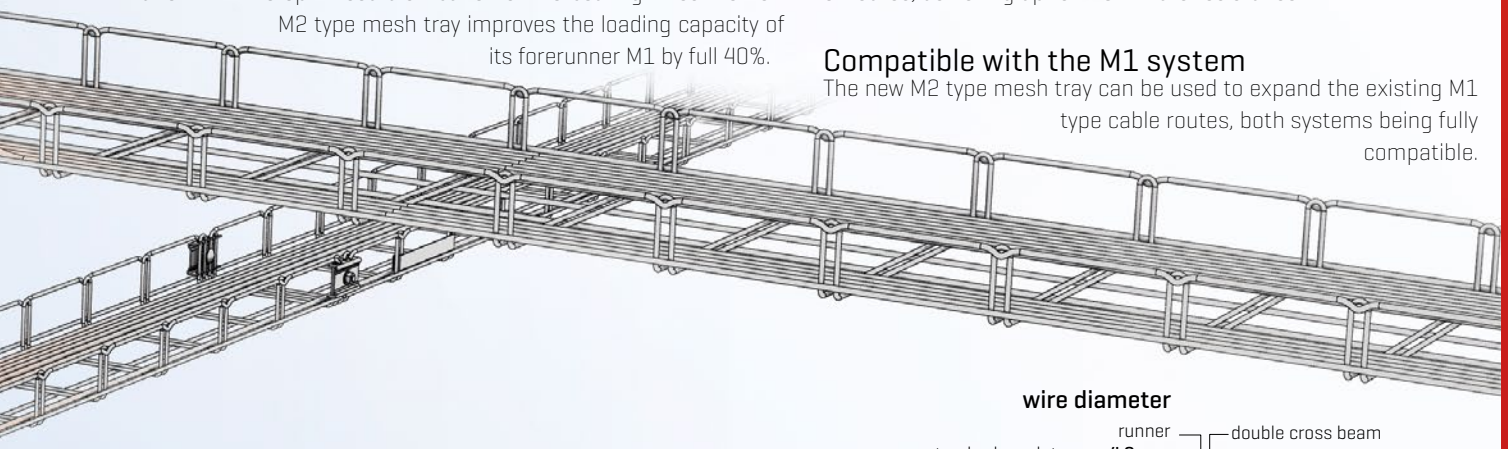
The open concept of the M2 mesh tray eliminates the accumulation of dust particles and the proliferation of microbes, reducing the upkeep of the cable pathway to minimum. This feature makes the M2 tray highly popular, among others, in the food processing industries.

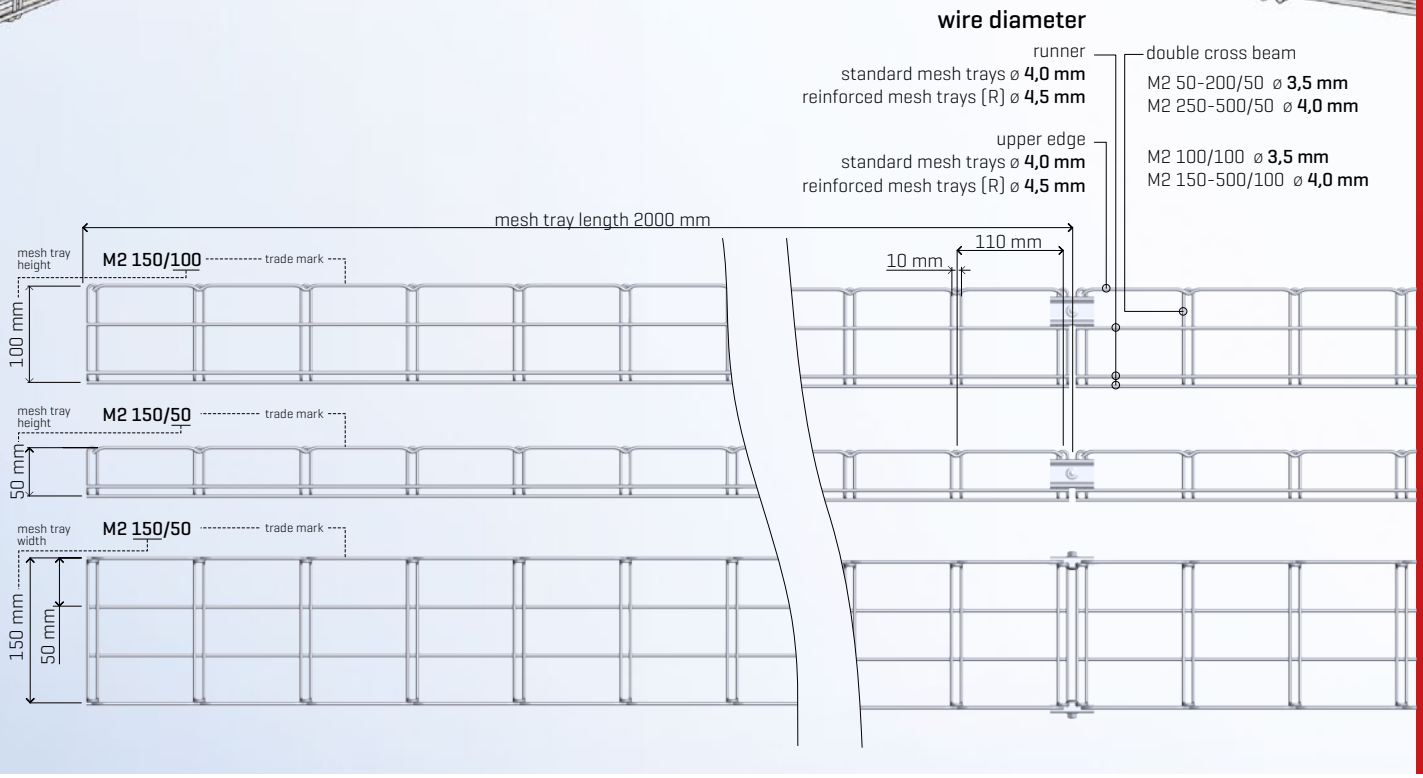
Excellent fire resistance

Due to its natural solidity and rigidity, the M2 mesh tray has surprisingly good results even in areas requiring the installation of fireproof routes, achieving up to 120 minute resistance.

Compatible with the M1 system

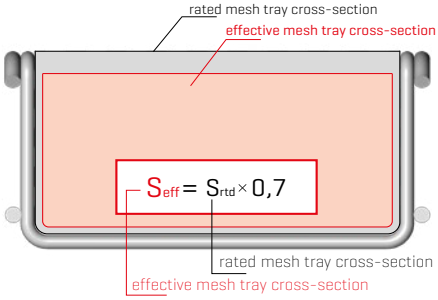
The new M2 type mesh tray can be used to expand the existing M1 type cable routes, both systems being fully compatible.





Utilisable mesh tray cross-section

The utilisable mesh tray section is a value defining the sum of sections of all cables that can be carried by a given mesh tray, plus a certain safety reserve. The safety reserve is intended, e.g., to cope with the increased need for space at the points of route bending, with less efficient utilization of the existing room if quite a number of cables are carried in one single track, and it also accounts for possible further needs to add some new cabling to the cable route, and similar issues.

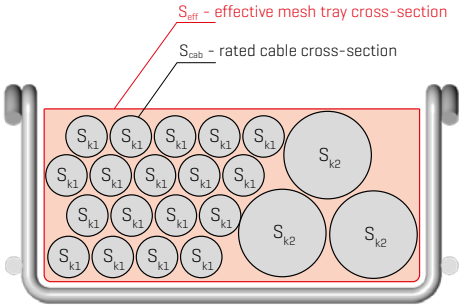


Determination of appropriate mesh tray size

The effective cross-section S_{eff} is defined for each cable mesh tray. This value can be used for rating the cable track with respect to the anticipated number of cables. At the same time, the purpose of the route and cooling system requirements should be taken into account and, accordingly, it is recommended to choose wider cable trays with some vacant space, i.e. lower filling rate. For better cooling it is also recommended to reduce the number of layers in which the cables are deposited.

1| necessary cross-section S_{tot}

The section is defined as the total sum of nominal sections of all cables to be placed in a cable route. Our orientation tables containing sections of the most frequented cables are meant as a help for determining the section of individual mesh trays. They are merely informative; for accurate data that you may need for your calculations please consult the manufacturer of the cabling you intend to use.



2| establishing the mesh tray size

Compare the calculated value of the required mesh tray section with the values of the effective mesh tray sections and find an appropriate one with the same or higher value than the one you have identified.

$$\text{total of cable sections} \leqq S_{ef}$$

total section of cables per mesh tray

shall not exceed the effective mesh tray section

Parameters of most frequented cables

	Cable type	Weight [kg/m]	Diameter [mm]	Section [mm²]
CYKY cables (copper core)	2x1,5	0,102	8,1	51,50
	3x1,5	0,119	8,6	58,06
	4x1,5	0,147	9,3	67,89
	5x1,5	0,173	10,1	80,08
	7x1,5	0,222	11,0	94,99
	12x1,5	0,386	14,6	167,33
	2x2,5	0,139	8,9	62,18
	3x2,5	0,167	9,5	70,85
	4x2,5	0,210	10,3	83,28
	5x2,5	0,257	11,2	98,47
	7x2,5	0,337	12,2	116,84
	12x2,5	0,568	16,3	208,57
	2x4	0,213	10,6	88,20
	3x4	0,253	11,2	98,47
	4x4	0,314	12,2	116,84
	5x4	0,376	13,8	149,50
	7x4	0,485	15,0	176,63
	12x4	0,870	20,0	314,00
	2x6	0,260	11,6	105,63
	3x6	0,325	12,3	118,76
	4x6	0,405	13,8	149,50
	5x6	0,500	15,1	178,99
	4x10	0,642	16,1	203,48
	5x10	0,770	18,0	254,34
	4x16	0,921	18,6	271,58
	5x16	1,138	20,4	326,69
	4x25	1,341	22,4	393,88
	5x25	1,622	24,5	471,20
	3x35+25	1,646	22,4	393,88
	4x35	1,769	24,8	482,81
	5x35	2,148	27,1	576,51
	3x50+35	2,164	30,4	725,47
	4x50	2,581	31,3	769,06
	3x70+50	2,799	33,6	886,23
	4x70	3,503	35,8	1006,09
	3x95+50	3,599	37,5	1103,91
	3x95+70	3,937	39,3	1212,42
	4x95	4,724	41,3	1338,97
	3x120+50	4,264	40,0	1256,00
	3x120+70	4,427	43,0	1451,47
	4x120	5,243	43,0	1451,47
	3x150+70	5,347	46,8	1719,34
	4x150	6,611	46,8	1719,34
	3x185+95	6,771	49,8	1946,83
	4x185	8,021	49,8	1946,83
	3x240+120	8,563	56,4	2497,05
	4x240	9,685	56,4	2497,05
AYKY cables (aluminium core)	4x10	0,375	17,4	237,67
	5x10	0,433	18,8	277,45
	4x16	0,580	19,7	304,65
	5x16	0,600	21,3	356,15
	4x25	0,750	22,4	393,88
	5x25	0,880	24,4	467,36
	3x35+25	0,909	24,7	478,92
	4x35	0,939	24,7	478,92
	5x35	1,108	27,1	576,51
	3x50+35	1,219	28,9	655,64
	4x50	1,275	28,9	655,64
	3x70+50	1,559	32,2	813,92
	4x70	1,814	35,4	983,73
	3x95+70	1,743	39,3	1212,42
	4x95	1,836	39,3	1212,42
	3x120+70	2,000	40,6	1293,96
	4x120	2,225	43,0	1451,47
	3x150+70	2,415	45,6	1632,30
	4x150	2,734	46,8	1719,34
	3x185+95	2,950	48,4	1838,91
	4x185	3,364	49,8	1946,83
	3x240+120	3,728	54,8	2357,39
	4x240	4,217	56,4	2497,05
SYKFY cables (telecommunications)	2x2x0,5	0,027	5,0	19,63
	3x2x0,5	0,033	5,5	23,75
	4x2x0,5	0,040	6,0	28,26
	5x2x0,5	0,052	7,0	38,47
	10x2x0,5	0,091	9,0	63,59
	15x2x0,5	0,110	10,5	86,55
	20x2x0,5	0,138	12,0	113,04
	25x2x0,5	0,174	13,0	132,67
	30x2x0,5	0,201	14,0	153,86
	50x2x0,5	0,306	17,0	226,87
	100x2x0,5	0,583	23,0	415,27

Table in .xls format can be downloaded at www.arkys.cz. Information source: PRAKAB

Impact of joint location upon the loading capacity and stiffness of the cable route

In terms of functionality and rigidity of a cable route, the ideal connecting point of particular mesh trays ought to be located at 1/5 of the support points span. In such case the loading capacity and the rigidity of the cable route achieve the best values.
On the contrary, locating the connecting point directly above the support point severely decreases the mesh tray loading capacity. Consequently, the mesh tray joints must not be placed directly above the mesh tray support point in any type of installation.

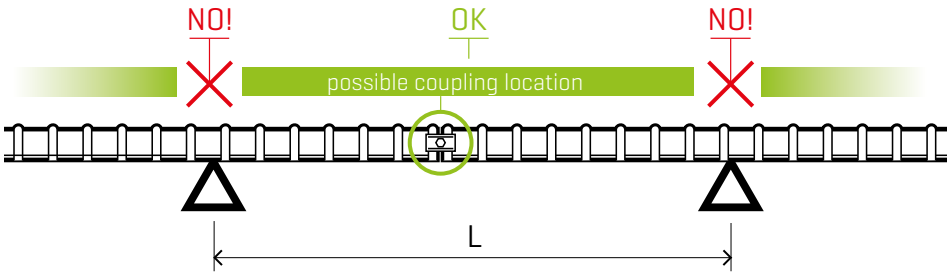
In the light of field experience in assembling cable routes it is obvious that it is not always possible to achieve the ideal position of the joints. Hence we test our cable routes for installations with arbitrary location of the joint and proven load parameters of a cable route installed in such way (meaning when SZM 1 connectors are placed anywhere else except for directly above the support points of the route) are available. In order to set the maximum load capacity of a cable route, there are two types of installation - see the following schemes.

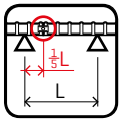
Standard assembly

(connection anywhere except for the support points)

This type of installation is considered to be standard as almost no requirements on joint location arise except for being placed directly above the support point. Hence there is no need to shorten the mesh trays and the installation waste is minimized.

This type of installation is suitable for standard cable routes. With usual span of support points, it provides higher maximum loading capacities than the utilizable loading capacity - see the following chapters and loading capacity charts below.

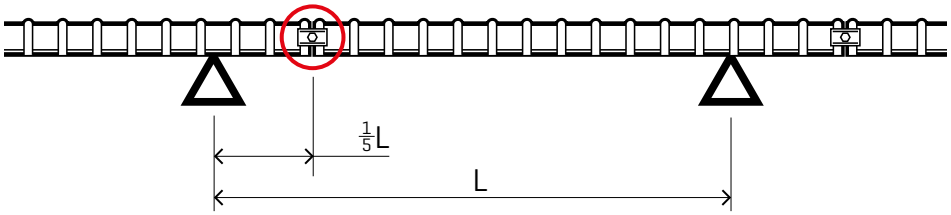




Higher load capacity assembly

(connection located at 1/5 of the support points span)

This type of installation is rather demanding, as the condition of placing the joints precisely leads to shortening of each mesh tray, thus to larger waste quantity and to lower economical effectivity. Consequently, this type of installation is suitable especially for very loaded cable routes or for technically challenging sections where a larger span of supports is needed. However, **it provides considerably higher loading capacity, up to twice the value of the standard installation.**



Mesh tray load control

The overall load of the route is the sum of the mass of all cables carried by the route, including all accessories suspended on the cable mesh trays. In other words, dividers and covers of cable routes, junction boxes, suspended lamps etc. should be comprised in this total. However, the cabling usually prevails.
To calculate the load with cables, the indicative weight of individual cable types and sizes can be used, as stated in the table of characteristics of common cables (p. 8). The calculated load capacity of a mesh tray must be compared to the maximum admissible figures according to the certificate valid for particular mesh tray dimension. When examining the load capacity of the cable route, it is also necessary to consider the type of installation, especially the position of connecting points.
If the DZM 3/100, DZM 3/150, DZM 4 and DZM 6 holders are used to carry the mesh tray, it should be considered that the assembly provides no supports from the bottom, but the suspension of the mesh tray using the upper edge wire. In such case the safety coefficient of 0.7 should be used for all values indicated in the tables and graphics on p. 11.

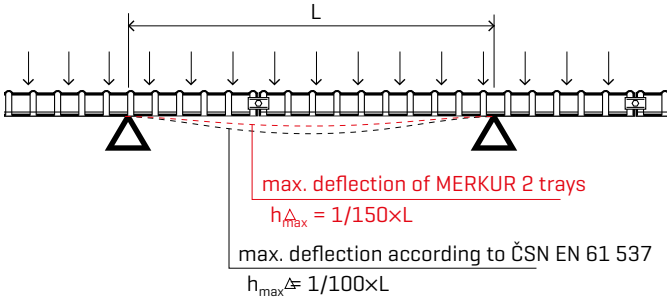
Criteria for determining the cable route loading capacity

In addition to the load capacity also the rigidity of the cable route is decisive for its design. It is assessed according to the maximum deflection of a loaded route.

The MERKUR 2 mesh trays have been tested for compliance with the ČSN EN 61 537 ed. 2 standard. Samples of mesh tray routes were loaded gradually (in steps) up to the SWL load, which is the maximum load value for which the mesh tray deflection measured at the middle between the support points does not exceed 1/100 of the span. At the same time, the transverse deflection at each span must not exceed 1/20 of the sample width. The tested mesh tray samples were further loaded gradually to 1.7 times the SWL load whilst, according to the standard, the mesh tray construction shall not get distorted. If both these conditions are met, the tested cable mesh tray will be issued the certificate.

The MERKUR 2 cable trays are designed with higher reserve and even under the maximum allowed load (see tables of recommended and maximum admissible loading capacity on following pages) their deflection does not exceed the value of 1/150 of the span between the support points. This means that, for example, if the span is 2,000 mm, the absolute deflection value does not exceed 13 mm (whilst, according to the standard requirements, the allowed deflection is permitted to reach 20 mm!).

Stiff mesh trays offer, among others, better conditions for the cabling function, namely under extreme conditions. This became evident e.g. during the fire resistance testing where M2 trays achieved excellent resistance values (see more on this topic in chapter Routes installation requiring functional integrity in fire on pages 56-78).



Considering the situation on the market, where the loading capacity figures presented by the majority of manufacturers and distributors are in reality the limit values of their mesh trays loading capacity, we present our standard recommended loading capacity with higher safety margin together with maximum admissible loading capacity of M2 mesh trays to allow comparison of both values. See more details in tables on following pages of this catalogue.

Real loading capacity of mesh trays

The previous paragraphs were dealing with weight and loading capacity of cable constructions in general, with regard to general load of the cable route with continuous weight distribution. However, the installed cabling situation is specific - the electric cables are practically the only effective load of the cable route. The exception is represented only by special types of installation like self-supporting cable routes with directly installed lighting elements etc.

Usually almost 100% of the mesh trays load consists solely of the installed cabling. If we take into consideration the available cross-section of the mesh trays and the usual specific weight, we obtain the following results:

Table of specific weight for selected cables

Cable type		Weight [kg/m]	Diameter [mm]	Cross-section [mm²]	Specific weight [kg/m/mm²]
CYKY	3x1,5	0,119	8,6	58,06	0,00205
	5x1,5	0,173	10,1	80,08	0,00216
	3x2,5	0,167	9,5	70,85	0,00236
	5x2,5	0,257	11,2	98,47	0,00261
	5x4	0,376	13,8	149,5	0,00252
	5x6	0,5	15,1	178,99	0,00279
	5x16	1,138	20,4	326,69	0,00348
	3x35+25	1,646	22,4	393,88	0,00418
AYKY	5x16	0,6	21,3	356,15	0,00168
	3x35+25	0,909	24,7	478,92	0,00190
	3x95+70	1,743	39,3	1212,42	0,00144
	3x240+120	3,728	54,8	2357,39	0,00158

The previous table shows that the specific weight of cables does not exceed the value of 0,0028 kg/m/mm². Only cables of large diameter and of low flexibility (hence of higher degree of self-support) reach higher values of specific weight. This is also reached by larger diamener with lower coefficient of filling the available cross-section of the mesh tray. This information has actual influence on construction load, as the previous chapters tell us that we only can place an appropriate number of cables into a particular rated mesh tray cross-section, the weight of cables will then load down the cable route.

When we apply this knowledge on effective mesh tray cross-section, we obtain the following table showing the maximum possible load of a mesh tray, loaded with cabling.

Cabling load with specific weight **0,0028 kg/m/mm²**

Tray size	Effective cross-section [mm²]	Possible/ Practical cabling load [kg/m]
M2 50/50	1 320	3,7
M2 100/50	2 900	8,1
M2 150/50	4 470	12,5
M2 200/50	6 050	16,9
M2 250/50	7 620	21,3
M2 300/50	9 200	25,8
M2 400/50	12 350	34,6
M2 500/50	15 500	43,4
M2 100/100	61 20	17,1
M2 150/100	9 440	26,4
M2 200/100	12 770	35,8
M2 250/100	16 090	45,1
M2 300/100	19 420	54,4
M2 400/100	26 070	73,0
M2 500/100	32 740	91,7
M2-R 300/50	9 200	25,8
M2-R 400/50	12 350	34,6
M2-R 500/50	15 500	43,4
M2-R 300/100	19 420	54,4
M2-R 400/100	26 070	73,0
M2-R 500/100	32 740	91,7
M2-G 50/100	1 320	3,7
M2-G 100/100	6 120	17,1

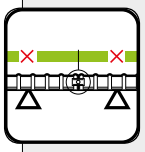
The previous table proves that the real values of mesh tray load with cables are relatively low and that high values are reached only with the largest mesh trays dimensions. Typical dimensions of mesh trays up to 300mm wide reach the load values of max. 25 kg/m (with the 50 mm side wall), or 55 kg/m (with the 100 mm side wall). The only exception is represented by the largest mesh tray dimensions, where it is more convenient to use the reinforced M2-R mesh trays, which permits to keep larger span between the anchorage points on the route, despite high specific load of the route.

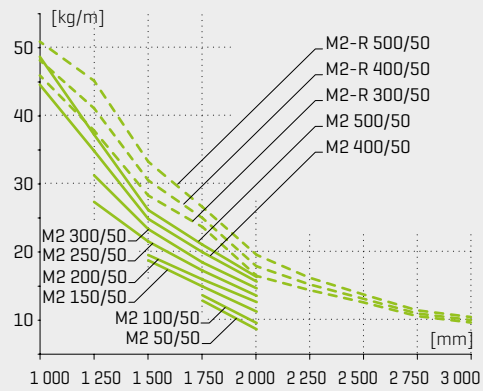
All this information brings us to conclustion that in standard realizations of cable routes it is not possible to load the mesh trays by the cabling in such way to achieve the limit values of their load capacity.

Recommended load values | *values according to standard methodology of M2 mesh trays tests*

mesh trays with 50 mm side wall

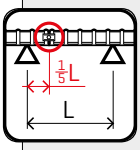
Standard assembly [connections anywhere except for the support points]

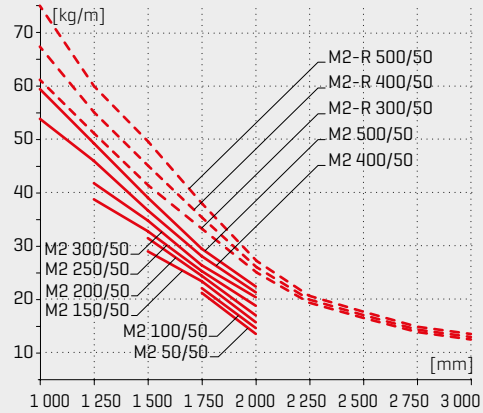




	recommended load values [kg/m]								
span [mm]	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 50/50	-	-	-	12,8	8,6	-	-	-	-
M2 100/50	-	-	-	13,6	9,5	-	-	-	-
M2 150/50	-	-	18,7	14,9	11,2	-	-	-	-
M2 200/50	-	-	19,5	15,9	12,6	-	-	-	-
M2 250/50	-	27,3	21,5	17,2	13,5	-	-	-	-
M2 300/50	-	31,2	23,3	18,4	14,6	-	-	-	-
M2 400/50	44,5	34,8	24,8	19,9	15,6	-	-	-	-
M2 500/50	48,6	37,2	26,1	21,0	16,3	-	-	-	-
M2-R 300/50	45,9	38,2	28,3	24,4	18,9	14,9	12,4	10,9	9,4
M2-R 400/50	48,0	41,9	30,8	25,6	19,2	15,1	13,0	11,3	9,7
M2-R 500/50	51,4	45,7	33,0	26,2	19,5	15,7	13,2	11,6	10,3

Assembly with higher load limit [connection in 1/5 of the span]

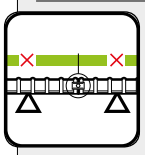


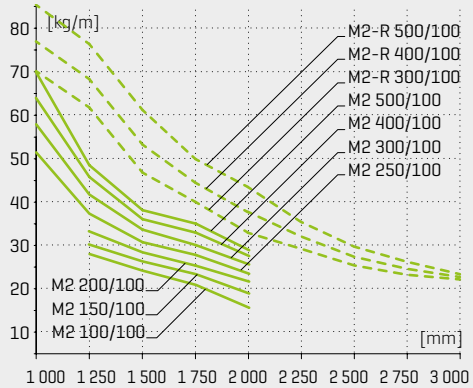


	recommended load values [kg/m]								
span [mm]	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 50/50	-	-	-	21,3	13,6	-	-	-	-
M2 100/50	-	-	-	22,2	14,7	-	-	-	-
M2 150/50	-	-	29,1	23,5	15,8	-	-	-	-
M2 200/50	-	-	31,6	24,5	17,1	-	-	-	-
M2 250/50	-	38,9	32,9	25,4	18,9	-	-	-	-
M2 300/50	-	41,9	34,9	26,5	20,5	-	-	-	-
M2 400/50	54,0	46,1	36,8	28,2	21,4	-	-	-	-
M2 500/50	59,6	49,4	39,2	29,6	22,5	-	-	-	-
M2-R 300/50	61,3	51,3	42,3	34,3	25,6	19,3	16,2	14,3	12,2
M2-R 400/50	69,3	55,7	45,9	36,5	26,5	19,7	16,8	14,7	12,6
M2-R 500/50	75,3	60,7	49,4	37,1	26,8	20,4	17,2	15,0	13,4

mesh trays with 100 mm side wall

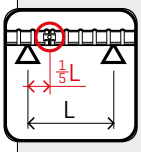
Standard assembly [connections anywhere except for the support points]

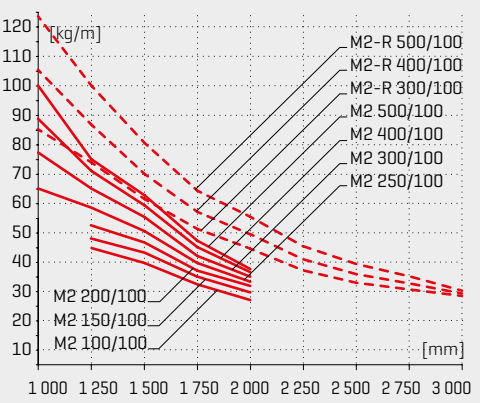




	recommended load values [kg/m]								
span [mm]	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 100/100	-	27,3	23,6	20,2	16,6	-	-	-	-
M2 150/100	-	39,2	30,9	24,8	20,5	-	-	-	-
M2 200/100	-	41,9	33,2	27,0	21,9	-	-	-	-
M2 250/100	52,6	44,1	35,5	28,9	23,2	-	-	-	-
M2 300/100	58,8	46,6	37,2	31,1	24,8	-	-	-	-
M2 400/100	63,5	51,8	42,6	33,5	26,7	-	-	-	-
M2 500/100	70,5	58,4	48,8	36,7	29,8	-	-	-	-
M2-R 300/100	70,2	61,6	47,5	40,6	34,4	28,9	25,6	23,5	21,8
M2-R 400/100	78,2	69,5	54,2	46,8	38,0	32,2	28,6	25,3	22,6
M2-R 500/100	86,1	77,4	62,1	50,2	42,7	35,0	30,6	26,8	22,8

Assembly with higher load limit [connection in 1/5 of the span]



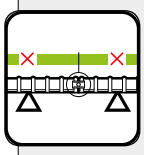


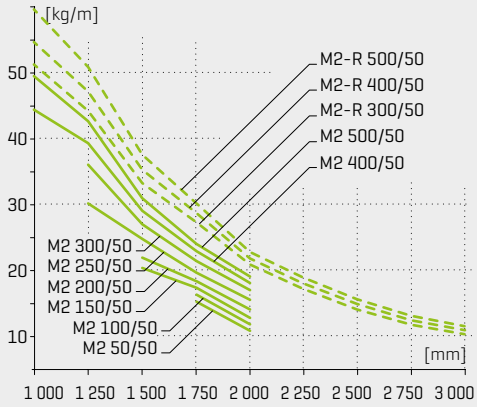
	recommended load values [kg/m]								
span [mm]	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 100/100	-	45,2	39,2	33,2	27,5	-	-	-	-
M2 150/100	-	50,8	42,7	34,4	29,1	-	-	-	-
M2 200/100	-	53,8	45,5	35,7	30,4	-	-	-	-
M2 250/100	64,4	55,0	47,1	37,4	31,5	-	-	-	-
M2 300/100	71,3	56,8	48,2	39,8	32,6	-	-	-	-
M2 400/100	86,6	65,4	55,9	43,6	35,2	-	-	-	-
M2 500/100	101,2	75,5	63,1	47,1	38,5	-	-	-	-
M2-R 300/100	85,2	75,0	61,6	51,9	45,2	37,5	33,3	30,5	28,4
M2-R 400/100	106,7	87,8	71,1	60,9	50,0	41,8	37,2	32,9	29,3
M2-R 500/100	123,6	100,1	80,3	64,5	55,1	45,5	39,8	34,8	29,7

Maximum allowed load values | *values according to methodology of ČSN EN 61 537 norm*

mesh trays with 50 mm side wall

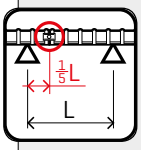
Standard assembly (connections anywhere except for the support points)

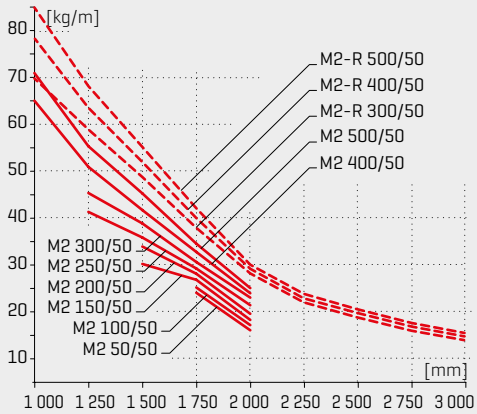




span [mm]	recommended load values [kg/m]								
	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 50/50	-	-	-	14,8	10,6	-	-	-	-
M2 100/50	-	-	-	15,9	11,5	-	-	-	-
M2 150/50	-	-	19,7	16,3	12,1	-	-	-	-
M2 200/50	-	-	21,4	17,6	13,6	-	-	-	-
M2 250/50	-	29,5	23,8	19,1	16,0	-	-	-	-
M2 300/50	-	36,1	26,7	23,1	17,9	-	-	-	-
M2 400/50	52,5	39,6	29,1	24,2	18,1	-	-	-	-
M2 500/50	57,4	43,2	31,2	24,8	18,3	-	-	-	-
M2-R 300/50	51,6	41,8	31,8	26,8	21,2	17,0	14,2	12,5	10,7
M2-R 400/50	54,0	45,5	34,6	28,1	21,6	17,3	14,8	12,9	11,1
M2-R 500/50	57,8	49,0	37,1	28,8	21,9	17,9	15,1	13,2	11,8

Assembly with higher load limit (connection in 1/5 of the span)

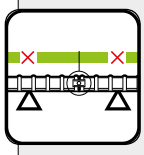


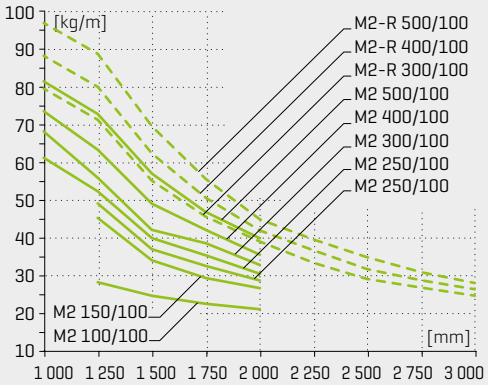


span [mm]	recommended load values [kg/m]								
	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 50/50	-	-	-	24,6	16,8	-	-	-	-
M2 100/50	-	-	-	25,9	17,4	-	-	-	-
M2 150/50	-	-	30,7	25,8	17,9	-	-	-	-
M2 200/50	-	-	34,7	26,8	18,5	-	-	-	-
M2 250/50	-	42,0	36,4	28,3	22,4	-	-	-	-
M2 300/50	-	48,5	40,0	32,4	24,2	-	-	-	-
M2 400/50	65,3	52,5	43,2	34,4	24,9	-	-	-	-
M2 500/50	71,2	57,4	46,7	35,0	25,3	-	-	-	-
M2-R 300/50	69,0	57,7	47,6	38,6	28,8	22,1	18,5	16,3	13,9
M2-R 400/50	78,0	62,7	51,6	41,1	29,8	22,5	19,2	16,8	14,4
M2-R 500/50	84,7	68,3	55,6	41,7	30,1	23,3	19,6	17,2	15,3

mesh trays with 100 mm side wall

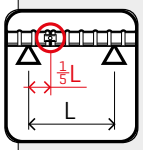
Standard assembly (connections anywhere except for the support points)

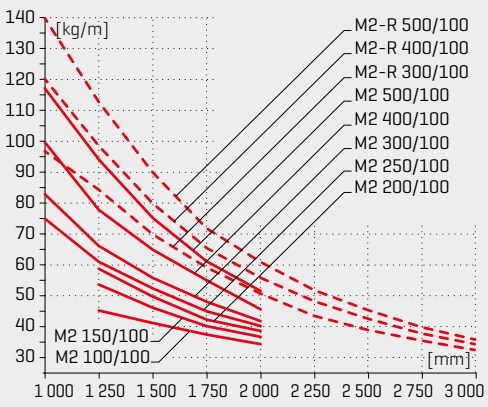




span [mm]	recommended load values [kg/m]								
	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 100/100	-	32,2	27,3	23,4	19,3	-	-	-	-
M2 150/100	-	43,1	35,8	27,8	23,8	-	-	-	-
M2 200/100	-	46,3	38,5	30,6	25,4	-	-	-	-
M2 250/100	61,0	50,5	41,2	33,5	26,9	-	-	-	-
M2 300/100	66,4	58,2	44,9	38,4	30,8	-	-	-	-
M2 400/100	74,0	65,7	51,3	42,6	34,9	-	-	-	-
M2 500/100	81,4	73,2	56,6	47,5	39,3	-	-	-	-
M2-R 300/100	79,0	69,3	53,4	45,7	38,7	33,0	29,3	26,8	24,9
M2-R 400/100	88,0	78,2	61,0	52,6	42,7	36,8	32,7	28,9	25,8
M2-R 500/100	96,9	87,1	69,9	56,5	48,0	40,0	35,0	30,6	26,1

Assembly with higher load limit (connection in 1/5 of the span)





span [mm]	recommended load values [kg/m]								
	1 000	1 250	1 500	1 750	2 000	2 250	2 500	2 750	3 000
M2 100/100	-	52,4	45,5	38,5	31,9	-	-	-	-
M2 150/100	-	58,9	49,5	39,9	33,8	-	-	-	-
M2 200/100	-	62,4	52,8	41,4	35,3	-	-	-	-
M2 250/100	74,7	63,8	54,6	43,4	36,5	-	-	-	-
M2 300/100	82,7	65,9	55,9	46,2	37,8	-	-	-	-
M2 400/100	100,9	76,9	64,8	50,6	40,8	-	-	-	-
M2 500/100	116,8	88,6	73,2	54,6	44,7	-	-	-	-
M2-R 300/100	95,8	84,4	69,3	58,4	50,8	42,9	38,1	34,8	32,4
M2-R 400/100	120,0	98,8	80,0	68,5	56,3	47,8	42,5	37,6	33,5
M2-R 500/100	139,0	112,6	90,3	72,60	62,0	52,0	45,5	39,8	33,9

The long life functioning of installed cable routes is substantially affected by the surface finish of all its parts. The MERKUR 2 cable mesh tray system can be delivered with the following alternatives:

Cold galvanizing *(electroplating)* CG

This zinc plating technology forms coats of zinc deposited by electrolytic process of 12 – 15 micron thickness. The coatings deposited by this technology are glossy and resemble chromium plating. To enhance the corrosion resistance of zinc a chromium agent in blue shade is used. However, neither colour nor gloss can affect the quality of the zinc layer. Upon order the parts can be provided with Aquares sealing varnish improving the resistance to corrosion and wear.

Sendzimir zinc plating SZ

This method is a surface treatment of cold-rolled steel sheets passing through a zinc dipping bath. This technology forms a continuous zinc layer on the steel plate by aplying 235 – 275 g/m^2, which means 17 – 23 micron of zinc layer.

Hot-zinc-dipping ZD

This special technology provides zinc coating by immersion. Zinc creates a solid and impermeable coat with long service life, ensuring also electrochemical protection of steel. Unlike other surface treatments, it not only covers steel with a zinc coat, but it also forms an inter-metallic phase of iron and zinc with high hardness and wear resistance. The thickness of the zinc layer may be increased to 80 microns on request.

The trays treated with hot-zinc-dipping will progressively display a natural oxidation process, the surface will become matt. This effect does not represent any surface defect nor any reason for warranty claim.

Despite significant durability and resitance of the surface finish protected by hot-zinc-dipping, a natural decrease of the zinc occurs, depending on the environment influence. Therefore it is necessary to consider the envorinment and the expected durability of the cable route when choosing the surface treatment.

Natural zinc losses due to environmental impact

Outdoor environment	0.8 - 1.0 µm/year
Industrial environment	1.5 - 3.5 µm/year
Medium corrosive and aggressive environment	2.0 - 5.0 µm/year
Extreme corrosive and aggressive environment	5.0 - 10.0 µm/year

Geomet 500 G5

This finish is characterised with its silvery grey surface. It has been developed for anticorrosion protection of connecting accessories. Even a very thin layer (5 – 7 micron) has a very high resistance to corrosion. The surfaces treated in this way withstand more than 600 hours in a salt chamber, which is 3 times better than the result of galvanic zinc plating. Geomet has broad applications, e.g. in the automotive industries, where it complies with their demanding technical requirements.

Stainless A2 A2

Austenitic chromium-nickel stainless steel with low carbon content according to AISI 304L (ČSN 17 249, DIN 1.4306) is of higher corrosion-resistance. It can be exposed to temperatures up to 350 °C. Standard delivery is without passivation or other surface finishings. An increased passivization protection is available upon request.

Stainless A4 A4

Austenitic chromium-nickel-molybdenum stainless steel according to AISI 316L (ČSN 17 349, DIN 1.4404) is of higher corrosion-resistance in chemical aggressive environment. It is also resistant to intercrystalline corrosion, even when exposed to temperatures up to 350 °C over a long period. This option is available only upon request and only with passivation.

Staining and passivation

Staining and the subsequent passivation increase the anticorrosive resitance of austenitic steel up to 4 times. At first, the chemical staining will remove the grease and mechanical impurities from the surface, whilst the surface is becoming matt and unified. The subsequent passivation, executed chemically in oxidation acid and followed by a drying process, increases the resistance of stainless steel components.

Surface finish guarantee

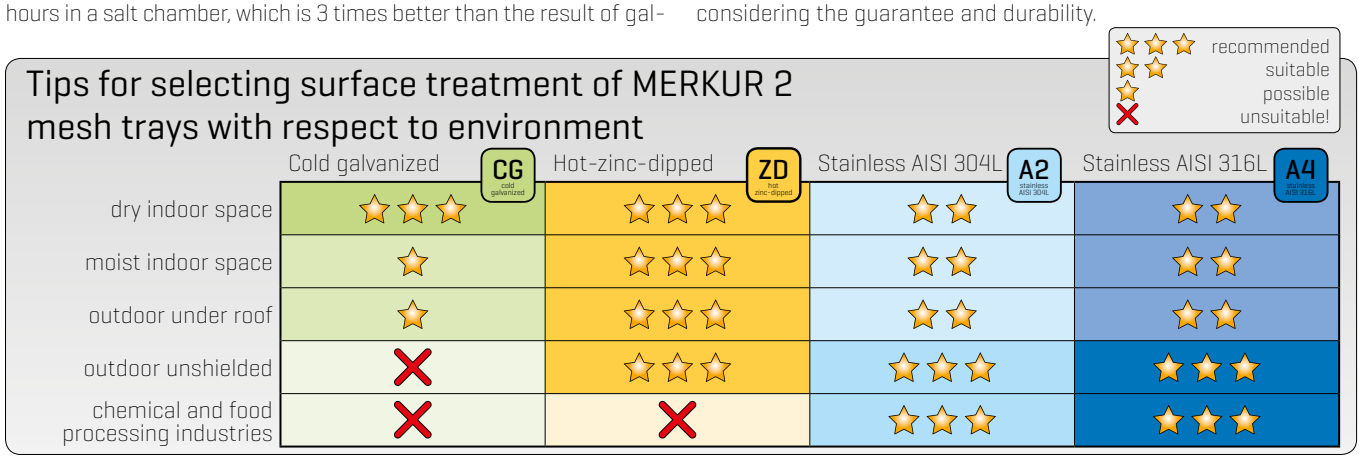
The 2-year guarantee for M2 trays relates to anticorrosive surface, weld joints and material. The warranty applies exclusively to installations of the MERKUR 2 mesh trays in appropriate environment.

Cold galvanized CG	5 years
Sendzimir zinc plated SZ	8 years
Geomet 500 G5	10 years
Hot-zinc-dipped ZD	10 years
AISI 304L stainess steel A2	15 years
AISI 316L stainless steel + passivation A4	15 years

Storage conditions

M2 cable mesh trays and their accessories must be stored in dry, non-aggressive environment and protected against mechanical damage. The maximum stocking height of M2 mesh trays of the same dimension can be 2.5 meters, provided the crossing of the layers is maintained. When taking the components out of stock, the ones that are stored for the longest time should be taken out first, considering the guarantee and durability.

Tips for selecting surface treatment of MERKUR 2 mesh trays with respect to environment



The table is intended for informative purposes only. When choosing a suitable surface treatment of MERKUR 2 cable mesh trays, the respective report on environmental effects should be considered. Such report forms an integral part of the project documentation for particular implementation.

MERKUR 2 - design with functionality

In 2006, after almost 10 years of successful marketing of the MERKUR system, the first idea of developing a brand new type of wire mesh tray was born, namely a system complying with modern trends, in particular strength, safety, as well as aesthetics.

Soon our development department commenced extensive work upon that task. At the beginning it was not easy to develop a mesh tray design integrating the attributes of high rigidity and strength, while still remaining the type of product meeting the basic favourable features of this bearing structure system – namely the very fast and easy assembly thanks to the low weight of single components. In the course of time this problem was overcome, especially by using a new technical solution, the so-called „double cross beam". As shown by corporate tests and later also during the official testing of the strength characteristics by the TZUS Brno testing institute, the new M2 mesh trays achieved load capacity values up to 40% higher, as compared with the older type.

MERKUR 2 trays passed another test with unexpectedly good result during testing of resistance in fire. Thanks to very effective construction of the trays in combination with cabling from the company Prakab, NKT and ELKOND (SK), high values of tested parameters were achieved. During the test exposure to conditions of a simulated fire, the functionality of the entire system was preserved up to 171 minutes at 1006 °C maximum temperature (see p. 47 – 56 of this catalogue for more details concerning the test and fire resistant assembly).

The test provided us with the final assurance that the direction we had chosen to follow was the right one, and that the new M2 mesh trays would bring high utility value, conforming to our primary and most important objective from the very first moment.

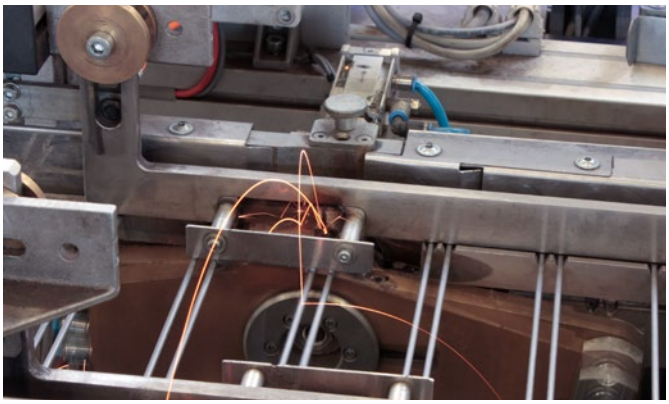
New design requires new technologies

In early 2008 the construction of the new LKZ 750 assembly line was launched. It integrated, among others, the very sophisticated technology of medium-frequency welding, used largely by automotive industries. In order to meet the spatial demands of the new assembly line, a new manufacturing hall was erected. Maximum handing over and transfer efficiency during the manufacturing process was achieved by placing the new hall site in the proximity of the renovated zinc plating shop. This helped to boost the efficiency of transfer and material transport.

The technology of manufacturing M2 by using medium-frequency resistance welding

Medium-frequency resistance welding is used at all stages of the manufacturing process of the MERKUR 2 mesh trays. Recently it has become a standard requirement, especially in automotive industries. This modern and sophisticated welding method needs no added material, unlike the "classic" low-frequency welding. Also another features make this method superior to the classic one.

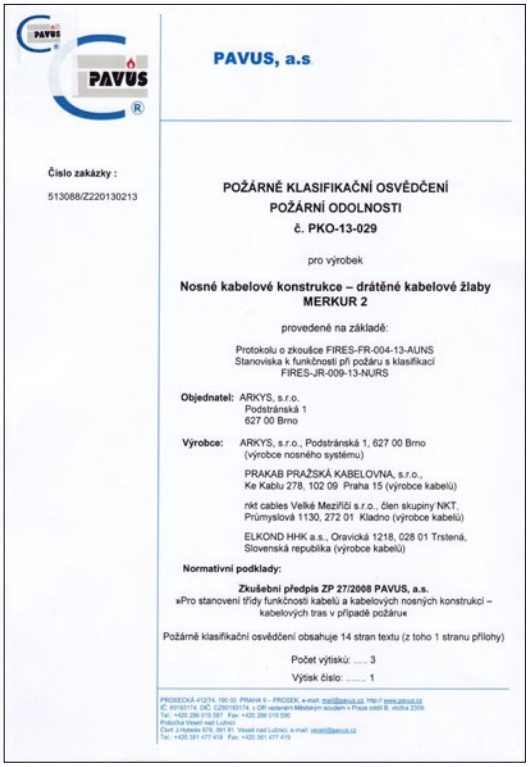
The welding transformer supplied over a medium-frequency converter provides direct current without any induction losses, thus delivering fast and precisely defined amounts of energy to the point of the weld joint. Enabling a very dynamic regulation of the welding process, it also affects the final quality of the weld joint. This is a very fast method (the duration of the welding cycle is in order of milliseconds). Thus the surrounding material does not warm up, which significantly reduces the losses, additional tensions and material distortion during the cooling period.



The production of MERKUR 2 cable mesh trays is fully implemented by means of instrumentation and control software by Bosch Rexroth Electric Drives and Controls GmbH.

CERTIFICATION
GUARANTEE OF QUALITY OF THE FUNCTIONAL AND TECHNICAL PARAMETERS OF THE SYSTEM

Fire classification certificates of the MERKUR 2 system.



PAVUS, a.s

Číslo zakázky :
513088/Z220130213

POŽÁRNĚ KLASIFIKAČNÍ OSVĚDČENÍ
POŽÁRNÍ ODOLNOSTI
č. PKO-13-029

pro výrobek

Nosné kabelové konstrukce – drátěné kabelové žlaby MERKUR 2

provedené na základě:

Protokolu o zkoušce FIRES-FR-004-13-AUNS
Stanoviska k funkčnosti při požáru s klasifikací FIRES-JR-009-13-NURS

Objednatel: ARKYS, s.r.o.
Podstránská 1
627 00 Brno

Výrobce: ARKYS, s.r.o., Podstránská 1, 627 00 Brno
(výrobce nosného systému)

PRAKAB PRAŽSKÁ KABELOVNA, s.r.o.,
Ke Kablu 278, 102 09 Praha 15 (výrobce kabelů)

nkt cables Velké Meziříčí s.r.o., člen skupiny NKT,
Průmyslová 1130, 272 01 Kladno (výrobce kabelů)

ELKOND HHK a.s., Oravická 1218, 028 01 Trstená,
Slovenská republika (výrobce kabelů)

Normativní podklady:

Zkušební předpis ZP 27/2008 PAVUS, a.s.
»Pro stanovení třídy funkčnosti kabelu a kabelových nosných konstrukcí – kabelových tras v případě požáru«

Požárně klasifikační osvědčení obsahuje 14 stran textu (z toho 1 stranu přílohy)

Počet výtisků: 3
Výtisk číslo: 1

FIRES
The Experts on Fire Safety

STANOVISKO K FUNKČNOSTI PRI POŽIARI S KLASIFIKÁCIOU

FIRES-JR-076-09-NURS

Názov výrobku: Drôtené káblové žľaby MERKUR 2

Objednávateľ: K.B.K., fire, s.r.o.
Rudná 1117/30a
703 00 Ostrava - Vítkovice
Česká republika

Výrobca: ARKYS, s.r.o.
Podstránská 1
627 00 Brno
Česká republika

Vypracoval: FIRES, s.r.o.
Autorizovaná osoba MVRR SR SK01
Osloboditeľov 282
059 35 Batizovce
Slovenská republika

Číslo projektu: PR-09-0446
Dátum vydania: 02. 02. 2010

Počet výtlačkov: 3
Výtlačok číslo: 3

Rozdeľovník výtlačkov:
Výtlačok číslo 1 FIRES, s. r. o., Osloboditeľov 282, 059 35 Batizovce, Slovenská republika (elektronická verzia)
Výtlačok číslo 2 K.B.K., fire, s.r.o., Rudná 1117/30a, 703 00 Ostrava - Vítkovice, Česká republika (elektronická verzia)
Výtlačok číslo 3 K.B.K., fire, s.r.o., Rudná 1117/30a, 703 00 Ostrava - Vítkovice, Česká republika

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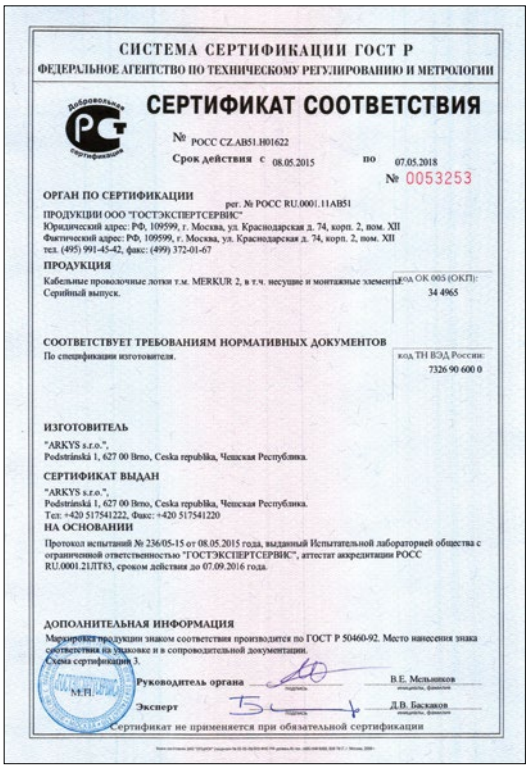
FIRES 149/S-27/10/2009-S

FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovenská republika
tel. 00421 52 775 22 98, fax. 00421 52 788 14 12, www.fires.sk
Notifikovaná osoba č. 1396. Autorizovaná osoba reg. č. SK01, Člen EGOLF

Compliance certificate GOST R authorizing imports and installations of the M2 system on the territory of the Russian Federation.



СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ РОСС CZ.AB51.H01622
Срок действия с 08.05.2015 по 07.05.2018
№ 0053253

ОРГАН ПО СЕРТИФИКАЦИИ
рег. № РОСС RU.0001.11AB51
ПРОДУКЦИЯ ООО "ГОСТЭКСПЕРТСЕРВИС"
Юридический адрес: РФ, 109599, г. Москва, ул. Краснодарская д. 74, корп. 2, пом. XII
Фактический адрес: РФ, 109599, г. Москва, ул. Краснодарская д. 74, корп. 2, пом. XII
тел. (495) 991-45-42, факс: (499) 372-01-67

ПРОДУКЦИЯ
Кабельные проволочные лотки т.м. MERKUR 2, в т.ч. несущие и монтажные элементы
Серийный выпуск.
код ОК 005 (ОКП): 34 4965

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ
По спецификации изготовителя.
код ТН ВЭД России: 7326 90 600 0

ИЗГОТОВИТЕЛЬ
"ARKYS s.r.o.",
Podstránská 1, 627 00 Brno, Ceska republika, Чешская Республика.

СЕРТИФИКАТ ВЫДАН
"ARKYS s.r.o.",
Podstránská 1, 627 00 Brno, Ceska republika, Чешская Республика.
Тел: +420 517541222, Факс: +420 517541220
НА ОСНОВАНИИ
Протокол испытаний № 236/05-15 от 08.05.2015 года, выданный Испытательной лабораторией общества с ограниченной ответственностью "ГОСТЭКСПЕРТСЕРВИС", аттестат аккредитации РОСС RU.0001.21ЛТ83, сроком действия до 07.09.2016 года.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ
Маркировка продукции знаком соответствия производится по ГОСТ Р 50460-92. Место нанесения знака соответствия на упаковке и в сопроводительной документации.
Схема сертификации 3.

М.П. Руководитель органа В.Е. Мельников
Эксперт Д.В. Баскаков
Сертификат не применяется при обязательной сертификации

Load test protocol of MERKUR 2 system.

Technický a zkušební ústav stavební Praha, s.p.
Technical and Test Institute for Construction Prague

Pobočka: Brno

Výtisk číslo: 1

Protokol o zkoušce

Protokol číslo: 060-031848 ze dne: 23.3.2010
Zakázka číslo: Z 060100041 ze dne: 26.2.2010

Výrobek: Kabelové žlaby
Typ/varianta: MERKUR 2

Žadatel / zákazník: ARKYS s.r.o.
Adresa: Podstránská 1, 627 00 Brno, Česká Republika

Evidenční číslo vzorku: 100/10/1-33

Osoba odpovědná za obsah tohoto protokolu –vedoucí zkušební laboratoře:

Ing. Jarmila Maliková

Tento protokol byl vyhotoven ve dvou výtiscích. První originál náleží zákazníkovi, druhý je archivován spolu s další dokumentací v TZÚS.
Tento protokol může být reprodukován jedině celý, jinak s písemným souhlasem vedoucí zkušební laboratoře.
Výsledky zkoušek a měření uvedená v tomto protokolu se týkají jen zkoušených předmětů

1/40

VOP-026 Šternberk, s.p.
lokalita Vyškov
s certifikovaným systémem jakosti dle ČSN EN ISO 9001

Číslo úkolu/zakázky: AZ160726
Číslo protokolu: 7250-122/2011

Odbor zkoušení techniky– zkušební laboratoř č.1103 akreditovaná ČIA dle ČSN EN ISO/IEC 17025

Výtisk číslo: 1
Počet listů: 3
Počet příloh: 0

ZKUŠEBNA EB

PROTOKOL O ZKOUŠCE
ELEKTRICKÉ KONTINUITY

Jméno a adresa zadavatele (zákazníka):
Arkys, s.r.o., Podstránská 1, 627 00 Brno

Identifikace zkoušeného předmětu: Kabelové žlaby MERKUR 2, LINEÁR 1, LINEÁR 2
Výrobní číslo: -
Výrobce: Arkys, s.r.o., Podstránská 1, 627 00 Brno
Technická dokumentace: -

Datum přijetí do zkoušky: 10. 11. 2011
Metoda zkoušení: ČSN EN 61537 ed. 2: 2007

Datum a místo provedení zkoušky: 10. 11. 2011 Zkušebna elektrické bezpečnosti
Vedoucí zkoušky: Ing. František Dostál
Zkoušku provedl: Ing. František Dostál, Ing. Jiří Vlček

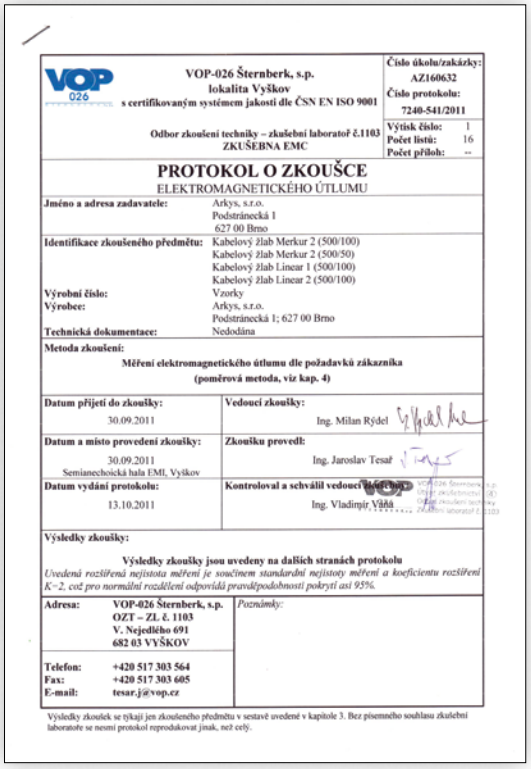
Datum vydání protokolu: 11. 11. 2011
Kontroloval a schválil vedoucí zkušebny: Ing. František Dostál

Výsledky zkoušky:
Výsledky dílčích zkoušek jsou uvedeny na dalších stranách tohoto protokolu.

ADRESA: VOP-026 Šternberk, s.p. Odbor zkoušení techniky V. Nejedlého 691 682 03 VYŠKOV
Telefon: 517 303 601
Fax: 517 303 605
E-mail: prikryl.li@vop.cz
Poznámky:

Výsledky zkoušky se týkají jen zkušebního předmětu. Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.

Electric continuity protocol
(measuring transition resistance)



VOP-026 Šternberk, s.p.
lokalita Vyškov
s certifikovaným systémem jakosti dle ČSN EN ISO 9001

Číslo úkolu/zakázky: AZ160632
Číslo protokolu: 7240-541/2011

Odbor zkoušení techniky – zkušební laboratoř č.1103
ZKUŠEBNA EMC

Výtisk číslo: 1
Počet listů: 16
Počet příloh: --

PROTOKOL O ZKOUŠCE
ELEKTROMAGNETICKÉHO ÚTLUMU

Jméno a adresa zadavatele: Arkys, s.r.o., Podstránecká 1, 627 00 Brno
Identifikace zkoušeného předmětu: Kabelový žlab Merkur 2 (500/100); Kabelový žlab Merkur 2 (500/50); Kabelový žlab Linear 1 (500/100); Kabelový žlab Linear 2 (500/100)
Výrobní číslo: Vzorky
Výrobce: Arkys, s.r.o., Podstránecká 1; 627 00 Brno
Technická dokumentace: Nedodána
Metoda zkoušení: Měření elektromagnetického útlumu dle požadavků zákazníka (poměrová metoda, viz kap. 4)

Datum přijetí do zkoušky: 30.09.2011
Vedoucí zkoušky: Ing. Milan Rýdel

Datum a místo provedení zkoušky: 30.09.2011 Semianechoická hala EMI, Vyškov
Zkoušku provedl: Ing. Jaroslav Tesař

Datum vydání protokolu: 13.10.2011
Kontroloval a schválil vedoucí zkušebny: Ing. Vladimír Váňa

Výsledky zkoušky:
Výsledky zkoušky jsou uvedeny na dalších stranách protokolu
Uvedená rozšířená nejistota měření je součinem standardní nejistoty měření a koeficientu rozšíření K=2, což pro normální rozdělení odpovídá pravděpodobnosti pokrytí asi 95%.

Adresa: VOP-026 Šternberk, s.p. OZT – ZL č. 1103 V. Nejedlého 691 682 03 VYŠKOV
Telefon: +420 517 303 564
Fax: +420 517 303 605
E-mail: tesar.j@vop.cz
Poznámky:

Výsledky zkoušek se týkají jen zkoušeného předmětu v sestavě uvedené v kapitole 3. Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.

MERKUR 2 EMC test protocol

INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a.s.
zkušební laboratoř elektrických výrobků
Sokolovská 573
686 01 Uherské Hradiště

ZKUŠEBNÍ LABORATOŘ č. 1004.3
akreditovaná Českým institutem pro akreditaci, o. p. s.

Číslo protokolu: 5145/11
Počet výtisků: 2
Číslo výtisku: 2

ZKUŠEBNÍ PROTOKOL

o zkoušce odolnosti povrchové ochrany systémů MERKUR 2, LINEAR

Měřící technik a autor protokolu: Jakub Procházka

Vedoucí zkušební laboratoře: Ing. Pavel Vávra

Datum vydání: 28. 11. 2011

Rozdělovník: Divize 4 Elektro Arkys, s.r.o.
výtisk č. 1
výtisk č. 2

Počet listů: 8
Počet příloh: 0

MERKUR 2 surface finish
resistance protocol

Vojenský technický ústav, s.p.
s certifikovaným systémem jakosti dle ČSN EN ISO 9001

Číslo úkolu/zakázky: 15-19-2-93-3201
Číslo protokolu: 194200-150/2015

Úsek zkoušení techniky– zkušební laboratoř č.1103 akreditovaná ČIA dle ČSN EN ISO/IEC 17025

Výtisk číslo: 1
Počet listů: 25
Počet příloh: -

ZKUŠEBNA SPECIÁLNÍCH MĚŘENÍ

PROTOKOL O ZKOUŠCE
SEIZMICKÉ ZPŮSOBILOSTI

Jméno a adresa zadavatele (zákazníka):
ARKYS, s.r.o., Podstránská 1, 627 00 Brno, Česká republika

Identifikace zkoušených předmětů: Kabelové nosné systémy MERKUR 2
Výrobní číslo: přesná identifikace viz 2–10. strana protokolu
Výrobce: ARKYS, s.r.o., Podstránská 1, 627 00 Brno, Česká republika
Technická dokumentace:

Datum přijetí do zkoušky: 13.04.2015 – 08.07.2015
Metoda zkoušení: ČSN IEC 980: 1993, čl. 6

Datum a místo provedení zkoušky: 16., 17., 27., 28.04.2015 8., 9. a 10.07.2015 Zkušebna speciálních měření
Vedoucí zkoušky: Ing. Jiří Lenikus
Zkoušku provedl: Ing. Jiří Lenikus

Datum vydání protokolu: 31.08.2015
Kontroloval a schválil vedoucí zkušebny: Ing. Ivan ŠTUCHAL

Výsledky zkoušky:
Zkoušený předmět byl podroben zkoušce seizmické způsobilosti.
Výsledky zkoušek jsou uvedeny v protokolu.
Uvedená rozšířená nejistota měření je součinem standardní nejistoty měření a koeficientu rozšíření K=2, což pro normální rozdělení odpovídá pravděpodobnosti pokrytí asi 95 %.

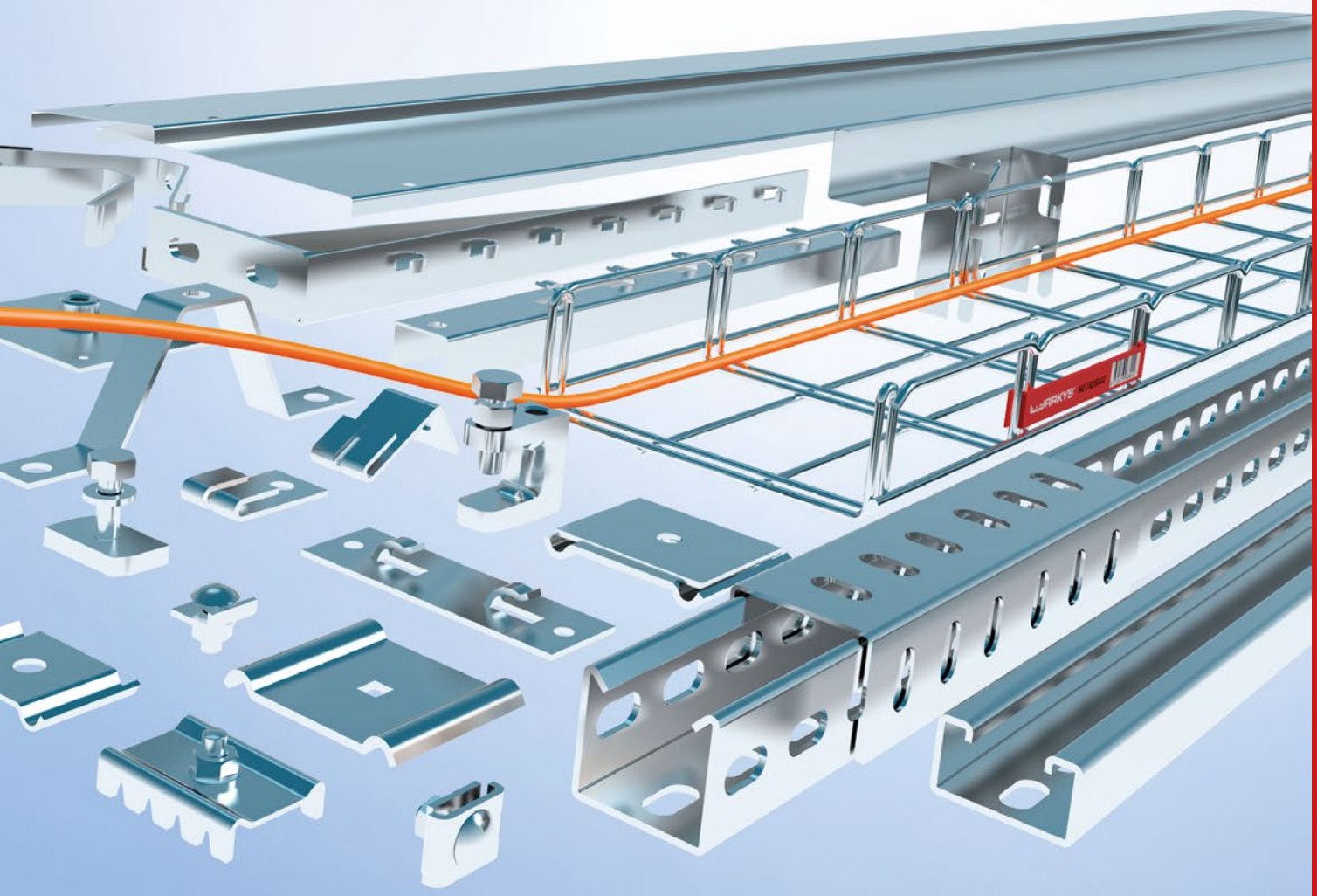
ADRESA: Vojenský technický ústav, s.p. odštěpný závod VTÚPV ÚZT – ZL č.1103 Vita Nejedlého 691 682 01 VYŠKOV
Telefon: 517 303 623
Fax: 517 303 605
E-mail: ivan.stuchal@vtusp.cz
Poznámky:

Výsledky zkoušky se týkají jen zkušebního předmětu. Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.

MERKUR 2 earthquake
resistance protocol

PARTS CATALOGUE OF THE M2 SYSTEM

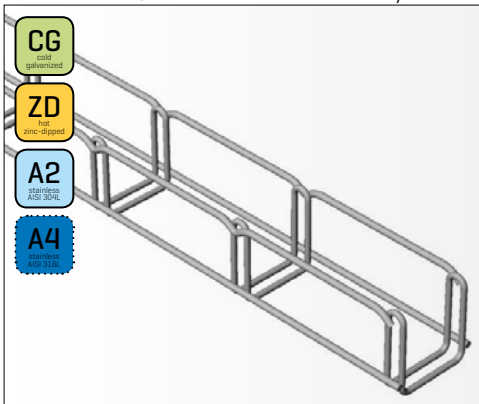
LIST OF ELEMENTS AND THEIR USE



M2 50/50 cable tray

| ↔ 50 mm | ↕ 50 mm | ⟷ 2000mm | 1,2 kg

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



S_{eff} = **1 320** mm²

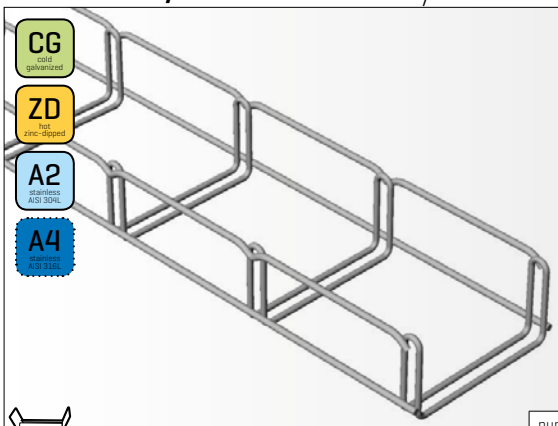
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	4 pcs	3 pcs	2 pcs	2 pcs	1 pc	1 pc	1 pc	1 pc	x	x	x	x
II	8 pcs	6 pcs	4 pcs	4 pcs	2 pcs							
III	12 pcs	9 pcs										
IV	16 pcs											

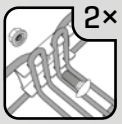
ARK - 211110 GZ
ARK - 221110 ŽZ
ARK - 231110 A2

M2 100/50 cable tray

| ↔ 100 mm | ↕ 50 mm | ⟷ 2000mm | 1,4 kg

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L





S_{eff} = **2 900** mm²

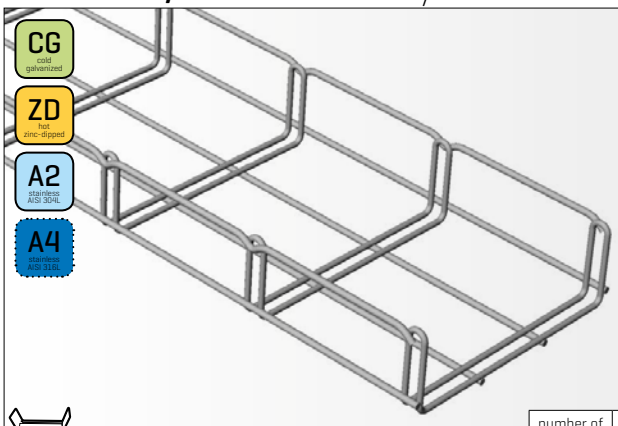
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	9 pcs	7 pcs	5 pcs	4 pcs	3 pcs	3 pcs	2 pcs	2 pcs	2 pcs	1 pc	x	x
II	18 pcs	14 pcs	10 pcs	8 pcs	6 pcs							
III	27 pcs	21 pc										
IV	36 pcs											

ARK - 211120 GZ
ARK - 221120 ŽZ
ARK - 231120 A2

M2 150/50 cable tray

| ↔ 150 mm | ↕ 50 mm | ⟷ 2000mm | 2,0 kg

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



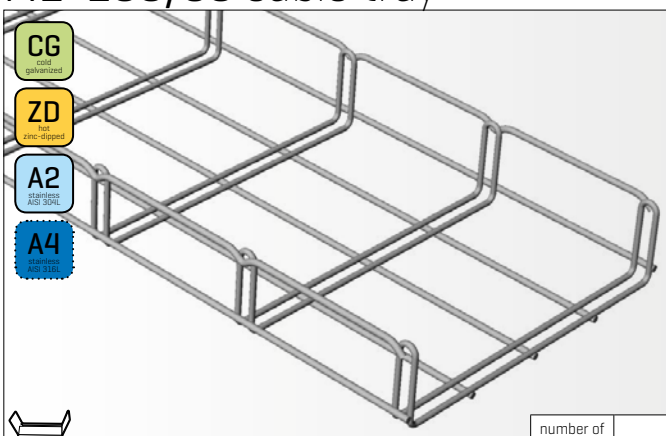
S_{eff} = **4 470** mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	14 pcs	11 pc	8 pcs	7 pcs	5 pcs	4 pcs	4 pcs	3 pcs	3 pcs	2 pcs	x	x
II	28 pcs	22 pcs	16 pcs	14 pcs	10 pcs							
III	42 pcs	33 pcs										
IV	56 pcs											

ARK - 211130 GZ
ARK - 221130 ŽZ
ARK - 231130 A2

M2 200/50 cable tray

| ↔ 200 mm | ↕ 50 mm | ⟷ 2000mm | 2,3 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

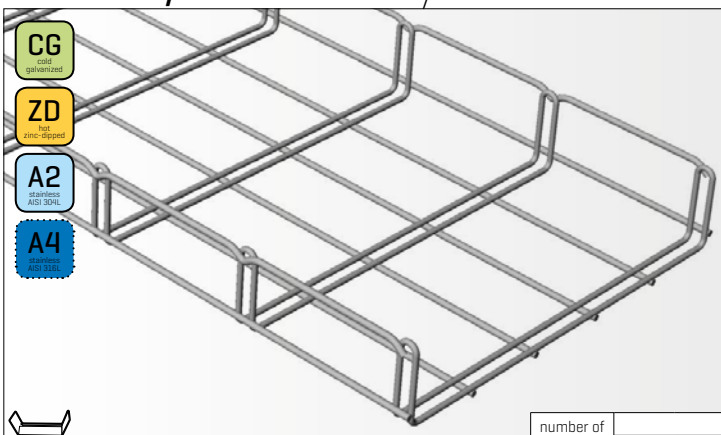
S_{eff} = 6 050 mm²

ARK - 211140 CG
ARK - 221140 ZD
ARK - 231140 A2

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	19 pcs	15 pcs	11 pc	9 pcs	7 pcs	6 pcs	5 pcs	4 pcs	4 pcs	3 pcs	x	x
II	38 pcs	30 pcs	22 pcs	18 pcs	14 pcs							
III	57 pcs	45 pcs										
IV	76 pcs											

M2 250/50 cable tray

| ↔ 250 mm | ↕ 50 mm | ⟷ 2000mm | 3,0 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

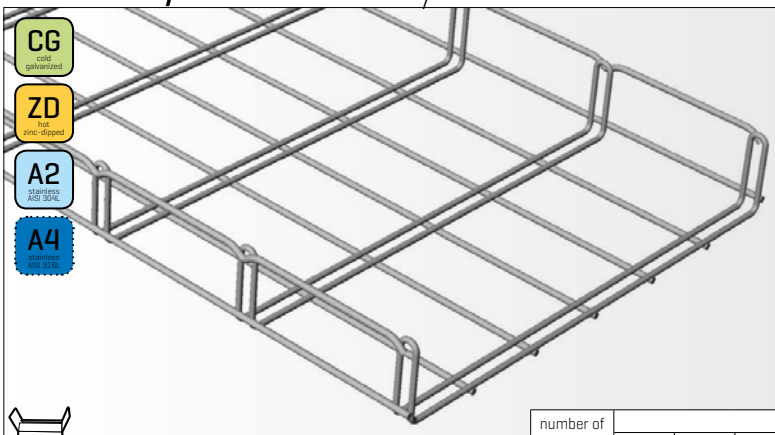
S_{eff} = 7 620 mm²

ARK - 211150 CG
ARK - 221150 ZD
ARK - 231150 A2

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	23 pcs	19 pcs	14 pcs	11 pc	9 pcs	7 pcs	6 pcs	5 pcs	5 pcs	4 pcs	x	x
II	46 pcs	38 pcs	28 pcs	22 pcs	18 pcs							
III	69 pcs	57 pcs										
IV	92 pcs											

M2 300/50 cable tray

| ↔ 300 mm | ↕ 50 mm | ⟷ 2000mm | 3,4 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

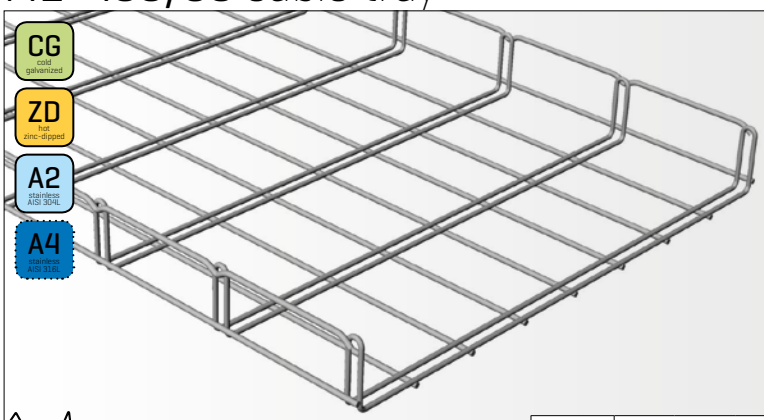
S_{eff} = 9 200 mm²

ARK - 211160 CG
ARK - 221160 ZD
ARK - 231160 A2

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	28 pcs	24 pcs	18 pcs	14 pcs	11 pc	9 pcs	8 pcs	7 pcs	6 pcs	5 pcs	x	x
II	56 pcs	48 pcs	36 pcs	28 pcs	22 pcs							
III	84 pcs	72 pcs										
IV	112 pcs											

M2 400/50 cable tray

| ↔ 400 mm | ↕ 50 mm | ⟷ 2000mm | 4,1 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4×

4 pcs

effective mesh tray section

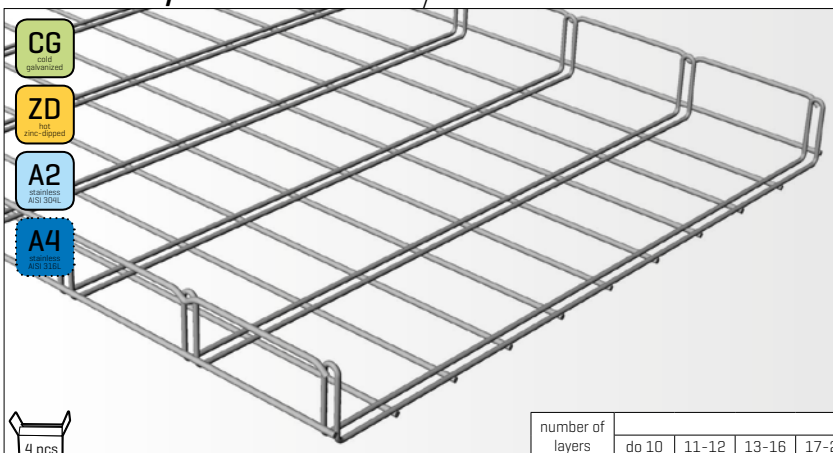
S_{eff} = 12 350 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	38 pcs	32 pcs	24 pcs	19 pcs	15 pcs	13 pcs	11 pc	9 pcs	8 pcs	7 pcs	x	x
II	76 pcs	64 pcs	48 pcs	38 pcs	30 pcs							
III	114 pcs	96 pcs										
IV	152 pcs											

ARK - 211170 CG
ARK - 221170 ZD
ARK - 231170 A2

M2 500/50 cable tray

| ↔ 500 mm | ↕ 50 mm | ⟷ 2000mm | 4,9 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4×

4 pcs

effective mesh tray section

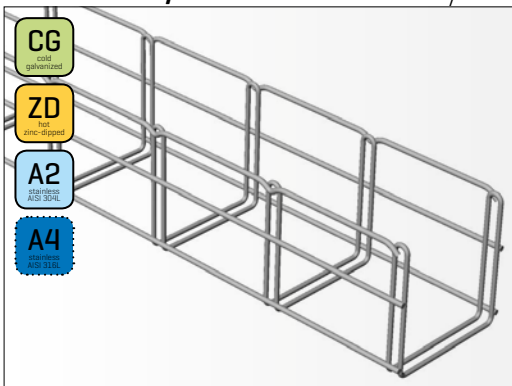
S_{eff} = 15 500 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	48 pcs	40 pcs	30 pcs	24 pcs	19 pcs	16 pcs	14 pcs	12 pcs	10 pcs	9 pcs	x	x
II	96 pcs	80 pcs	60 pcs	48 pcs	38 pcs	32 pcs						
III	144 pcs	120 pcs										
IV	192 pcs											

ARK - 211180 CG
ARK - 221180 ZD
ARK - 231180 A2

M2 100/100 cable tray

| ↔ 100 mm | ↕ 100 mm | ⟷ 2000mm | 2,1 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

2×

8 pcs

effective mesh tray section

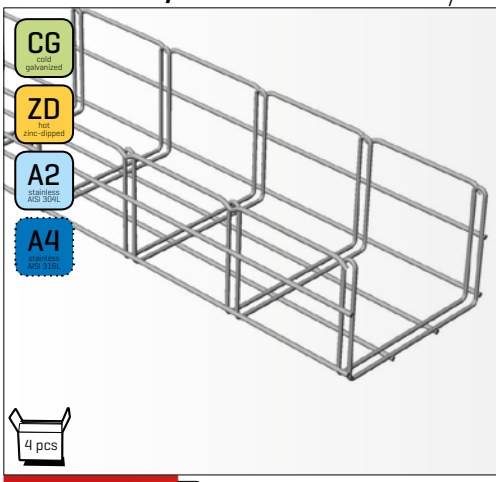
S_{eff} = 6 120 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	9 pcs	7 pcs	5 pcs	4 pcs	3 pcs	3 pcs	2 pcs	2 pcs	2 pcs	1 pc	1 pc	1 pc
II	18 pcs	14 pcs	10 pcs	8 pcs	6 pcs	6 pcs	4 pcs	4 pcs	4 pcs			
III	27 pcs	21 pc	15 pcs	12 pcs	9 pcs	9 pcs						
IV	36 pcs	28 pcs	20 pcs	16 pcs								
V	45 pcs	35 pcs	25 pcs									
VI	54 pcs	42 pcs										
VII	63 pcs	49 pcs										
VIII	72 pcs											
IX	81 pc											

ARK - 211210 CG
ARK - 221210 ZD
ARK - 231210 A2

M2 150/100 cable tray

| ↔ 150 mm | ↕ 100 mm | ⟷ 2000mm | 3,0 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4 pcs

3×

effective mesh tray section

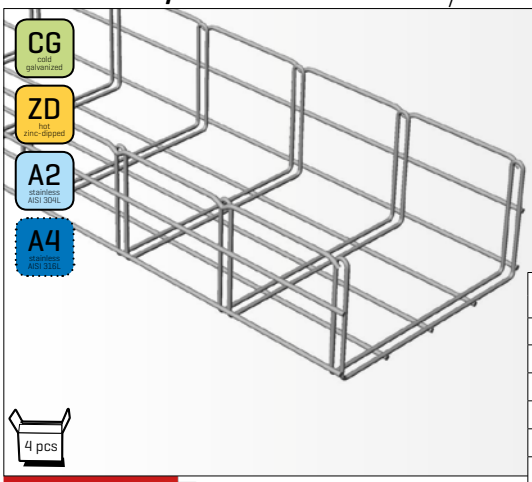
S_{eff} = 9 440 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	14 pcs	11 pc	8 pcs	7 pcs	5 pcs	4 pcs	4 pcs	3 pcs	3 pcs	2 pcs	2 pcs	2 pcs
II	28 pcs	22 pcs	16 pcs	14 pcs	10 pcs	8 pcs	8 pcs	6 pcs	6 pcs			
III	42 pcs	33 pcs	24 pcs	21 pc	15 pcs	12 pcs						
IV	56 pcs	44 pcs	32 pcs	28 pcs								
V	70 pcs	55 pcs	40 pcs									
VI	84 pcs	66 pcs										
VII	98 pcs	77 pcs										
VIII	112 pcs											
IX	126 pcs											

ARK - 211220	CG
ARK - 221220	ZD
ARK - 231220	A2

M2 200/100 cable tray

| ↔ 200 mm | ↕ 100 mm | ⟷ 2000mm | 3,4 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4 pcs

3×

effective mesh tray section

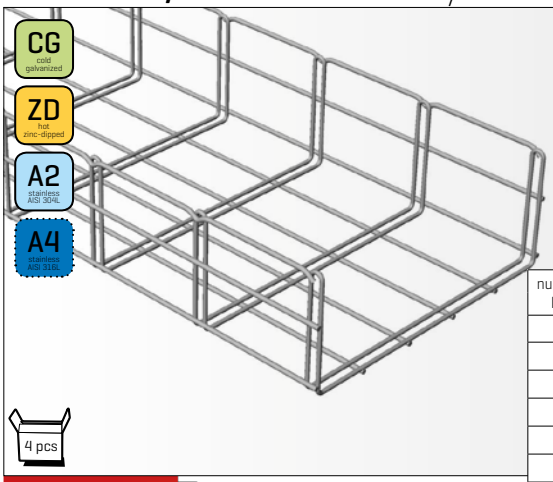
S_{eff} = 12 770 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	19 pcs	15 pcs	11 pc	9 pcs	7 pcs	6 pcs	5 pcs	4 pcs	4 pcs	3 pcs	3 pcs	3 pcs
II	38 pcs	30 pcs	22 pcs	18 pcs	14 pcs	12 pcs	10 pcs	8 pcs	8 pcs			
III	57 pcs	45 pcs	33 pcs	27 pcs	21 pc	18 pcs						
IV	76 pcs	60 pcs	44 pcs	36 pcs								
V	95 pcs	75 pcs	55 pcs									
VI	114 pcs	90 pcs										
VII	133 pcs	105 pcs										
VIII	152 pcs											
IX	171 pc											

ARK - 211230	CG
ARK - 221230	ZD
ARK - 231230	A2

M2 250/100 cable tray

| ↔ 250 mm | ↕ 100 mm | ⟷ 2000mm | 3,7 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4 pcs

3×

effective mesh tray section

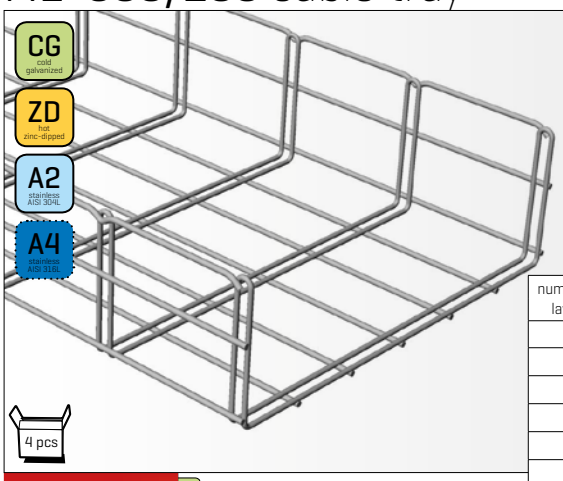
S_{eff} = 16 090 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	23 pcs	19 pcs	14 pcs	11 pc	9 pcs	7 pcs	6 pcs	5 pcs	5 pcs	4 pcs	4 pcs	4 pcs
II	46 pcs	38 pcs	28 pcs	22 pcs	18 pcs	14 pcs	12 pcs	10 pcs	10 pcs			
III	69 pcs	57 pcs	42 pcs	33 pcs	27 pcs	21 pc						
IV	92 pcs	76 pcs	56 pcs	44 pcs								
V	115 pcs	95 pcs	70 pcs									
VI	138 pcs	114 pcs										
VII	161 pc	133 pcs										
VIII	184 pcs											
IX	207 pcs											

ARK - 211240	CG
ARK - 221240	ZD
ARK - 231240	A2

M2 300/100 cable tray

| ↔ 300 mm | ↕ 100 mm | ⟷ 2000mm | 4,1 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

4 pcs

3×

effective mesh tray section

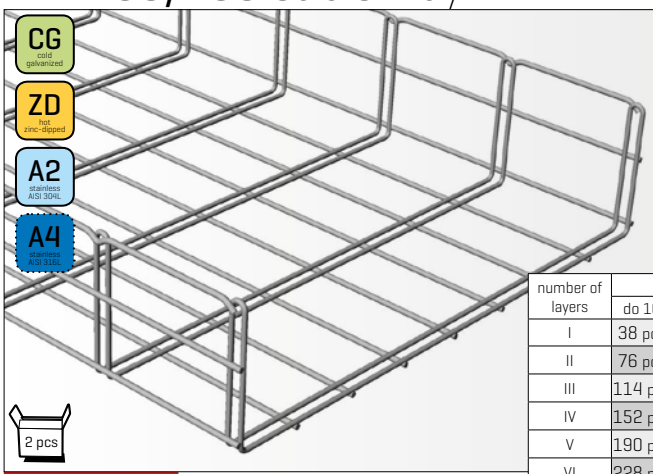
S_{eff} = 19 420 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	28 pcs	24 pcs	18 pcs	14 pcs	11 pc	9 pcs	8 pcs	7 pcs	6 pcs	5 pcs	5 pcs	4 pcs
II	56 pcs	48 pcs	36 pcs	28 pcs	22 pcs	18 pcs	16 pcs	14 pcs	12 pcs			
III	84 pcs	72 pcs	54 pcs	42 pcs	33 pcs	27 pcs						
IV	112 pcs	96 pcs	72 pcs	56 pcs								
V	140 pcs	120 pcs	90 pcs									
VI	168 pcs	144 pcs										
VII	196 pcs	168 pcs										
VIII	224 pcs											
IX	252 pcs											

ARK - 211250 CG
ARK - 221250 ZD
ARK - 231250 A2

M2 400/100 cable tray

| ↔ 400 mm | ↕ 100 mm | ⟷ 2000mm | 4,9 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

2 pcs

4×

effective mesh tray section

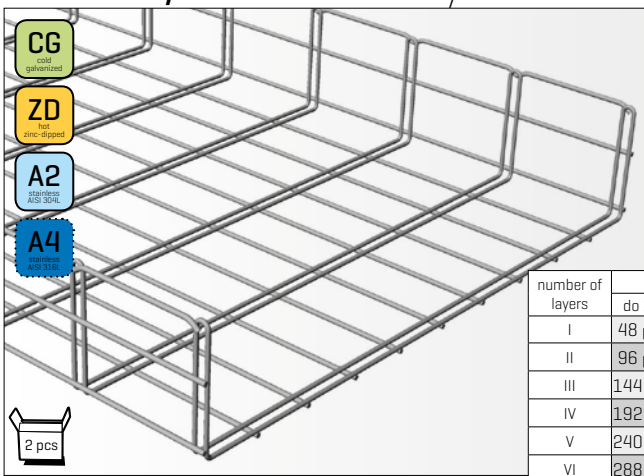
S_{eff} = 26 070 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	38 pcs	32 pcs	24 pcs	19 pcs	15 pcs	13 pcs	11 pc	9 pcs	8 pcs	7 pcs	7 pcs	6 pcs
II	76 pcs	64 pcs	48 pcs	38 pcs	30 pcs	26 pcs	22 pcs	18 pcs	16 pcs			
III	114 pcs	96 pcs	72 pcs	57 pcs	45 pcs	39 pcs						
IV	152 pcs	128 pcs	96 pcs	76 pcs								
V	190 pcs	160 pcs	120 pcs									
VI	228 pcs	192 pcs										
VII	266 pcs	224 pcs										
VIII	304 pcs											
IX	342 pcs											

ARK - 211260 CG
ARK - 221260 ZD
ARK - 231260 A2

M2 500/100 cable tray

| ↔ 500 mm | ↕ 100 mm | ⟷ 2000mm | 5,7 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

2 pcs

4×

effective mesh tray section

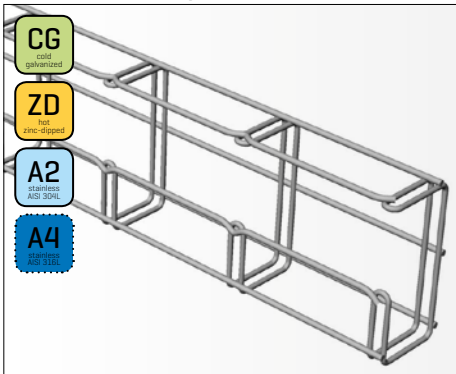
S_{eff} = 32 740 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	48 pcs	40 pcs	30 pcs	24 pcs	19 pcs	16 pcs	14 pcs	12 pcs	10 pcs	9 pcs	8 pcs	8 pcs
II	96 pcs	80 pcs	60 pcs	48 pcs	38 pcs	32 pcs	28 pcs	24 pcs	20 pcs			
III	144 pcs	120 pcs	90 pcs	72 pcs	57 pcs	48 pcs						
IV	192 pcs	160 pcs	120 pcs	96 pcs								
V	240 pcs	200 pcs	150 pcs									
VI	288 pcs	240 pcs										
VII	336 pcs	280 pcs										
VIII	384 pcs											
IX	432 pcs											

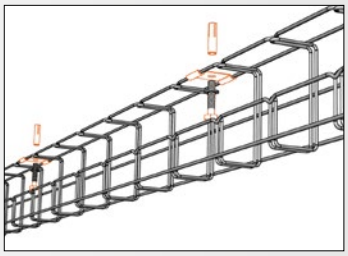
ARK - 211270 CG
ARK - 221270 ZD
ARK - 231270 A2

M2-G 50/100 cable tray

| ↔ 50 mm | ↕ 100 mm | ⟷ 2000mm | 2,0 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



Cable mesh trays of the G range are intended for simplified assembly in the soffit with DZM holders.

S_{eff} = 1 320 mm²

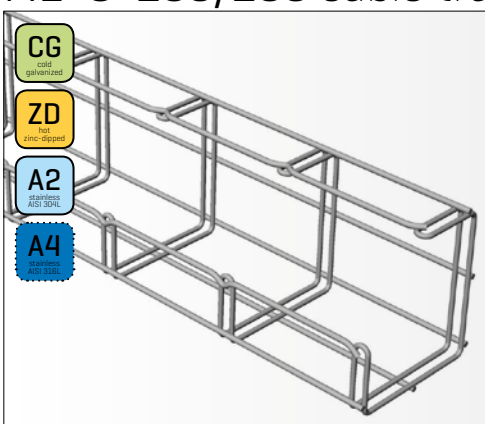
8 pcs

ARK - 211310 CG
ARK - 221310 ZD
ARK - 231310 A2

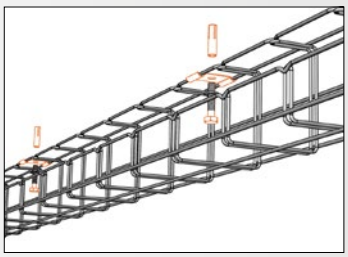
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	4 pcs	3 pcs	2 pcs	2 pcs	1 pc	1 pc	1 pc	1 pc	x	x	x	x
II	8 pcs	6 pcs	4 pcs	4 pcs	2 pcs							
III	12 pcs	9 pcs										
IV	16 pcs											

M2-G 100/100 cable tray

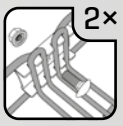
| ↔ 100 mm | ↕ 100 mm | ⟷ 2000mm | 2,3 kg



CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



Cable mesh trays of the G range are intended for simplified assembly in the soffit with DZM holders.



S_{eff} = 6 120 mm²

4 pcs

ARK - 211320 CG
ARK - 221320 ZD
ARK - 231320 A2

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	9 pcs	7 pcs	5 pcs	4 pcs	3 pcs	3 pcs	2 pcs	2 pcs	2 pcs	1 pc	1 pc	1 pc
II	18 pcs	14 pcs	10 pcs	8 pcs	6 pcs	6 pcs	4 pcs	4 pcs	4 pcs			
III	27 pcs	21 pc	15 pcs	12 pcs	9 pcs	9 pcs						
IV	36 pcs	28 pcs	20 pcs	16 pcs								
V	45 pcs	35 pcs	25 pcs									
VI	54 pcs	42 pcs										
VII	63 pcs	49 pcs										
VIII	72 pcs											
IX	81 pc											

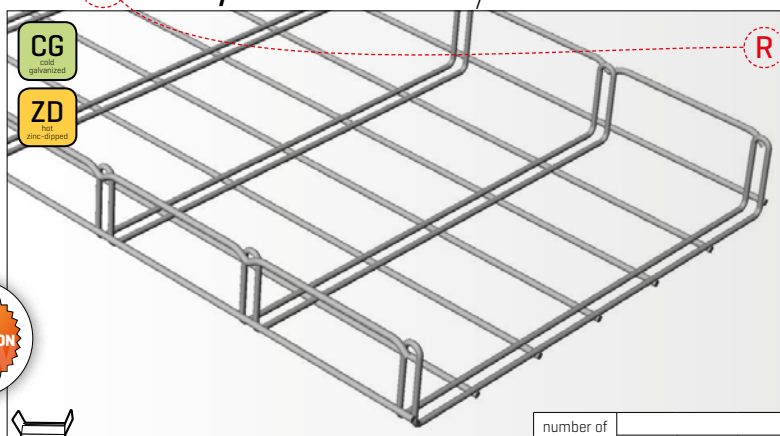
M2-R 300/50 cable tray

↔ 300 mm | ↕ 50 mm | ⟷ 2000mm | 3,9 kg

CG cold galvanized

ZD hot zinc-dipped

R – Reinforced mesh trays with runners and edges of 4.5 mm diameter *(standard diameter 4.0 mm)*



INNOVATION NEW

effective mesh tray section

S_{eff} = 9 200 mm²

4 pcs

ARK - 211450 CG
ARK - 221450 ZD
- A2

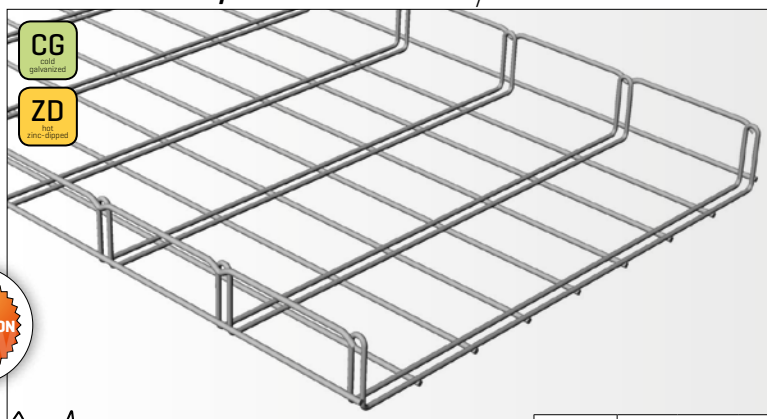
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	28 pcs	24 pcs	18 pcs	14 pcs	11 pc	9 pcs	8 pcs	7 pcs	6 pcs	5 pcs	x	x
II	56 pcs	48 pcs	36 pcs	28 pcs	22 pcs							
III	84 pcs	72 pcs										
IV	112 pcs											

M2-R 400/50 cable tray

↔ 400 mm | ↕ 50 mm | ⟷ 2000mm | 4,6 kg

CG cold galvanized

ZD hot zinc-dipped



INNOVATION NEW

effective mesh tray section

S_{eff} = 12 350 mm²

4 pcs

ARK - 211460 CG
ARK - 221460 ZD
- A2

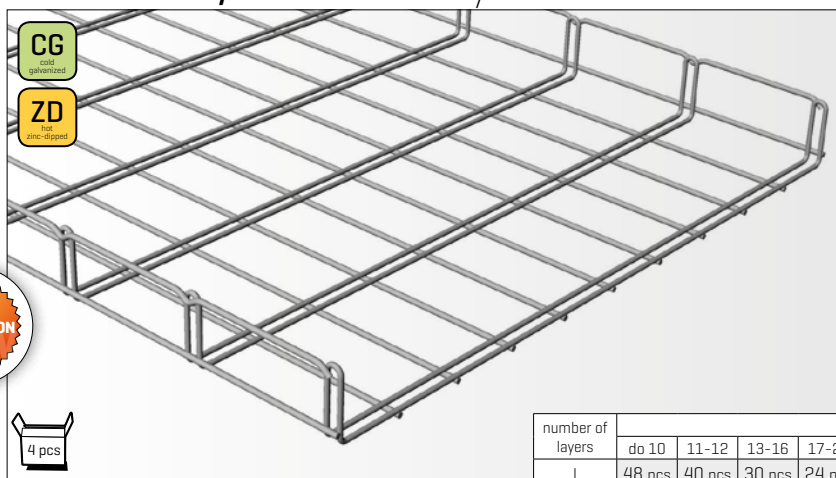
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	38 pcs	32 pcs	24 pcs	19 pcs	15 pcs	13 pcs	11 pc	9 pcs	8 pcs	7 pcs	x	x
II	76 pcs	64 pcs	48 pcs	38 pcs	30 pcs							
III	114 pcs	96 pcs										
IV	152 pcs											

M2-R 500/50 cable tray

↔ 500 mm | ↕ 50 mm | ⟷ 2000mm | 5,5 kg

CG cold galvanized

ZD hot zinc-dipped



INNOVATION NEW

effective mesh tray section

S_{eff} = 15 500 mm²

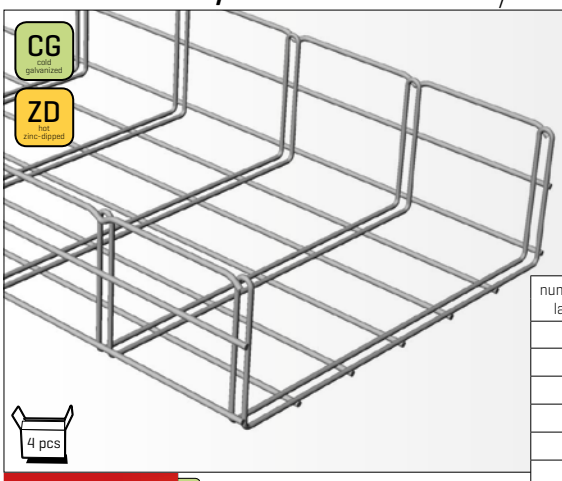
4 pcs

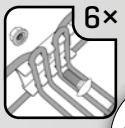
ARK - 211470 CG
ARK - 221470 ZD
- A2

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	48 pcs	40 pcs	30 pcs	24 pcs	19 pcs	16 pcs	14 pcs	12 pcs	10 pcs	9 pcs	x	x
II	96 pcs	80 pcs	60 pcs	48 pcs	38 pcs	32 pcs						
III	144 pcs	120 pcs										
IV	192 pcs											

M2-R 300/100 cable tray

| ↔ 300 mm | ↕ 100 mm | ⟷ 2000mm | 4,6 kg |





INNOVATION NEW

effective mesh tray section

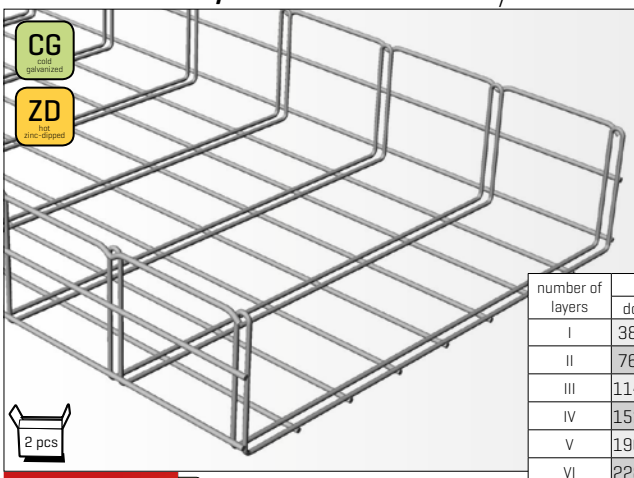
S_{eff} = 19 420 mm²

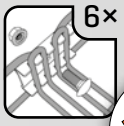
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	28 pcs	24 pcs	18 pcs	14 pcs	11 pc	9 pcs	8 pcs	7 pcs	6 pcs	5 pcs	5 pcs	4 pcs
II	56 pcs	48 pcs	36 pcs	28 pcs	22 pcs	18 pcs	16 pcs	14 pcs	12 pcs			
III	84 pcs	72 pcs	54 pcs	42 pcs	33 pcs	27 pcs						
IV	112 pcs	96 pcs	72 pcs	56 pcs								
V	140 pcs	120 pcs	90 pcs									
VI	168 pcs	144 pcs										
VII	196 pcs	168 pcs										
VIII	224 pcs											
IX	252 pcs											

ARK - 211550 CG
ARK - 221550 ZD
- A2

M2-R 400/100 cable tray

| ↔ 400 mm | ↕ 100 mm | ⟷ 2000mm | 5,5 kg |





INNOVATION NEW

effective mesh tray section

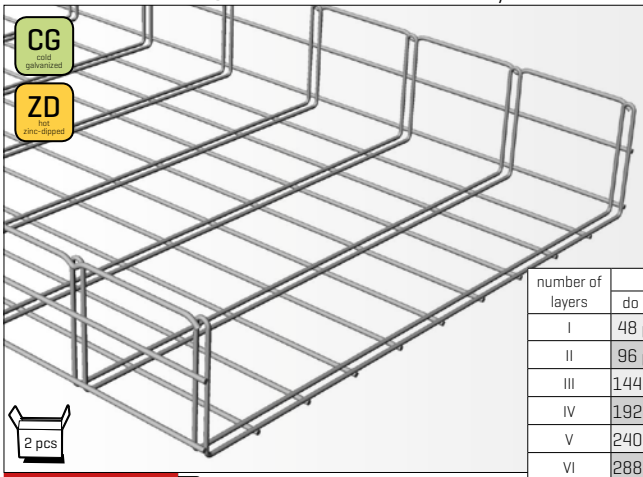
S_{eff} = 26 070 mm²

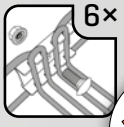
number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	38 pcs	32 pcs	24 pcs	19 pcs	15 pcs	13 pcs	11 pc	9 pcs	8 pcs	7 pcs	7 pcs	6 pcs
II	76 pcs	64 pcs	48 pcs	38 pcs	30 pcs	26 pcs	22 pcs	18 pcs	16 pcs			
III	114 pcs	96 pcs	72 pcs	57 pcs	45 pcs	39 pcs						
IV	152 pcs	128 pcs	96 pcs	76 pcs								
V	190 pcs	160 pcs	120 pcs									
VI	228 pcs	192 pcs										
VII	266 pcs	224 pcs										
VIII	304 pcs											
IX	342 pcs											

ARK - 211560 CG
ARK - 221560 ZD
- A2

M2-R 500/100 cable tray

| ↔ 500 mm | ↕ 100 mm | ⟷ 2000mm | 6,3 kg |





INNOVATION NEW

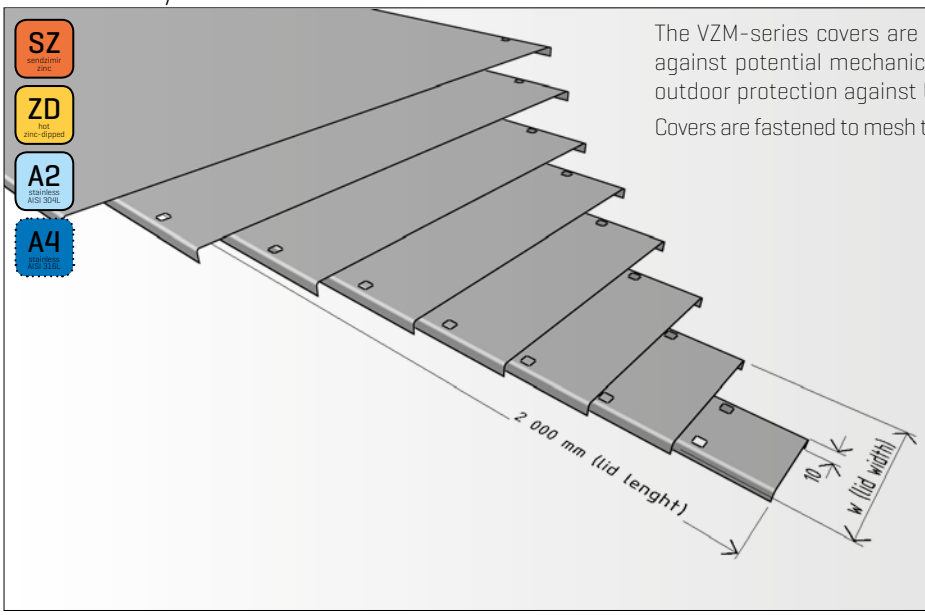
effective mesh tray section

S_{eff} = 32 740 mm²

number of layers	cable diameter [mm]											
	do 10	11-12	13-16	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
I	48 pcs	40 pcs	30 pcs	24 pcs	19 pcs	16 pcs	14 pcs	12 pcs	10 pcs	9 pcs	8 pcs	8 pcs
II	96 pcs	80 pcs	60 pcs	48 pcs	38 pcs	32 pcs	28 pcs	24 pcs	20 pcs			
III	144 pcs	120 pcs	90 pcs	72 pcs	57 pcs	48 pcs						
IV	192 pcs	160 pcs	120 pcs	96 pcs								
V	240 pcs	200 pcs	150 pcs									
VI	288 pcs	240 pcs										
VII	336 pcs	280 pcs										
VIII	384 pcs											
IX	432 pcs											

ARK - 211570 CG
ARK - 221570 ZD
- A2

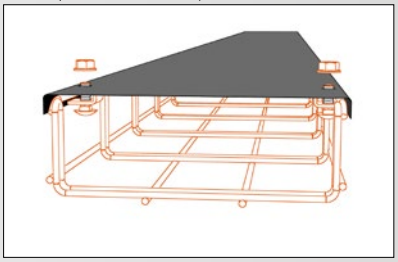
VZM tray cover



The VZM-series covers are used to cover the cable track to protect it against potential mechanical damage of the cables, as as well as for outdoor protection against UV radiation.

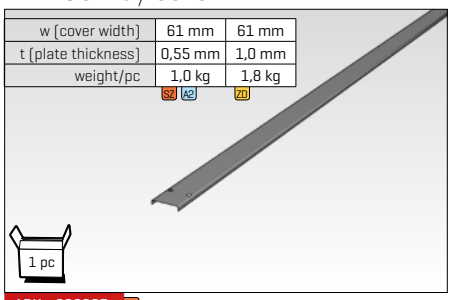
Covers are fastened to mesh trays by means of SVM 1 couplings (see p. 32).

example of assembly



VZM 50 tray cover

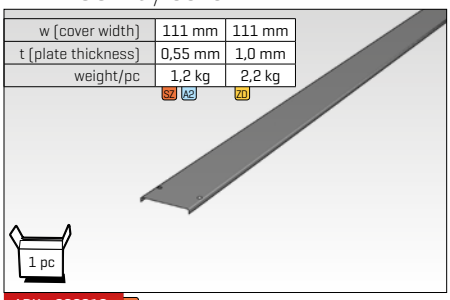
w (cover width)	61 mm	61 mm
t (plate thickness)	0,55 mm	1,0 mm
weight/pc	1,0 kg	1,8 kg
	SZ	A2 ZD



ARK - 222005 SZ
ARK - 222205 ZD
ARK - 232005 A2

VZM 100 tray cover

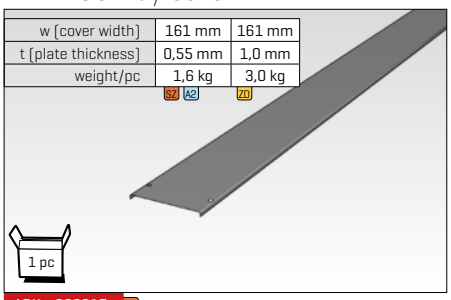
w (cover width)	111 mm	111 mm
t (plate thickness)	0,55 mm	1,0 mm
weight/pc	1,2 kg	2,2 kg
	SZ	A2 ZD



ARK - 222010 SZ
ARK - 222210 ZD
ARK - 232010 A2

VZM 150 tray cover

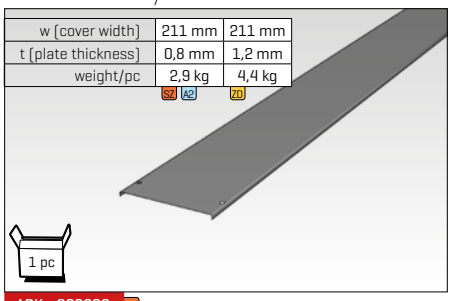
w (cover width)	161 mm	161 mm
t (plate thickness)	0,55 mm	1,0 mm
weight/pc	1,6 kg	3,0 kg
	SZ	A2 ZD



ARK - 222015 SZ
ARK - 222215 ZD
ARK - 232015 A2

VZM 200 tray cover

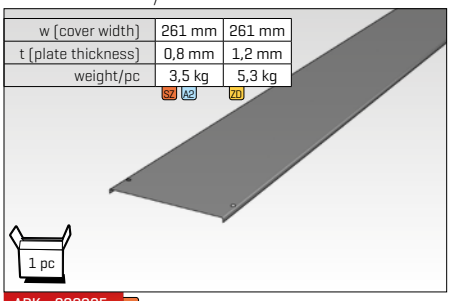
w (cover width)	211 mm	211 mm
t (plate thickness)	0,8 mm	1,2 mm
weight/pc	2,9 kg	4,4 kg
	SZ	A2 ZD



ARK - 222020 SZ
ARK - 222220 ZD
ARK - 232020 A2

VZM 250 tray cover

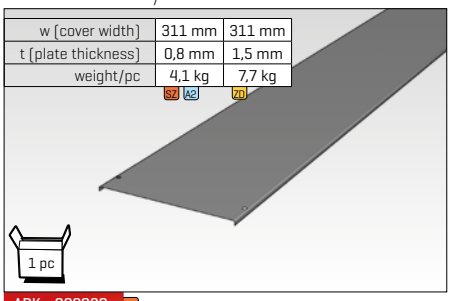
w (cover width)	261 mm	261 mm
t (plate thickness)	0,8 mm	1,2 mm
weight/pc	3,5 kg	5,3 kg
	SZ	A2 ZD



ARK - 222025 SZ
ARK - 222225 ZD
ARK - 232025 A2

VZM 300 tray cover

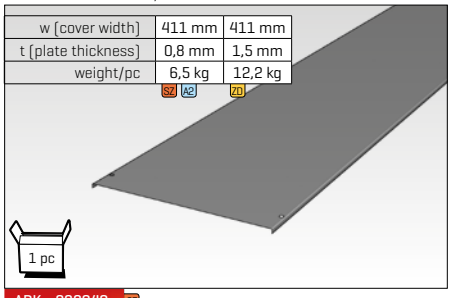
w (cover width)	311 mm	311 mm
t (plate thickness)	0,8 mm	1,5 mm
weight/pc	4,1 kg	7,7 kg
	SZ	A2 ZD



ARK - 222030 SZ
ARK - 222230 ZD
ARK - 232030 A2

VZM 400 tray cover

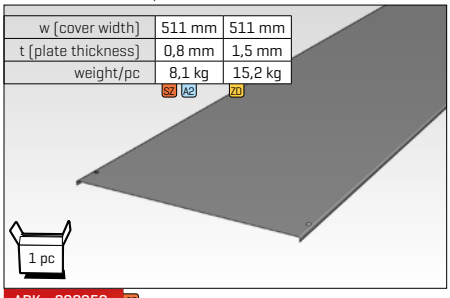
w (cover width)	411 mm	411 mm
t (plate thickness)	0,8 mm	1,5 mm
weight/pc	6,5 kg	12,2 kg
	SZ	A2 ZD



ARK - 222040 SZ
ARK - 222240 ZD
ARK - 232040 A2

VZM 500 tray cover

w (cover width)	511 mm	511 mm
t (plate thickness)	0,8 mm	1,5 mm
weight/pc	8,1 kg	15,2 kg
	SZ	A2 ZD



ARK - 222050 SZ
ARK - 222250 ZD
ARK - 232050 A2

Section of standard tray cover

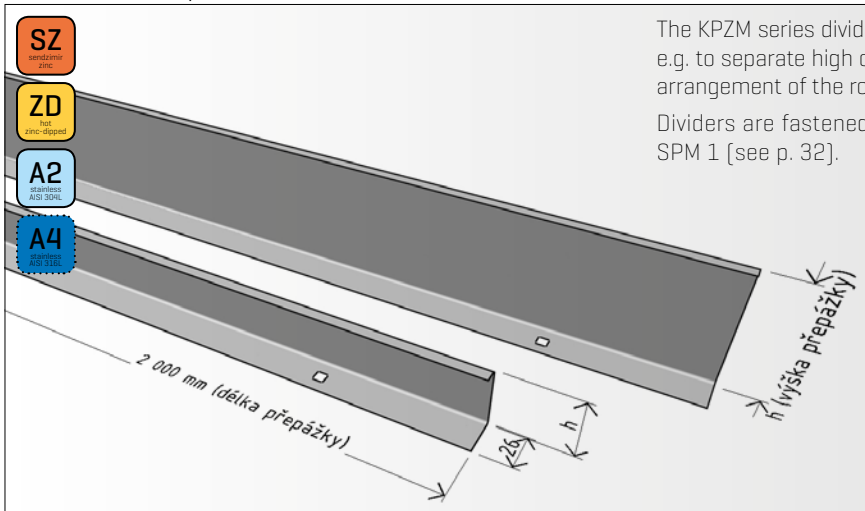
Section of ZD (zinc dipped) tray cover of 250 mm and wider

KPZM tray divider

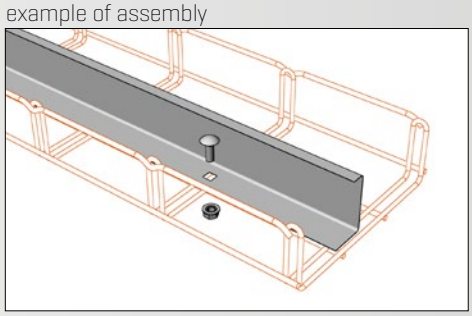
SZ sendzimir zinc
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

The KPZM series dividers are used to divide the mesh tray into sections, e.g. to separate high current from low current circuits, or just for a clear arrangement of the route.

Dividers are fastened to mesh trays by means of the connecting set SPM 1 (see p. 32).

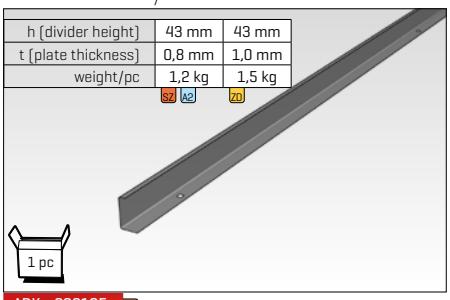


example of assembly



KPZM 50 tray divider

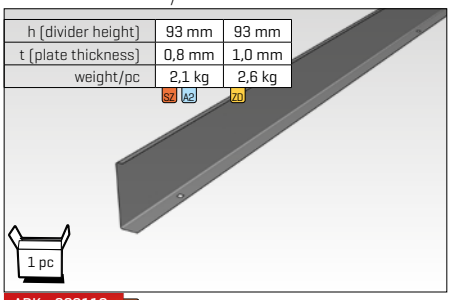
h (divider height)	43 mm	43 mm
t (plate thickness)	0,8 mm	1,0 mm
weight/pc	1,2 kg	1,5 kg



ARK - 222105 SZ
ARK - 222305 ZD
ARK - 232105 A2

KPZM 100 tray divider

h (divider height)	93 mm	93 mm
t (plate thickness)	0,8 mm	1,0 mm
weight/pc	2,1 kg	2,6 kg

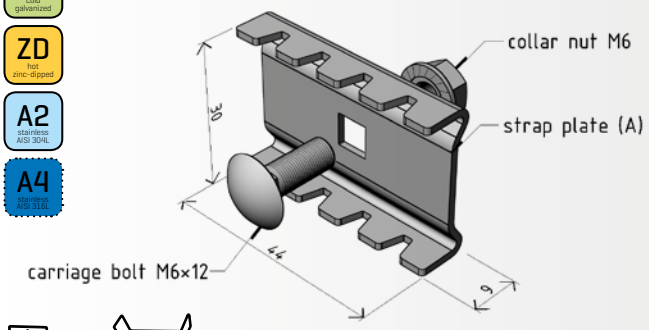


ARK - 222110 SZ
ARK - 222310 ZD
ARK - 232110 A2

SZM 1 tray coupling

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



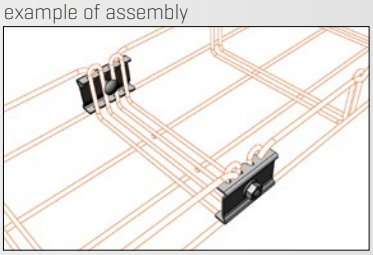
10pcs ×10 = 100pcs

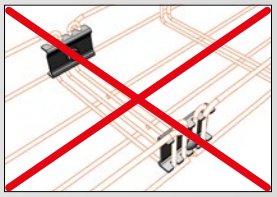
The SZM 1 mesh tray coupling is the general splice of the MERKUR 2 system. It is used for joining mesh trays of the cable route.

The coupling set consists of the body - a strap plate (A), carriage bolt M6x16 and collar nut M6.

Sheet metal thickness 1.5 mm.

example of assembly



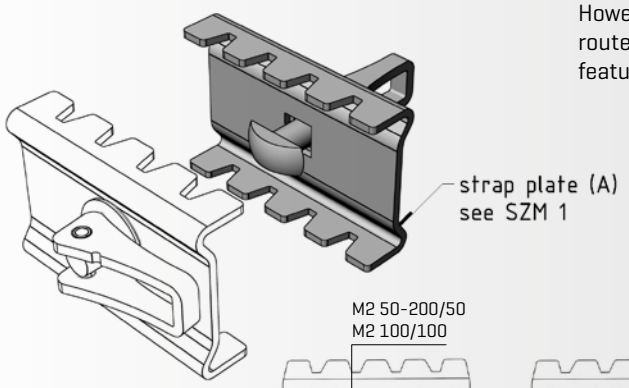


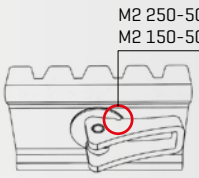
ARK - 213010	CG	0 - cold galvanized (CG)
ARK - 223010	ZD	2 - geomet 500 (G5)
ARK - 233010	A2	3 - stainless AISI 304 (A2)

SZM 1-R tray coupling | boltless coupling for fast assembly

CG cold galvanized

Components shown in the figure are included in the package.

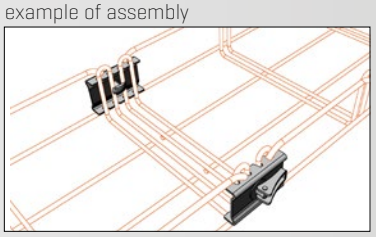


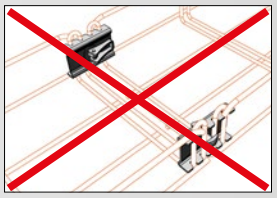


10pcs ×10 = 100pcs

SZM 1-R is a boltless quick coupling element, enabling to install the M2 system in an even shorter time and more comfortably. However, the installation of this coupling is forbidden for cable routes with functional integrity (fire resistant installation). This feature is ensured by the SZM 1 coupling only.

example of assembly



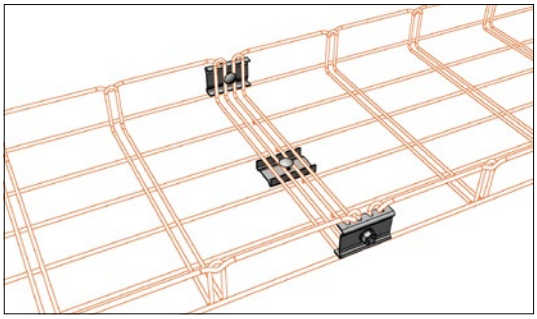


ARK - 213017	CG
-	
-	

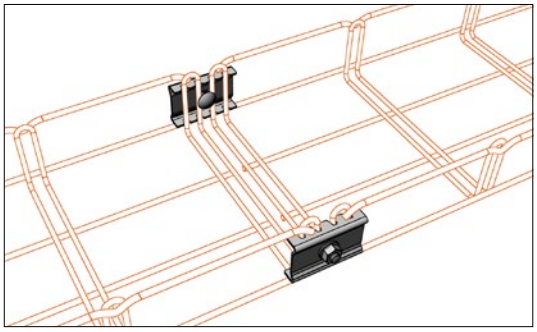
Rules for connecting

In order to meet declared values, it is necessary to use the correct amount of couplings in positions according to the pictures. Declared values of tray capacity apply under the condition of prescribed installation of connection points. Otherwise we do not guarantee the declared values.

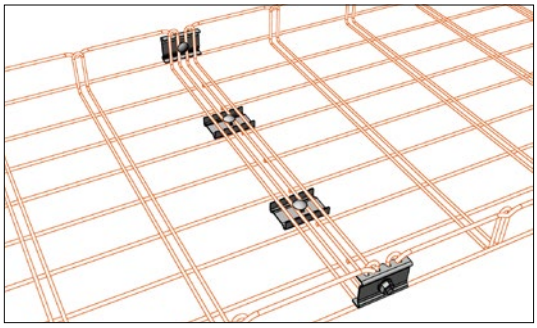
M2 250/50
M2 300/50
M2 150/100
M2 200/100
M2 250/100
M2 300/100



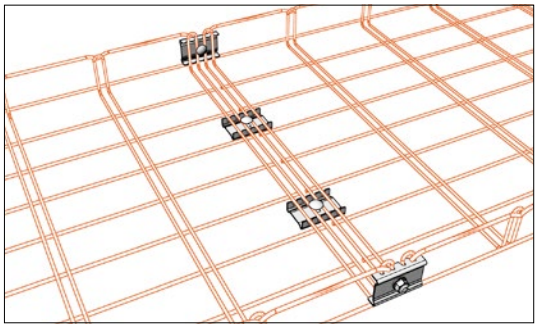
M2 50/50
M2 100/50
M2 150/50
M2 200/50
M2 100/100
M2 50/50 G
M2 100/100 G



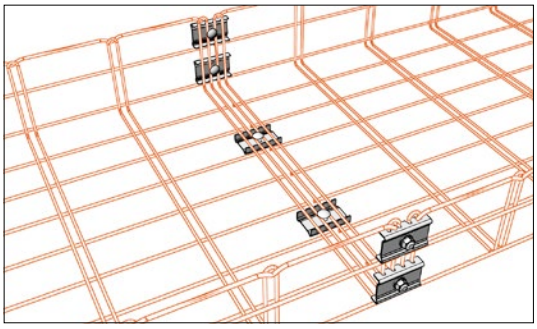
M2 400/50
M2 500/50
M2 400/100
M2 500/100



M2-R 300/50
M2-R 400/50
M2-R 500/50

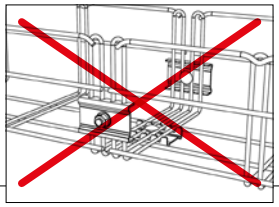


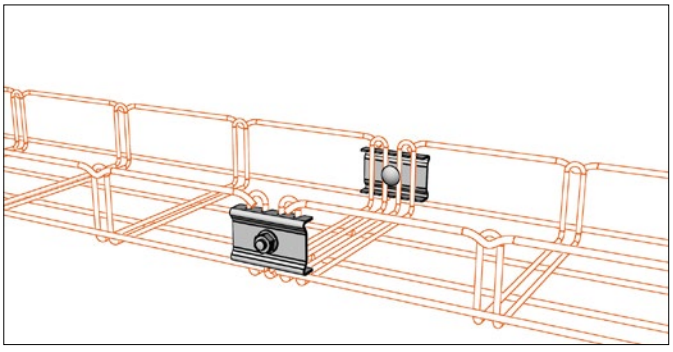
M2-R 300/100
M2-R 400/100
M2-R 500/100

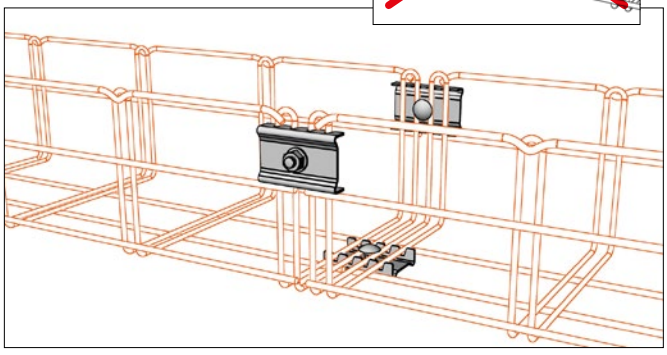


Correct location of coupling SZM 1 or SZM 1-R

The correct location of the couplings on the side wall of the mesh tray is important for achieving the declared load capacity as well as the optimum stiffness of the assembled mesh tray, as shown in the figures. It is of essential importance in particular for mesh trays with 100 mm height of the side wall requiring the location of the junction piece directly under the upper margin of the tray.



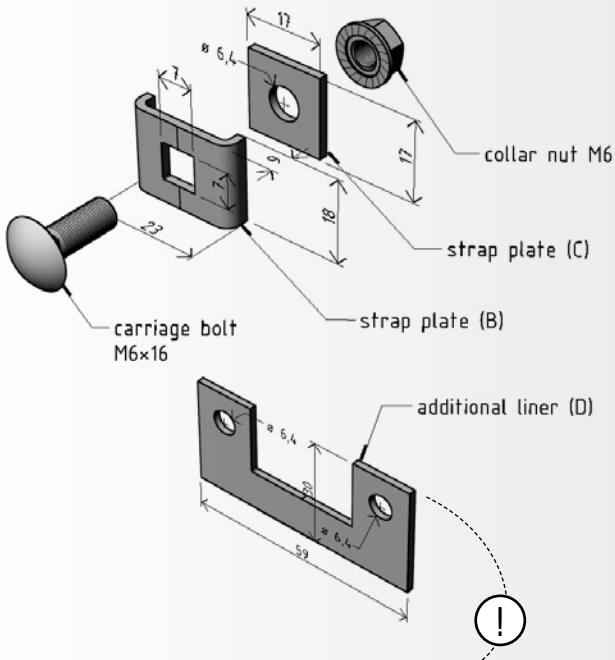




SZM 4 profile coupling

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



10pcs +Every package contains 5 pcs of additional liner (D) to be installed with 2x coupling SZM 4

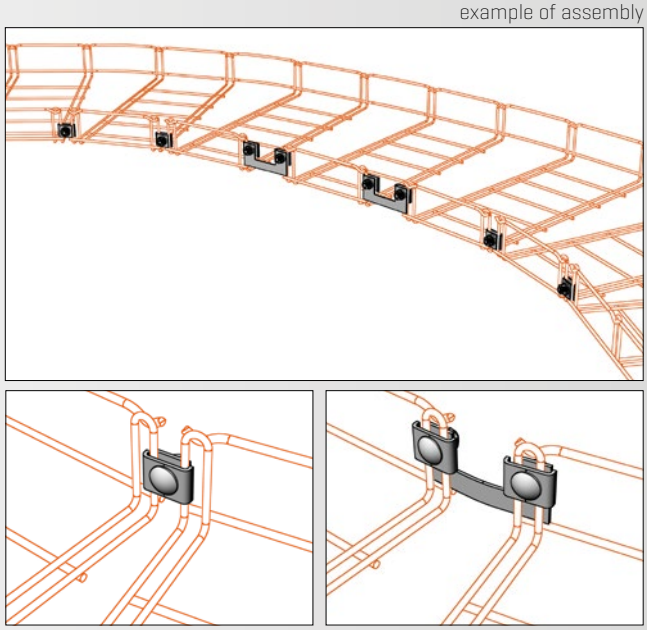
10pcs ×10 = 100pcs

The SZM 4 coupling is used to form elbows, T-pieces, mesh tray crossings and other branches, as needed on the cable track. Various angles can be shaped by consecutive steps combining liners C and D.

The coupling set consists of strap plate B, the main liner, the liners C and D, the carriage bolt M6x20 and collar nut M6.

Sheet metal thickness 2.0 mm.

example of assembly



ARK - 213040 CG
ARK - 223040 ZD
ARK - 233040 A2

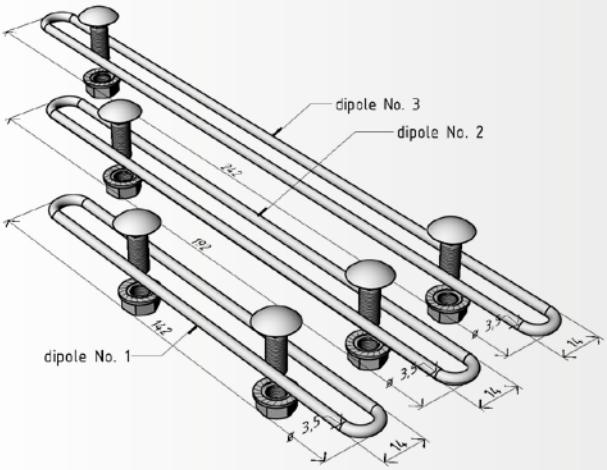
0 - cold galvanized (CG)
2 - geomet 500 (G5)
3 - stainless AISI 304 (A2)

For further information on using SZM 4 see section Shaping in p. 85 – 96

TSM 50-100 profile set

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.

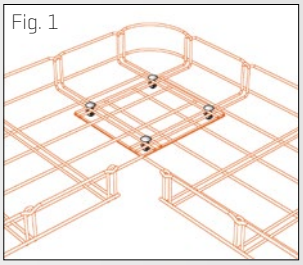


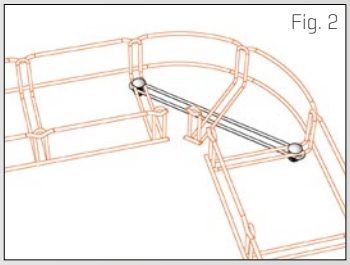
1 pc = 2x dipole No. 1 + 2x dipole No. 2 + 2x dipole No. 3
8x carriage bolt M6x16 + 8x collar nut M6

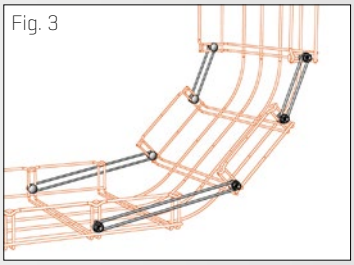
1 pc ×20 = 20 pcs

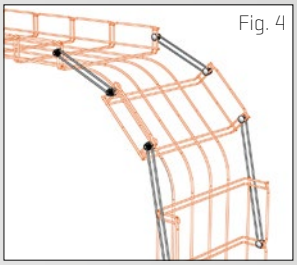
The profile set TSM 50-100 serves as a supplement for profile coupling SZM 4. It is used predominantly for shaping mesh trays of 50 and 100 mm width, but its connecting accessories (bolt + nut) can be also used to shape other mesh tray sizes (see Figs 1 and 2). It can also serve for shaping inner and outer elbows (see Figs 3 and 4).

example of assembly









ARK - 213050 CG
ARK - 223050 ZD
ARK - 233050 A2

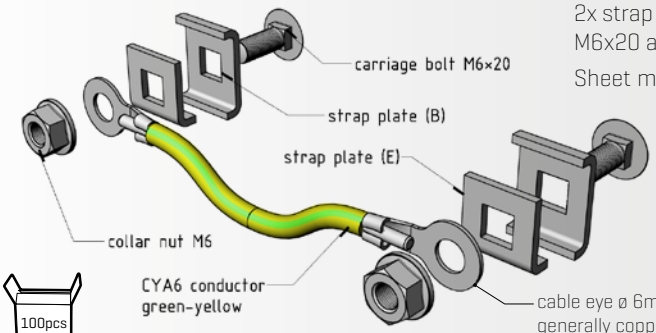
0 - cold galvanized (CG)
2 - geomet 500 (G5)
3 - stainless AISI 304 (A2)

For further information on using TSM shaping set see section Shaping on p. 85 – 96

SUM 1 grounding connector

SZ sendzimir zinc
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



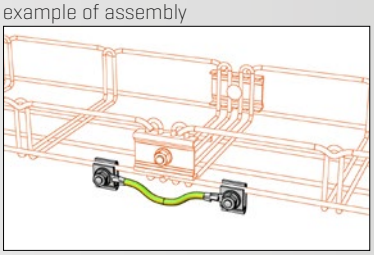
10pcs ×10 = 100pcs

The connector SUM 1 serves for supplementary conductive connections between the mesh trays when implementing cable routes in highly aggressive (corrosive) environment (in particular AD3 - AD8, AF3 and AF4, but possibly others).

Connector set consists of conductor CYA 6 zž (lenghth 200 mm), 2x strap plates (B), 2x additional liners (E), 2 pcs of carriage bolts M6x20 and 2 pcs of nuts M6.

Sheet metal thickness 2.0 mm.

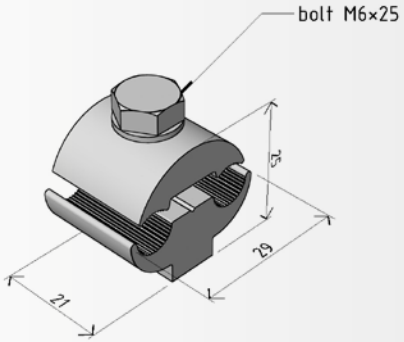
example of assembly



ARK - 213070 ARK - 223070 ARK - 233070	CG ZD A2	0 - cold galvanized (CG) 2 - geomet 500 (G5) 3 - stainless AISI 304 (A2)

SVZM 1 grounding connector

Components shown in the figure are included in the package.



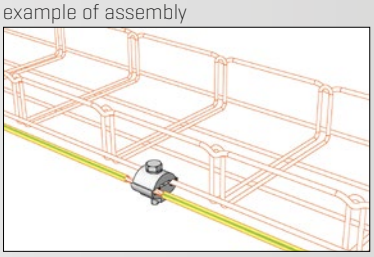
10pcs ×10 = 100pcs

The connector SVZM 1 serves to earthen the cable track, and after the installation of the earth conductor to the cable track it can be used as an arbitrary earth conductor.

The diameter of the clamp for the conductor is up to 25 mm^2.

SVZM 1 grounding connector must be installed every 5 – 10 meters of the route.

example of assembly

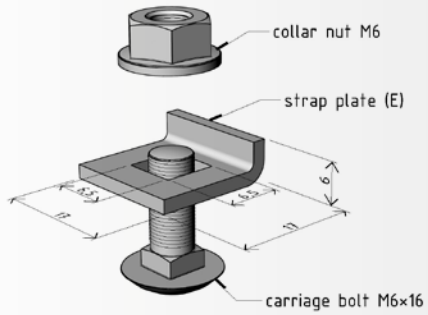


ARK - 213078 - ARK - 233078	CG A2	Connector – brass, connecting material galvanic zinc (GZ) Connector – brass, connecting material stainless steel AISI 304 (A2)

SVM 1 cover joint

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



10pcs ×10 = 100pcs

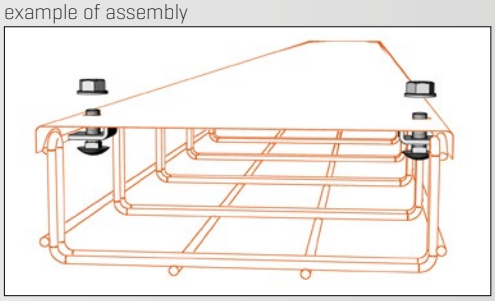
The joint SVM 1 serves for fastening tray covers.

The joint set consists of a liner with border (E), a carriage bolt M6x16 and a collar nut M6.

Installation of 2 pcs of clamps per 1 meter of cover.

Sheet metal thickness 2.0 mm.

example of assembly



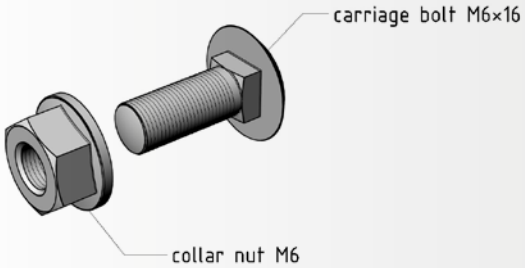
ARK - 213085	CG
ARK - 223085	ZD
ARK - 233085	A2

5 - **The standard surface finish of the connecting accessories for this component is Geomet 500 (G5)**
7 - stainless AISI 304 (A2)

SPM 1 connecting set for dividers

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



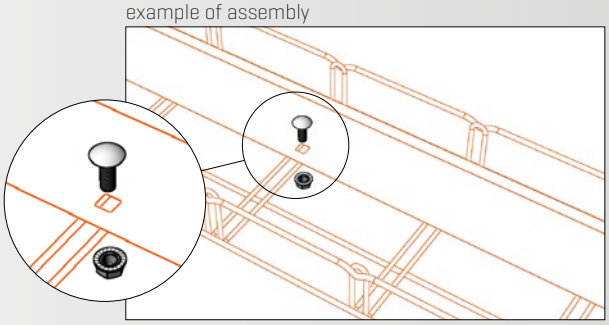
10pcs ×10 = 100pcs

The connecting set SPM 1 serves for fastening the partition to any place within the entire width of the mesh tray. This versatility represents its main technical benefit.

Installation of 2 pcs of SPM 1 connecting set per 1 meter of divider.

SPM 1 connecting set consists of a carriage bolt M6x16 and a collar nut M6.

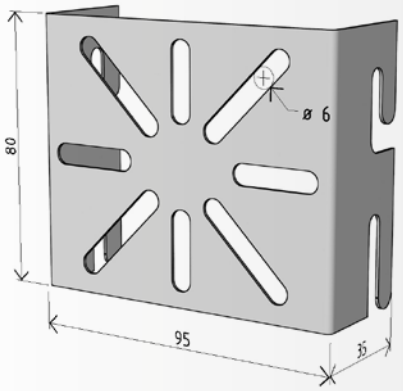
example of assembly



ARK - 213080	CG
ARK - 223080	G5
ARK - 233080	A2

DZM 1 juction box holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

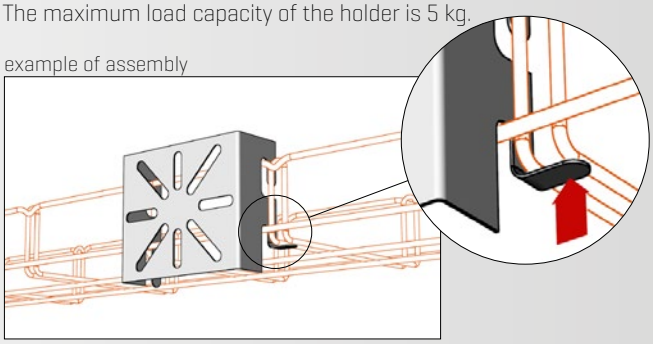


42 pcs

The DZM 1 box holder serves to attach distribution boxes and other elements (sockets, switches, etc.) directly to the cable track. The holder is secured to the mesh tray by means of at least one lip.

The maximum load capacity of the holder is 5 kg.

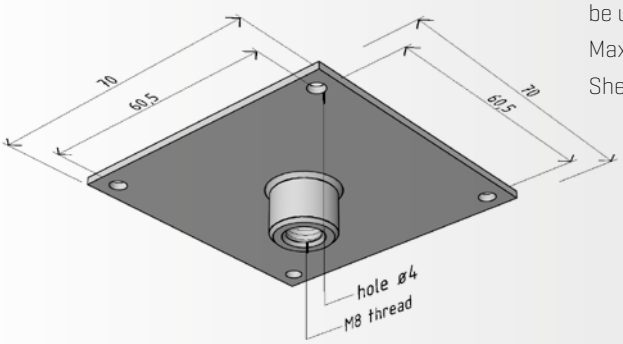
example of assembly



ARK - 214010	CG
ARK - 224010	ZD
ARK - 234010	A2

DZM 2 holder of threaded rod

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L



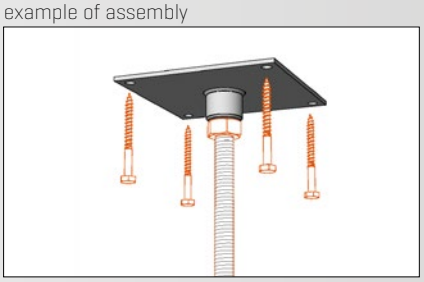
100pcs

The DZM 2 holder serves for spatial assemblies, anchoring threaded rods M8 to the ceiling (wooden, hourdis, etc.,), or under any horizontal part of a building where metal dowels into concrete cannot be used.

Maximum recommended loading capacity is 150 kg.

Sheet metal thickness 2.0 mm.

example of assembly

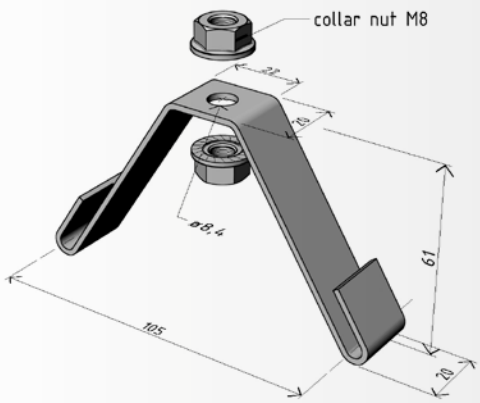


ARK - 214020	CG
–	ZD
ARK - 234020	A2

DZM 3/100 mesh tray holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.

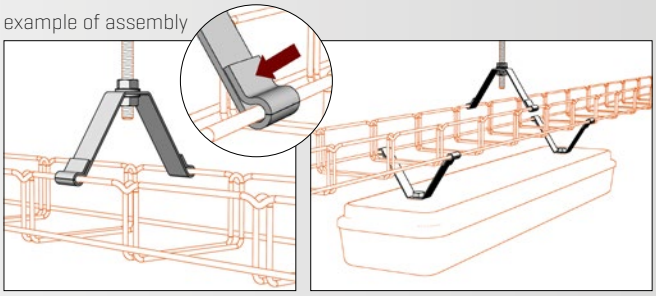


100pcs

The DZM 3/100 ceiling bracket serves for suspending 100 mm mesh trays from M8 threaded rods. It can also serve as a bearing element for the installation of various types of light fittings. Maximum recommended loading capacity is 50 kg. Sheet metal thickness 2.0 mm.

This type of holder cannot be combined with mesh tray cover. In case of requested installation with cover, it is necessary to use PZM support (see p. 46) or DZM 6 holders (see p. 35)

example of assembly



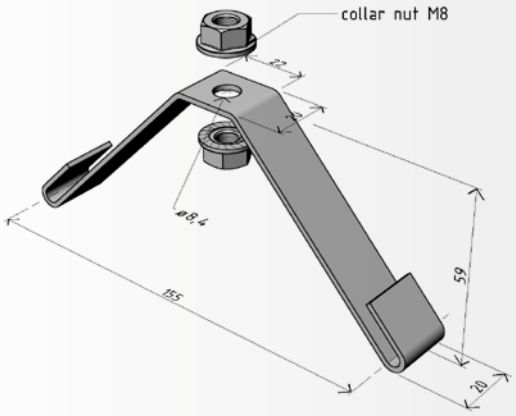
ARK - 214030	CG
ARK - 224030	ZD
ARK - 234030	A2

0 - cold galvanized (CG)
2 - geomet 500 (GS)
3 - stainless AISI 304 (A2)

DZM 3/150 mesh tray holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.

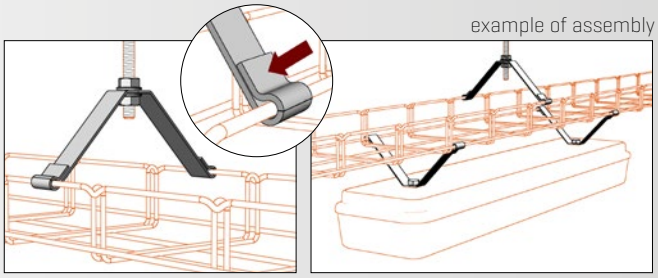


80 pcs

The DZM 3/10 ceiling bracket serves for suspending 150 mm mesh trays from M8 threaded rods. It can also serve as a bearing element for the installation of various types of light fittings. Maximum recommended loading capacity is 50 kg. Sheet metal thickness 2.0 mm.

This type of holder cannot be combined with mesh tray cover. In case of requested installation with cover, it is necessary to use PZM support (see p. 46) or DZM 6 holders (see p. 35)

example of assembly

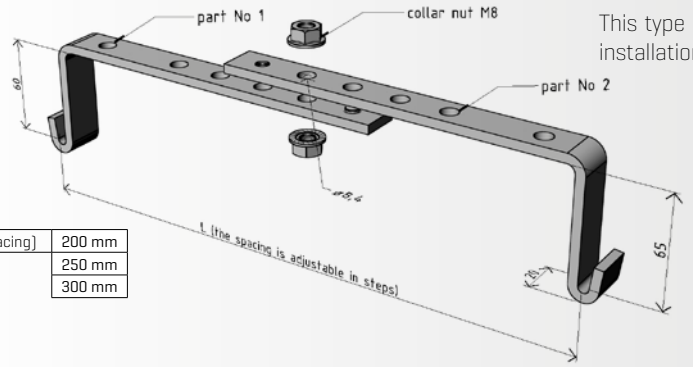


ARK - 214035	CG	5 - cold galvanized (CG)
ARK - 224035	ZD	7 - geomet 500 (G5)
ARK - 234035	A2	8 - stainless AISI 304 (A2)

DZM 4 adjustable mesh tray holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L

Components shown in the figure are included in the package.



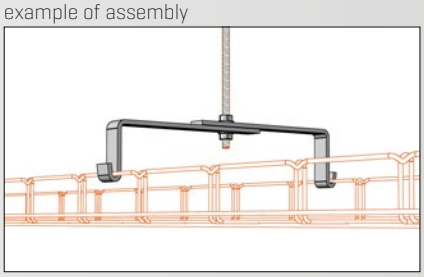
L (holder spacing)	200 mm
	250 mm
	300 mm

25 pcs

The DZM 4 ceiling bracket serves for suspending 200 - 300 mm width mesh trays from M8 threaded rods. It is not designed for trays of 100 mm width. Maximum recommended loading capacity is 80 kg. Sheet metal thickness 5.0 mm.

This type of holder cannot be combined with mesh tray cover. If an installation with cover is required, then a PZM support is an option.

example of assembly

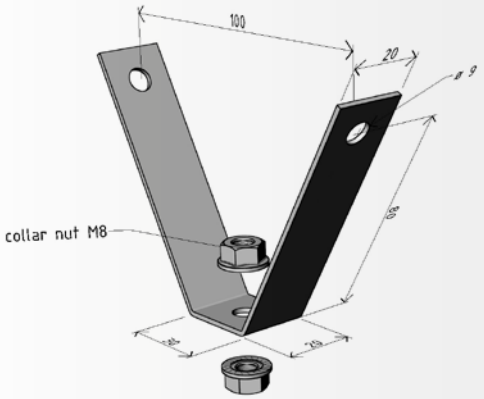


ARK - 214040	CG	0 - cold galvanized (CG)
ARK - 224040	ZD	2 - geomet 500 (G5)
ARK - 234040	A2	3 - stainless AISI 304 (A2)

DZM 5 trapezoidal holder of threaded rod

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



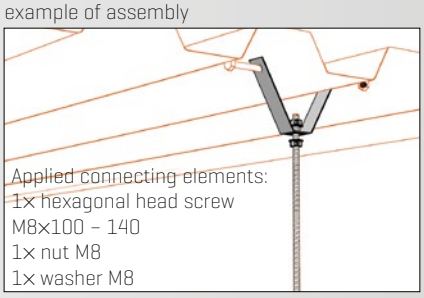
100pcs

The DZM 5 holder serves to anchor M8 threaded rods in roofs and in soffits made with trapezoidal sheet metal cladding. Maximum recommended loading capacity – 100 kg.

Sheet metal thickness 2.0 mm.

Trapezoid scissors are recommended for cutting the sheet metal cladding (see chapter Tools and accessories).

example of assembly



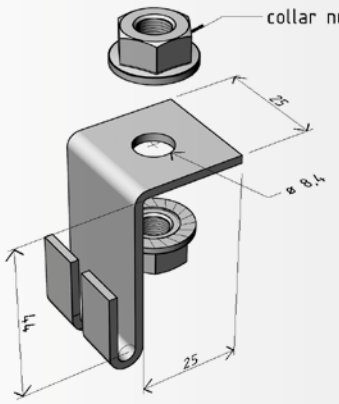
Applied connecting elements:
1× hexagonal head screw
M8×100 – 140
1× nut M8
1× washer M8

ARK - 214050	CG	0 - cold galvanized (CG)
ARK - 224050	ZD	2 - geomet 500 (G5)
ARK - 234050	A2	3 - stainless AISI 304 (A2)

DZM 6 mesh tray holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.



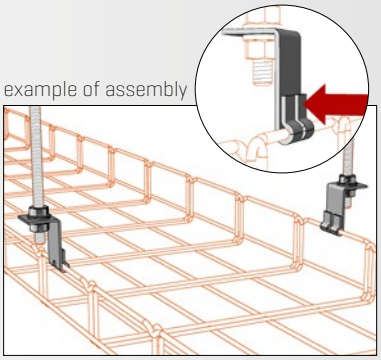
10pcs ×10 = 100pcs

The DZM 6 holder is used in pairs to suspend cable mesh trays on M8 threaded rods. The maximum load capacity of the holder is 50 kg/m. However, the recommended load capacity is 40 kg.

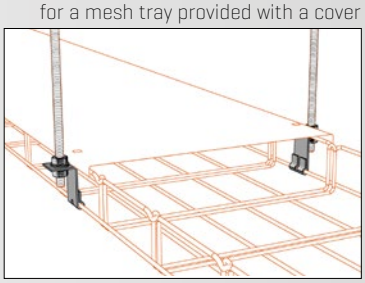
Sheet metal thickness 2.0 mm.

If the mesh tray is covered with VZM cover, the DZM 6 holder shall be attached to the bottom wire of the side wall.

example of assembly



example of holder fixing for a mesh tray provided with a cover

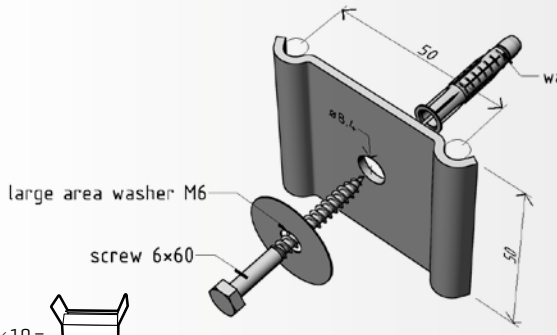


ARK - 214060	CG	0 - cold galvanized (CG)
ARK - 224060	ZD	2 - geomet 500 (G5)
ARK - 234060	A2	3 - stainless AISI 304 (A2)

DZM 7 ascending holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

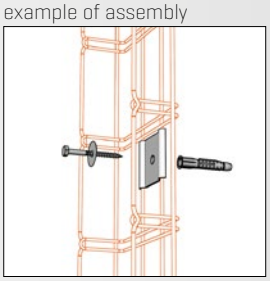
Components shown in the figure are included in the package.

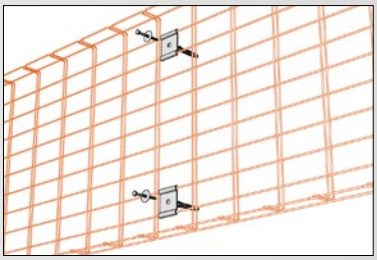


10pcs ×10 = 100pcs

The DZM 7 holder serves to anchor cable mesh trays in horizontal and vertical routes upon the walls. It is not designed for trays of 100 mm width. Sheet metal thickness 2.0 mm.

example of assembly

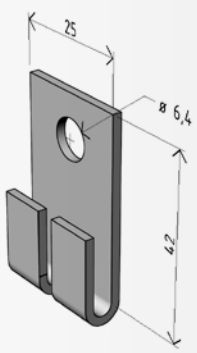




ARK - 214070	CG	0 - cold galvanized (CG)
ARK - 224070	ZD	3 - stainless AISI 304 (A2)
ARK - 234070	A2	

DZM 8 wall holder of mesh tray

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

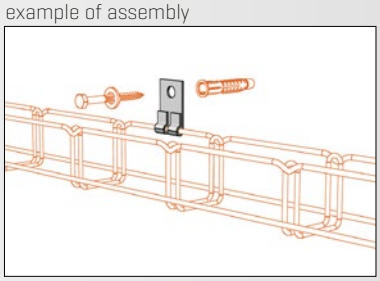


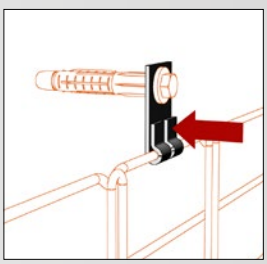
10pcs ×10 = 100pcs

The DZM 8 holder serves for anchoring cable mesh trays directly on vertical parts of a building. Maximum recommended loading capacity – 40 kg. Sheet metal thickness 2.0 mm.

The maximum recommended width of the mesh tray is 50 and 100 mm, depending on the mass load of the mesh tray.

example of assembly



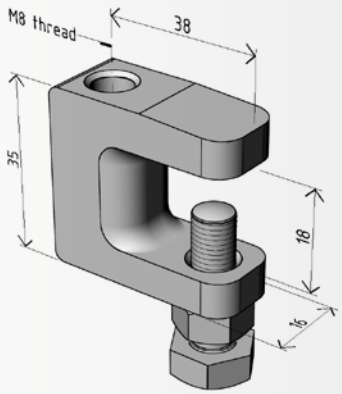


ARK - 214080	CG
ARK - 224080	ZD
ARK - 234080	A2

DZM 9 holder of threaded rod

CG cold galvanized

Components shown in the figure are included in the package.

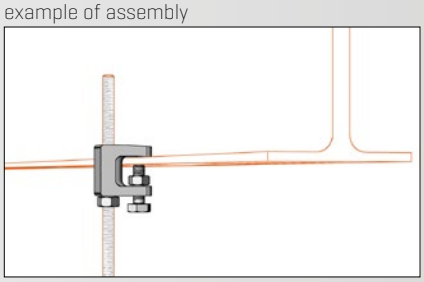


The DZM 9 holder serves to anchor M8 threaded rods in spatial assembly by suspension on "I" profile.

The maximum recommended load of the holder is 120 kg.

Material: tempered cast iron, zinc-plated

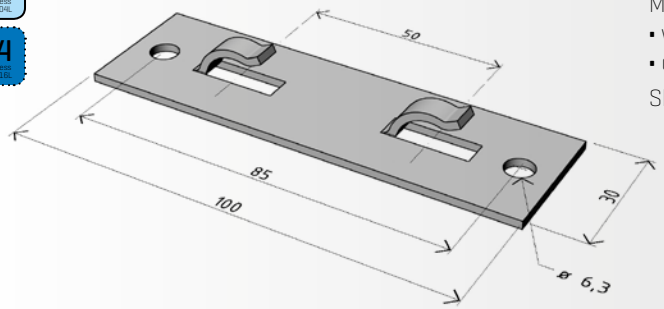
example of assembly



ARK - 214090 CG
-
-

DZM 10 wall holder of mesh tray

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



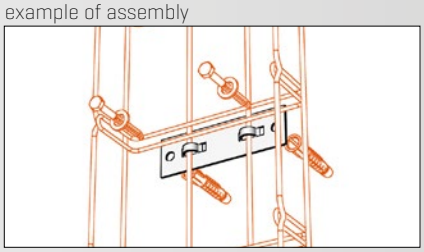
Due to its universality the DZM 10 wall holder can be used in multiple installation types for both vertical and horizontal mounting.

It is preferred especially with metal structures to which it can be welded or attached by bolts. It is not technically designed for trays of 100 mm width.

Maximum recommended loading capacity of hooks:
- wall installation – shear stress 30 kg
- ceiling installation – tensile stress 10 kg

Sheet metal thickness 1.5 mm.

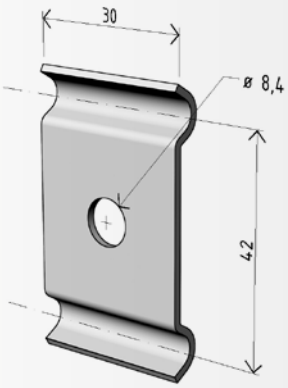
example of assembly



ARK - 214100 CG
ARK - 224100 ZD
ARK - 234100 A2

DZM 12 lateral holder of mesh tray

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



10pcs ×10 = 100pcs

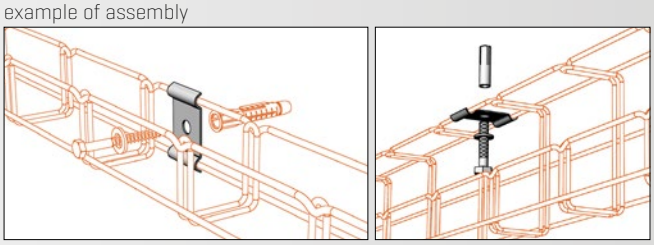
The DZM 12 lateral holder serves for anchoring cable mesh trays of smaller dimensions directly on vertical parts of the construction.

The maximum recommended width of the mesh tray is 150 mm, depending on the mass load of the mesh tray.

It is also possible to use DZM 12 holder as anchoring element for „G" type M2 cable trays.

Sheet metal thickness 2.0 mm.

example of assembly

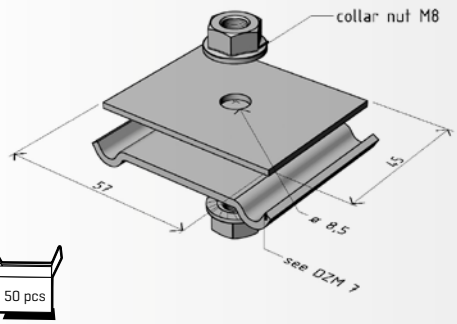


ARK - 214120 CG
ARK - 224120 ZD
ARK - 234120 A2

DZM 13 holder of mesh tray

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.

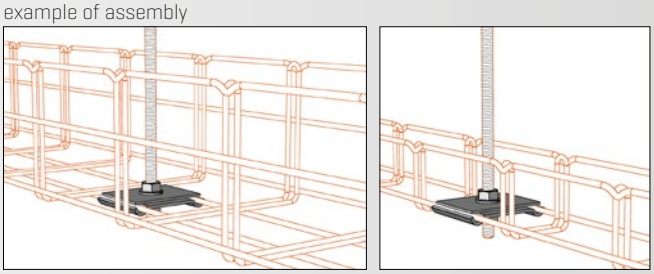


10pcs ×5 = 50 pcs

The DZM 13 holder is used for cable mesh trays on M8 threaded rods. This installation is suitable for mesh trays M2 50/50, M2 150/50 and M2 150/100 only. Maximum recommended loading capacity is 50 kg.

Sheet metal thickness 2.0 mm.

example of assembly

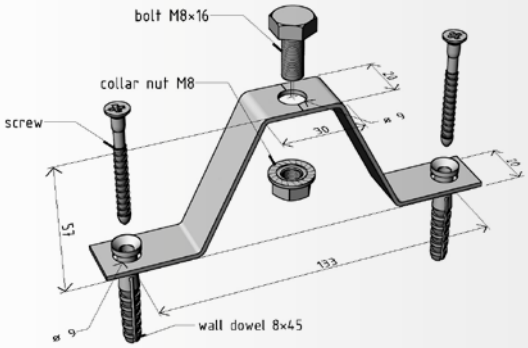


ARK - 214130	CG	0 - cold galvanized (CG)
ARK - 224130	ZD	2 - geomet 500 (G5)
ARK - 234130	A2	3 - stainless AISI 304 (A2)

DZM 14 floor holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

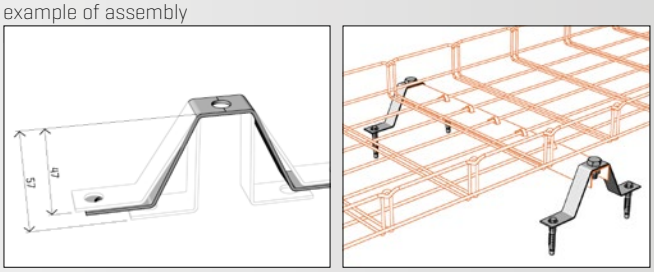
Components shown in the figure are included in the package.



100pcs

The DZM 14 holder serves in combination with PZM supports for cable track installations in false floors. The height of the pathway can be adjusted to 47 – 57 mm, namely by widening or narrowing down the achoring holes. Maximum recommended loading capacity is 60 kg. Sheet metal thickness 2.0 mm.

example of assembly

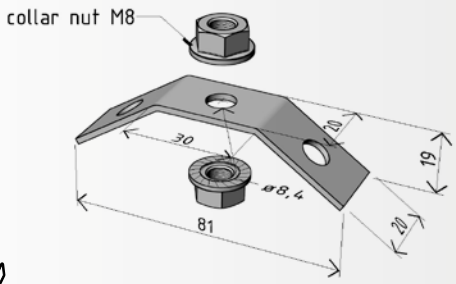


ARK - 214140	CG	0 - cold galvanized (CG)
ARK - 224140	ZD	3 - stainless AISI 304 (A2)
ARK - 234140	A2	

DZM 15 suspension ropes holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

Components shown in the figure are included in the package.

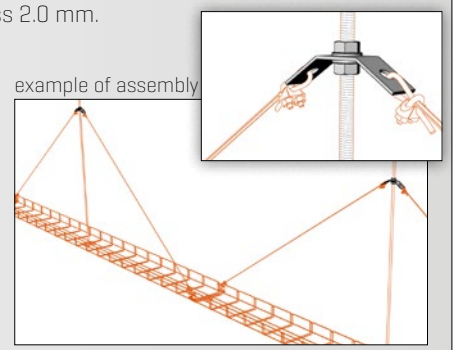


10ks ×10 = 100ks

DZM 15 holder is used for anchoring of suspension rope to threaded rod. It is designed for rope suspension in places where it is necessary to cross space without possibility of direct anchoring to soffit.

Sheet metal thickness 2.0 mm.

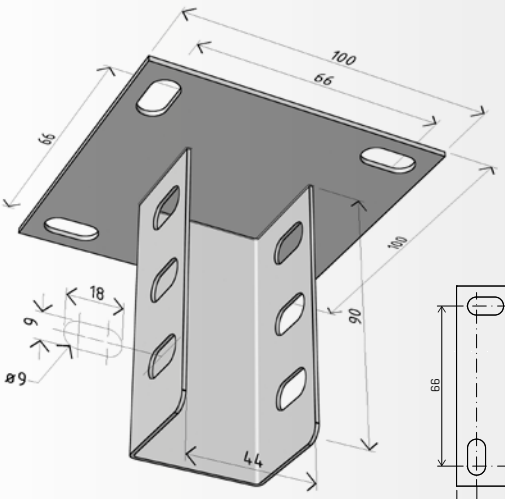
example of assembly

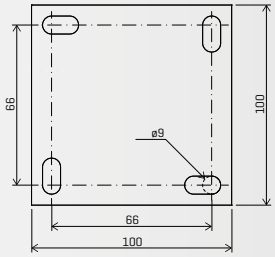


ARK - 214150	GZ	
ARK - 224150	ZZ	
ARK - 234150	A2	

DZM STP strut holder

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L





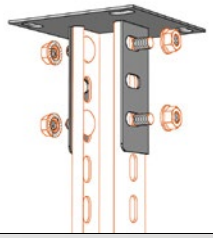
The DZM STP strut holder serves for anchoring STPM spatial installation struts (see p.38) under the horizontal building structures.

If necessary, the holder can be turned by 180° and used as a floor bracket.

The maximum pull load capacity of the DZM STP holder is 250 kg.

Sheet metal thickness: main plate 2.0 mm
U-profile 1.5 mm

example of assembly



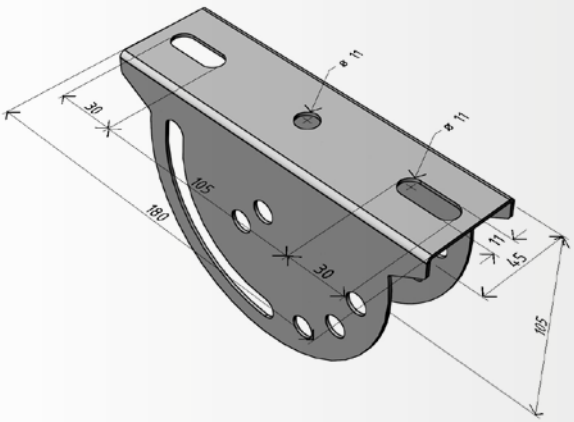
Connecting elements:
4× carriage bolt M8×20
4× washer M10
4× nut M8

12 pcs

ARK - 214300	CG
ARK - 224300	ZD
ARK - 234300	A2

DZM STPU angular strut holder

SZ sendzimir zinc
A2 stainless AISI 304L
A4 stainless AISI 316L

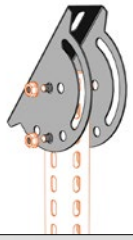


DZM STPU holder is used for anchoring STPM struts (see p. 44) of spatial mounting under horizontal constructions in situations where it is necessary to compensate angular difference between angle of soffit with horizontal plain.

The maximum pull load capacity of the DZM STPU holder is 150 kg.

Sheet metal thickness 2.0 mm.

example of assembly



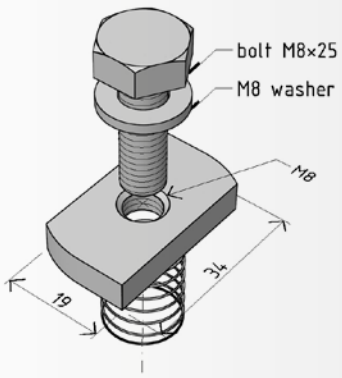
Connecting elements:
4× carriage bolt M8×20
4× washer M10
4× nut M8

1 pc

–	
ARK - 224310	SZ
ARK - 234310	A2

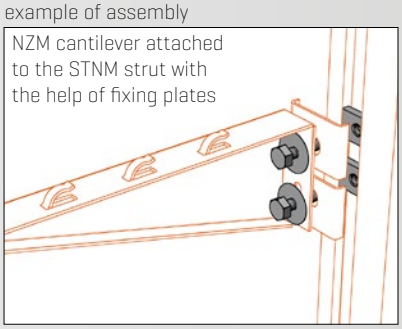
MSM rectangular nut

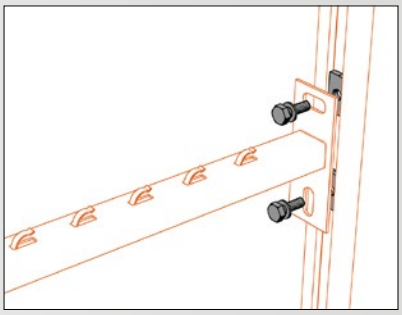
CG cold galvanized
A2 stainless AISI 304L



The rectangular MSM nut serves for anchoring cantilevers to the struts in combination with the fixing plate PVM. The use of PVM fixing plate is not necessary with NPZM cantilevers thanks to their sturdy base.

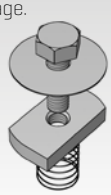
example of assembly





MSM/M6 rectangular nut

Components shown in the figure are included in the package.



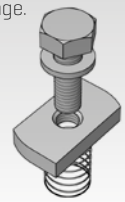
10pcs ×10 = 100pcs

Intended for cantilevers of 50, 100, 150, and 200 sizes.

ARK - 218951 – ARK - 238951 CG A2

MSM/M8 rectangular nut

Components shown in the figure are included in the package.



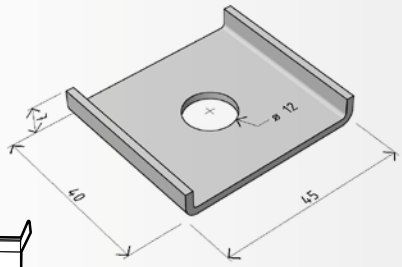
10pcs ×10 = 100pcs

Intended for cantilevers of 250, 300, 400 and 500 sizes.

ARK - 218952 – ARK - 238952 CG A2

PVM fixing plate

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



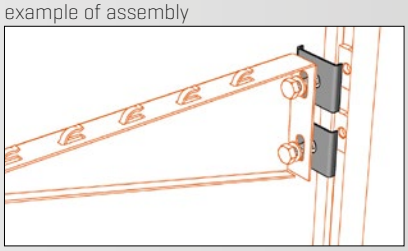
10pcs ×10 = 100pcs

ARK - 218953 CG
ARK - 228953 ZD
ARK - 238953 A2

PVM fixing plates serve for centring the NZM cantilevers when anchoring them to the strut.

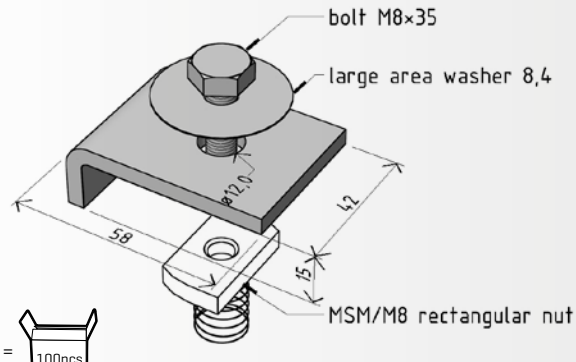
Sheet metal thickness 2.0 mm.

example of assembly



PIM fixing plate to I profile

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L



10pcs ×10 = 100pcs

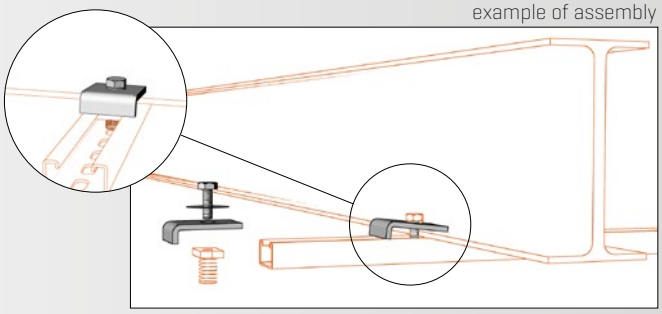
ARK - 218960 CG
ARK - 228960 ZD
ARK - 238960 A2

0 - cold galvanized (CG)
3 - stainless AISI 304 (A2)

The PIM fixing plate for I profiles, combined with rectangular nut MSM/M8, serves for attaching I-profile cantilevers to the struts, the maximum section of the I-beam being 15 mm.

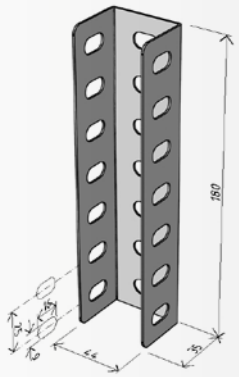
Sheet metal thickness 2.0 mm.

example of assembly



SSPM spatial strut splice

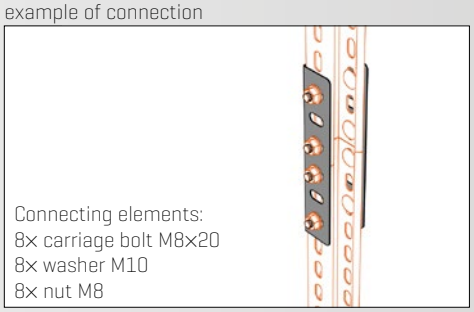
ZD hot zinc-dipped



The SSPM slice serves for joining two spatial struts STPM (see p. 44). A good quality connection requires using not less than the oconnecting elements specified in the figure.

Sheet metal thickness 1.5 mm.

example of connection



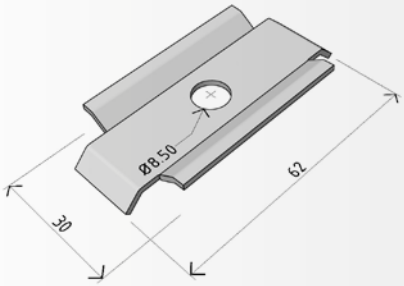
Connecting elements:
8× carriage bolt M8×20
8× washer M10
8× nut M8

1 pc

–	CG
ARK - 223095	ZD
–	A2

SVSM stabilizing plate of strut

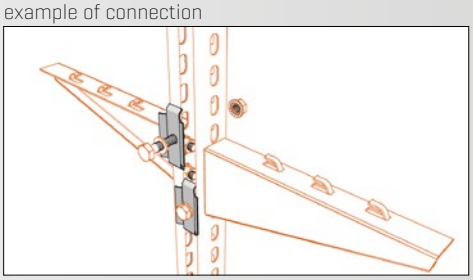
CG cold galvanized



SVSM stabilizing plate of strut is used for reinforcing the open profile of STPM strut in place of anchoring the cantilever in installations with functional integrity. For cantilevers with small base (NZM 50-200) only one piece is required. However, for cantilevers with higher base (NZM 250-500) always use the SVSM plates in pairs. Correctly installed stabilizing setting prevents sides of the strut from deflection under the pressure of loaded cantilever.

Sheet metal thickness 1.5 mm.

example of connection



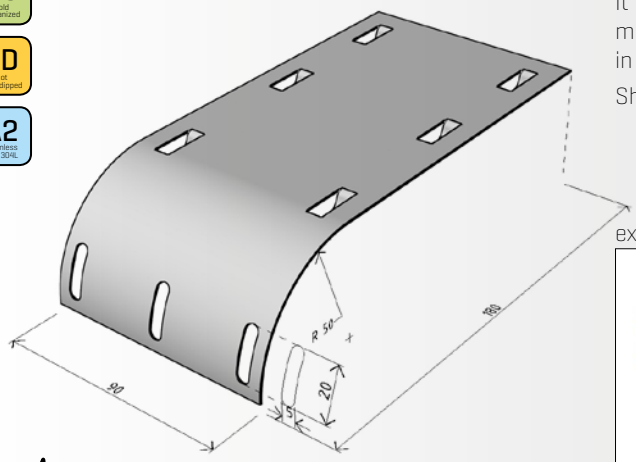
Connecting elements for one SVSM setting:
1× bolt M8×50
1× washer M10
1× collared nut M8

10pcs ×10 = 100pcs

ARK - 218958	CG
–	ZD
–	A2

KSM cable chute

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L

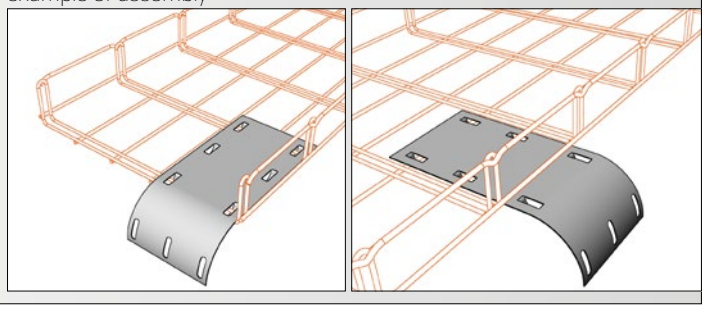


The cable chute KSM is used to guide the cable bunch safely out of the tray.

It protects the cabling against mechanical damage, while ensuring the minimum bending radius of the cables (may not be used for tray 50/50 in paralel direction).

Sheet metal thickness 1.0 mm.

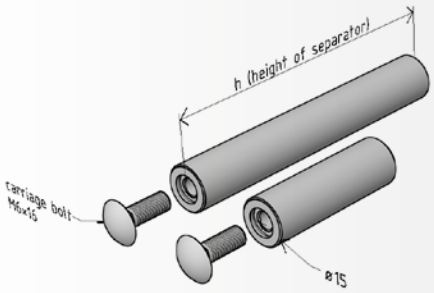
example of assembly



1 pc

ARK - 212410	CG
ARK - 222410	ZD
ARK - 232410	A2

KOM cable separator

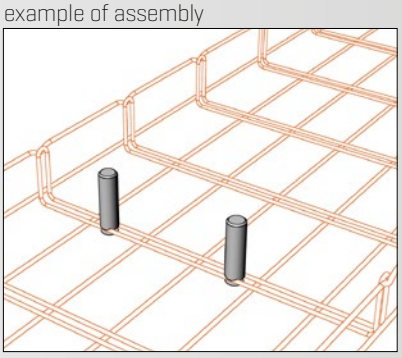


The cable separator KOM is used prior to the insertion of the cables for temporary division of the space (e.g. power circuits/low current) in a plurality of chambers, which makes the following bundling of cables easier.

KOM separators may be fixed in any position of the crossbeam to facilitate the installation and to enhance the transparency of cable layout.

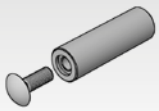
When the bundling is ready, the separators KOM can be removed and then used anew.

example of assembly



KOM 50 cable separator

h (hight of separator)	48 mm



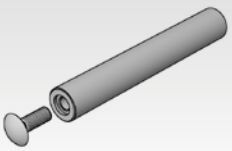
10pcs ×10 = 100pcs

intended for cable trays of 50 mm height

ARK - 219975 – – ☐ plastic

KOM 100 cable separator

h (hight of separator)	98 mm



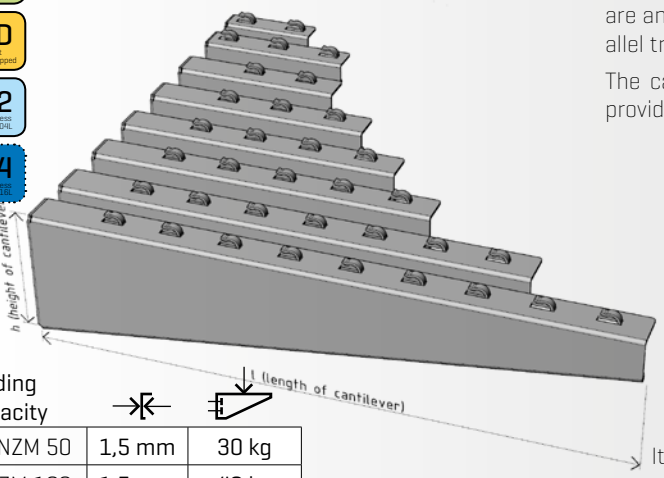
10pcs ×10 = 100pcs

intended for cable trays of 100 mm height

ARK - 219976 – – ☐ plastic

NZM cantilever

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L



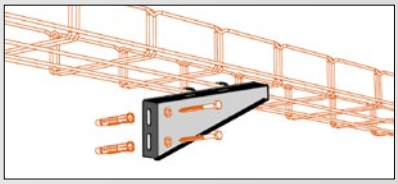
The NZM-series cantilevers are used as wall bearing elements for wall mounting of cable tracks. For spatial track installations the cantilevers are anchored in STPM webs. In case of a plurality of wall mounted parallel tracks the combination with STNM web (see p. 49) can be used.

The cantilevers are made of sheet metal 1.5 and 2.0 mm. They are provided with boltless grips.

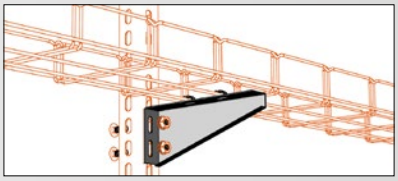
loading capacity		
NZM 50	1,5 mm	30 kg
NZM 100	1,5 mm	40 kg
NZM 150	2,0 mm	45 kg
NZM 200	2,0 mm	50 kg
NZM 250	2,0 mm	75 kg
NZM 300	2,0 mm	100 kg
NZM 400	2,0 mm	120 kg
NZM 500	2,0 mm	150 kg

To ensure correct functioning of cantilevers and to achieve their nominal loading capacity it is important to maintain even distribution of weight along their length.

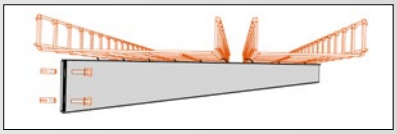
Wall mounting
This execution serves for anchoring cable tracks directly in the masonry or another vertical construction.



Mounting on strut
It is used for spatial cable tracks or for compound wall mounting of more cable tracks above each other.

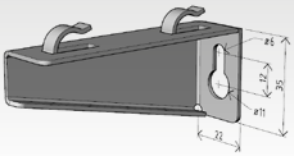


Compound mounting
for more trays on one cantilever.



NZM 50 cantilever

l (length of cantilever)	83 mm
h (height of cantilever)	32 mm
T (sheet thickness)	1,5 mm

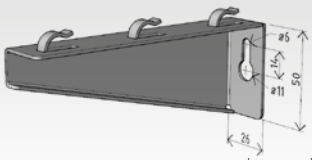


60 pcs

ARK - 215005 CG
ARK - 225005 ZD
ARK - 235005 A2

NZM 100 cantilever

l (length of cantilever)	133 mm
h (height of cantilever)	52 mm
T (sheet thickness)	1,5 mm



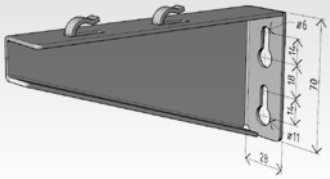
40 pcs

can be used for 50 and 100 mm mesh trays

ARK - 215010 CG
ARK - 225010 ZD
ARK - 235010 A2

NZM 150 cantilever

l (length of cantilever)	172 mm
h (height of cantilever)	73 mm
T (sheet thickness)	2,0 mm

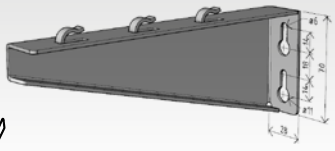


20 pcs

ARK - 215015 CG
ARK - 225015 ZD
ARK - 235015 A2

NZM 200 cantilever

l (length of cantilever)	225 mm
h (height of cantilever)	72 mm
T (sheet thickness)	2,0 mm

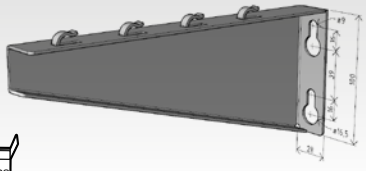


20 pcs

ARK - 215020 CG
ARK - 225020 ZD
ARK - 235020 A2

NZM 250 cantilever

l (length of cantilever)	273 mm
h (height of cantilever)	102 mm
T (sheet thickness)	2,0 mm

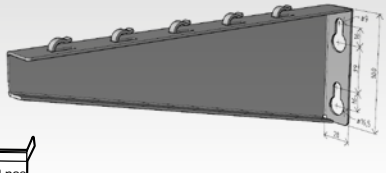


10 pcs

ARK - 215025 CG
ARK - 225025 ZD
ARK - 235025 A2

NZM 300 cantilever

l (length of cantilever)	328 mm
h (height of cantilever)	102 mm
T (sheet thickness)	2,0 mm

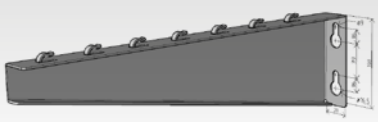


10 pcs

ARK - 215030 CG
ARK - 225030 ZD
ARK - 235030 A2

NZM 400 cantilever

l (length of cantilever)	400 mm
h (height of cantilever)	105 mm
T (sheet thickness)	2,0 mm



10 pcs

ARK - 215040 GZ
ARK - 225040 ZD
ARK - 235040 A2

NZM 500 cantilever

l (length of cantilever)	500 mm
h (height of cantilever)	105 mm
T (sheet thickness)	2,0 mm

10 pcs

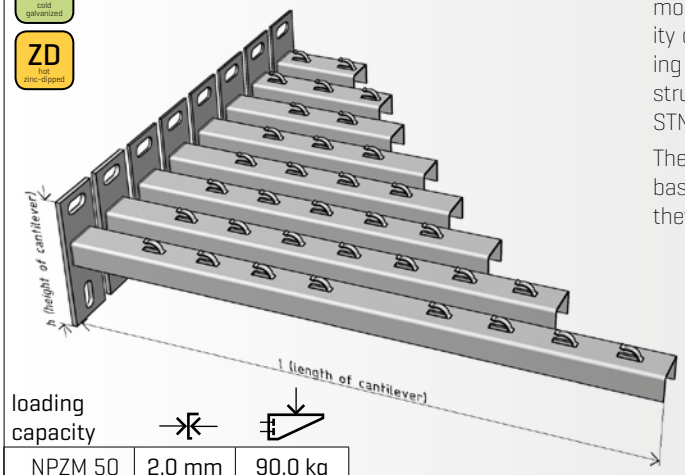
ARK - 215050 GZ
ARK - 225050 ZD
ARK - 235050 A2

Information about variability of combinations cable trays - cantilevers on page 44.

NPZM cantilever

CG cold galvanized

ZD hot zinc-dipped



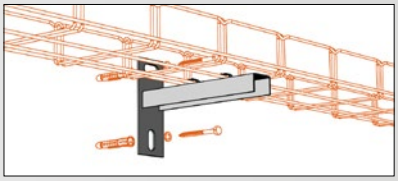
NZPM cantilevers are used as wall supporting elements for cable route mounting and thier biggest technical advantage is mainly in the possibility of simple and fast installation of anchoring elements. In case of using these cantilevers in spatial installation, they are anchored into STPM struts and in case of wall mounting of more tracks above each other into STNM strut (see p. 45).

The body of the cantilevers is made of sheet metal 2.0 mm thick and their base of sheet metal 5.0 and 6.0 mm thick. For easy installation of tracks they are equipped with boltless clamps.

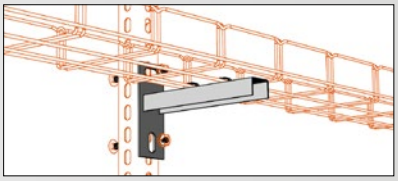
loading capacity		
NPZM 50	2,0 mm	90,0 kg
NPZM 100	2,0 mm	88,3 kg
NPZM 150	2,0 mm	86,7 kg
NPZM 200	2,0 mm	85,0 kg
NPZM 250	2,0 mm	81,7 kg
NPZM 300	3,0 mm	80,0 kg
NPZM 400	3,0 mm	78,3 kg
NPZM 500	3,0 mm	75,0 kg

To ensure correct functioning of cantilevers and to achieve their nominal loading capacity it is important to maintain even distribution of weight along their length.

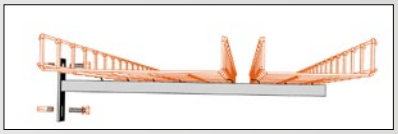
Wall mounting
This execution serves for anchoring cable tracks directly in the masonry or another vertical construction.



Mounting on strut
It is used for spatial cable tracks or for compound wall mounting of more cable tracks above each other.

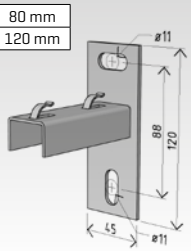


Compound mounting
for more trays on one cantilever.



NPZM 50 cantilever

l (length of cantilever)	80 mm
h (height of cantilever)	120 mm

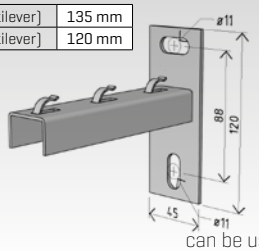


10 pcs

ARK - 215105 CG
ARK - 225105 ZD
–

NPZM 100 cantilever

l (length of cantilever)	135 mm
h (height of cantilever)	120 mm



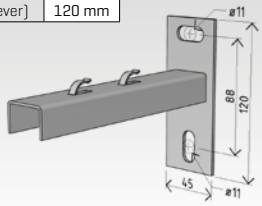
10 pcs

can be used for 50 and 100 mm mesh trays

ARK - 215110 CG
ARK - 225110 ZD
–

NPZM 150 cantilever

l (length of cantilever)	170 mm
h (height of cantilever)	120 mm

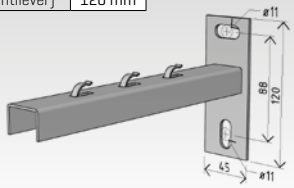


10 pcs

ARK - 215115 CG
ARK - 225115 ZD
–

NPZM 200 cantilever

l (length of cantilever)	225 mm
h (height of cantilever)	120 mm

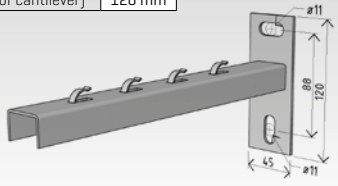


10 pcs

ARK - 215120 CG
ARK - 225120 ZD
–

NPZM 250 cantilever

l (length of cantilever)	270 mm
h (height of cantilever)	120 mm

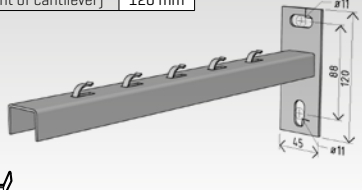


10 pcs

ARK - 215125 CG
ARK - 225125 ZD
–

NPZM 300 cantilever

l (length of cantilever)	320 mm
h (height of cantilever)	120 mm

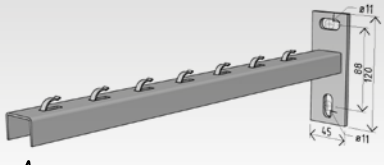


10 pcs

ARK - 215130 CG
ARK - 225130 ZD
–

NPZM 400 cantilever

l (length of cantilever)	400 mm
h (height of cantilever)	120 mm

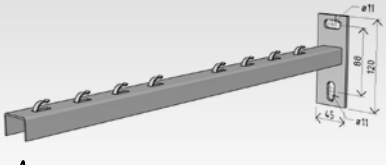


10 pcs

ARK - 215140 CG
ARK - 225140 ZD
–

NPZM 500 cantilever

l (length of cantilever)	500 mm
h (height of cantilever)	120 mm



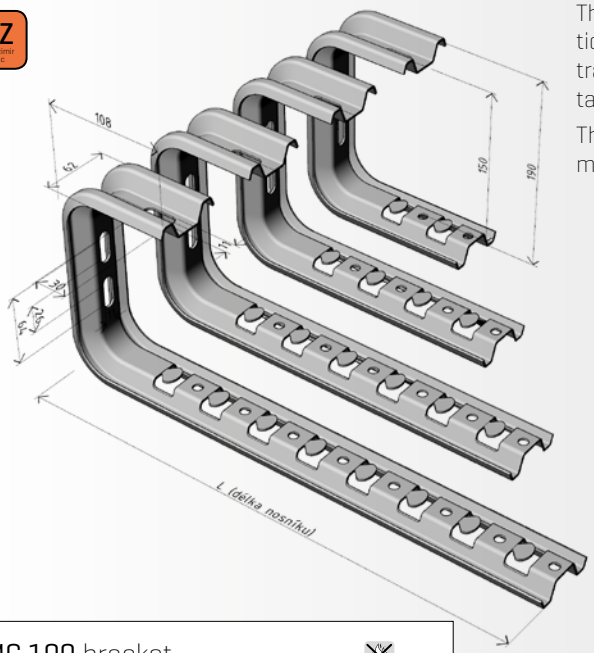
10 pcs

ARK - 215150 CG
ARK - 225150 ZD
–

Information about variability of combinations cable trays - cantilevers on page 44.

NZMC bracket

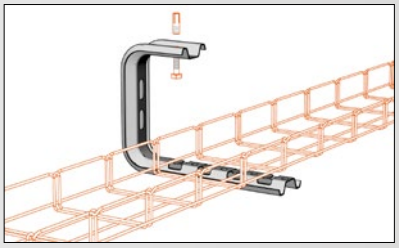
SZ sendzimir zinc



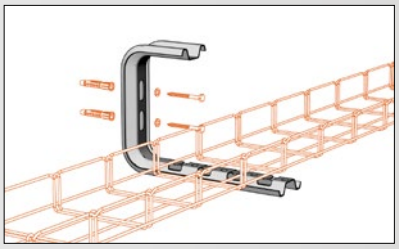
The NZMC series brackets are mainly used as bearing elements for installations under the ceiling. Their major advantage is the easy access to mesh trays when laying the cables, which cannot be enabled by other implementations, with the exception of certain more complex design solutions.

The brackets are made of sheet metal 2.0 mm. For easy installation of mesh trays they are provided with boltless grips.

Ceiling mounting
serves to anchor cable routes running under the ceiling or suspended from another horizontal structure.



Wall mounting
serves to anchor cable routes directly into the masonry or to another vertical building structure.



NZMC 100 bracket

l (length of cantilever)	165 mm

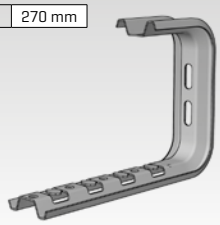
1 pc

CAUTION !!! designed for mesh tray 50/50 only

ARK - 225210 SZ

NZMC 200 bracket

l (length of cantilever)	270 mm



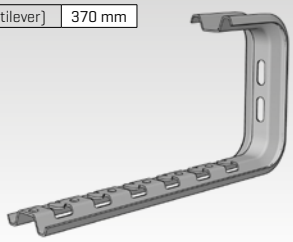
1 pc

this bracket is also intended for 100 mm mesh trays

ARK - 225220 SZ

NZMC 300 bracket

l (length of cantilever)	370 mm

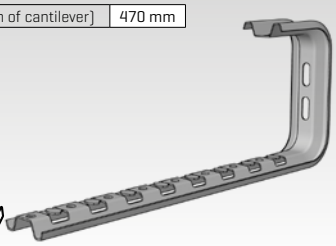


1 pc

ARK - 225230 SZ

NZMC 400 bracket

l (length of cantilever)	470 mm



1 pc

ARK - 225240 SZ

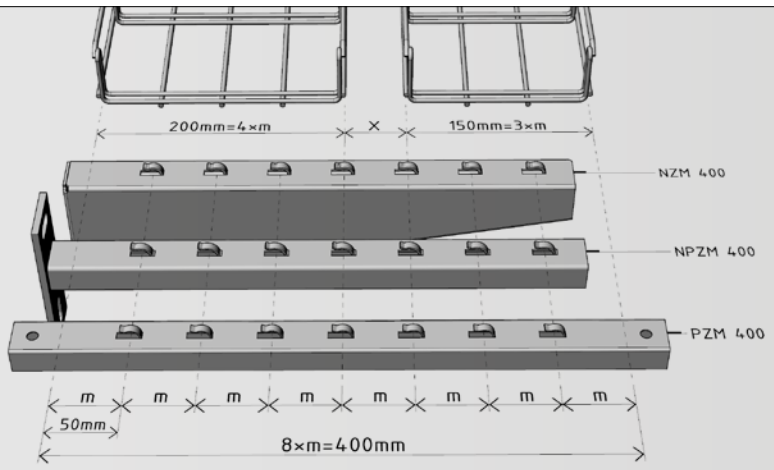
Load capacity table

			max. tray width
NZMC 100	140 kg	85 kg	50 mm
NZMC 200	90 kg	50 kg	200 mm
NZMC 300	50 kg	30 kg	300 mm
NZMC 400	37 kg	23 kg	400 mm

Trays combinations on cantilevers

Combinations of several trays can be fitted on M2 system cantilevers. The possibilities are determined by the „m" number of 50mm moduls on a cantilever. When combining more trays on one cantilever, one modul must be always skipped between all adjoining trays.

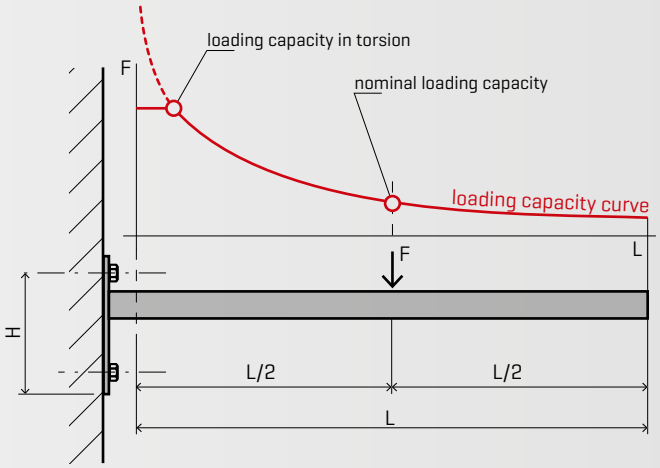
The complete overview of possibilities of tray installation on cantilevers and all available combinations of trays on cantilevers are on www.arkys.cz, chapter Combinations of trays on cantilevers and supports.



Rules for anchoring and loading of cantilevers

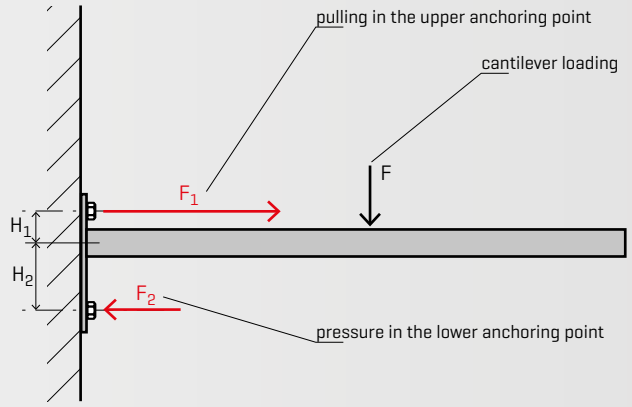
In order to meet declared values of loading capacity, it is necessary to follow a few rules during installation and laying cabling into trays.

Optimum loading distribution

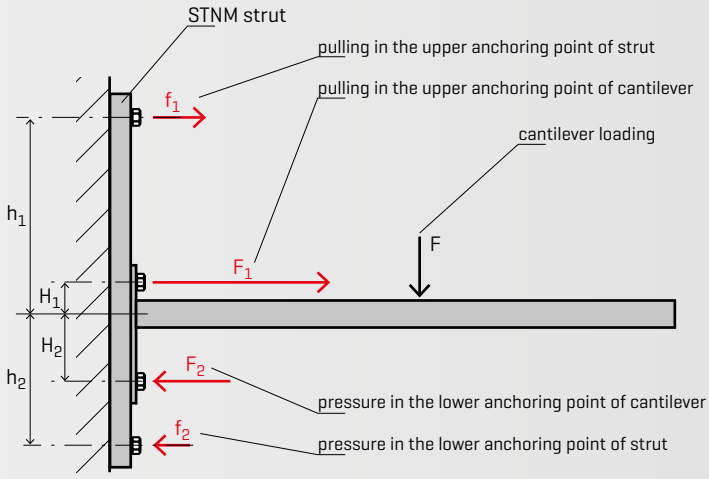


Loading capacity of a cable track is affected by distribution alongside the cantilever. Declared values at various types of cantilevers apply to even loading distribution. The resultant of forces is placed in the centre and corresponds to sum of weights of the cables. In case it is not possible or suitable to ensure even loading distribution, it is important that cables of higher weight be lain closer to cantilever base. If even this is impossible, it is necessary to keep in mind the reduced load capacity which is reduced according to the extend of load asymmetry (see picture and chart on the left).

Correctly chosen and installed anchoring



The load capacity of an anchoring point is usually the most crucial limitation for the load ability of the whole cable track. The distribution of forces (see scheme on the left) suggests that the upper anchoring point is more strained then the lower one - the pulling force applies.
Therefore in high loaded cable routes it is necessary to examine the quality and the type of wall material which the cable route is anchored onto. The whole length of installed route must be thoroughly examined. The right choice of anchoring type and its installation method are the key conditions to achieve high load capacities of cable routes.



In case the wall quality does not allow sufficiently solid anchoring or in case the wall material cannot be examine, the installation of cantilevers through STNM strut is recommended. In such case, the load of anchoring points is considerably lower and a higher load capacity of the route is thus achieved. This option is suitable for highly loaded routes, especially if anchored directly to the wall.

Anchoring technology



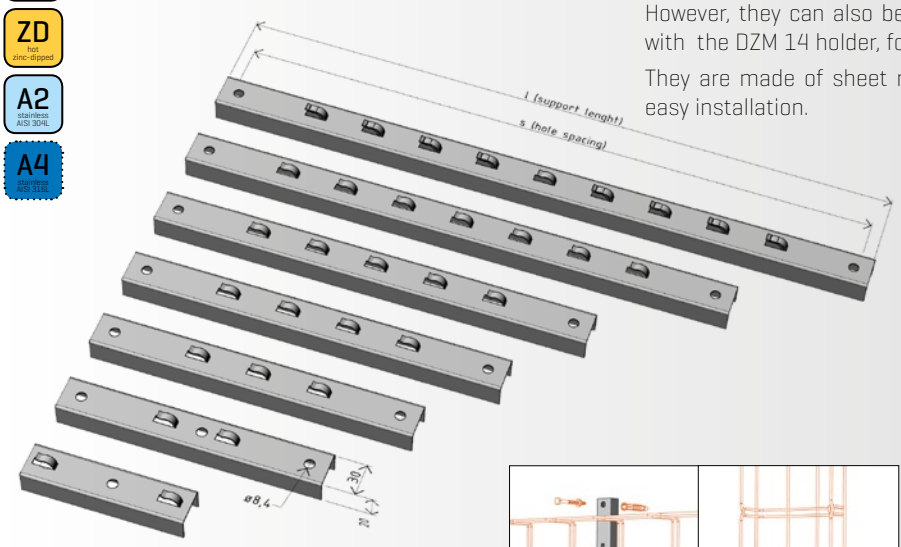

We offer a complex selection of anchoring elements from renowned suppliers that cover wide range of demands of building and solve majority of common situations during installations of routes. See more details about anchoring elements on p. 53 or on www.arkys.cz.

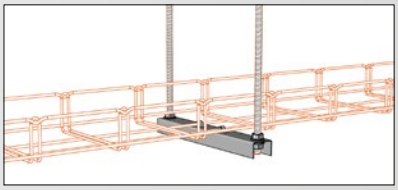
PZM support

CG cold galvanized
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

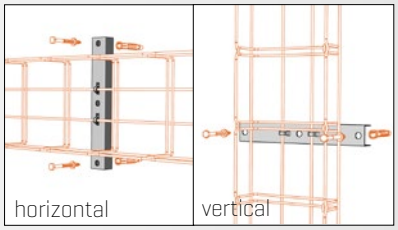
The PZM series supports are used in combination with pairs of M8 threaded rods as bearing elements in vertical cable route installations. However, they can also be used for wall mounting or, in combination with the DZM 14 holder, for floor mounting (see p. 37).

They are made of sheet metal 1mm. Boltless grips are provided for easy installation.

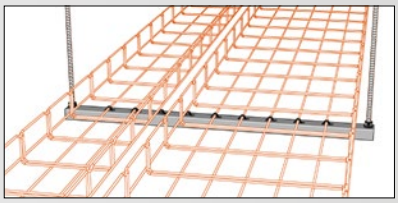




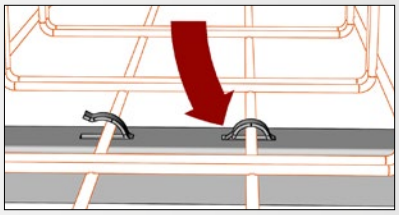
Mounting on threaded rod pairs
serves for suspended cable tracks anchored directly into the ceiling.



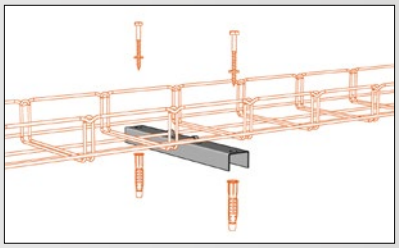
Wall mounting
serves for wall mounted cable tracks.



Multiple route assembly
Multiple mesh trays can be attached to the supports, up to the full capacity of each support.



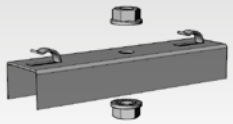
Attaching the mesh trays to the supports
Mesh trays placed on supports are attached by bending the grips as shown in the figure.



Floor mounting
serves for horizontal cable tracks anchored directly into the floor.

PZM 100 support

l (support lenght)	130 mm



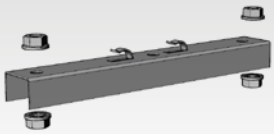
25 pcs

Components shown in the figure are included in the package

ARK - 216010	CG	0 - cold galvanized (CG)
ARK - 226010	ZD	2 - geomet 500 (G5)
ARK - 236010	A2	3 - stainless AISI 304 (A2)

PZM 150 support

l (support lenght)	215 mm
s (hole spacing)	185 mm



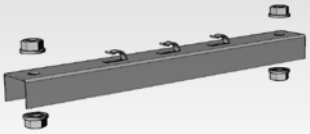
25 pcs

Components shown in the figure are included in the package

ARK - 216015	CG	5 - cold galvanized (CG)
ARK - 226015	ZD	7 - geomet 500 (G5)
ARK - 236015	A2	8 - stainless AISI 304 (A2)

PZM 200 support

l (support lenght)	265 mm
s (hole spacing)	235 mm



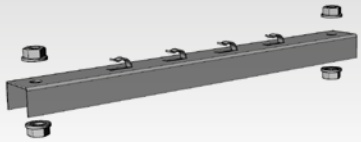
25 pcs

Components shown in the figure are included in the package

ARK - 216020	CG	0 - cold galvanized (CG)
ARK - 226020	ZD	2 - geomet 500 (G5)
ARK - 236020	A2	3 - stainless AISI 304 (A2)

PZM 250 support

l (support lenght)	315 mm
s (hole spacing)	285 mm



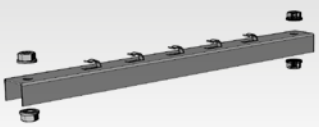
25 pcs

Components shown in the figure are included in the package

ARK - 216025	CG	5 - cold galvanized (CG)
ARK - 226025	ZD	7 - geomet 500 (G5)
ARK - 236025	A2	8 - stainless AISI 304 (A2)

PZM 300 support

l (support lenght)	365 mm
s (hole spacing)	335 mm



25 pcs

Components shown in the figure are included in the package

ARK - 216030	CG	0 - cold galvanized (CG)
ARK - 226030	ZD	2 - geomet 500 (G5)
ARK - 236030	A2	3 - stainless AISI 304 (A2)

PZM 400 support

l (support lenght)	465 mm
s (hole spacing)	435 mm

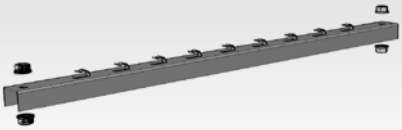
25 pcs

Components shown in the figure are included in the package

ARK - 216040	CG	0 - cold galvanized (CG)
ARK - 226040	ZD	2 - geomet 500 (G5)
ARK - 236040	A2	3 - stainless AISI 304 (A2)

PZM 500 support

l (support lenght)	565 mm
s (hole spacing)	535 mm



25 pcs

Components shown in the figure are included in the package

ARK - 216050	CG	0 - cold galvanized (CG)
ARK - 226050	ZD	2 - geomet 500 (G5)
ARK - 236050	A2	3 - stainless AISI 304 (A2)

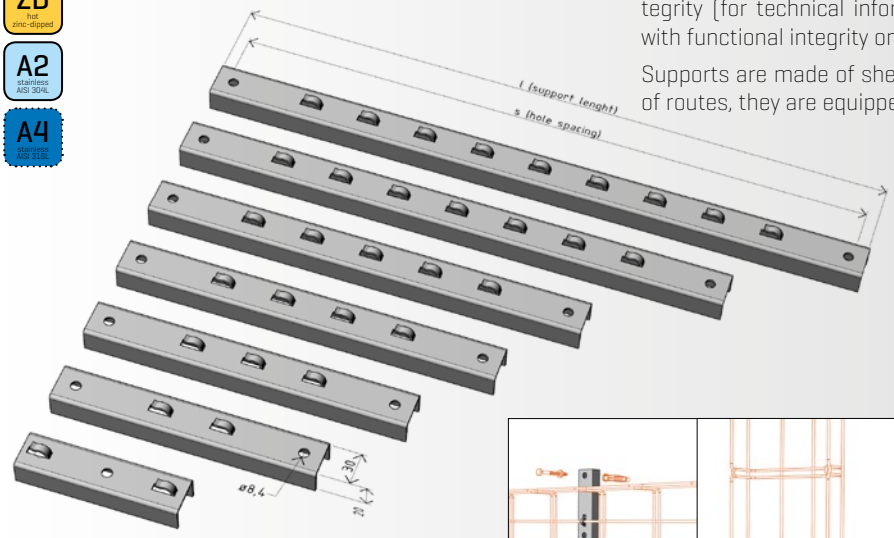
Information about variability of combinations cable trays - supports on page 44.

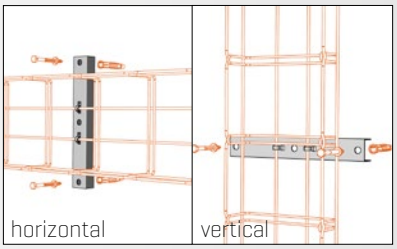
PZMP support, fire resistant

SZ sendzimir zinc
ZD hot zinc-dipped
A2 stainless AISI 304L
A4 stainless AISI 316L

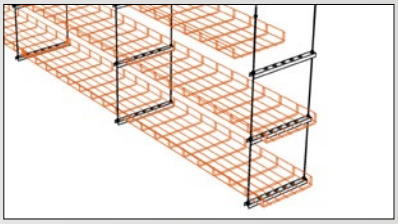
PZMP supports are tested for fire resistance acc. to temperature curves P and PH. In combination with threaded rod M8, they are used as supporting elements during installations of cable route with functional integrity (for technical information on mounting see chapter Mounting with functional integrity on p. 56 – 78).

Supports are made of sheet metal of 2 mm thick. For easy installation of routes, they are equipped with boltless clamps.

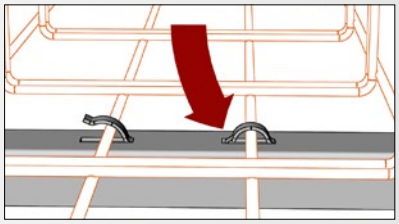




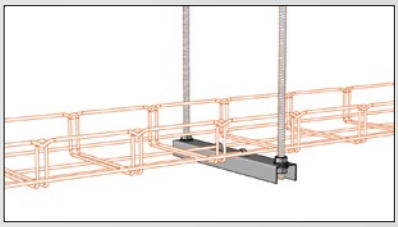
Wall mounting
serves for wall mounted cable tracks.



Suspended mounting
The threaded rods can carry multiple cable tracks above one another. The mesh trays may have various widths, up to the full support capacity.



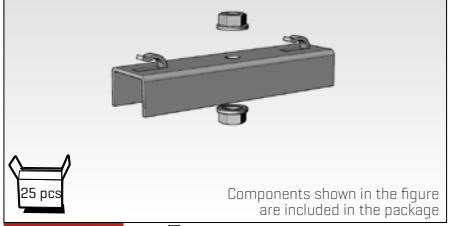
Attaching the mesh trays to the supports
Mesh trays placed on supports are attached by bending the grips as shown in the figure.



Mounting on pairs of threaded rods
This execution serves for suspended tracks anchored to the ceiling.

PZMP 100 support, fire resistant

l (support lenght)	130 mm



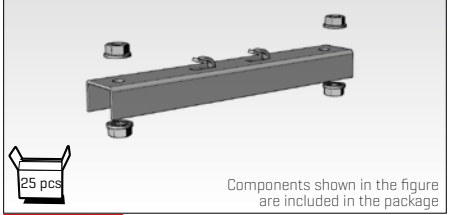
25 pcs

Components shown in the figure are included in the package

ARK - 216210	DB	0 - cold galvanized (CG)
ARK - 226210	ZD	2 - geomet 500 (G5)
ARK - 236210	A2	3 - stainless AISI 304 (A2)

PZMP 150 support, fire resistant

l (support lenght)	215 mm
s (hole spacing)	185 mm



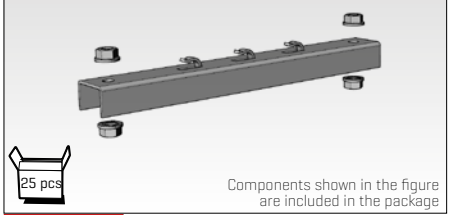
25 pcs

Components shown in the figure are included in the package

ARK - 216215	DB	5 - cold galvanized (CG)
ARK - 226215	ZD	7 - geomet 500 (G5)
ARK - 236215	A2	8 - stainless AISI 304 (A2)

PZMP 200 support, fire resistant

l (support lenght)	265 mm
s (hole spacing)	235 mm



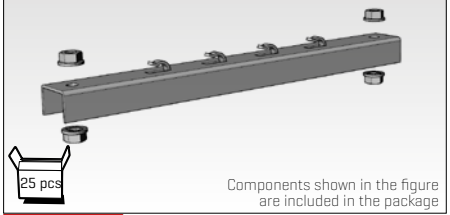
25 pcs

Components shown in the figure are included in the package

ARK - 216220	DB	0 - cold galvanized (CG)
ARK - 226220	ZD	2 - geomet 500 (G5)
ARK - 236220	A2	3 - stainless AISI 304 (A2)

PZMP 250 support, fire resistant

l (support lenght)	315 mm
s (hole spacing)	285 mm



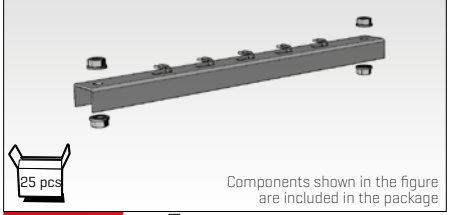
25 pcs

Components shown in the figure are included in the package

ARK - 216225	DB	5 - cold galvanized (CG)
ARK - 226225	ZD	7 - geomet 500 (G5)
ARK - 236225	A2	8 - stainless AISI 304 (A2)

PZMP 300 support, fire resistant

l (support lenght)	365 mm
s (hole spacing)	335 mm



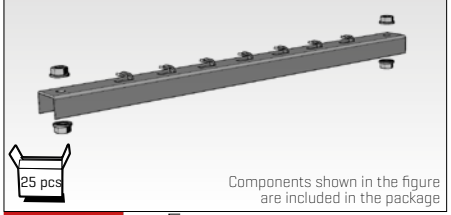
25 pcs

Components shown in the figure are included in the package

ARK - 216230	DB	0 - cold galvanized (CG)
ARK - 226230	ZD	2 - geomet 500 (G5)
ARK - 236230	A2	3 - stainless AISI 304 (A2)

PZMP 400 support, fire resistant

l (support lenght)	465 mm
s (hole spacing)	435 mm



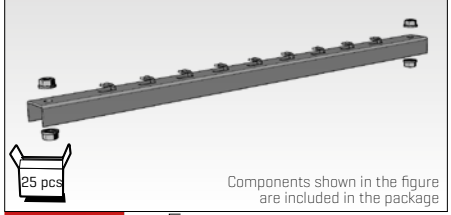
25 pcs

Components shown in the figure are included in the package

ARK - 216240	DB	0 - cold galvanized (CG)
ARK - 226240	ZD	2 - geomet 500 (G5)
ARK - 236240	A2	3 - stainless AISI 304 (A2)

PZMP 500 support, fire resistant

l (support lenght)	565 mm
s (hole spacing)	535 mm



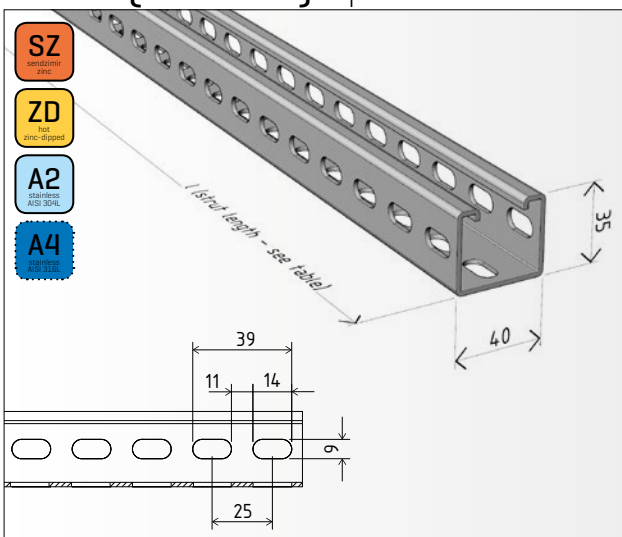
25 pcs

Components shown in the figure are included in the package

ARK - 216250	DB	0 - cold galvanized (CG)
ARK - 226250	ZD	2 - geomet 500 (G5)
ARK - 236250	A2	3 - stainless AISI 304 (A2)

Information about variability of combinations cable trays - supports on page 44.

STPM (1.5 mm) spatial strut



The spatial struts of the STPM series are used for creating carrying structures for cable tracks.

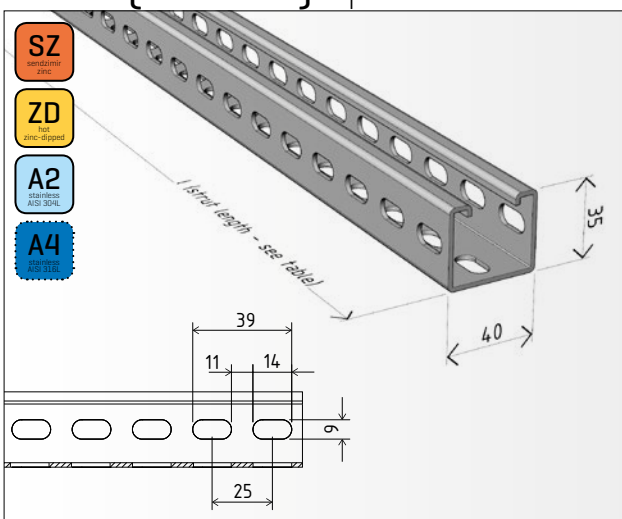
The anchoring to the horizontal parts of the structure is made in combination with DZM STP or DZM STPU holders. Subsequently NZM and NPZM cantilevers are installed on them if needed. The end of the strut can be closed by cap OK 2 for safety.

	strut length [mm]	mass [kg/pc]	SZ sendzimir zinc (17-23 micron)	ZD hot zinc-dipped (80-90 micron)	A2 stainless AISI 304L (AISI 304)
STPM 200 (1,5mm)	200 mm	0,24 kg	ARK - 227020	ARK - 227620	ARK - 237020
STPM 250 (1,5mm)	250 mm	0,30 kg	ARK - 227025	ARK - 227625	ARK - 237025
STPM 300 (1,5mm)	300 mm	0,36 kg	ARK - 227030	ARK - 227630	ARK - 237030
STPM 400 (1,5mm)	400 mm	0,54 kg	ARK - 227040	ARK - 227640	ARK - 237040
STPM 500 (1,5mm)	500 mm	0,61 kg	ARK - 227050	ARK - 227650	ARK - 237050
STPM 600 (1,5mm)	600 mm	0,73 kg	ARK - 227060	ARK - 227660	ARK - 237060
STPM 700 (1,5mm)	700 mm	0,83 kg	ARK - 227070	ARK - 227670	ARK - 237070
STPM 800 (1,5mm)	800 mm	0,97 kg	ARK - 227080	ARK - 227680	ARK - 237080
STPM 900 (1,5mm)	900 mm	1,09 kg	ARK - 227090	ARK - 227690	ARK - 237090
STPM 1000 (1,5mm)	1 000 mm	1,21 kg	ARK - 227100	ARK - 227700	ARK - 237100
STPM 1100 (1,5mm)	1 100 mm	1,35 kg	ARK - 227110	ARK - 227710	ARK - 237110
STPM 3000 (1,5mm)	3 000 mm	3,50 kg	ARK - 227300	ARK - 227900	ARK - 237300

1 pc

ARK - 227xxx SZ
ARK - 227xxx ZD
ARK - 237xxx A2

STPM (2.0 mm) spatial strut

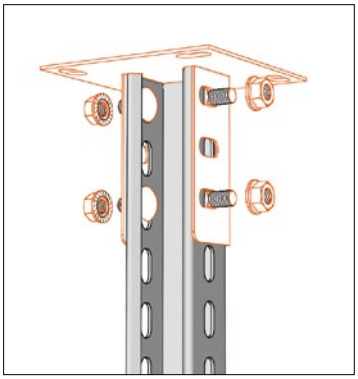


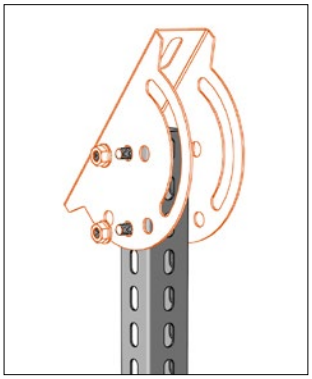
	strut length [mm]	mass [kg/pc]	SZ sendzimir zinc (17-23 micron)	ZD hot zinc-dipped (80-90 micron)	A2 stainless AISI 304L (AISI 304)
STPM 1200 (2,0mm)	1 200 mm	1,96 kg	ARK - 227120	ARK - 227720	ARK - 237120
STPM 1300 (2,0mm)	1 300 mm	2,05 kg	ARK - 227130	ARK - 227730	ARK - 237130
STPM 1400 (2,0mm)	1 400 mm	2,14 kg	ARK - 227140	ARK - 227740	ARK - 237140
STPM 1500 (2,0mm)	1 500 mm	2,31 kg	ARK - 227150	ARK - 227750	ARK - 237150
STPM 1600 (2,0mm)	1 600 mm	2,43 kg	ARK - 227160	ARK - 227760	ARK - 237160
STPM 1700 (2,0mm)	1 700 mm	2,65 kg	ARK - 227170	ARK - 227770	ARK - 237170
STPM 1800 (2,0mm)	1 800 mm	2,78 kg	ARK - 227180	ARK - 227780	ARK - 237180
STPM 1900 (2,0mm)	1 900 mm	2,90 kg	ARK - 227190	ARK - 227790	ARK - 237190
STPM 2000 (2,0mm)	2 000 mm	3,10 kg	ARK - 227200	ARK - 227800	ARK - 237200
STPM 2100 (2,0mm)	2 100 mm	3,21 kg	ARK - 227210	ARK - 227810	ARK - 237210
STPM 2200 (2,0mm)	2 200 mm	3,38 kg	ARK - 227220	ARK - 227820	ARK - 237220
STPM 2300 (2,0mm)	2 300 mm	3,52 kg	ARK - 227230	ARK - 227830	ARK - 237230
STPM 2400 (2,0mm)	2 400 mm	3,66 kg	ARK - 227240	ARK - 227840	ARK - 237240
STPM 2500 (2,0mm)	2 500 mm	3,81 kg	ARK - 227250	ARK - 227850	ARK - 237250
STPM 2600 (2,0mm)	2 600 mm	3,98 kg	ARK - 227260	ARK - 227860	ARK - 237260
STPM 2700 (2,0mm)	2 700 mm	4,09 kg	ARK - 227270	ARK - 227870	ARK - 237270
STPM 2800 (2,0mm)	2 800 mm	4,22 kg	ARK - 227280	ARK - 227880	ARK - 237280
STPM 2900 (2,0mm)	2 900 mm	4,39 kg	ARK - 227290	ARK - 227890	ARK - 237290
STPM 3000 (2,0mm)	3 000 mm	4,50 kg	ARK - 227302	ARK - 227902	ARK - 237302
STPM 6000 (2,0mm)	6 000 mm	9,00 kg	ARK - 227602	-	-

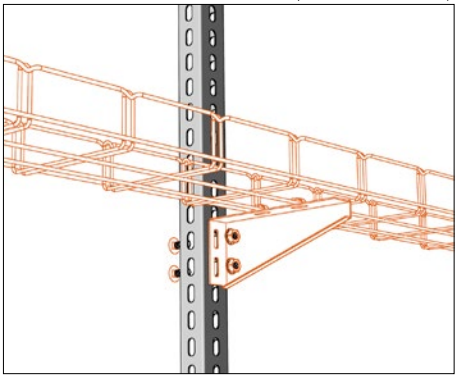
1 pc

ARK - 227xxx SZ
ARK - 227xxx ZD
ARK - 237xxx A2

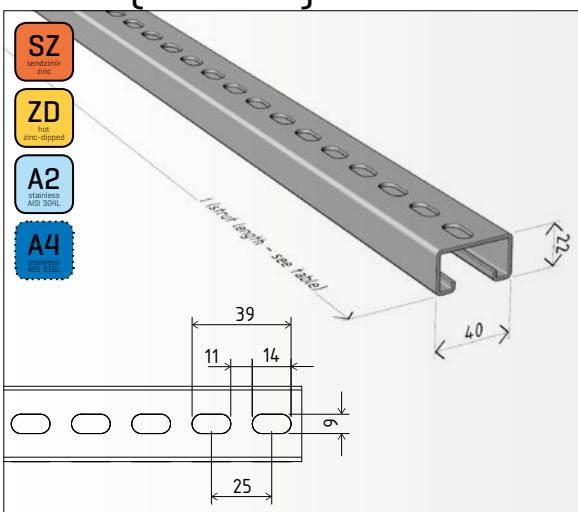
examples of assembly







STNM (1.5 mm) wall strut



1 pc

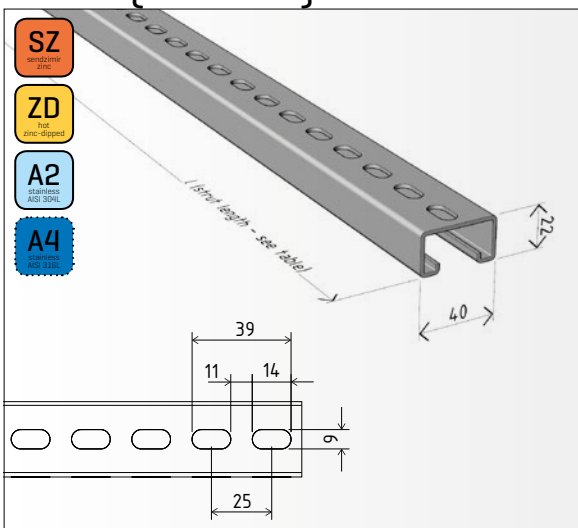
ARK - 228xxx SZ
ARK - 228xxx ZD
ARK - 238xxx A2

The struts of the STNM series are used for wall mounting of cable routes in places where the anchoring forces should be distributed in poor quality masonry.

Using rectangular nuts MSM/M6-M8 and positioning clamp (see p. 39), it is possible to add another cable route later.

	strut length [mm]	mass [kg/pc]	SZ sendzimir zinc (17-23 micron)	ZD hot zinc-dipped (80-90 micron)	A2 stainless AISI 304L (AISI 304)
STNM 200 (1,5mm)	200 mm	0,24 kg	ARK - 228020	ARK - 228620	ARK - 238020
STNM 250 (1,5mm)	250 mm	0,30 kg	ARK - 228025	ARK - 228625	ARK - 238025
STNM 300 (1,5mm)	300 mm	0,36 kg	ARK - 228030	ARK - 228630	ARK - 238030
STNM 400 (1,5mm)	400 mm	0,54 kg	ARK - 228040	ARK - 228640	ARK - 238040
STNM 500 (1,5mm)	500 mm	0,61 kg	ARK - 228050	ARK - 228650	ARK - 238050
STNM 600 (1,5mm)	600 mm	0,73 kg	ARK - 228060	ARK - 228660	ARK - 238060
STNM 700 (1,5mm)	700 mm	0,83 kg	ARK - 228070	ARK - 228670	ARK - 238070
STNM 800 (1,5mm)	800 mm	0,97 kg	ARK - 228080	ARK - 228680	ARK - 238080
STNM 900 (1,5mm)	900 mm	1,09 kg	ARK - 228090	ARK - 228690	ARK - 238090
STNM 1000 (1,5mm)	1 000 mm	1,21 kg	ARK - 228100	ARK - 228700	ARK - 238100
STNM 1100 (1,5mm)	1 100 mm	1,35 kg	ARK - 228110	ARK - 228710	ARK - 238110
STNM 3000 (1,5mm)	3 000 mm	3,50 kg	ARK - 228300	ARK - 228900	ARK - 238300

STNM (2.0 mm) wall strut



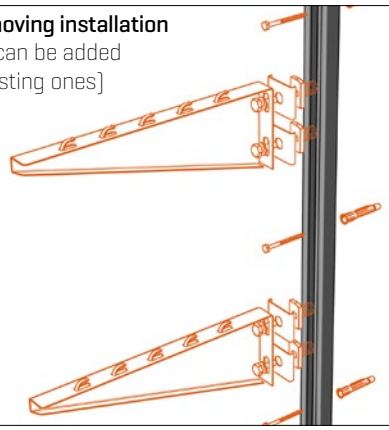
1 pc

ARK - 228xxx SZ
ARK - 228xxx ZD
ARK - 238xxx A2

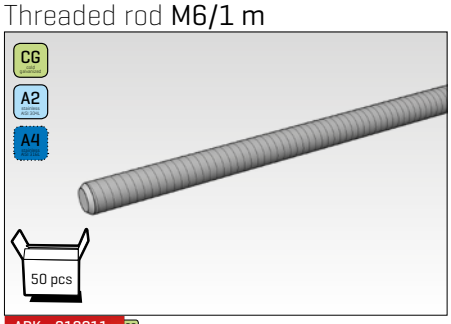
	strut length [mm]	mass [kg/pc]	SZ sendzimir zinc (17-23 micron)	ZD hot zinc-dipped (80-90 micron)	A2 stainless AISI 304L (AISI 304)
STNM 1200 (2,0mm)	1 200 mm	2,04 kg	ARK - 228120	ARK - 228720	ARK - 238120*
STNM 1300 (2,0mm)	1 300 mm	2,14 kg	ARK - 228130	ARK - 228730	ARK - 238130*
STNM 1400 (2,0mm)	1 400 mm	2,24 kg	ARK - 228140	ARK - 228740	ARK - 238140*
STNM 1500 (2,0mm)	1 500 mm	2,41 kg	ARK - 228150	ARK - 228750	ARK - 238150*
STNM 1600 (2,0mm)	1 600 mm	2,54 kg	ARK - 228160	ARK - 228760	ARK - 238160*
STNM 1700 (2,0mm)	1 700 mm	2,77 kg	ARK - 228170	ARK - 228770	ARK - 238170*
STNM 1800 (2,0mm)	1 800 mm	2,90 kg	ARK - 228180	ARK - 228780	ARK - 238180*
STNM 1900 (2,0mm)	1 900 mm	3,03 kg	ARK - 228190	ARK - 228790	ARK - 238190*
STNM 2000 (2,0mm)	2 000 mm	3,24 kg	ARK - 228200	ARK - 228800	ARK - 238200*
STNM 2100 (2,0mm)	2 100 mm	3,36 kg	ARK - 228210	ARK - 228810	-
STNM 2200 (2,0mm)	2 200 mm	3,53 kg	ARK - 228220	ARK - 228820	-
STNM 2300 (2,0mm)	2 300 mm	3,67 kg	ARK - 228230	ARK - 228830	-
STNM 2400 (2,0mm)	2 400 mm	3,82 kg	ARK - 228240	ARK - 228840	-
STNM 2500 (2,0mm)	2 500 mm	3,98 kg	ARK - 228250	ARK - 228850	-
STNM 2600 (2,0mm)	2 600 mm	4,16 kg	ARK - 228260	ARK - 228860	-
STNM 2700 (2,0mm)	2 700 mm	4,27 kg	ARK - 228270	ARK - 228870	-
STNM 2800 (2,0mm)	2 800 mm	4,39 kg	ARK - 228280	ARK - 228880	-
STNM 2900 (2,0mm)	2 900 mm	4,51 kg	ARK - 228290	ARK - 228890	-
STNM 3000 (2,0mm)	3 000 mm	4,70 kg	ARK - 228302	ARK - 228902	-
STNM 6000 (2,0mm)	6 000 mm	9,40 kg	ARK - 228602	-	-

(*) sheet metal thickness 1.5 mm

Mounting type – moving installation
(additional routes can be added in-between the existing ones)

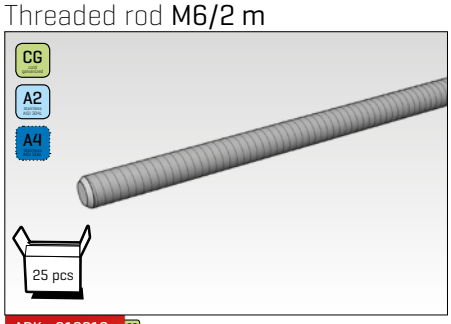


Threaded rod M6/1 m



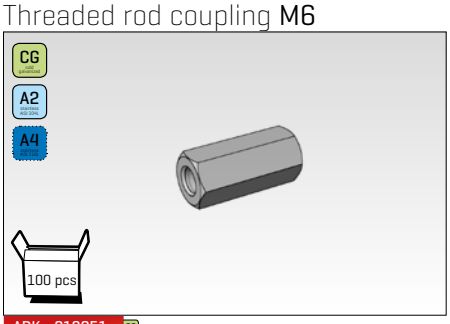
ARK - 219011	CG
–	
ARK - 239011	A2

Threaded rod M6/2 m



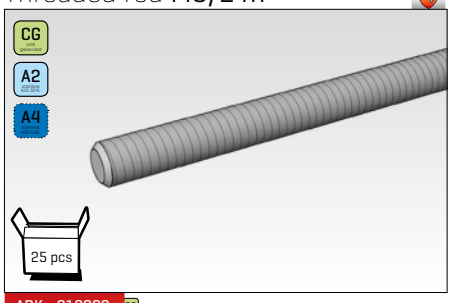
ARK - 219012	CG
–	
ARK - 239012	A2

Threaded rod coupling M6



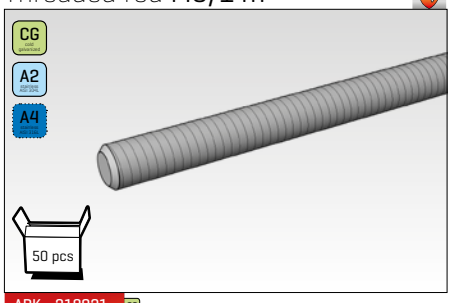
ARK - 219051	CG
–	
ARK - 239051	A2

Threaded rod M8/2 m



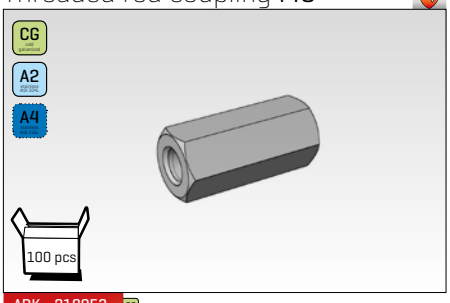
ARK - 219022	CG
–	
ARK - 239022	A2

Threaded rod M8/1 m



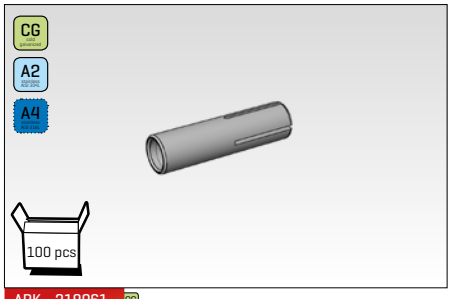
ARK - 219021	CG
–	
ARK - 239021	A2

Threaded rod coupling M8



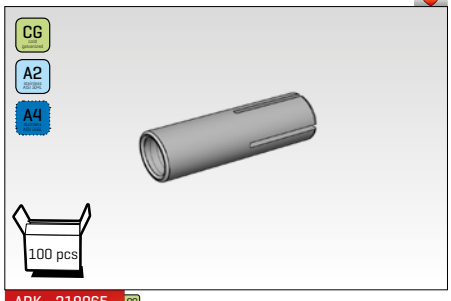
ARK - 219053	CG
–	
ARK - 239053	A2

Metal dowel M6×25



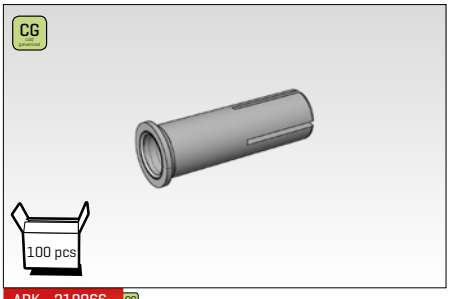
ARK - 219061	CG
–	
ARK - 239061	A2

Metal dowel M8×30



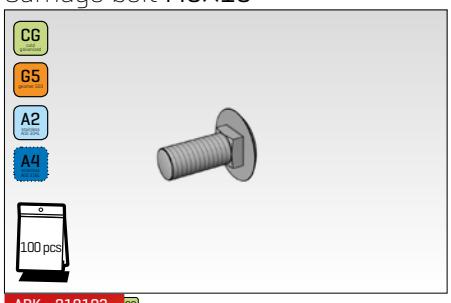
ARK - 219065	CG
–	
ARK - 239065	A2

Metal collar dowel M8×30



ARK - 219066	CG
–	
–	

Carriage bolt M6×16

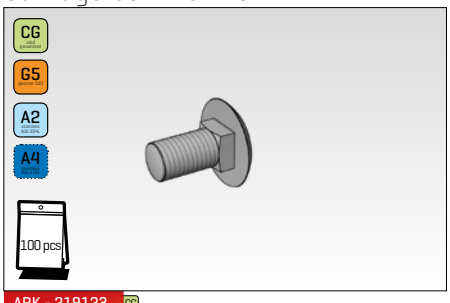


ARK - 219103	CG
ARK - 229103	G5
ARK - 239103	A2

Carriage bolt M6×20

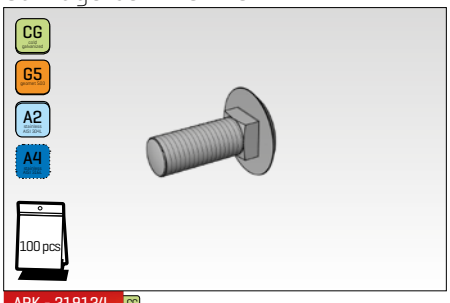
ARK - 219104	CG
ARK - 229104	G5
ARK - 239104	A2

Carriage bolt M8×16



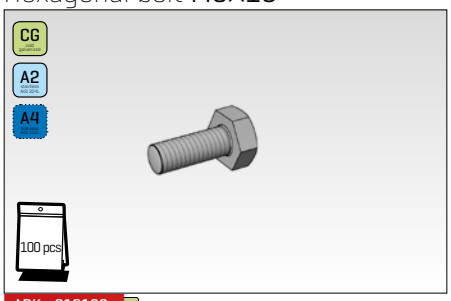
ARK - 219123	CG
ARK - 229123	G5
ARK - 239123	A2

Carriage bolt M8×20



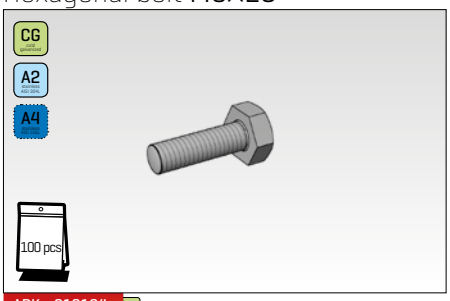
ARK - 219124	CG
ARK - 229124	G5
ARK - 239124	A2

Hexagonal bolt M6×16



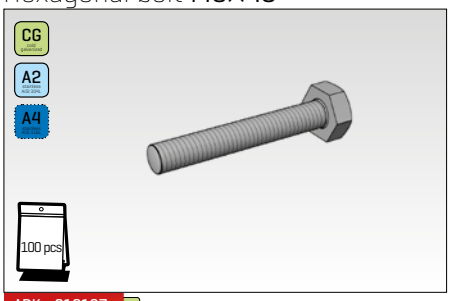
ARK - 219163 CG
–
ARK - 239163 A2

Hexagonal bolt M6×20



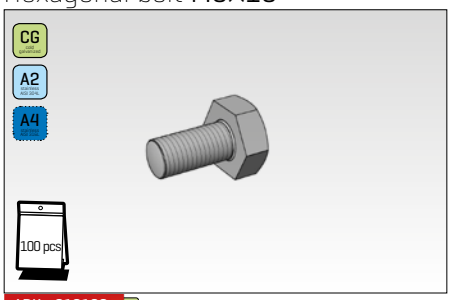
ARK - 219164 CG
–
ARK - 239164 A2

Hexagonal bolt M6×40



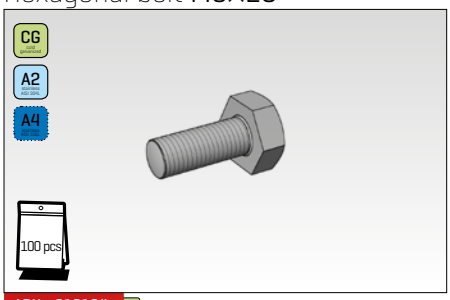
ARK - 219167 CG
–
ARK - 239167 A2

Hexagonal bolt M8×16



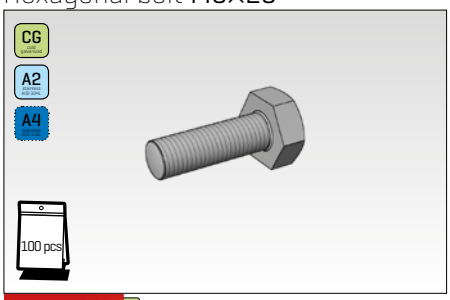
ARK - 219183 CG
–
ARK - 239183 A2

Hexagonal bolt M8×20



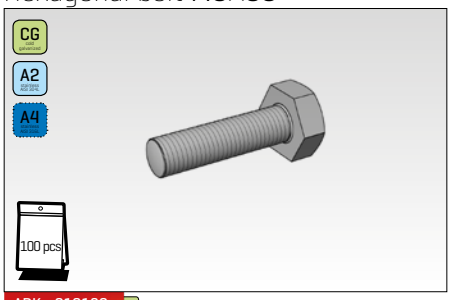
ARK - 219184 CG
–
ARK - 239184 A2

Hexagonal bolt M8×25



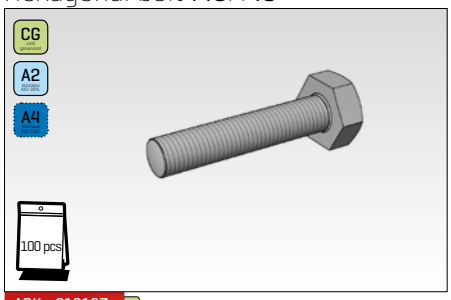
ARK - 219185 CG
–
ARK - 239185 A2

Hexagonal bolt M8×30



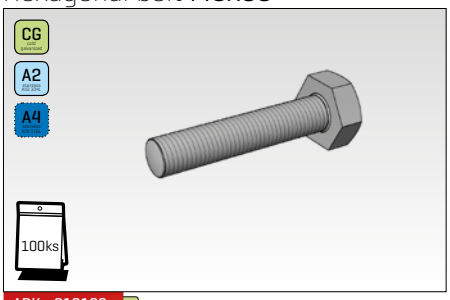
ARK - 219186 CG
–
ARK - 239186 A2

Hexagonal bolt M8×40



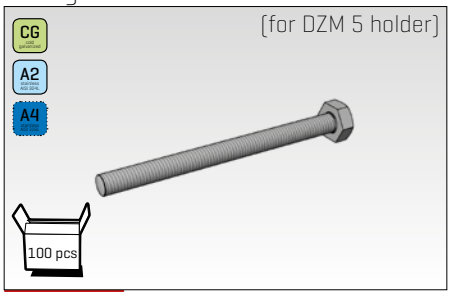
ARK - 219187 CG
–
ARK - 239187 A2

Hexagonal bolt M8×50



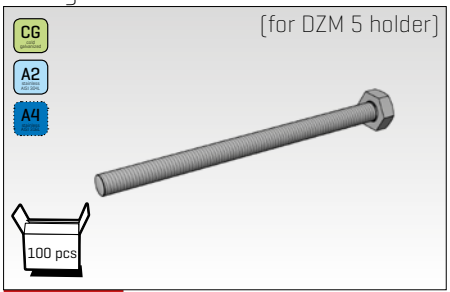
ARK - 219188 CG
–
ARK - 239188 A2

Hexagonal bolt M8×100 (for DZM 5 holder)



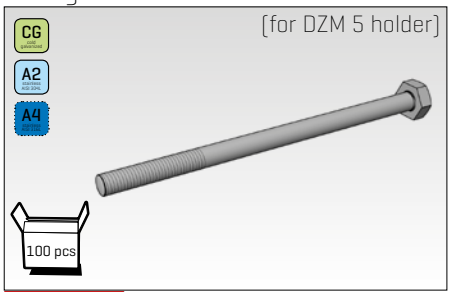
ARK - 219198 CG
–
ARK - 239198 A2

Hexagonal bolt M8×120 (for DZM 5 holder)



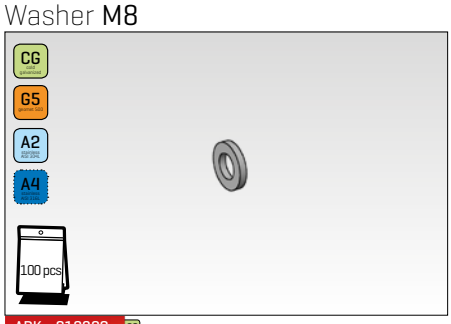
ARK - 219202 CG
–
ARK - 239202 A2

Hexagonal bolt M8×140 (for DZM 5 holder)



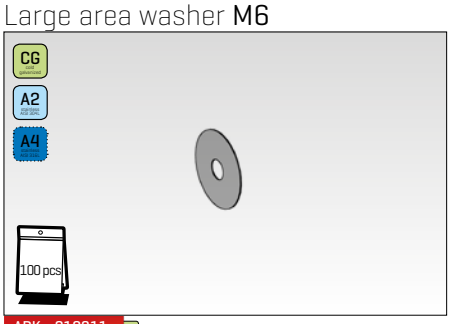
ARK - 219206 CG
–
ARK - 239206 A2

Washer M8



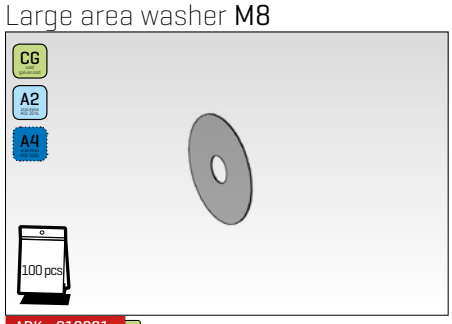
ARK - 219320 CG
ARK - 229320 G5
ARK - 239320 A2

Large area washer M6



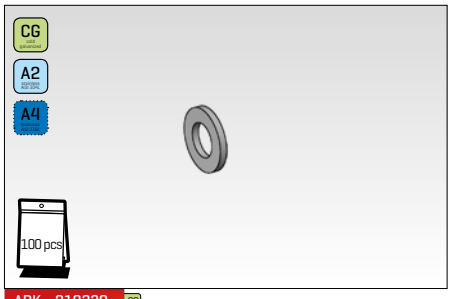
ARK - 219311 CG
–
ARK - 239311 A2

Large area washer M8



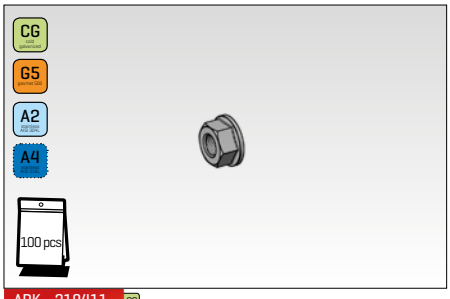
ARK - 219321 CG
–
ARK - 239321 A2

Washer M10



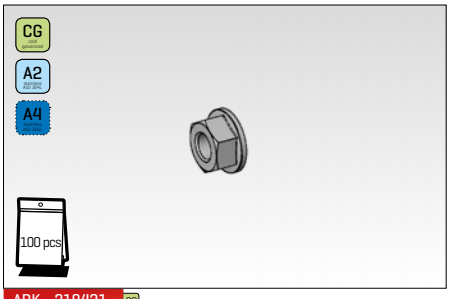
ARK - 219330 CG
–
ARK - 239330 A2

Collar nut M6



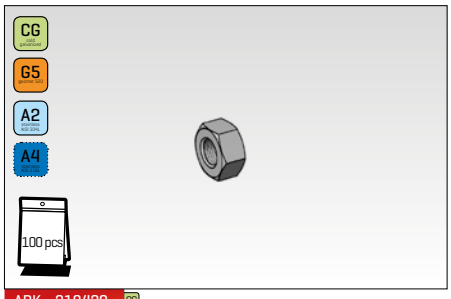
ARK - 219411 CG
ARK - 229411 G5
ARK - 239411 A2

Collar nut M8



ARK - 219421 CG
–
– G5
– A2

Nut M8



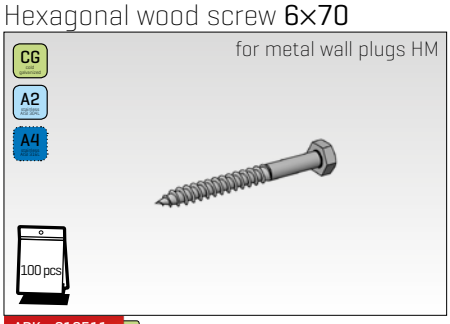
ARK - 219420 CG
ARK - 229420 G5
ARK - 239420 A2

Hexagonal wood screw 6×60

ARK - 219510 CG
–
ARK - 239510 A2

Hexagonal wood screw 6×70

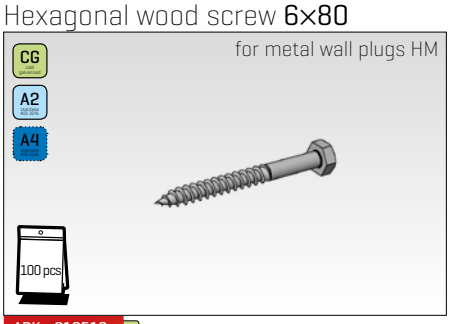
for metal wall plugs HM



ARK - 219511 CG
–
ARK - 239511 A2

Hexagonal wood screw 6×80

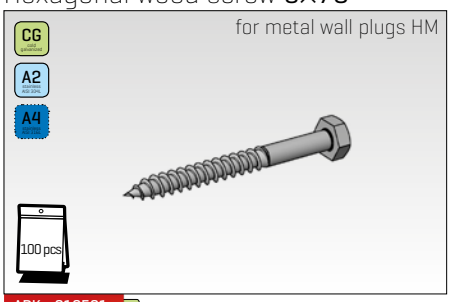
for metal wall plugs HM



ARK - 219512 CG
–
ARK - 239512 A2

Hexagonal wood screw 8×70

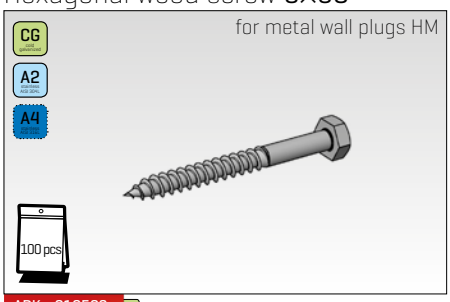
for metal wall plugs HM



ARK - 219521 CG
–
ARK - 239521 A2

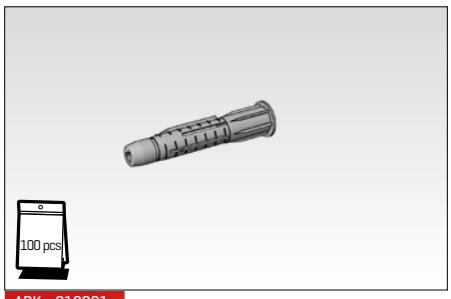
Hexagonal wood screw 8×90

for metal wall plugs HM



ARK - 219523 CG
–
ARK - 239523 A2

Wall dowel **10x60 NYLON UH-L**



ARK - 219091

Wall dowel **12x72 NYLON UH-L**

for hollow bricks

ARK - 219092

Sheet metal wall plug **M8/60**

ARK - 219081 CG

Sheet metal wall plug **M10/60**

ARK - 219083 CG

Girder anchor **M6x65**

ARK - 219071 CG

Girder anchor **M8x85**

ARK - 219075 CG

Metal wall plug **HM S M6/12x52**

for hollow bricks

ARK - 219067 CG

Metal wall plug **HM SS M8/13x55**

for hollow bricks

ARK - 219069 CG

Metal wall plug **HM S M6/12x65**

for hollow bricks

ARK - 219068 CG

Metal wall plug **HM SS M8/13x68**

for hollow bricks

ARK - 219070 CG

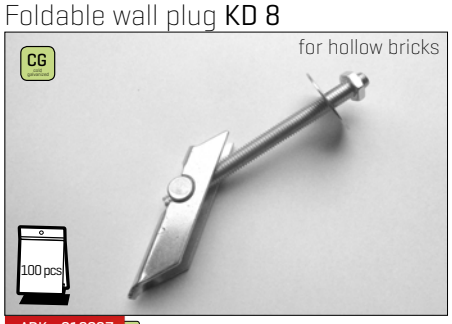
Foldable wall plug **KD 6**

for hollow bricks

ARK - 219095 CG

Foldable wall plug **KD 8**

for hollow bricks



ARK - 219097 CG

Chemical anchoring **CH-VSF-300C**

summer 300ml

ARK - 219601

Chemical anchoring **CH-VSF-300C/W**

winter 300ml

ARK - 219602

Metal strainer **12x1000mm**

for chemical anchoring M6/M8

ARK - 219603 CG

Rope tightener NLM

ARK - 219925
CG
–
–

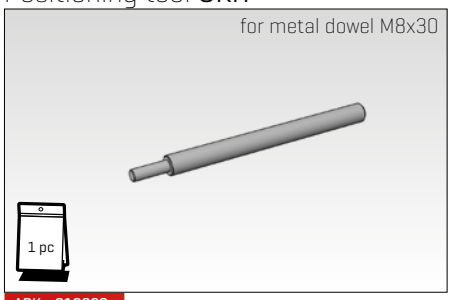
Wire 3mm (FeZn)

ARK - 219910
CG
–
–

Rope clamp 3 mm

ARK - 219920
CG
–
–

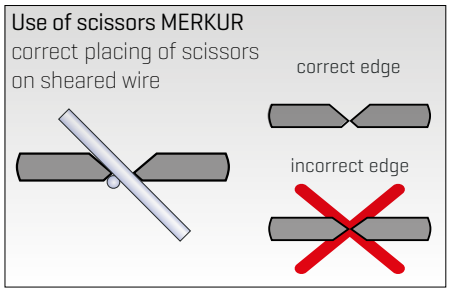
Positioning tool UKH



ARK - 219960

MERKUR scissors

ARK - 219952



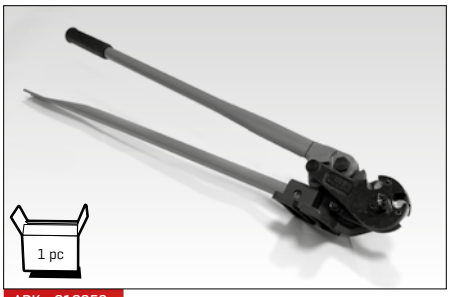
Trapezoidal scissors, medium

ARK - 219954

Trapezoidal scissors, large

ARK - 219955

Cutter for threaded rods



ARK - 219958

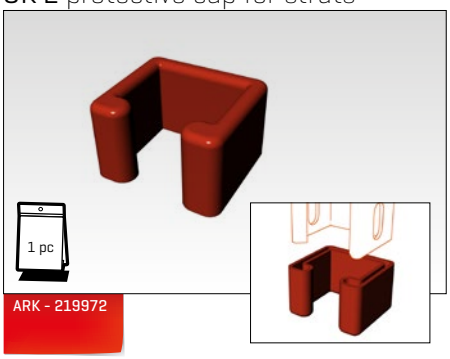
pliers HMZ 1

ARK - 219959

OK 1 protective cap for wires

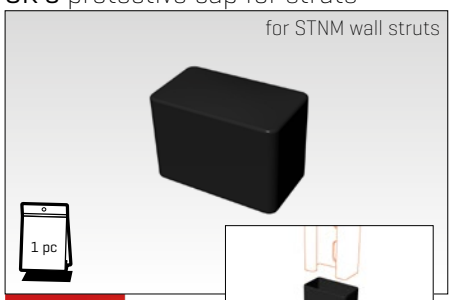
ARK - 219971

OK 2 protective cap for struts



ARK - 219972

OK 3 protective cap for struts



ARK - 219973

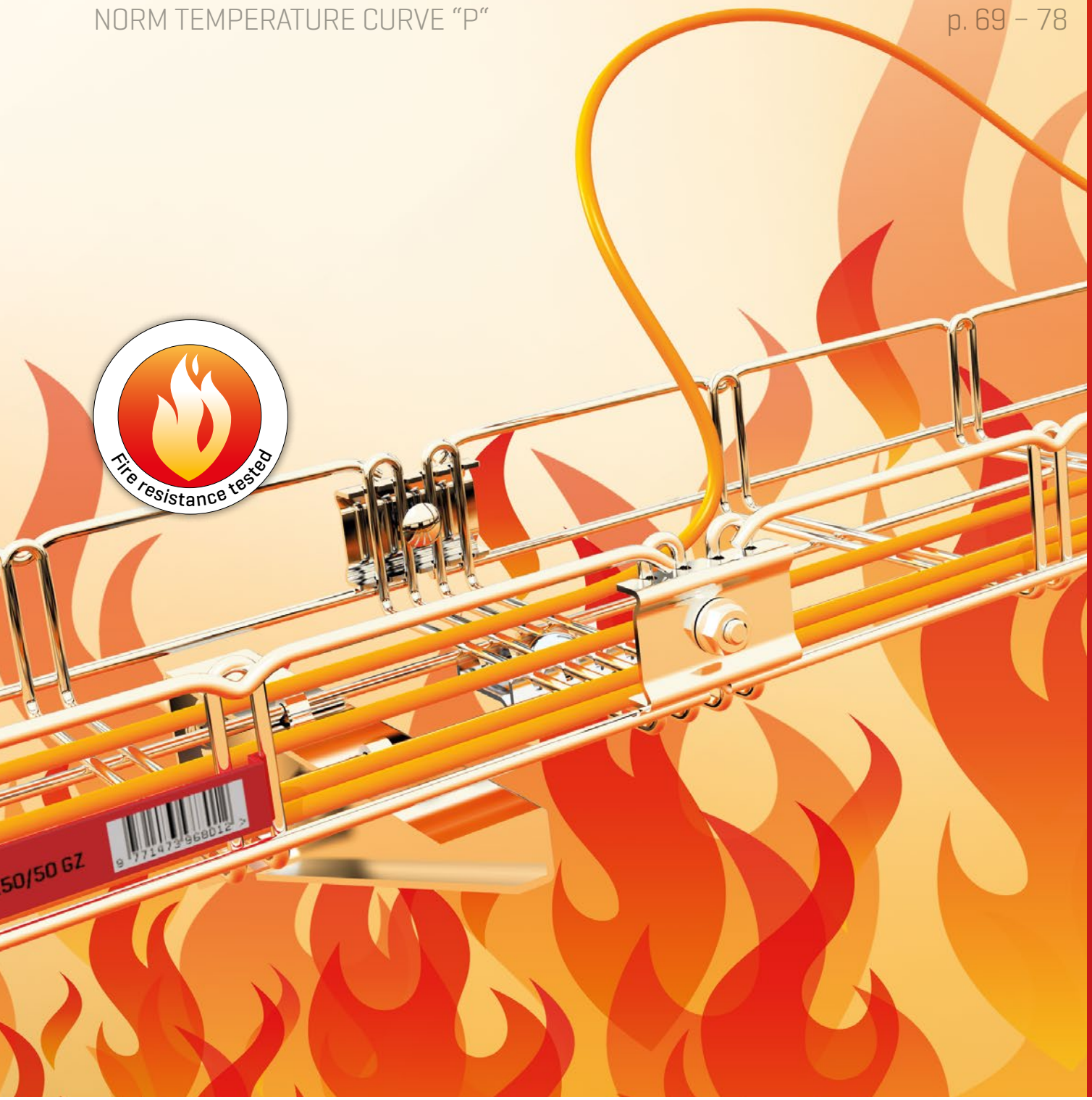
OK 4 protective cap for supports

ARK - 219974

zinc spray - zinc 98% (400 ml)

ARK - 219981

FIRE RESISTANT MOUNTING
ASSEMBLY MANUAL FOR ROUTES WITH FUNCTIONAL INTEGRITY

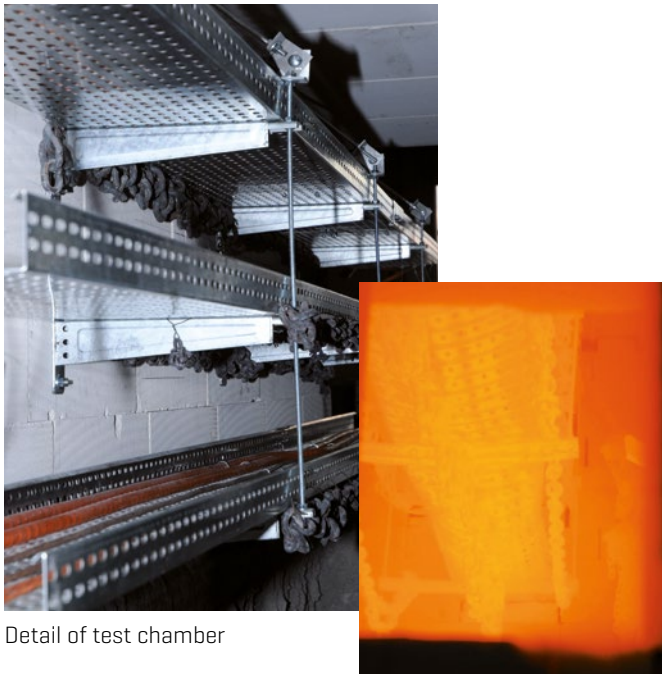


Designing and implementing constructions so as to prevent the outbreak and further spreading of fire, whilst maintaining the protection of any endangered persons – these are the fundamental requirements of the regulations not only in the Czech Republic, but worldwide. Numerous active devices are installed in buildings in order to prevent the outbreak of fire, to prevent its spreading and to protect the persons threatened by the fire.

These devices include electric fire alarms, stationary fire quenching equipment, installations for drawing off heat and smoke, emergency lighting of escape routes etc. All of them need electric power supply for their operation and communication links with other elements of the safety system. That is why it is absolutely essential to retain the functionality of such power and communication circuits.

Considering these reasons regulations have been implemented in the field of fire safety that deal with the problems of delivering electric power to the above-mentioned devices. Also the cable routes are part of this supply chain, and they shall remain functional in case of fire for permitting the end equipment to fulfil its function correctly.

The ability of the cable routes to fulfil their function even under extreme fire conditions is tested in specialized labs where the cable routes are installed in test chambers and then exposed to simulated fire conditions. The test of functional integrity, accordingly, does not concern only the separate cable trays, but their whole systems including the installed cabling and the carrying elements as a functional system. Based upon these tests the cable carrying systems are then designated by a class of functionality of the cable system P15(30, 60, 90, 120)-R, or PH P15(30, 60, 90, 120)-R, by which the respective testing institute confirms whether the given elements of the installation and their combinations are suitable for assembling fire resistant cable routes under the given parameters.



Detail of test chamber

Temperature curves and what do P, PH and Pxx mean?

The designation "P" (alternatively "PH" or "Pxx") defines the type of the temperature curve (the anticipated development of temperature depending on the time during a simulated fire, as used for the test of functional integrity) that the cable routes with this designation is able to withstand.

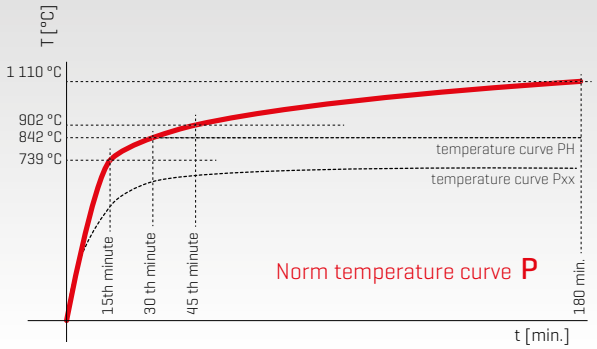
Distortion as a consequence of extreme temperatures

Cable routes that are exposed to the effects of high temperatures succumb to distortions due to thermal dilatation of the trays, but also due to changes of the mechanical properties of the material they are made of. Both these factors account for the fact that distortions appear in the cable routes loaded by cabling, which is manifested in particular by sagging of the routes between the support points. Such distortions of the cable routes are logical and inevitable consequences of processes taking place under the exposure to high temperatures, and it is practically impossible to eliminate them. That is the reason why the deformation should not exceed certain limit values given by the functionality of the routes as a whole (e.g. the insulation layers of the cabling cannot be damaged). Also, the potential deformation of the cable route should occur as early as possible,

Classification of functional integrity "P"

Under the P regime the cable routes are subject to strain of so called norm curve of temperature with following course of temperatures:

time	temperature reached in test chamber
15th minute	739 °C
30th minute	842 °C
45th minute	902 °C
60th minute	945 °C
90th minute	1 006 °C
120th minute	1 049 °C
180th minute	1 110 °C

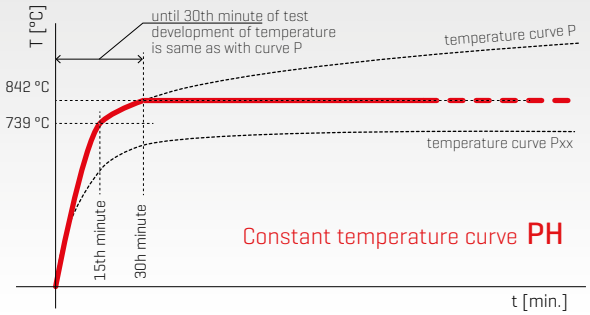


Classification of functional integrity "PH"

PH defines a temperature curve having the same course as during the classification of the P type until the 30th minute of the test. Beginning with the 30th minute the cable route is further subjected to constant temperature of 842 °C. This temperature curve has been designed specifically, because the majority of new and large facilities are equipped with stationary fire safety devices for active fire fighting. They reduce the temperatures within the given space during the fire (stable sprinklers, equipment for drawing off smoke and heat) and can prevent further increase of temperature above the test value of 842 °C. E.g. stable sprinkler extinguishers can be activated when temperature has increased above approximately 68 °C (according to the setting of the temperature fuse). This makes the installation of equipment withstanding temperatures of 1 000 °C obsolete and expensive.

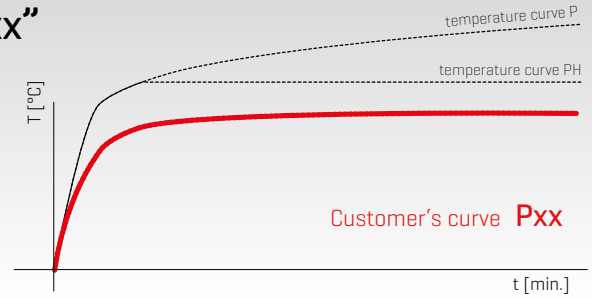
Many end devices installed in fire resistant tracks have their maximum operating temperature only approximately 450 – 500 °C (e.g. fans etc.) and for their maintenance the temperature resistance according to the curve "PH" is sufficient.

time	temperature reached in test chamber
15th minute	739 °C
30th minute	842 °C



Classification of functional integrity "Pxx"

Pxx means that the manufacturer has chosen his own temperature curve fur the purpose of testing. According to his consideration the chosen test criteria should be sufficient from the technical and commercial viewpoints. The designation "xx" indicates the maximum temperature to which the cable route is exposed.



ideally prior to the termination of the process of so called ceramising of the cables, while further deformation should either not take place at all, or remain as small as possible. This fact, along with the overall integrity of the route (i.e. during exposure to heat the overall failure of the cable should not occur, for instance due to the collapse of some carrying elements) is of decisive importance for the capacity of the cable track to duly fulfil its function in the course of a real fire.

How do fire resistant cables work?

The insulating sleeve sandwich of fire resistant cables is made of materials having current properties of insulating plastic materials under normal conditions (flexibility, electrical strength etc.). However, as opposed to current plastic material, when this type of cabling gets exposed to high temperatures, the plastic layers do not melt and burn out (which would later result in uncovering the cable core with the consequent short-circuit), but the insulating layers of fire resistant cables succumb to the process of so called ceramisation. During the process of ceramisation the plastic particles of the sleeve burn out while the filling melts into a consistent and conjoined layer that ensures the insulation function even in the course of long-time exposure to high temperatures. Unfortunately these layers after the ceramisation are very brittle and sensitive to shape distortions. Consequently, for the functional integrity of the cable route, it is extremely important that the fire resistant cables are as protected as possible against potential distortions or another destructive interventions that may occur.

Criteria for passing the resistance test

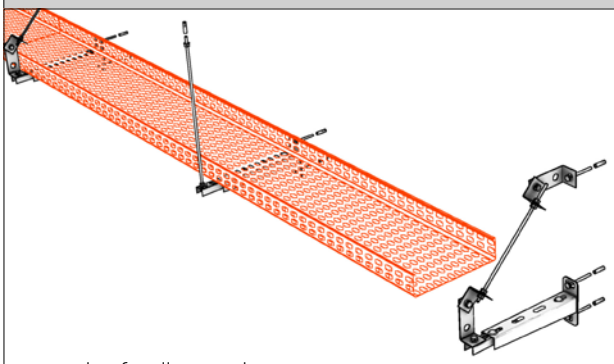
The whole set of cable routes and cabling creates one functional system where each part affects both the whole and the remaining parts. The interlinked system is also subject to influences that may seem negligible at first sight, and it is quite difficult to divide the system into single parts and to test them separately. Consequently, the fire resistance test shall always concern the complete functional route in which, in the course of exposure to temperatures according to the following temperature curves, the functionality of the electric circuits carried within the trays is checked at regular intervals. The only essential parameter, and also the sole criterion for the successful passing of the functional integrity test, is the 100% functionality of all electric circuits installed in the cable track over the whole duration of the test.

Different mountings according to: ZP 27-2008, STN 92 0205 and DIN 4102-12

Because there are more suppliers of cable mesh trays on Czech market and of course more manufacturers of the cables, the basic cable tracks are defined in the testing regulations for simplification.

If the the defined requirements are fulfilled according to ZP 27-2008, STN 92 0205 a DIN 4102-12 we can test so called "norm" mounting, which is technically "sturdier" (smaller size, stronger walls etc.), or so called not normed mounting.

NORM MOUNTING



example of wall mounting

Norm mounting is defined by regulations in a specific and detailed manner. In the case of cable mesh trays these requirements must be strictly fulfilled:

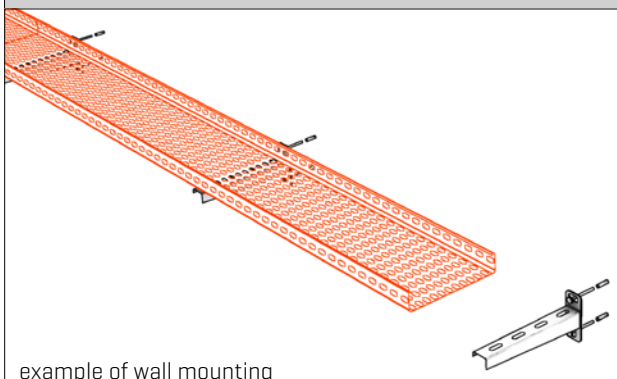
REQUIREMENTS FOR **NORM MOUNTING** IMPLEMENTATION
width of cable trays max. 300 mm
height of sidewall 60 mm (exactly)
cantilever spacing 1200 mm (exactly)
sheet metal thickness 1.5 mm (exactly)
perforation share of cable tray 15%±5%
free ends of cantilevers shall be fixed with threaded rods
track loading 10 kg/m max.

If the above requirements have not been met – if the design differs in any of the points, the installation can not be considered as a "norm" and shall be handled as "not normed mounting".

ADVANTAGES
option of using cabling from manufacturer without realisation of the test itself. Also other cables than the ones that passed fire resistance tests with the given system can be deposited onto the structure (according to ZP 27/2008 and STN 92 0205:2010).

DISADVANTAGES
the main disadvantage of norm mounting as opposed to not normed mounting are higher material demands, and in particular a time consuming installation of the cable track. Of course, both lead to higher financial costs than in case of a comparable not normed mounting.
impossiblity to load a cable route with cabling over 10 Kg/m, irrespectively of tray size and of other elements of the route
60 mm sidewall height. For most manufacturers, it represents non typical production made on request and, accordingly, delivery terms of these trays tend to be longer in comparison to standard production (50 mm or 100 mm height).

NOT NORMED MOUNTING



example of wall mounting

If it is technically possible, i.e. if option of installation of the same type of cabling exists (for reasons of time availability, better price etc.) as the type that was tested by the manufacturer of the cable mesh trays, then not normed mounting is more beneficial.

REQUIREMENTS FOR **NOT NORMED MOUNTING** IMPLEMENTATION
No specific requirements have been prescribed by regulation for not normed mounting.

ADVANTAGES
higher loading capacity of route (up to 15 kg/m with Linear cable trays and from 2 up to 20 kg/m with MERKUR 2 cable trays)
better flexibility e.g. optional application of supports and threaded rods for spatial installation
less material – cost savings
considerably easier assembly – saving time needed for mounting
broader choice of components (especially tray sizes)

DISADVANTAGES
necessity to maintain the same manufacturer and type of cabling which the given type of mounting was certified with

From the viewpoint of functionality of the cable route the chosen type of mounting (norm/not normed) is insigificant. What is important is fulfilling the requirements of the functional period. It is up to the designer and the supplying company which type of the cable track will be chosen as the more suitable one for the particular application.

Specific impacts of standard upon wire mesh cable trays

Unfortunately the test regulation ZP 27/2008 has left the wire mesh trays aside down to the present day, offering only full-sheet tray alternatives for the "Norm route" (e.g. the LINEAR system) and for cable grids called "Ladders". **Due to this reason the wire mesh cable system cannot achieve classification for the time being (covering the so-called "Norm" execution of the respective mounting), since the standard does not offer such option.** Anyway, our cable mesh trays MERKUR 2 successfully passed the test of functional integrity, including under the P curve, as early as in 2011 and repeatedly in 2013.

MERKUR 2 system from viewpoint of functional integrity tests and their impact upon the practice

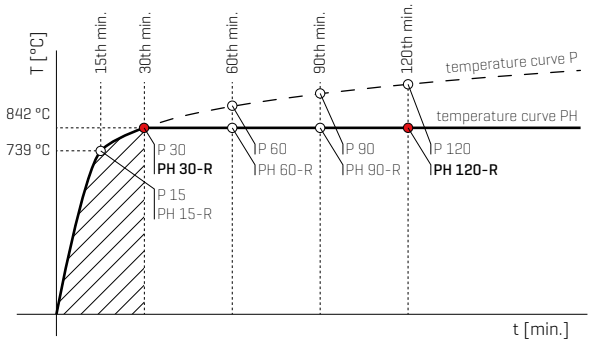
As to the actual utilization of the M2 system in practical operation, there are only two restrictions in the light of the present legal regulations, but they are not that substantial as they might seem at first sight.

1. UTILISATION OF CABLING

Norm mounting, as opposed to the other types, permits the use of any cabling that fulfils separately the prescribed parameters of fire resistance. The classification of the not norm mounting is always related to the type of cabling with which it was tested. The M2 system has passed all tests with the installation of the PRAKAB, NKT and ELKOND (SK) cabling, representing the most readily available, most frequented, and also one of the most efficient ones as regards the price/performance ratio in our conditions. In the majority of cases this cable type has already been chosen by the customer in advance, or the originally suggested type can be easily replaced by these cables.

2. TEMPERATURE CURVE AND THE MAXIMUM TEMPERATURE

The currently requested classifications for cable tracks are usually defined in relation to the "P" curve of temperature (see table on the next page). The testing of functional integrity of the M2 system was carried out according to the "PH" curve. However, the P and PH curves are very similar (see the following diagram). Both curves are fully identical until the 30th minute of the test, and only then they are seen to diverge. Whereas the P curve continues to rise slowly, the PH curve stagnates at the level of 842°C that has been reached exactly at the 30th test minute.



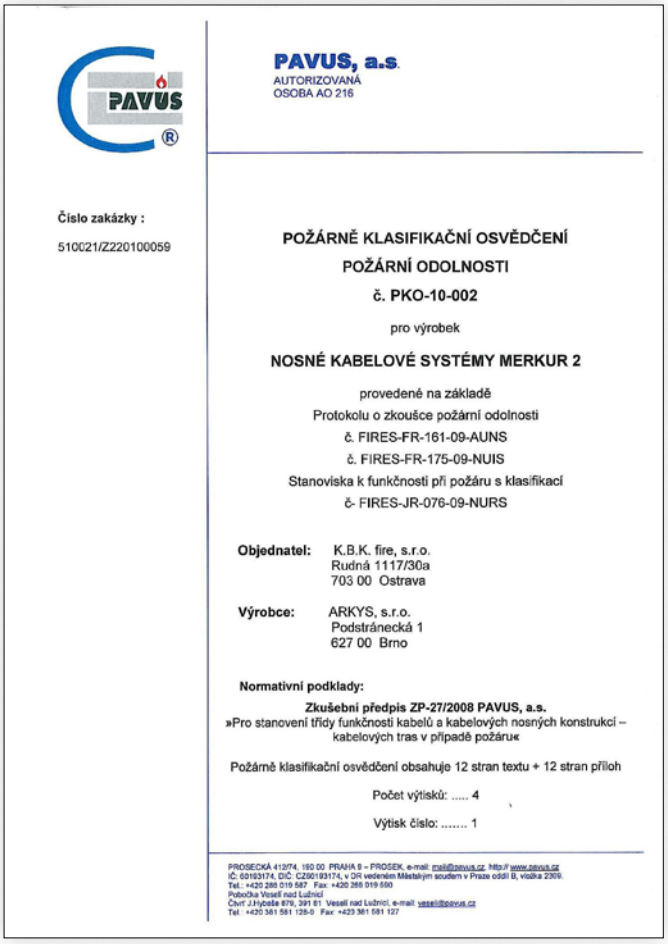
Considering the practice of implementing cable routes with the requirement of functional integrity during a fire (see table at the bottom of this page), it is obvious that the resistance of the route of 30 minutes and less is fully sufficient for the substantial part of applications. This means that in such cases the requirement of the building will be met by the "norm and not norm" execution alike, while the economic benefits of the latter go without saying (see comparison on the next page).

Currently requested classification of functional integrity

for some selected examples of installation of fire safe routes for ensuring the fire security of buildings, see ČSN 730848 – cable distributions with functional integrity

field of application	specification of use	classification of functional integrity
electric fire alarms, including central protection desks	supply cabling of exchange	not functional (an exchange having its own battery)
	control cabling to elements that need only signal to switch over to their fire function without the need of the cabling further on	P 15-R
	command cabling to elements needing supply over the whole time of their operation, as ensured by EPS (flap valves held in open position by EPS tension, electric valves etc..) – during their functioning	P 15-R up to P 90-R (PH 90-R)
stationary and automatic, semi-stable extinguishers, and auxiliary extinguishing equipment	stable – powering fire pumps	P 30-R up to P 90-R (PH 90-R)
	semi-stable	not functional (no power needed)
	auxiliary – depending on project	no determination in advance (depending on the project)
equipment for drawing off heat and smoke	fire fans	P 30-R
	smoke flap valves	P 30-R
pumps for fire fighting water		min. P 30-R
door opening		acc. to chosen type, usually P 15-R
door closing		acc. to chosen type, usually P 15-R
broadcasting		P 30-R
emergency lights	according to Czech Standards	P 15-R up to P 60-R(PH 60-R)
	according to European Standards	P 60-R (PH 60–R)
air conditioning	switching off air conditioning	P 15-R
fire elevator		P 45-R (PH 45-R)
evacuation elevator		P 45-R (PH 45-R)
openings for the air inlet		openings for air inlet depending on type, usually P 15-R up to P 30-R
fans	fans for aeration of protected escape routes	P 15-R up to P 60-R (PH 60-R)

extract from the classification protocol of MERKUR 2 System



PAVUS, a.s.
AUTORIZOVANÁ OSOBA AO 216

Číslo zakázky :

510021/Z220100059

POŽÁRNĚ KLASIFIKAČNÍ OSVĚDČENÍ
POŽÁRNÍ ODOLNOSTI
č. PKO-10-002

pro výrobek

NOSNÉ KABELOVÉ SYSTÉMY MERKUR 2

provedené na základě
Protokolu o zkoušce požární odolnosti
č. FIRES-FR-161-09-AUNS
č. FIRES-FR-175-09-NUIS
Stanoviska k funkčnosti při požáru s klasifikací
č- FIRES-JR-076-09-NURS

Objednatel: K.B.K. fire, s.r.o.
Rudná 1117/30a
703 00 Ostrava

Výrobce: ARKYS, s.r.o.
Podstránecká 1
627 00 Brno

Normativní podklady:

Zkušební předpis ZP-27/2008 PAVUS, a.s.
»Pro stanovení třídy funkčnosti kabelů a kabelových nosných konstrukcí – kabelových tras v případě požáru«

Požárně klasifikační osvědčení obsahuje 12 stran textu + 12 stran příloh

Počet výtisků: 4

Výtisk číslo: 1

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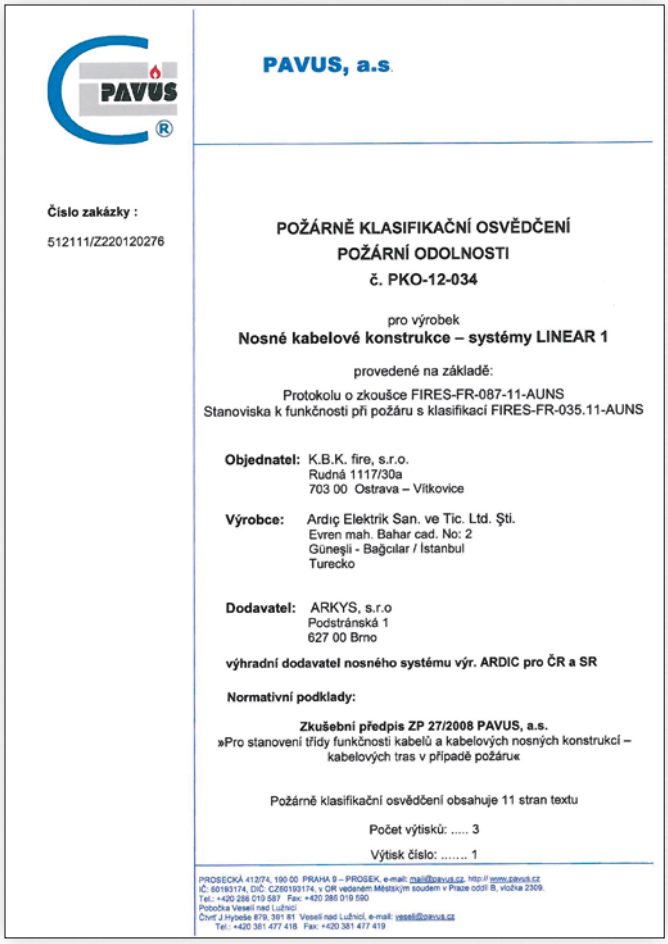
extract from the classification protocol of LINEAR 1 System



PAVUS, a.s.

Číslo zakázky :

512111/Z220120276

POŽÁRNĚ KLASIFIKAČNÍ OSVĚDČENÍ
POŽÁRNÍ ODOLNOSTI
č. PKO-12-034

pro výrobek
Nosné kabelové konstrukce – systémy LINEAR 1

provedené na základě:
Protokolu o zkoušce FIRES-FR-087-11-AUNS
Stanoviska k funkčnosti při požáru s klasifikací FIRES-FR-035.11-AUNS

Objednatel: K.B.K. fire, s.r.o.
Rudná 1117/30a
703 00 Ostrava – Vítkovice

Výrobce: Ardıç Elektrik San. ve Tic. Ltd. Şti.
Evren mah. Bahar cad. No: 2
Güneşli - Bağcılar / İstanbul
Turecko

Dodavatel: ARKYS, s.r.o
Podstránská 1
627 00 Brno

výhradní dodavatel nosného systému výr. ARDIC pro ČR a SR

Normativní podklady:

Zkušební předpis ZP 27/2008 PAVUS, a.s.
»Pro stanovení třídy funkčnosti kabelů a kabelových nosných konstrukcí – kabelových tras v případě požáru«

Požárně klasifikační osvědčení obsahuje 11 stran textu

Počet výtisků: 3

Výtisk číslo: 1

PROSECKÁ 412/74, 190 00 PRAHA 9 – PROSEK, e-mail: mail@pavus.cz, http:// www.pavus.cz
IČ: 60193174, DIČ: CZ60193174, v OR vedeném Městským soudem v Praze oddíl B, vložka 2309.
Tel.: +420 286 019 587 Fax: +420 286 019 590
Pobočka Veselí nad Lužnicí
Čtvrť J.Hybeše 879, 391 81 Veselí nad Lužnicí, e-mail: vesely@pavus.cz
Tel.: +420 381 477 418 Fax: +420 381 477 419

extract from the classification protocol of MERKUR 2 System

FIRES
The Experts on Fire Safety

STANOVISKO K FUNKČNOSTI PRI POŽIARI S KLASIFIKÁCIOU

FIRES-JR-009-13-NURS

Názov výrobkov: Drôtené káblové žľaby MERKUR 2 vrátane nosných systémov

Objednávateľ: ARKYS, s.r.o.
Podstránská 1
627 00 Brno
Česká republika

Vypracoval: FIRES, s.r.o.
Autorizovaná osoba MVRR SR SK01
Osloboditeľov 282
059 35 Batizovce
Slovenská republika

Číslo projektu: PR-12-0324
Dátum vydania: 04. 04. 2013

Počet výtlačkov: 9
Výtlačok číslo: 3

Rozdeľovník výtlačkov:
Výtlačok číslo 1 FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovenská republika (elektronická verzia)
Výtlačok číslo 2 K.B.K. fire, s.r.o., Heydukova 1093/26, 702 00 Ostrava – Přívoz, Česká republika (elektronická verzia)
Výtlačok číslo 3 ARKYS s.r.o., Podstránská 1, 627 00 Brno, Česká republika (elektronická verzia)
Výtlačok číslo 4 PRAKAB PRAŽSKÁ KABELOVNA, s.r.o., Ke Kablu 278, 102 09 Praha 15, Česká republika (elektronická verzia)
Výtlačok číslo 5 ELKOND HHK a.s., Oravická 1228, 028 01 Trstená, Slovenská republika (elektronická verzia)
Výtlačok číslo 6 K.B.K. fire, s.r.o., Heydukova 1093/26, 702 00 Ostrava – Přívoz, Česká republika
Výtlačok číslo 7 ARKYS s.r.o., Podstránská 1, 627 00 Brno, Česká republika
Výtlačok číslo 8 PRAKAB PRAŽSKÁ KABELOVNA, s.r.o., Ke Kablu 278, 102 09 Praha 15, Česká republika
Výtlačok číslo 9 ELKOND HHK a.s., Oravická 1228, 028 01 Trstená, Slovenská republika

Toto stanovisko pozostáva z 10 strán a smie sa použiť či reprodukovať len ako celok

FIRES 140/S-27/10/2009-S

FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovenská republika
tel. 00421 52 775 22 98, fax. 00421 52 788 14 12, www.fires.sk
Notifikovaná osoba č. 1396. Autorizovaná osoba reg. č. SK01. Člen EGOLF

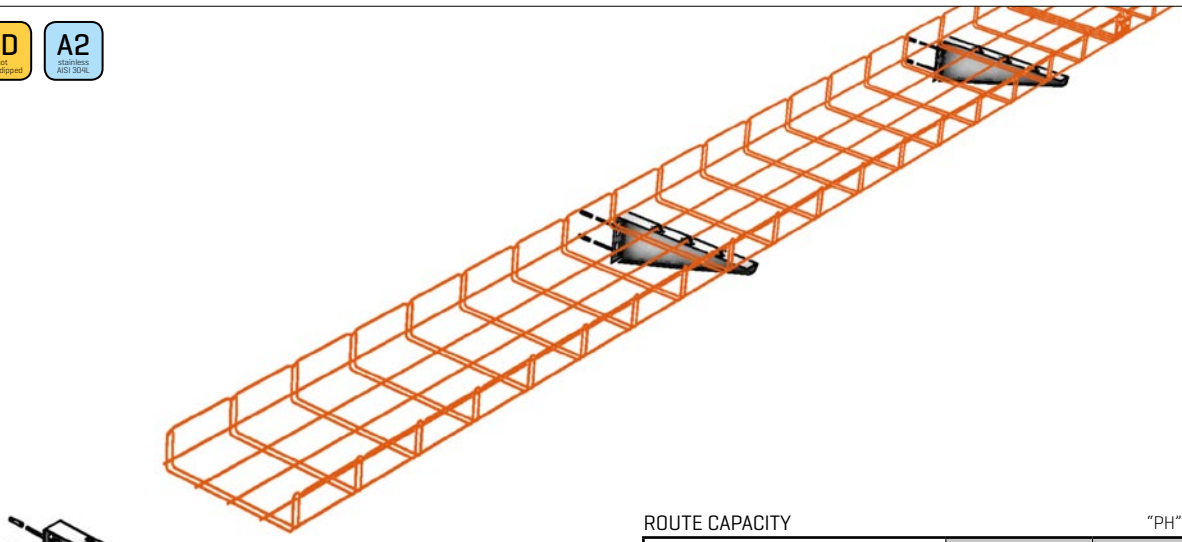
MERKUR 2

INSTALLATION OF ROUTES WITH FUNCTIONAL INTEGRITY ACCORDING TO CURVE OF CONSTANT TEMPERATURE "PH" WITH CLASSIFICATION:

PH 120-R
PS_{842} 120
E 90

Wall mounting **not normed** | on NZM cantilevers

CG cold galvanized | ZD hot zinc-dipped | A2 stainless AISI 304L



used for current horizontal guiding of one or more storeys of cable routes over vertical walls of buildings. This type of installation can be used both for high current and low current circuits.

ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 18 kg *
	low current	up to 18 kg *
sideboard size 100 mm	high current	up to 20 kg *
	low current	up to 20 kg *

MOUNTING LIMITS [*] see table on p. 16

maximum spacing of supports	1 000 mm
cables shall be attached to the tray by SONAP clamps at the beginning and the end of each bend	
balanced distribution of cantilever load with centre of gravity possibly close to its root	

APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2×1␣␣␣
SZM 1 coupling	ARK-2×3010
NZM 50 - 500 cantilever	ARK-2×62␣␣

[×] position indicating type of surface finish
␣␣positions indicating specific dimension

functional integrity according to temperature curve "PH" in classification according to regulations:

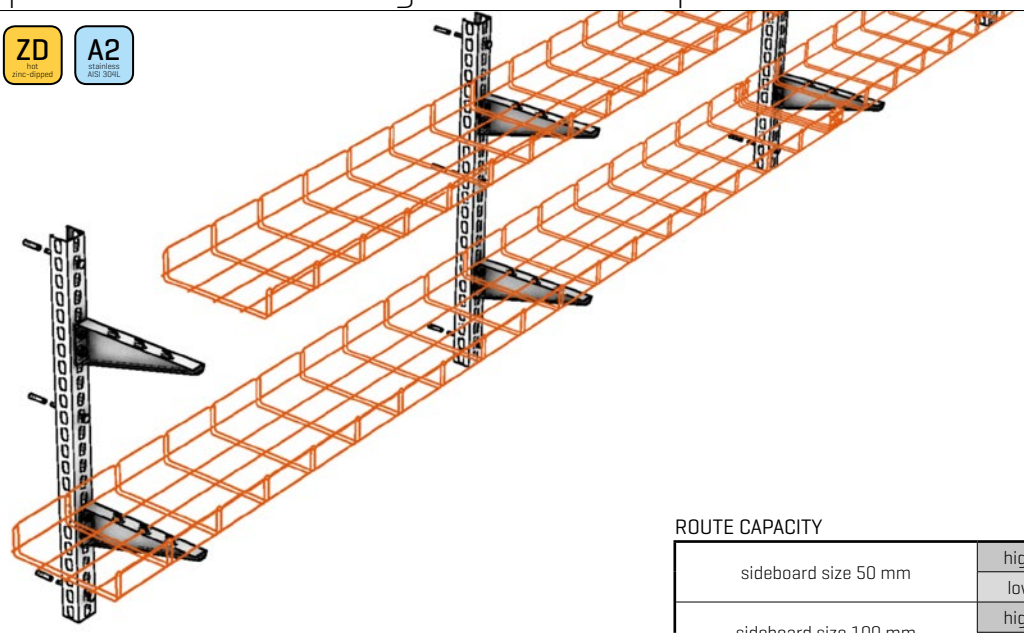
		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R	PS_{842} 120	E 30

cabling used in testing:

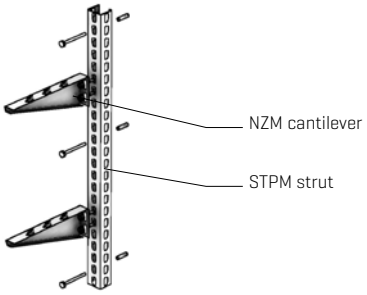
	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADIaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFIaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

Compound wall mounting **not normed** | on STPM struts

CG cold galvanized | ZD hot zinc-dipped | A2 stainless AISI 304L



used for current horizontal guiding of one or more storeys of cable routes over vertical walls of buildings. Also possible for more loaded routes attached to walls with difficult anchoring.



ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 18 kg *
	low current	up to 18 kg *
sideboard size 100 mm	high current	up to 20 kg *
	low current	up to 20 kg *

MOUNTING LIMITS [*] see table on p. 16

maximum spacing of supports	1 000 mm
max. spacing of anchoring points on the strut	400 mm
max. number of levels/rows of cable trays	3
min. spacing of cantilevers on one strut (the STPM 300 strut can accommodate only one storey of cable track)	300 mm
cables shall be attached to tray by SONAP clamps at the beginning and the end of each bend	
balanced distribution of cantilever load with centre of gravity possibly close to its root	

APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
NZM 50 - 500 cantilever	ARK-2x50␣␣
STPM strut	ARK-227␣␣␣

[x] position indicating type of surface finish
␣␣positions indicating specific dimension

functional integrity according to temperature curve "PH" in classification according to regulations:

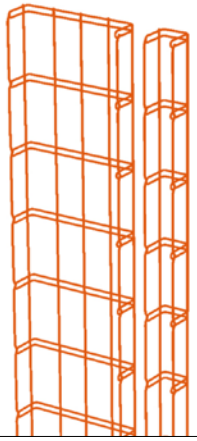
		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R	PS_{842} 120	E 30

cabling used in testing:

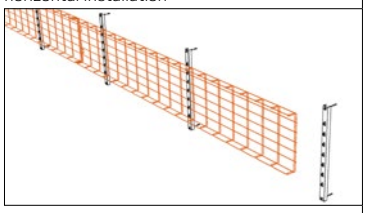
	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADlaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

Flat (ascending) installation **not normed** | on PZMP supports

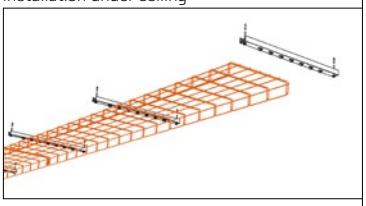
CG cold galvanized | ZD hot zinc-dipped | A2 stainless AISI 304L



horizontal installation



installation under ceiling



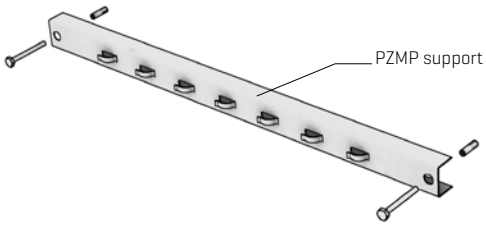
used for vertical guiding of tracks in one or more parallel channels of trays upon vertical surfaces of the building. The cabling shall always be attached to the trays by SONAP clamps. This type of installation can be also used horizontally, including routes under the ceiling (see pictures).

ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 15 kg *
	low current	up to 15 kg *
sideboard size 100 mm	high current	up to 15 kg *
	low current	up to 15 kg *

MOUNTING LIMITS [*] see table on p. 16

maximum spacing of supports	1 000 mm
maximum spacing of SONAP clamps (i.e. fixed to each third cross beam)	300 mm
max. length of vertical section of route, in case of longer vertical sections, the route shall be provided with retaining bends (see picture) or with certified installation box for pulling tension relief of the cables	3 500 mm



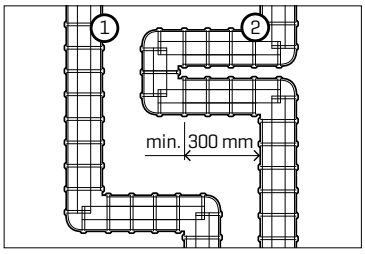
APPLIED ELEMENTS order code

MERKUR 2 50 - 300 /50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
PZMP 100 - 300 support	ARK-2x62␣␣

[x] position indicating type of surface finish
␣␣positions indicating specific dimension

implementation of retaining bends in vertical route

Some specialized solutions of retaining positions offered by other suppliers are also available, e.g. ZSE90 pull relief box.



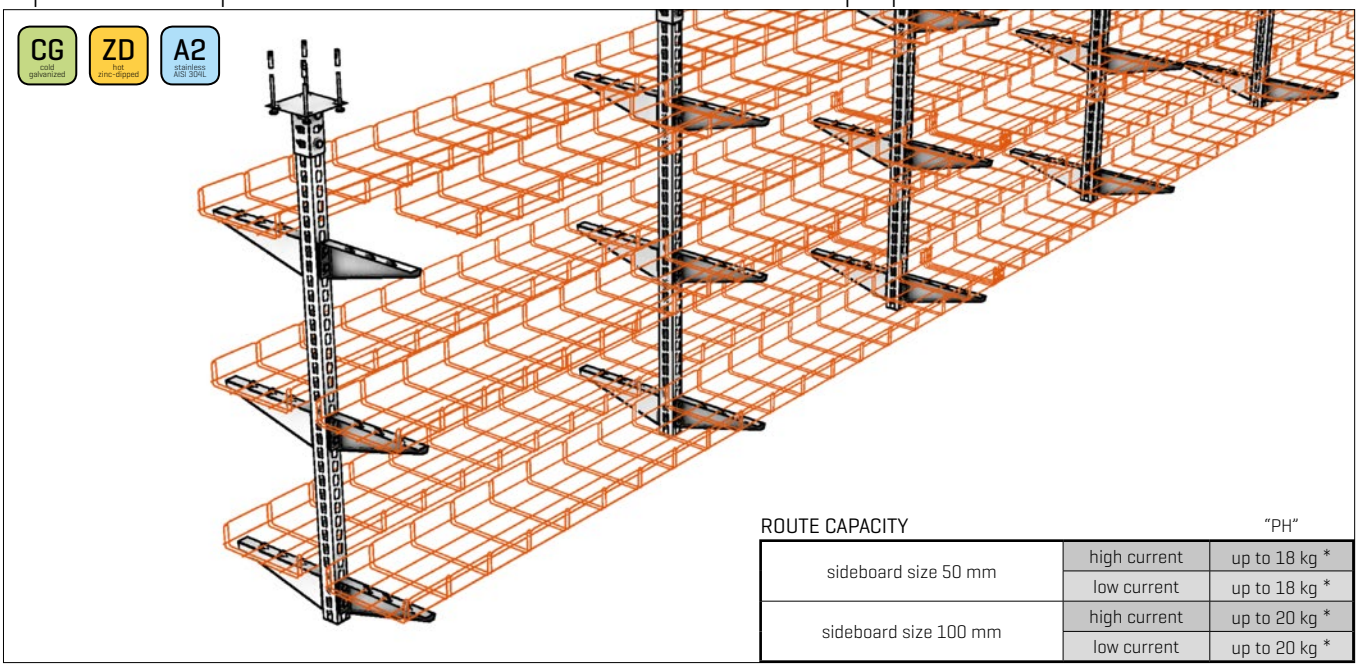
functional integrity according to temperature curve "PH" in classification according to regulations:		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R	PS_{842} 120	E 30

cabling used in testing:

	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADlaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

Spatial suspended installation **not normed** | upon STPM struts

CG cold galvanized · ZD hot zinc-dipped · A2 stainless AISI 304L



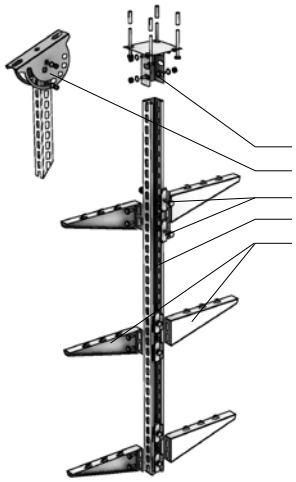
ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 18 kg *
	low current	up to 18 kg *
sideboard size 100 mm	high current	up to 20 kg *
	low current	up to 20 kg *

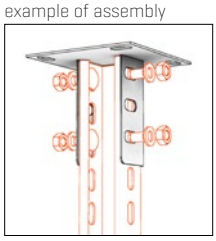
This arrangement serves for guiding routes anchored to the ceiling. They can be installed on one or more levels on struts. Such solution is particularly well adapted for complex routes with crossing on different levels.

MOUNTING LIMITS [*] see table on p. 16

maximum spacing of supports	1 000 mm
maximum load of one strut	100 kg
max. number of levels/rows of cable trays	3
distance between routes at the strut in installations of several levels shall be at least	300 mm
cables shall be fixed by SONAP clamps at the beginning and the end of each bend	
symmetric and balanced distribution of load to prevent deflections of strut	



example of assembly



example of mounting applied connecting elements:
4x M8x20 carriage bolt
4x M10 washer
4x M8 nut

APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2×1␣␣␣
SZM 1 coupling	ARK-2×3010
NZM 50 - 500 cantilever	ARK-2×50␣␣
STPM strut	ARK-2×7␣␣␣
SVSM stabilizing setting of strut	ARK-218958
DZM STP holder	ARK-2×4300
DZM STPU holder	ARK-2×4310

(x) position indicating type of surface finish
␣␣positions indicating specific dimension

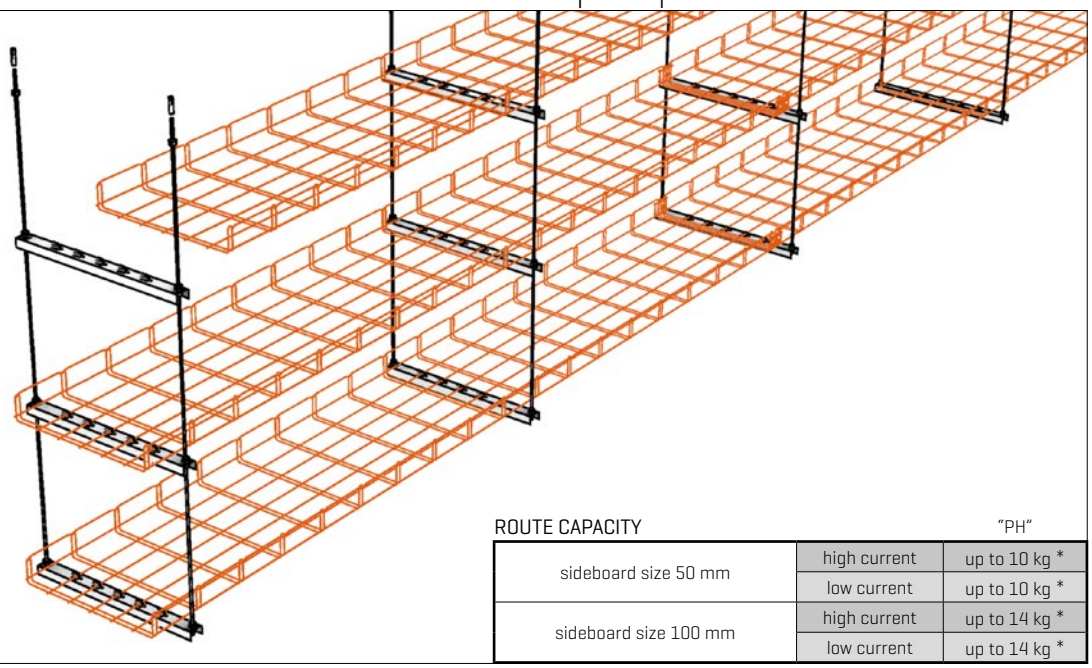
functional integrity according to temperature curve "PH" in classification according to regulations:		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R	PS_{842} 120	E 30

cabling used in testing:

	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADlaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

Spatial suspended installation **not normed** | on pairs of threaded rods

CG cold galvanized | ZD hot zinc-dipped | A2 stainless AISI 304L



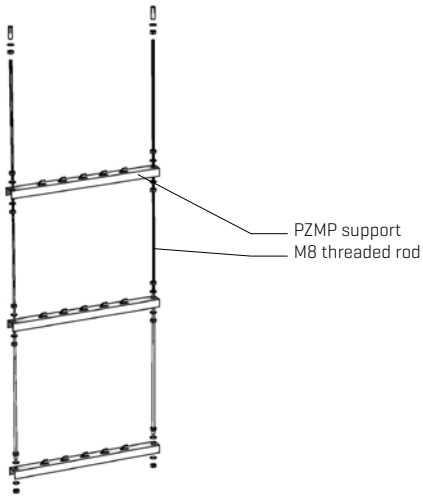
used for spatial guiding of routes anchored to the ceiling. The cable routes can be installed in one or more parallel cable tray channels. It is based upon current spatial assembly using threaded rods.

ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 10 kg *
	low current	up to 10 kg *
sideboard size 100 mm	high current	up to 14 kg *
	low current	up to 14 kg *

MOUNTING LIMITS [*] see table on p. 16

maximum spacing of threaded rods	1 000 mm
maximum load of one pair of threaded rods	50 kg
max. number of levels/rows of cable trays	3
minimum height distance of supports in case of multiple track assembly	300 mm
cables shall be fixed by SONAP clamps at the beginning and at the end of each bend	
balanced loading of supports to enable uniform load distribution between both rods of pair	



APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
PZMP 100 - 500 support	ARK-2x62␣␣
M8 threaded rod	ARK-2x9021

[x] position indicating type of surface finish
␣␣positions indicating specific dimension

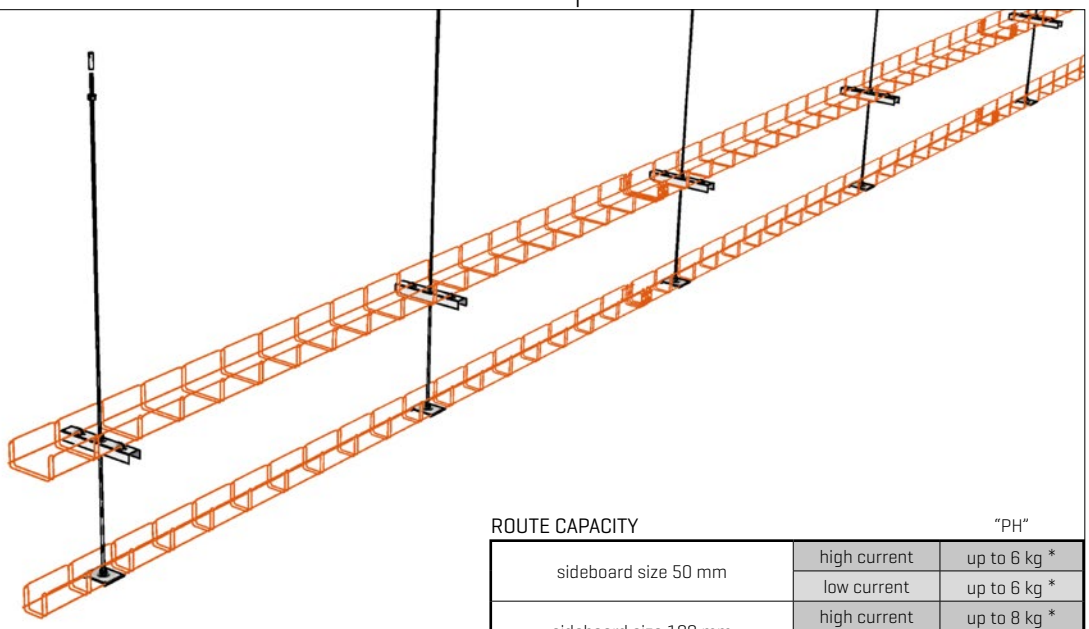
functional integrity according to temperature curve "PH" in classification according to regulations:		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R*	PS_{842} 120	E 30

cabling used in testing:

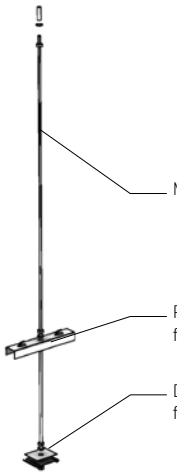
	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADIaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFIaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

Spatial suspended installation **not normed** | on threaded rods

CG cold galvanized · ZD hot zinc-dipped · A2 stainless AISI 304L



used for spatial guiding of tracks anchored to the ceiling. The threaded rod is fixed directly in the concrete ceiling with the aid of metallic dowels and the trays can be attached to it either by PZMP 100 support or by DZM 13 holder.



ROUTE CAPACITY "PH"

sideboard size 50 mm	high current	up to 6 kg *
	low current	up to 6 kg *
sideboard size 100 mm	high current	up to 8 kg *
	low current	up to 8 kg *

[*] see table on p. 16

MOUNTING LIMITS

suitable only for cable trays M2 50 – 100/50 and M2 100/100	
suitable only for M2 50 – 100/50 and M2 100/100 cable trays with max. two storeys of trays, various combinations (holder/support) available	
maximum spacing of threaded rods	1 000 mm
maximum load of one threaded rod	25 kg/m
min. distance between the storeys in case of multiple installation of routes on one threaded rod	300 mm
cables shall be attached by SONAP clamps at the beginning and at the end of each bend	

APPLIED ELEMENTS order code

M2 50-100/50 a M2 100/100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
PZMP 100 support	ARK-2x6210
DZM 13 holder	ARK-2x4130
M8 threaded rod	ARK-2x9021

(x) position indicating type of surface finish

␣␣positions indicating specific dimension

functional integrity according to temperature curve "PH" in classification according to regulations:

		ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	Prakab	PH 120-R	PS_{842} 120	E 30
low current	Prakab	PH 120-R	PS_{842} 120	E 30

cabling used in testing:

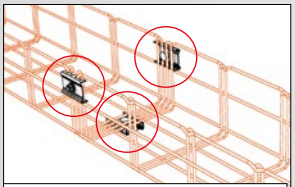
	manufacturer	cabling type	cabling used in testing
constant temperature curve "PH"	**Prakab**	high current	type PRADlaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1

MAXIMUM PERMISSIBLE LOAD VALUES OF MERKUR 2 CABLE TRACKS

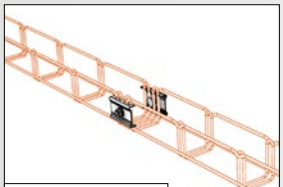
	loading capacity depending upon execution						fire resistance according to cabling type	
	simple horizontal using NZM	compound horizontal on STPM strut	ascending on PZMP supports	suspended on STPM struts	suspended on M8 rod pairs	suspended on M8 single rods	high current	low current
M2 50/50	3 kg	3 kg	3 kg	3 kg	3 kg	3 kg	PH120-R	PH120-R
M2 100/50	6 kg	6 kg	6 kg	6 kg	6 kg	6 kg	PH120-R	PH120-R
M2 150/50	9 kg	9 kg	9 kg	9 kg	8 kg	-	PH120-R	PH120-R
M2 200/50	12 kg	12 kg	10 kg	12 kg	10 kg	-	PH120-R	PH120-R
M2 250/50	14 kg	14 kg	10 kg	14 kg	10 kg	-	PH120-R	PH120-R
M2 300/50	14 kg	14 kg	15 kg	14 kg	10 kg	-	PH120-R	PH120-R
M2 400/50	16 kg	16 kg	-	16 kg	12 kg (*)	-	PH120-R	P30-R/PH120-R *
M2 500/50	18 kg	18 kg	-	18 kg	12 kg (*)	-	PH120-R	P30-R/PH120-R*
M2 100/100	8 kg	8 kg	8 kg	8 kg	8 kg	8 kg	PH120-R	PH120-R
M2 150/100	10 kg	10 kg	10 kg	10 kg	10 kg	-	PH120-R	PH120-R
M2 200/100	13 kg	13 kg	12 kg	13 kg	12 kg	-	PH120-R	PH120-R
M2 250/100	16 kg	16 kg	14 kg	16 kg	12 kg	-	PH120-R	PH120-R
M2 300/100	18 kg	18 kg	15 kg	18 kg	12 kg	-	PH120-R	PH120-R
M2 400/100	18 kg	18 kg	-	18 kg	14 kg	-	PH120-R	P30-R
M2 500/100	20 kg	20 kg	-	20 kg	14 kg	-	PH120-R	P30-R

(*) Due to the test course two mesh tray widths, **M2 400 and M2 500 for low current circuits**, did not obtain full certification (PH 120-R) and can only be used with P30-R certification. However, they complied with the PH 120-R certification conditions in the suspended installation type on pairs of rods. The test outcome may have been biased by the fact that the MERKUR 2 specimen were located in extremely exposed parts of the filled test chamber. However, this fact does not represent a real disadvantage, since the required fire resistance of low current distribution cableways usually does not exceed 30 minutes. If higher resistance should be obligatory, then another size of the available M2 cable tray system with full certification can be the right option.

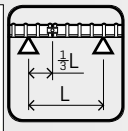
Connecting cable trays with SZM 1 couplings



trays of 100 - 500 mm width

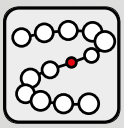


M2 50/50 tray



The compliance with high requirements regarding stiffness can only be achieved by using at least three SZM 1 couplings when assembling the cable mesh trays. Two of them shall be located at the side walls and one at the bottom of the tray. There is only one exception to this rule, namely the M2 50/50 mesh tray where two connecting elements will do, as shown in the picture on the left. No coupling may be located above the support point. The ideal position is at 1/3 of the distance between the support points.

Often disregarded connotations



The weakest element of an installation is decisive for the overall resistance of a cable route. That is why it should be kept in mind that even the sturdiest execution of a cable track with best craftsmanship can be jeopardized by poor cabling, inappropriate anchoring, designing the route through risky places and other aspects of the project and the implementation of the cable track.

Anchorage to the building

It is very important to pay enough attention to the right choice and execution of the anchorage of the bearing elements of cable routes to the structures (e.g. by bolts with metal dowels).
If needed, we are ready to suggest an appropriate method of anchoring the bearing components for the cable routes suitable for your planned implementation.

Supplementary installation elements for cable tracks with functional integrity

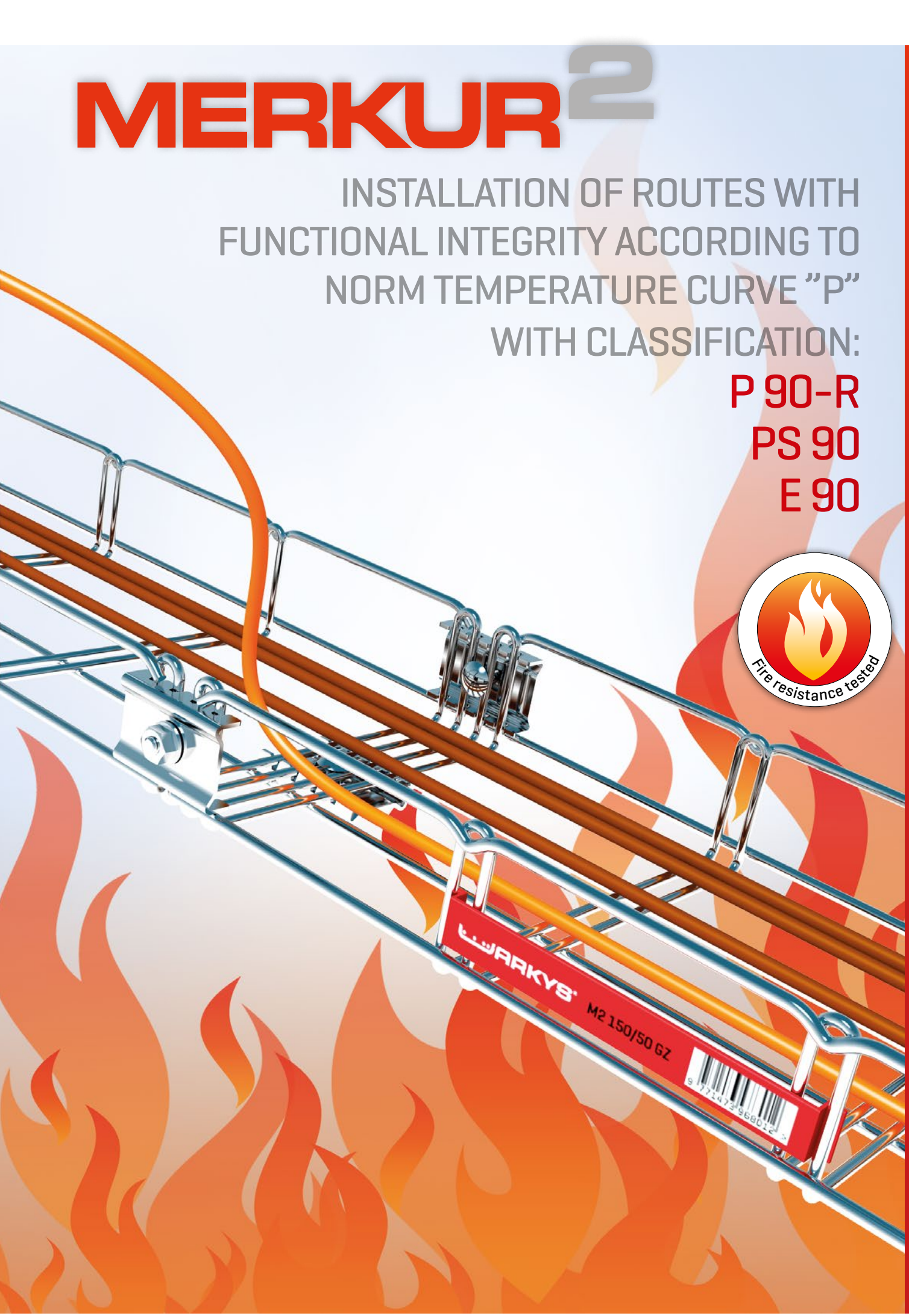
For the cable routes with required fire resistant functional integrity it is necessary to use suitable installation components. During the installation of cable tracks within the Merkur 2 system it is possible to take the advantage of using installation box type 8117 P016 (manufactured by Kopos Kolín), which have classification P 30-R. This type of boxes may be used with all wire mesh trays on high current tracks. The boxes themselves are not classified for low current tracks.

We recommend that the representatives of installing companies consult individual solutions of cabling and supporting components with business-technical managers of the company Arkys, s.r.o. - find your regional contact at www.arkys.cz

MERKUR 2

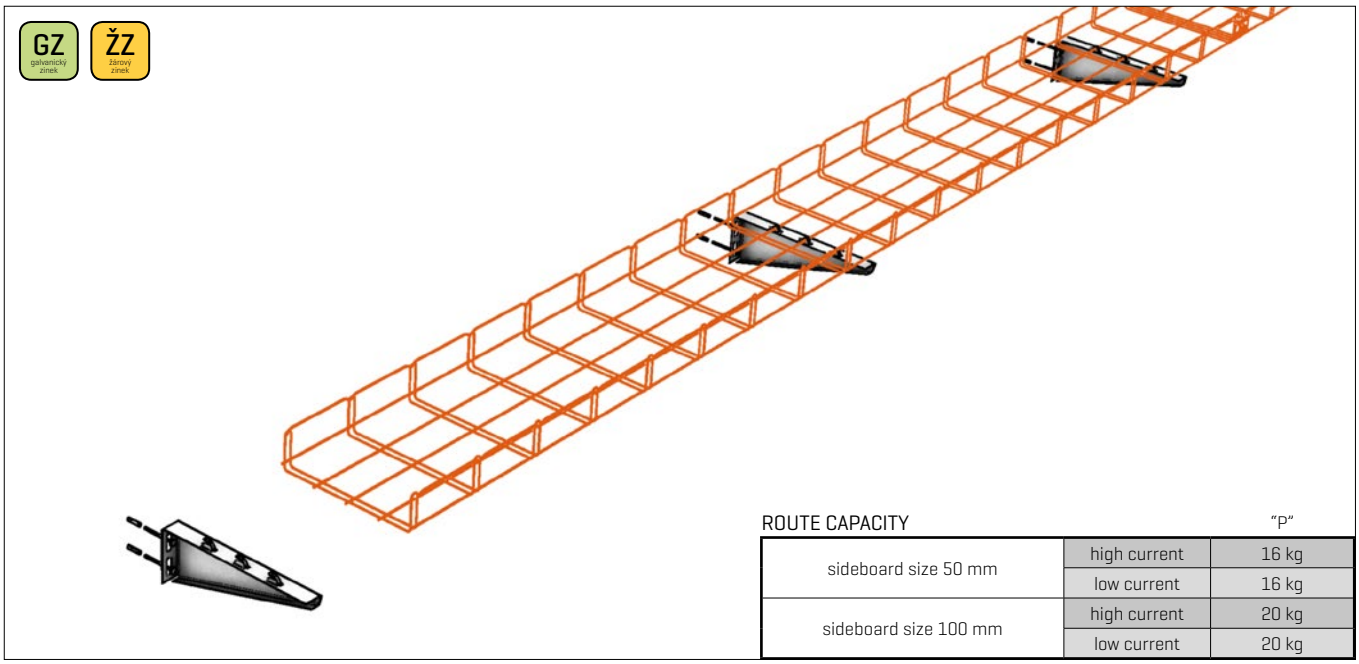
INSTALLATION OF ROUTES WITH FUNCTIONAL INTEGRITY ACCORDING TO NORM TEMPERATURE CURVE "P" WITH CLASSIFICATION:

P 90-R
PS 90
E 90



Wall mounting **not normed** | on NZM cantilevers

GZ galvanický zinek ŽZ žárový zinek



used for current horizontal guiding of one or more storeys of cable routes over vertical walls of buildings. This type can be used both for high current and low current circuits.

ROUTE CAPACITY "P"

sideboard size 50 mm	high current	16 kg
	low current	16 kg
sideboard size 100 mm	high current	20 kg
	low current	20 kg

MOUNTING LIMITS

maximum spacing of supports	1 000 mm
cables shall be attached to tray by SONAP clamps at the beginning and at the end of each bend	
balanced distribution of cantilever load with the centre of gravity possibly close to its root	

APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2×1␣␣␣
SZM 1 coupling	ARK-2×3010
NZM 50 - 500 cantilever	ARK-2×62␣␣

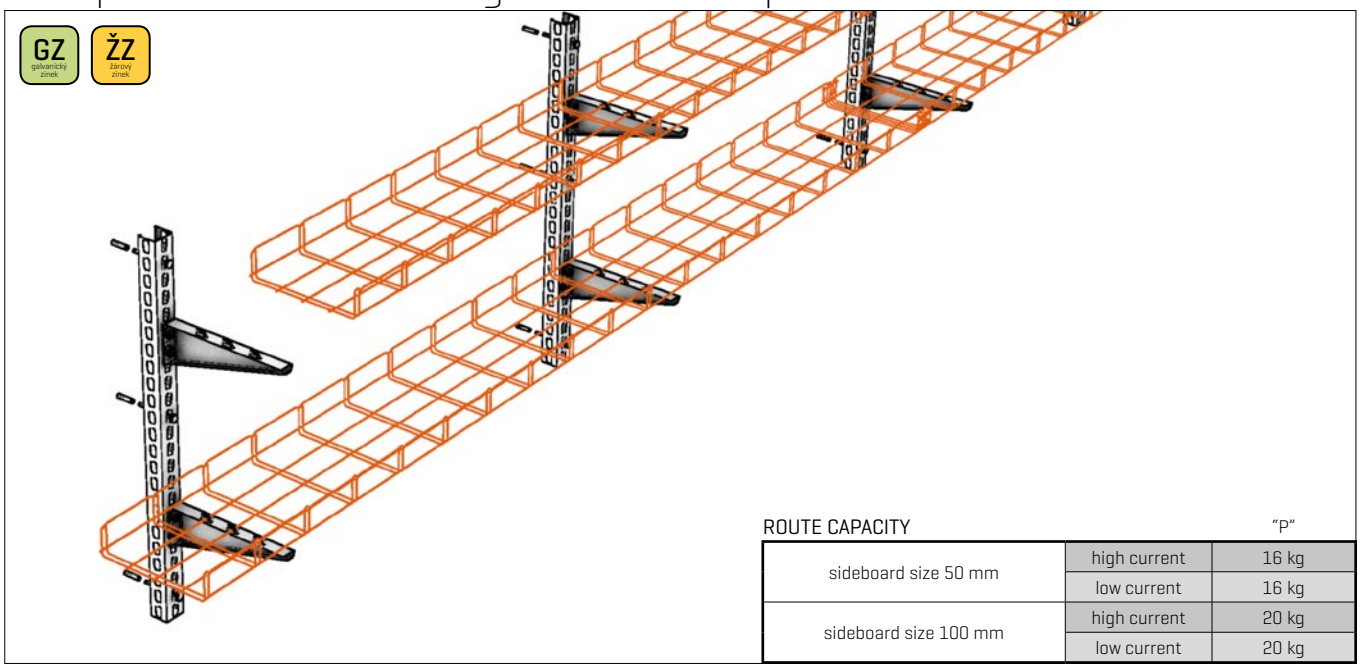
(x) position indicating type of surface finish
␣␣positions indicating specific dimension

functional integrity according to temperature curve "P" in classification according to regulations:

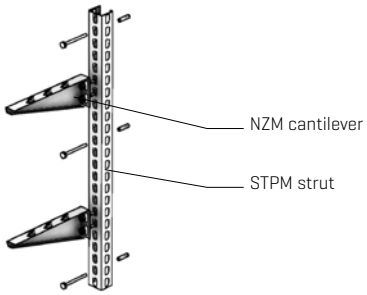
			ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT		P 60-R	PS 60	E 60
	Prakab	↕50 mm	P 60-R	PS 60	E 60
		↕100 mm	P 30-R	PS 30	E 30
	Elkond HHK	↕50 mm	P 30-R	PS 30	E 30
		↕100 mm	P 15-R	PS 15	E 15
low current	NKT		–	–	–
	Prakab		P 60-R	PS 60	E 60
	Elkond HHK		P 30-R	PS 30	E 30

cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Compound wall mounting **not normed** | on STPM struts



used for current horizontal guiding of one or more storeys of cable routes over vertical walls of buildings. Also possible for more loaded routes attached to walls with difficult anchoring.



ROUTE CAPACITY "P"

sideboard size 50 mm	high current	16 kg
	low current	16 kg
sideboard size 100 mm	high current	20 kg
	low current	20 kg

MOUNTING LIMITS

maximum spacing of supports	1 000 mm
max. spacing of anchoring points on the strut	400 mm
max. number of levels/rows of cable trays	3
min. spacing of cantilevers on one strut (the STPM 300 strut can accommodate only one storey of cable route)	300 mm
cables shall be attached to the tray by SONAP clamps at the beginning and at the end of each bend	
balanced distribution of cantilever load with the centre of gravity possibly close to its root	

APPLIED ELEMENTS order code

MERKUR 2 50 - 500/50 - 100 tray	ARK-2×1␣␣␣
SZM 1 coupling	ARK-2×3010
NZM 50 - 500 cantilever	ARK-2×50␣␣
STPM strut	ARK-227␣␣␣

(x) position indicating type of surface finish
␣␣positions indicating specific dimension

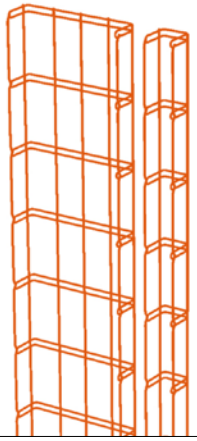
functional integrity according to temperature curve "P" in classification according to regulations:

			ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT		P 60-R	PS 60	E 60
	Prakab	↕50 mm	P 60-R	PS 60	E 60
		↕100 mm	P 30-R	PS 30	E 30
	Elkond HHK	↕50 mm	P 30-R	PS 30	E 30
		↕100 mm	P 15-R	PS 15	E 15
low current	NKT		–	–	–
	Prakab		P 60-R	PS 60	E 60
	Elkond HHK		P 30-R	PS 30	E 30

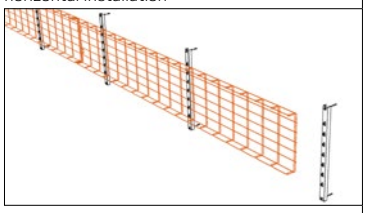
cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Flat (ascending) installation **not normed** | on PZMP supports

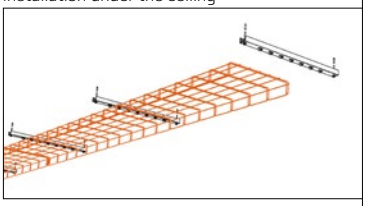
GZ galvanický zinek
ŽZ žárový zinek



horizontal installation



installation under the ceiling



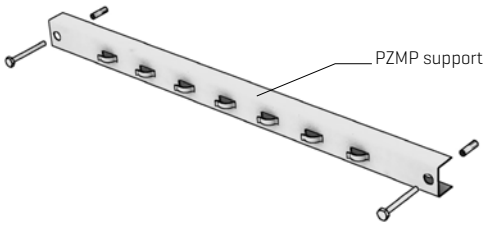
used for vertical guiding of routes in one or more parallel channels of trays upon vertical surfaces of the building. The cabling shall be always attached to the trays by SONAP clamps. This type of installation can be also used horizontally, including routes under the ceiling (see pictures).

ROUTE CAPACITY

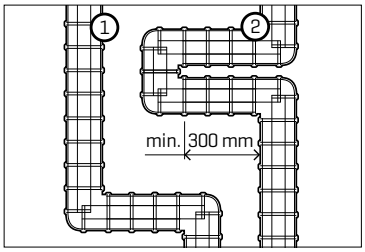
		"P"
sideboard size 50 mm	high current	10 kg
	low current	10 kg
sideboard size 100 mm	high current	10 kg
	low current	10 kg

MOUNTING LIMITS

maximum spacing of supports	1 000 mm
maximum spacing of SONAP clamps (i.e. fixed to every third cross beam)	300 mm
max. length of vertical section of route, in case of longer vertical sections, the route shall be provided with retaining bends (see picture) or with certified installation box for pulling tension relief of the cables	3 500 mm



implementation of retaining bends in a vertical route



Some specialized solutions of retaining positions offered by other suppliers are also available, e.g. ZSE90 pull relief box.

APPLIED ELEMENTS

	order code
MERKUR 2 50 - 300 /50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
PZMP 100 - 300 support	ARK-2x62␣␣

(x) position indicating type of surface finish
␣␣positions indicating specific dimension

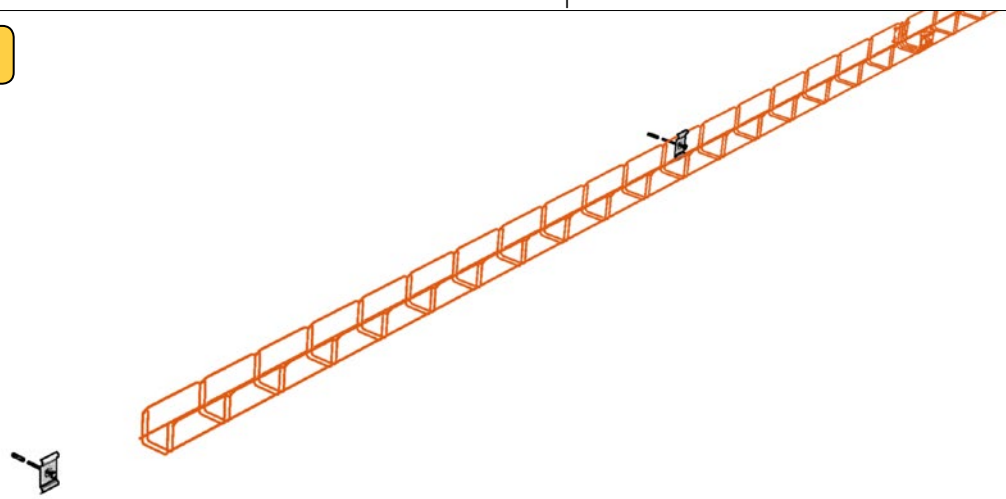
functional integrity according to temperature curve "P" in classification according to regulations:

			STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT	P 90-R	PS 90	E 90
	Prakab	P 30-R	PS 30	E 30
	Elkond HHK	P 60-R	PS 60	E 60
low current	NKT	–	–	–
	Prakab	P 30-R	PS 30	E 30
	Elkond HHK	P 90-R	PS 90	E 90

cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRADlaDur 1-CSKH-V 180; P30-R, PH-120-R, PS30, E30 B2ca s1d0
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Wall installation LIGHT **not normed** | on DZM 12 holders

GZ galvanicky zinek ŽZ žárový zinek



ROUTE CAPACITY "P"

sideboard size 50 mm	high current	3 kg
	low current	3 kg
sideboard size 100 mm	high current	3 kg
	low current	3 kg

Solution intended for horizontal guiding of one or more storeys of cable routes on vertical surfaces of the buildings. It is approved exclusively for the M2 50/50 cable tray and can be recommended as an economic solution of simple communication cable routes.

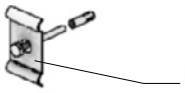
MOUNTING LIMITS

installation approved for M2 50/50 tray only	
maximum spacing of supports	1 250 mm

APPLIED ELEMENTS order code

MERKUR 2 50 /50 tray	ARK-2×1110
SZM 1 coupling	ARK-2×3010
DZM 12 holder	ARK-2×4120

(x) position indicating type of surface finish



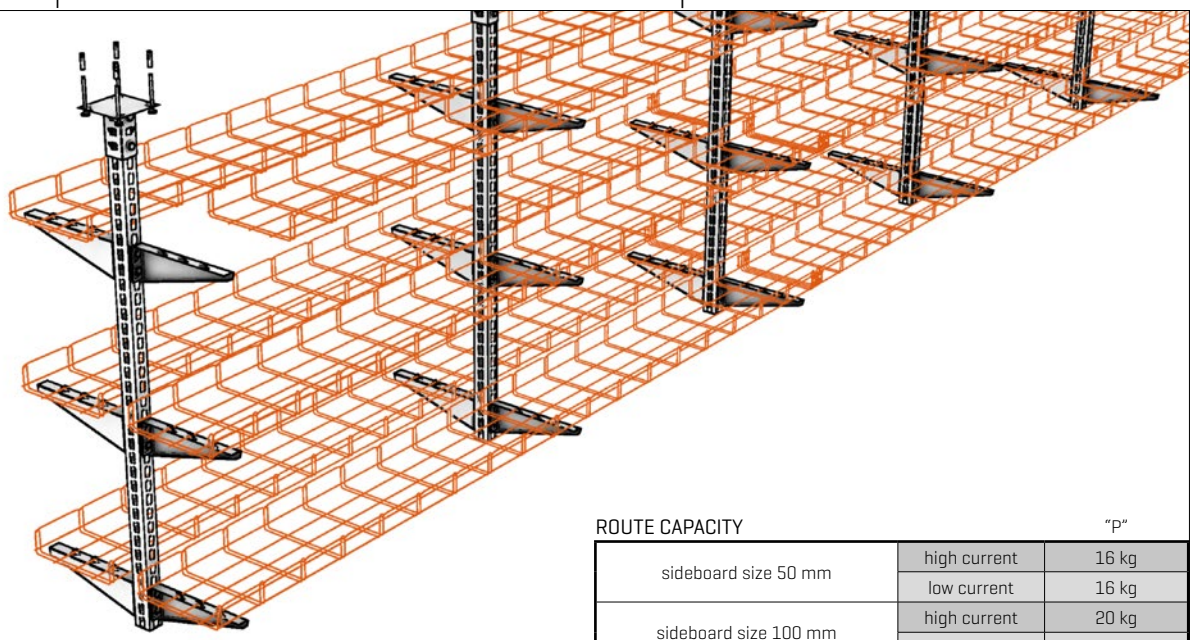
DZM 12 holder

functional integrity according to temperature curve "P" in classification according to regulations:			STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT	–	–	–
	Prakab	P 90-R	PS 90	E 90
	Elkond HHK	P 60-R	PS 60	E 60
low current	NKT	–	–	–
	Prakab	P 60-R	PS 60	E 60
	Elkond HHK	P 90-R	PS 90	E 90

cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	–	–
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK (SK)	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Spatial suspended installation **not normed** | on STPM struts

GZ galvanický zinek ŽZ žárový zinek



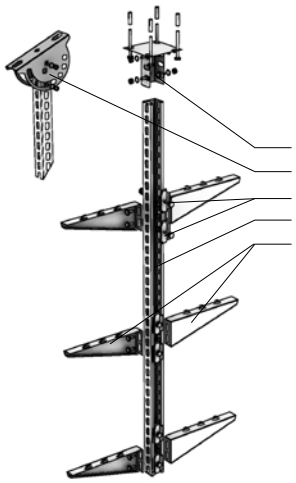
This arrangement serves for guiding routes anchored to the ceiling. They can be installed on one or more levels on struts. Such solution is particularly well adapted for complex tracks with crossing on different levels.

ROUTE CAPACITY

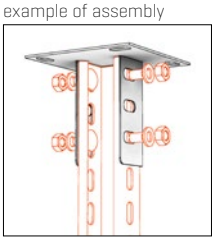
		"P"
sideboard size 50 mm	high current	16 kg
	low current	16 kg
sideboard size 100 mm	high current	20 kg
	low current	20 kg

MOUNTING LIMITS

maximum spacing of supports	1 000 mm
maximum load of one strut	100 kg
max. number of levels/rows of cable trays	3
distance between routes at the strut in installations of several levels shall be at least	300 mm
cables shall be fixed by SONAP clamps at the beginning and at the end of each bend	
symmetric and balanced distribution of load to prevent deflections of the strut	



example of assembly



applied connecting elements:
4x M8x20 carriage bolt
4x M10 washer
4x M8 nut

APPLIED ELEMENTS

	order code
MERKUR 2 50 - 500/50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
NZM 50 - 500 cantilever	ARK-2x50␣␣
STPM strut	ARK-2x7␣␣␣
SVSM stabilizing setting of strut	ARK-218958
DZM STP holder	ARK-2x4300
DZM STPU holder	ARK-2x4310

(x) position indicating type of surface finish
␣␣positions indicating specific dimension

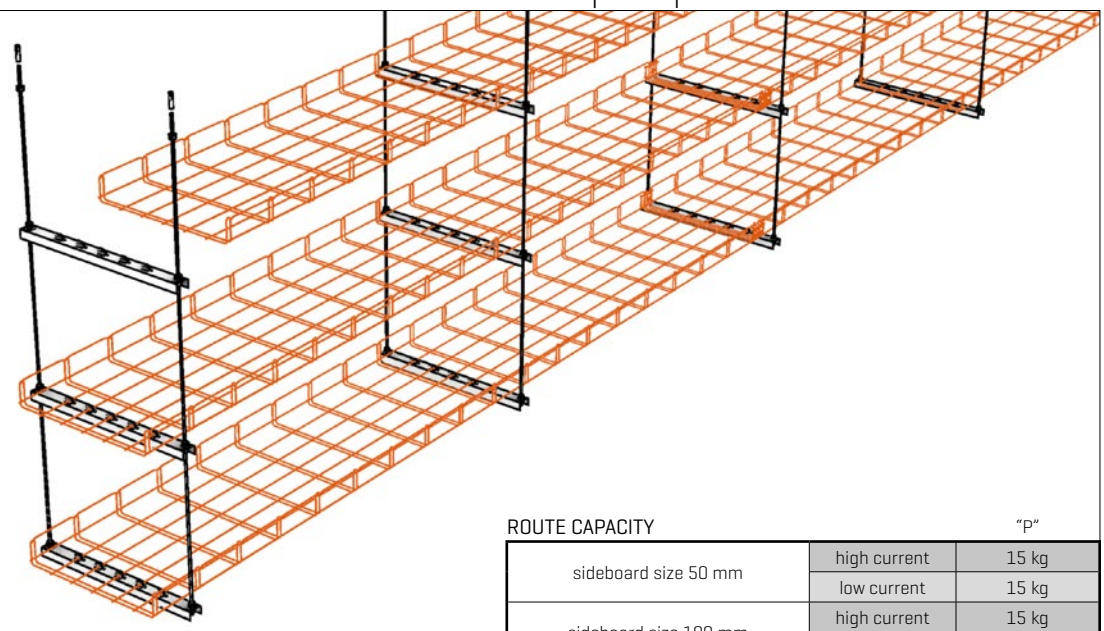
functional integrity according to temperature curve "P" in classification according to regulations:

			ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT		P 60-R	PS 60	E 60
	Prakab	↕50 mm	P 60-R	PS 60	E 60
		↕100 mm	P 30-R	PS 30	E 30
	Elkond HHK	↕50 mm	P 30-R	PS 30	E 30
		↕100 mm	P 15-R	PS 15	E15
low current	NKT		–	–	–
	Prakab		P 60-R	PS 60	E 60
	Elkond HHK		P 30-R	PS 30	E 30

cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Spatial suspended installation **not normed** | on pairs of threaded rods

GZ galvanicky zinek ŽZ žárový zinek



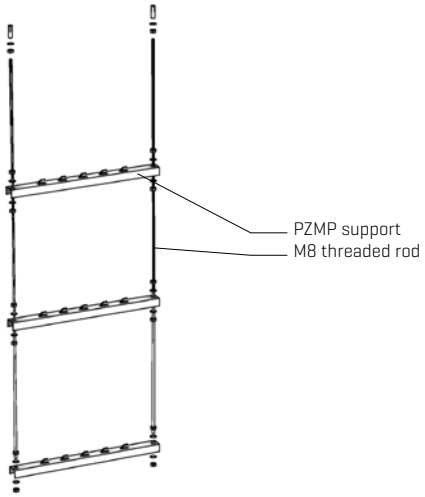
used for spatial guiding of routes anchored to the ceiling. The cable routes can be installed in one or more parallel cable tray channels. It is based on current spatial assembly using threaded rods.

ROUTE CAPACITY

		"P"
sideboard size 50 mm	high current	15 kg
	low current	15 kg
sideboard size 100 mm	high current	15 kg
	low current	15 kg

MOUNTING LIMITS

maximum spacing of threaded rods	1 000 mm
maximum load of one pair of threaded rods	50 kg
max. number of levels/rows of cable trays	3
minimum vertical distance of the supports in case of multiple route assembly	300 mm
cables shall be fixed by SONAP clamps at the beginning and the end of each bend	
balanced loading of the supports to enable uniform load distribution between both rods of the pair	



APPLIED ELEMENTS

	order code
MERKUR 2 50 - 500/50 - 100 tray	ARK-2x1␣␣␣
SZM 1 coupling	ARK-2x3010
PZMP 100 - 500 support	ARK-2x62␣␣
M8 threaded rod	ARK-2x9021

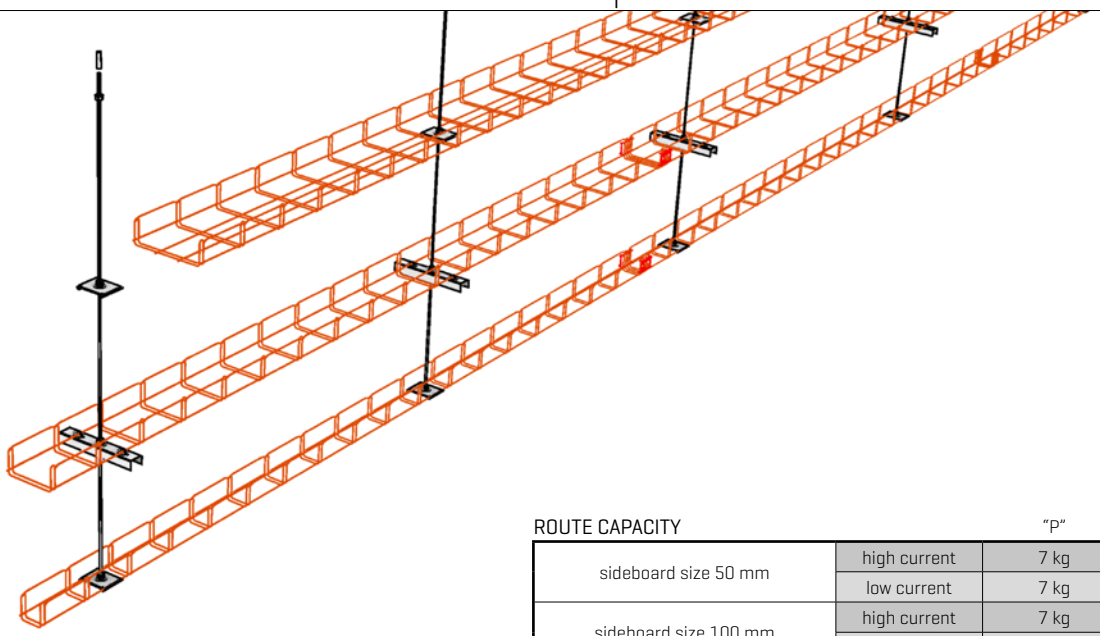
(x) position indicating type of surface finish
␣␣positions indicating specific dimension

functional integrity according to temperature curve "P" in classification according to regulations:			ZP 27/2008	STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT		P 90-R	PS 90	E 90
	Prakab	↕50 mm	P 90-R	PS 90	E 90
		↕100 mm	P 60-R	PS 60	E 60
	Elkond HHK		–	–	–
low current	NKT		–	–	–
	Prakab	↕50 mm	P 90-R	PS 90	E 90
		↕100 mm	–	–	–
	Elkond HHK		P 90-R	PS 90	E 90

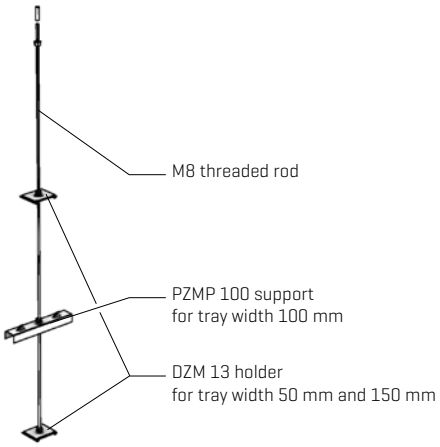
cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Spatial suspended installation **not normed** | on threaded rods

GZ galvanický zinek ŽZ žárový zinek



used for spatial guiding of routes anchored to the ceiling. The threaded rod is fixed directly in the concrete ceiling with the aid of metallic dowels and the trays can be attached to it either by PZMP100 support or by holder DZM 13.



ROUTE CAPACITY "P"

sideboard size 50 mm	high current	7 kg
	low current	7 kg
sideboard size 100 mm	high current	7 kg
	low current	7 kg

MOUNTING LIMITS

suitable only for M2 50 – 100/50 and M2 100/100 cable trays	
max. two storeys of trays with various combinations (holder/support) allowed	
maximum spacing of threaded rods	1 000 mm
maximum load of one threaded rod	25 kg/m
min. distance between the storeys in case of multiple installation of routes on one threaded rod	300 mm
cables shall be attached by SONAP clamps at the beginning and at the end of each bend	

APPLIED ELEMENTS order code

M2 50-150/50 tray	ARK-2×1␣␣␣
SZM 1 coupling	ARK-2×3010
PZMP 100 support	ARK-2×6210
DZM 13 holder	ARK-2×4130
M8 threaded rod	ARK-2×9021

(x) position indicating type of surface finish
␣␣positions indicating specific dimension

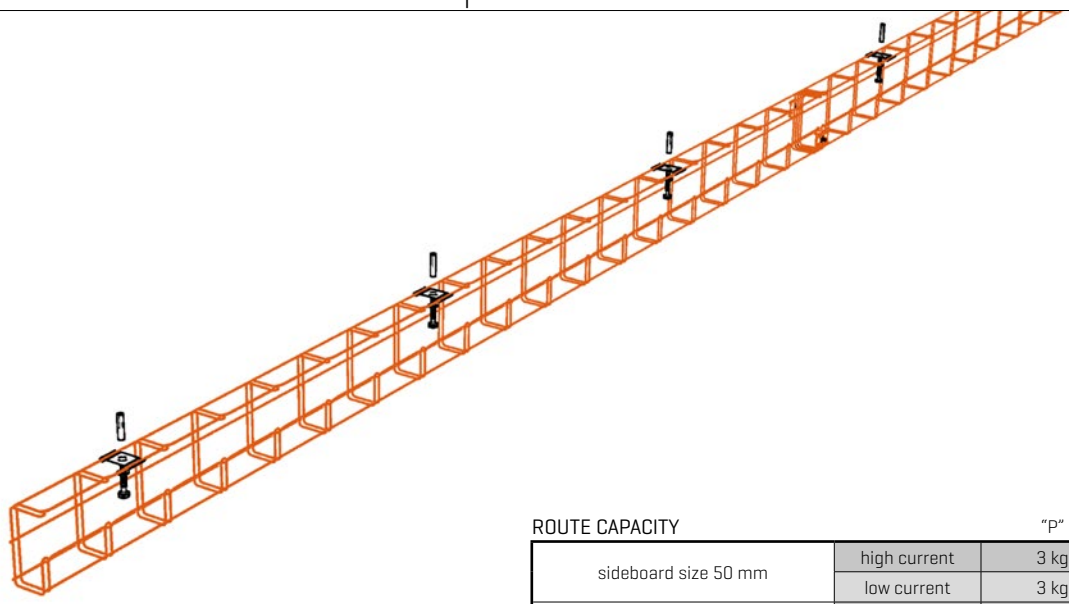
functional integrity according to temperature curve "P" in classification according to regulations:

			STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT	P 90-R	PS 90	E 90
	Prakab	P 90-R	PS 90	E 90
	Elkond HHK	P 15-R	PS 15	E 15
low current	NKT	–	–	–
	Prakab	P 60-R	PS 60	E 60
	Elkond HHK	P 90-R	PS 90	E 90

cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK [SK]	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Wall installation LIGHT **not normed** | on DZM 12 holders

GZ galvanicky zinek ŽZ žárový zinek



ROUTE CAPACITY "P"

sideboard size 50 mm	high current	3 kg
	low current	3 kg
sideboard size 100 mm	high current	3 kg
	low current	3 kg

solution intended for horizontal guiding of one or more storeys of cable routes on vertical surfaces of the buildings. It is approved exclusively for the M2 50/50 cable tray and can be recommended as an economic solution for simple communication cable routes.

MOUNTING LIMITS

maximum spacing of supports	1 250 mm

APPLIED ELEMENTS order code

M2 50-100/100-G tray	ARK-2×13␣␣
SZM 1 coupling	ARK-2×3010
DZM 12 holder	ARK-2×4120

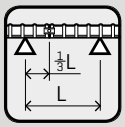
(x) position indicating type of surface finish

functional integrity according to temperature curve "P" in classification according to regulations:

			STN 92 0205:2012	DIN 4102-12:1998-11
high current	NKT	P 90-R	PS 90	E 90
	Prakab	P 90-R	PS 90	E 90
	Elkond HHK	P 60-R	PS 60	E 60
low current	NKT	–	–	–
	Prakab	P 60-R	PS 60	E 60
	Elkond HHK	P 90-R	PS 90	E 90

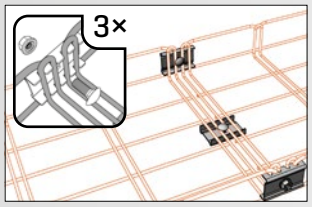
cabling used in testing:	manufacturer	cabling type	cabling used in testing
norm temperature curve "P"	**NKT cables**	high current	type NOPOVIC 1-CXKH-V FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	not supplied by manufacturer
	Prakab	high current	type PRAFlaDur 90 (N)HXH-J FE 180; P90-R, PS90, E90 B2ca s1d0a1
		low current	type PRAFlaGuard F SSKFH-V180; P90-R, PS90, E90 B2ca s1d0a1
	Elkond HHK (SK)	high current	type 1-CXKH-V P90-R, PS90, E90 B2ca s1d0a1
		low current	type SHXKFH-V180 Lg P90-R B2ca s1d1a1

Connecting cable trays with SZM 1 couplings

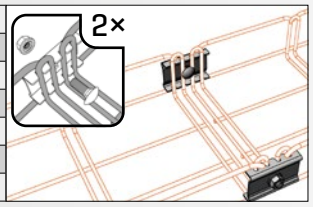


In order to maintain the declared values, it is necessary to use the correct number of couplings in positions according to the pictures.
The declared capacity values of the trays depend on prescribed implementation of connections. Otherwise, we do not guarantee the declared capacities.

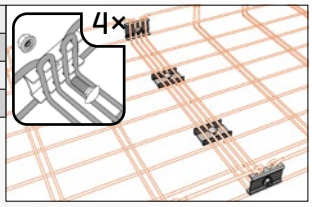
M2 250/50
M2 300/50
M2 150/100
M2 200/100
M2 250/100
M2 300/100



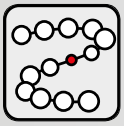
M2 50/50
M2 100/50
M2 150/50
M2 200/50
M2 100/100
M2 50/50 G
M2 100/100 G



M2 400/50
M2 500/50
M2 400/100
M2 500/100



Often disregarded connotations



The weakest element of an installation is decisive for the overall resistance of a cable route. That is why it should be kept in mind that even the sturdiest execution of a cable route with best craftsmanship can be jeopardized by poor cabling, inappropriate anchoring, designing the route through risky places and other aspects of the project and the implementation of the cable route.

Anchorage to the building

It is very important to pay enough attention to the right choice and execution of the anchorage of the bearing elements of cable tracks to the structures (e.g. by bolts with metal dowels).
If needed, we are ready to suggest an appropriate method of anchoring the bearing components for the cable routes suitable for your planned implementation.

Supplementary installation elements for cable routes with functional integrity

For the cable routes with required fire resistant functional integrity it is necessary to use suitable installation components. During the installation of cable tracks within the Merkur 2 system it is possible to take the advantage of using installation box type 8117 P016 (manufactured by Kopos Kolín), which have classification P 30-R. This type of boxes may be used with all wire mesh trays on high current routes. The boxes themselves are not classified for low current routes.

We recommend that the representatives of installing companies consult individual usages of cabling and supporting components with business-technical manager of the company Arkys, s.r.o. - see contact according to regions at www.arkys.cz

SEISMIC QUALIFICATION
MANUAL FOR EARTQUAKE RESISTANT CABLE ROUTES INSTALLATION

The development of modern industrial premises and urban communities progressively increases their complexity and intesified demands on technical equipment and user comfort. A significant technical development and new findings brought into everyday life enable us to meet these requirements. Moreover, there are increased demands on reliability and safe operation of technical facilities, including accidents or other extreme situations. The safety of employees, visitors or operators of industrial mechanisms and the environmental protection are the main principal issues.

In everyday situations, reliability is the main concern during fire, industrial explosion or natural disasters such as destructing impacts of water, wind or lightning. The impact of an earthquake on buildings and their parts is rather marginal in our country, yet, in certain buldings, it is taken into consideration and it is therefore important to test particular components with regard to this aspect.

The requirements on functionality during emergency events are emphasized especially in nuclear and chemical facilities where the absolute safety and control of nuclear and chemical processes is obligatory to prevent negative effects on the environment.

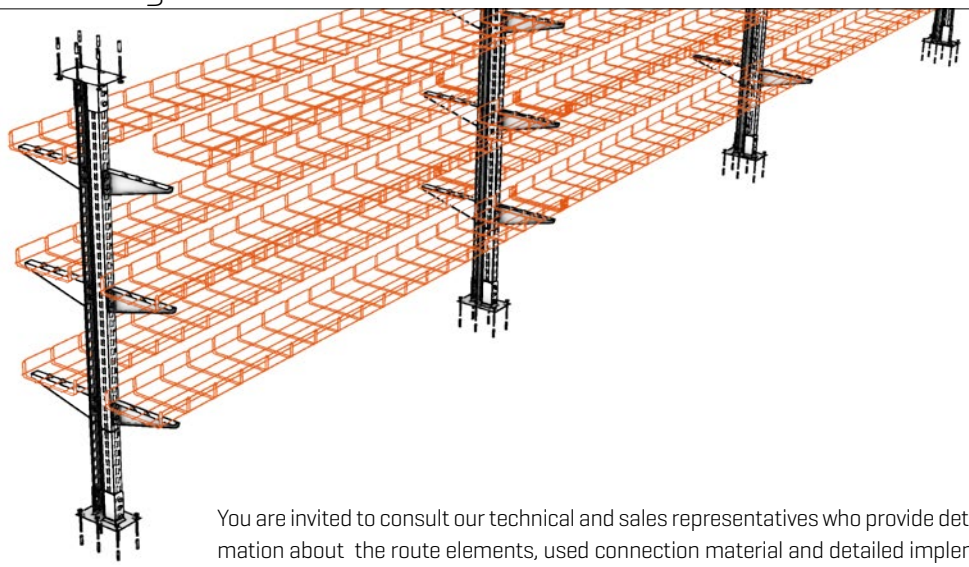
Similar requirements on preserving the cable routes functionality have been lately connected to buildings where larger gathering of people occurs, for example skyscrapers, shopping malls, hotels, exhibition grounds, closed parkings, hospitals, and, notably, for complex tunnel constructions, e.g. subway lines.

In order to meet these requirements and to extend the functional and application options of our M2 cable tray system, we have tested the trays for seismic qualification according to +CSN IEC 980: 1993 art.6, according to examination regulations „ZP-15-013.VOP.C.00" for nuclear power plant Temelin, the whole SO 800 bulding and for the nuclear power plant Dukovany, building SO 805/1 - level +31, and for the bulding SO 800 Dukovany.

Based on the results of the test, the M2 cable trays were approved for installation of cable routes where the functionality during an earthquake is required. A brief overview of installation types with certified ability to resist an earthquake is shown on following pages.

Firm anchorage "ceiling to floor", double-sided cantilevers

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L

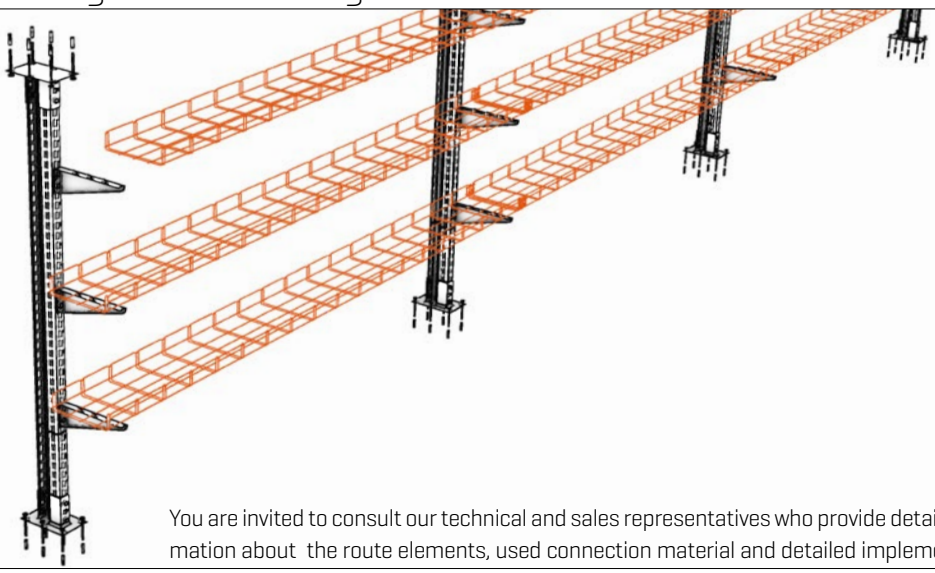


Seismic resistant design

You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

Firm anchorage "ceiling to floor", single-sided cantilevers

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L

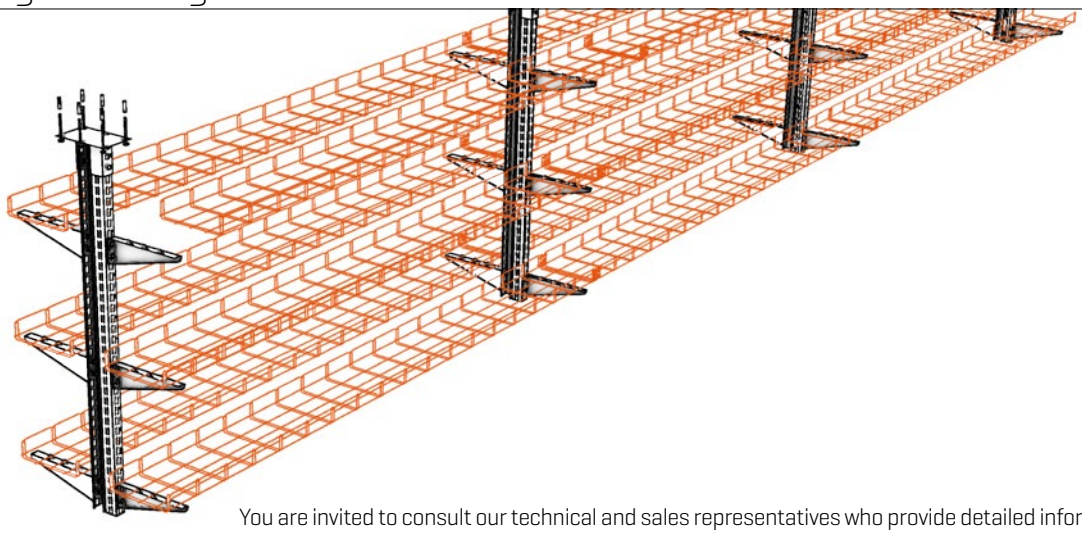


Seismic resistant design

You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

Firm anchorage "ceiling", double-sided cantilevers

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L

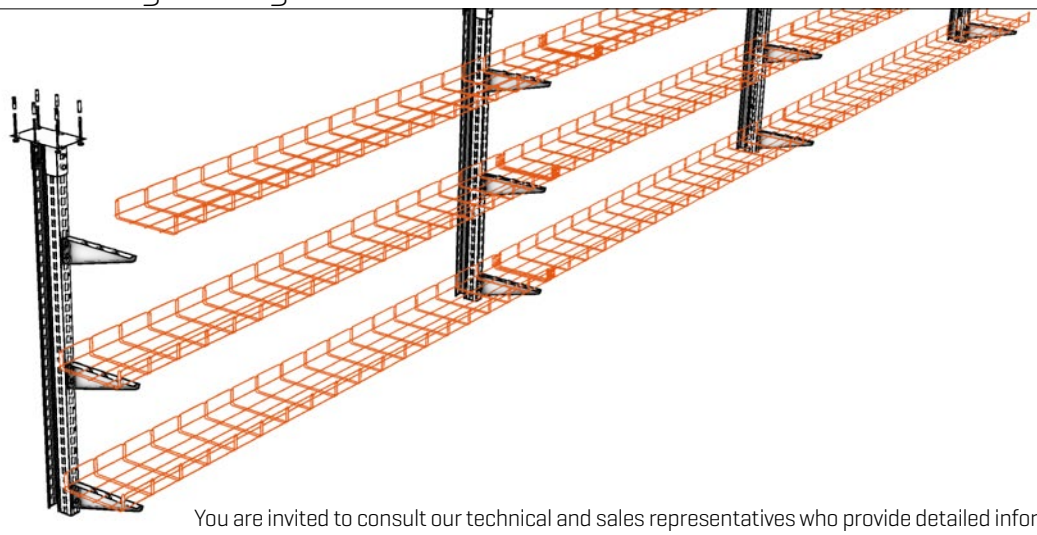


Seismic resistant design

You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

Firm anchorage "ceiling", single-sided cantilevers

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L

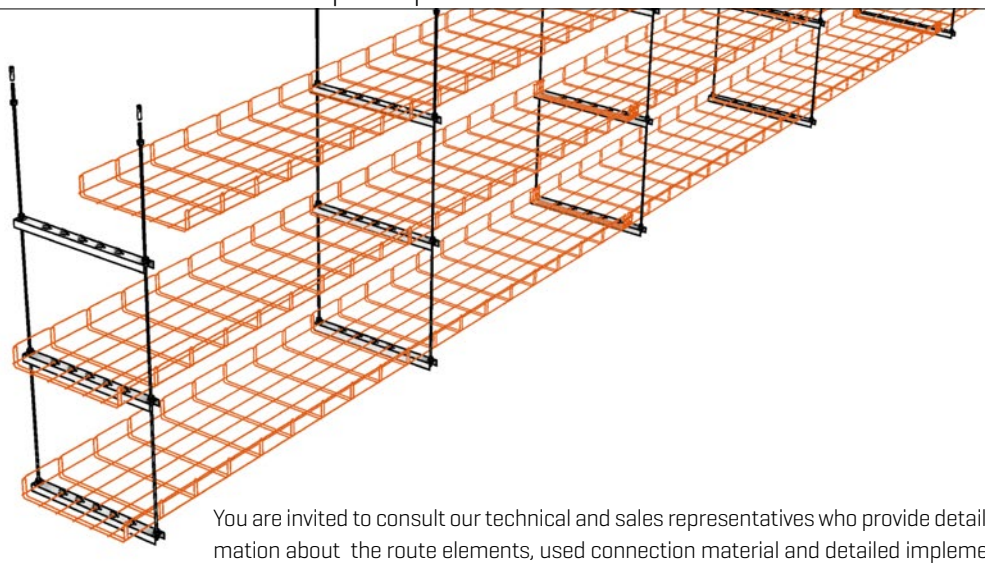


Seismic resistant design

You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

Spatial suspension installation | on pairs of thread rods

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L

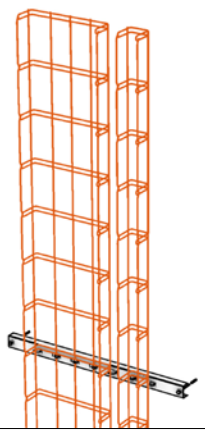


Seismic resistant design

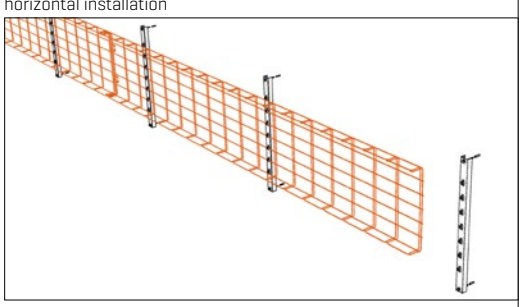
You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

Flat (vertical) installation | on PZMP supports

GZ galvanický zinek | ŽZ žárový zinek | A2 nerez AISI 304L



horizontal installation



Seismic resistant design

You are invited to consult our technical and sales representatives who provide detailed information about the route elements, used connection material and detailed implementation.

MERKUR 2 earthquake test protocol

Vojenský technický ústav, s.p.
s certifikovaným systémem jakosti dle ČSN EN ISO 9001

Číslo úkolu/ zakázky: 15-19-2-93-3201
Číslo protokolu: 194200-150/2015

Úsek zkoušení techniky– zkušební laboratoř č.1103 akreditovaná ČIA dle ČSN EN ISO/IEC 17025

L 1103

ZKUŠEBNA SPECIÁLNÍCH MĚŘENÍ

Výtisk číslo: 1
Počet listů: 25
Počet příloh: -

PROTOKOL O ZKOUŠCE
SEIZMICKÉ ZPŮSOBILOSTI

Jméno a adresa zadavatele (zákaznika):
ARKYS, s.r.o., Podstránská 1, 627 00 Brno, Česká republika

Identifikace zkoušených předmětů: Kabelové nosné systémy MERKUR 2
Výrobní číslo: přesná identifikace viz 2–10. strana protokolu
Výrobce: ARKYS, s.r.o., Podstránská 1, 627 00 Brno, Česká republika
Technická dokumentace:

Datum přijetí do zkoušky:
13.04.2015
08.07.2015

Metoda zkoušení: ČSN IEC 980: 1993, čl. 6

Datum a místo provedení zkoušky:
16., 17., 27., 28.04.2015
8., 9. a 10.07.2015
Zkušebna speciálních měření

Vedoucí zkoušky:
Ing. Jiří Lenikus

Zkoušku provedl:
Ing. Jiří Lenikus

Datum vydání protokolu:
31.08.2015

Kontroloval a schválil vedoucí zkušebny:
Ing. Ivan ŠTUCHAL

Výsledky zkoušky:

Zkoušený předmět byl podroben zkoušce seizmické způsobilosti.

Výsledky zkoušek jsou uvedeny v protokolu.

Uvedená rozšířená nejistota měření je součinem standardní nejistoty měření a koeficientu rozšíření K=2, což pro normální rozdělení odpovídá pravděpodobnosti pokrytí asi 95 %.

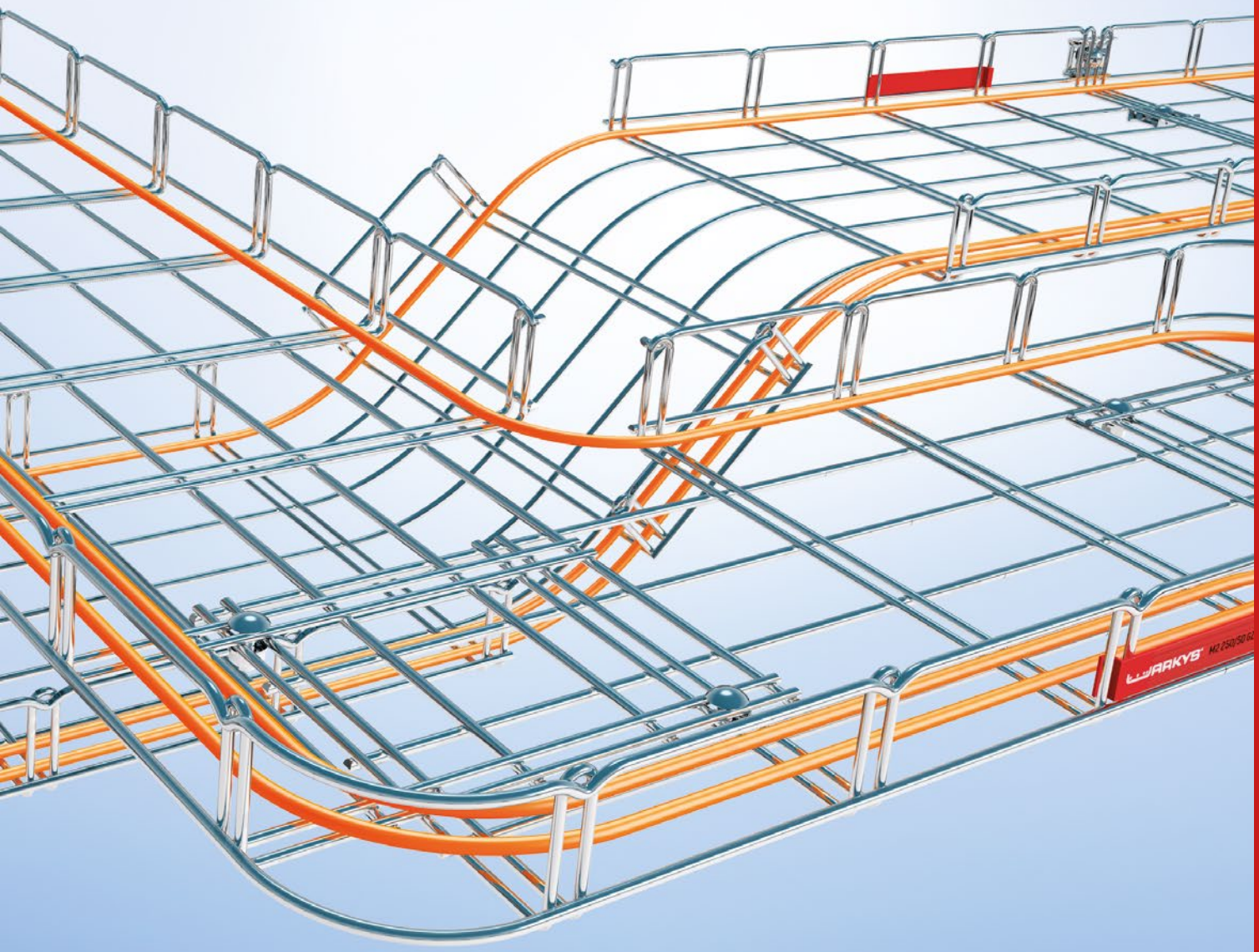
ADRESA: Vojenský technický ústav, s.p.
odštěpný závod VTÚPV
ÚZT – ZL č.1103
Vita Nejedlého 691
682 01 VYŠKOV

Telefon: 517 303 623
Fax: 517 303 605
E-mail: ivan.stuchal@vtusp.cz

Poznámky:

Výsledky zkoušky se týkají jen zkušebního předmětu. Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.

SHAPING
MANUAL FOR THE IMPLEMENTATION OF SHAPED ELEMENTS OF ROUTES



SHAPING IN GENERAL

BASIC PLANE SHAPING

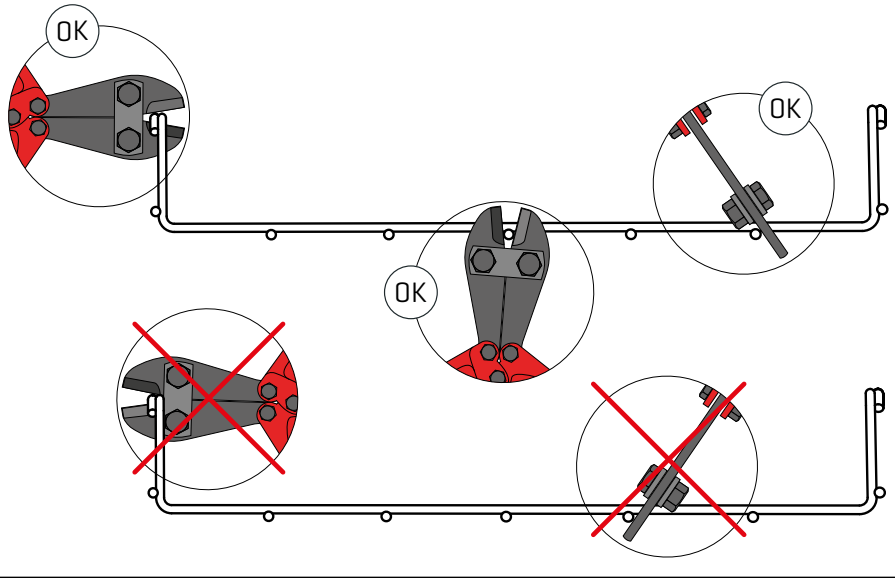
TRACK CROSSING

SPATIAL SHAPING

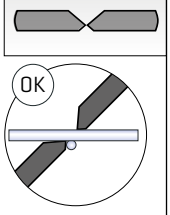
CONNECTING TRACKS

wrench No 10

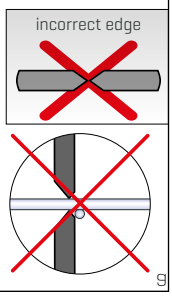
protective equipment



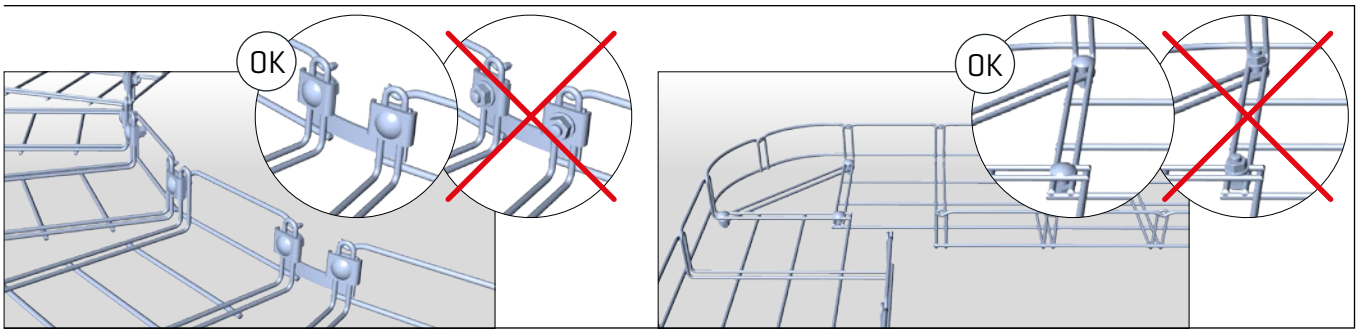
correct edge



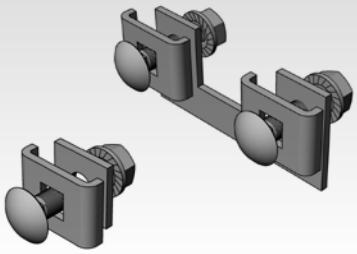
incorrect edge



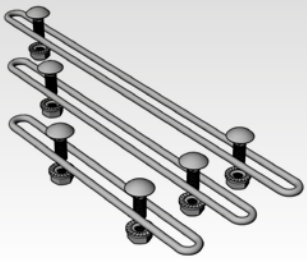
9



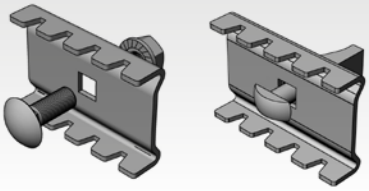
Profile coupling **SZM 4**



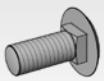
Profile set **TSM**



Tray coupling **SZM 1, SZM 1-R**

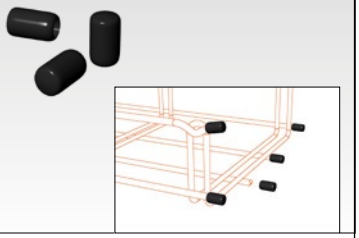


Carriage bolt **M6x16**



Collar nut **M6**

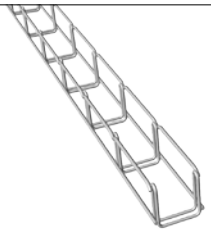
OK 1 protective cap for wires



MERKUR scissors

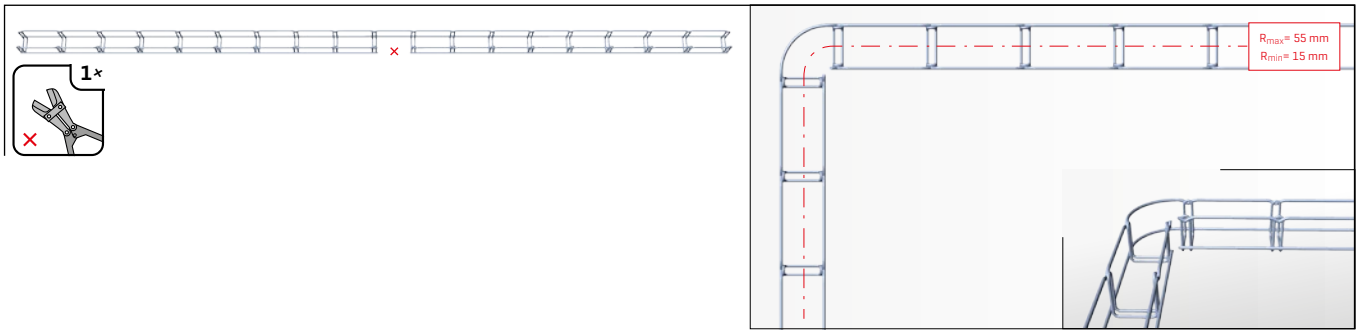
side edge

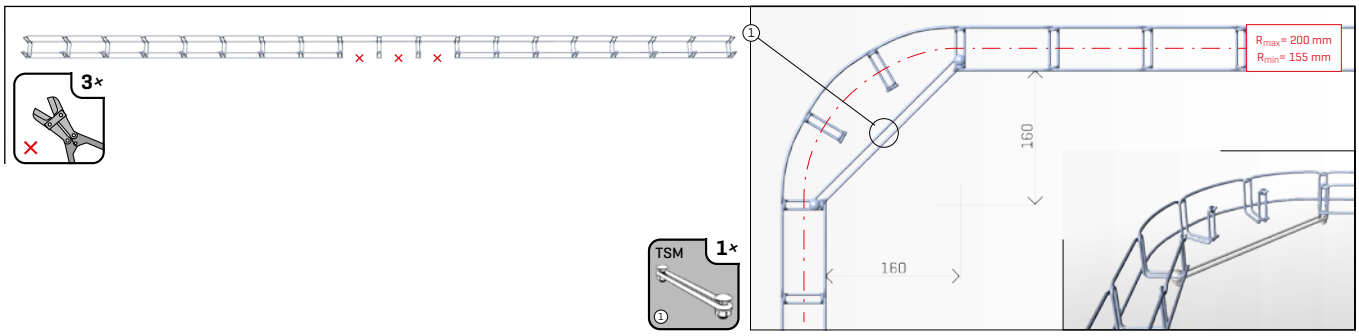
Zinc spray - zinc **98%** (400 ml)

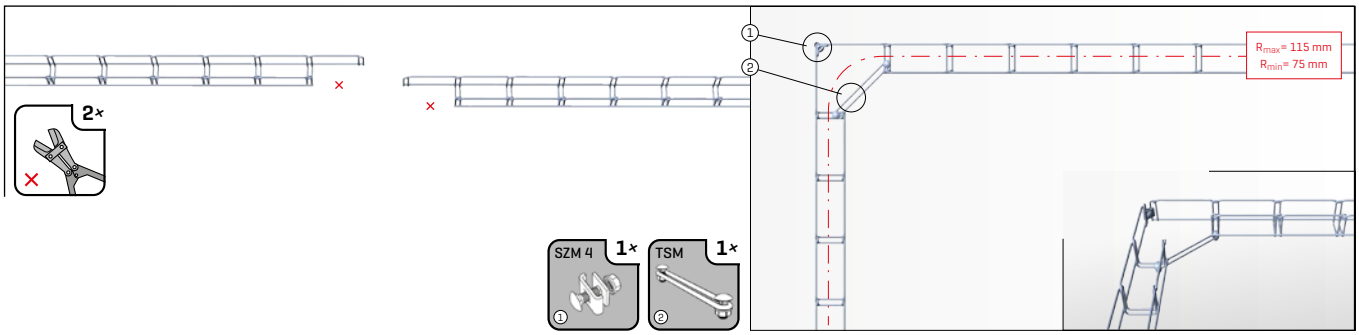


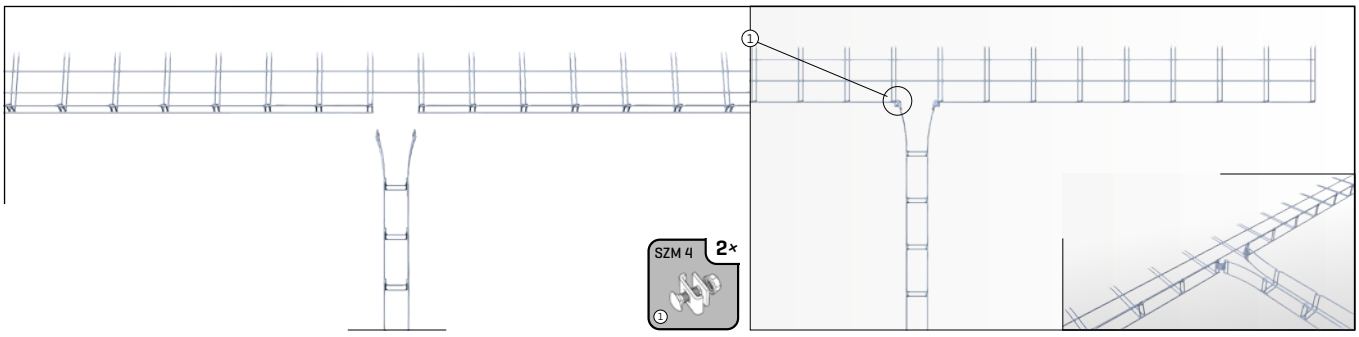
50 mm

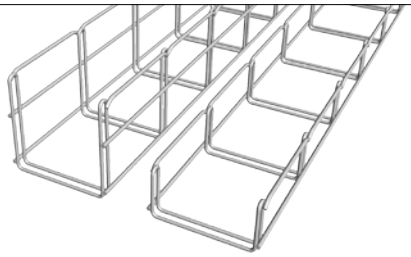
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.





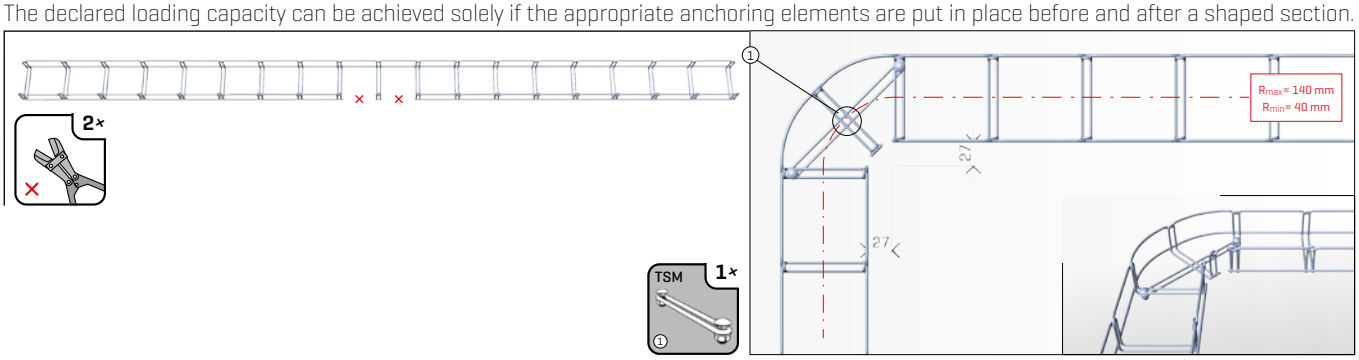


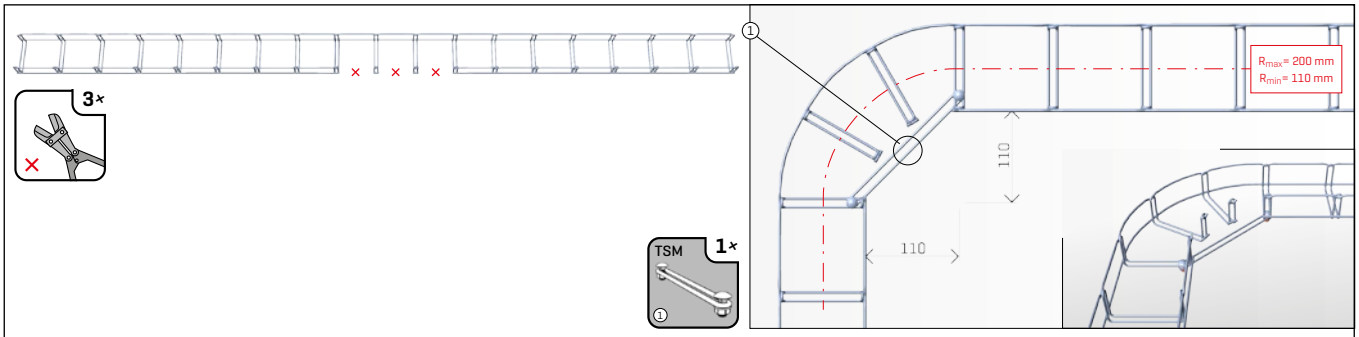


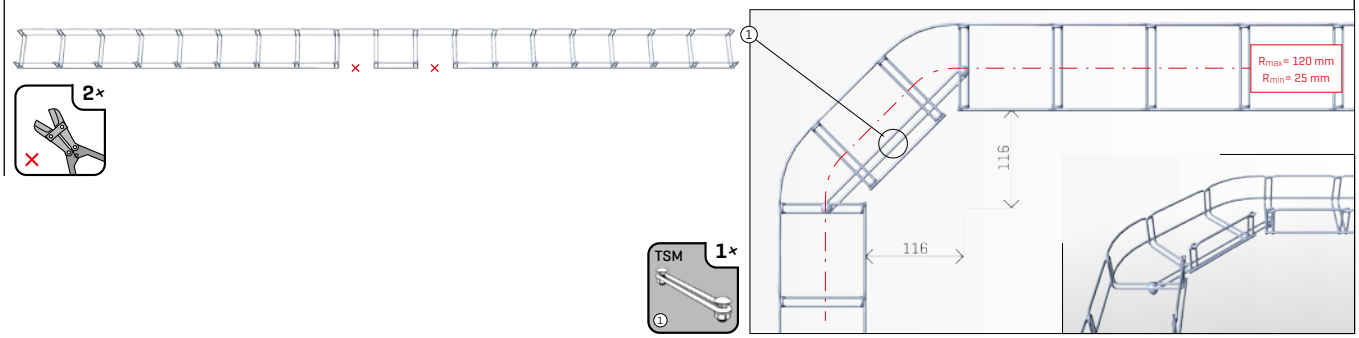


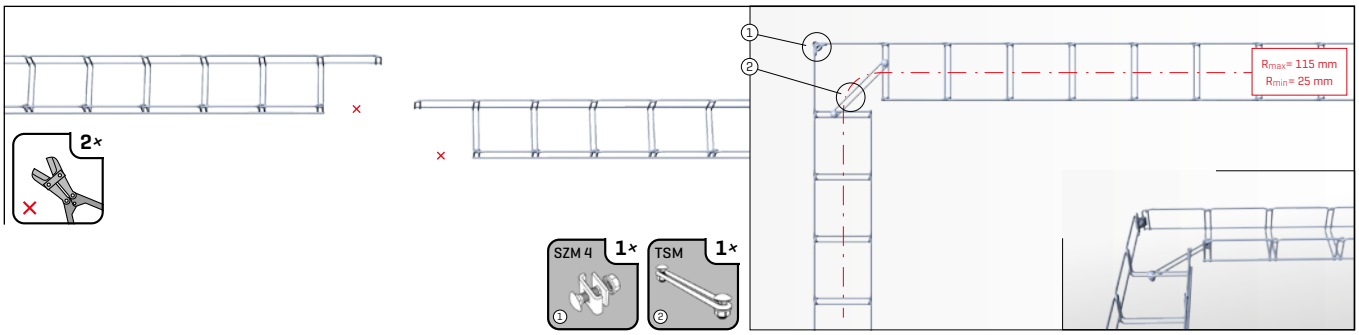
100 mm

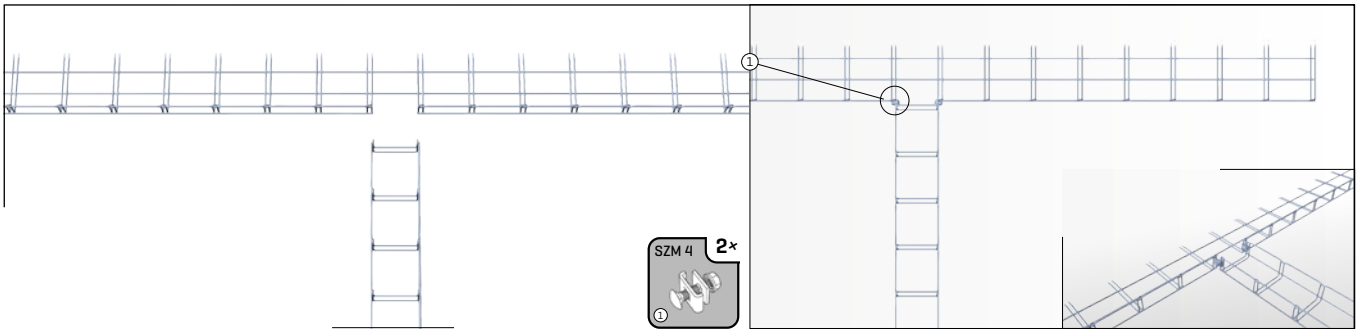
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

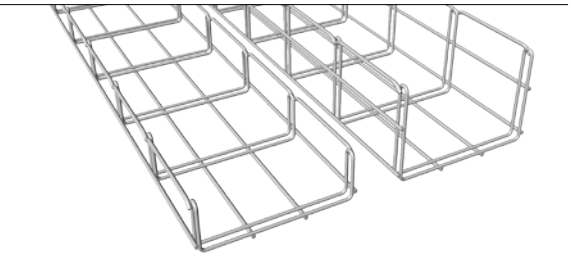






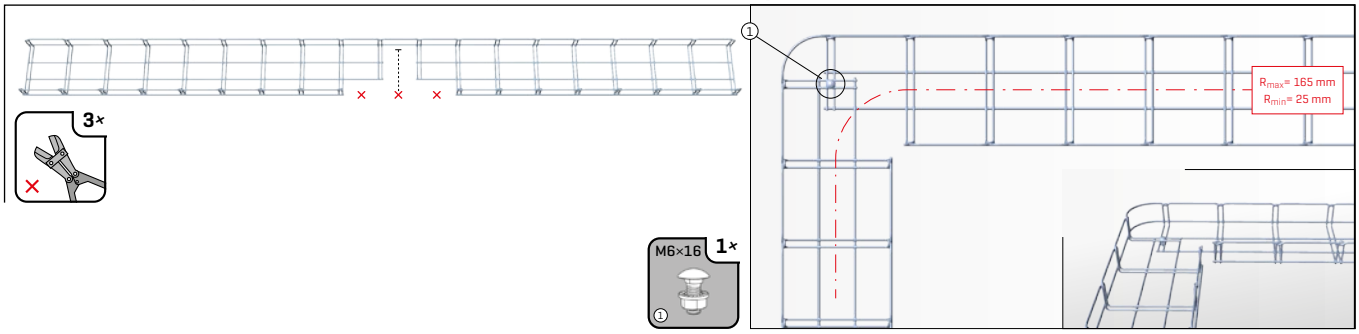


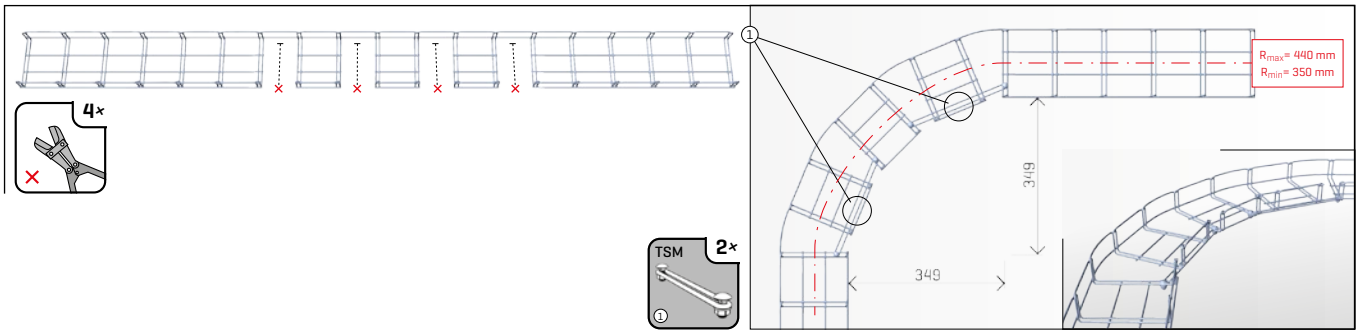


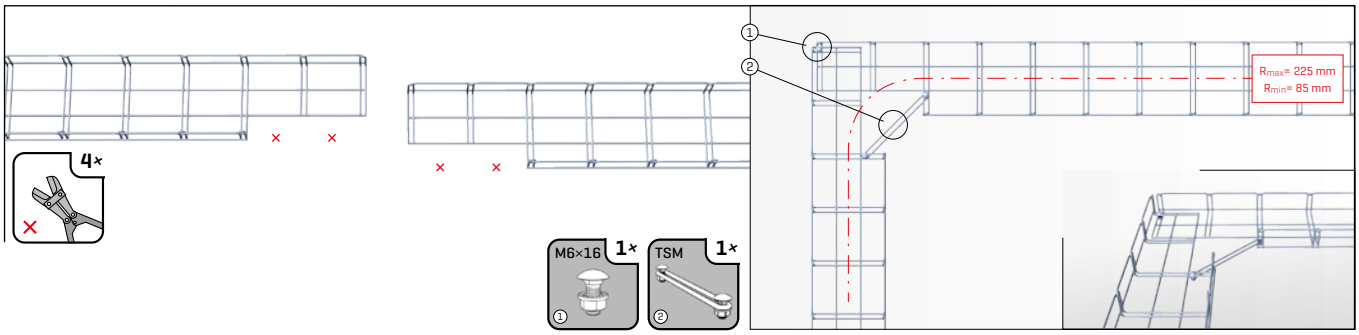


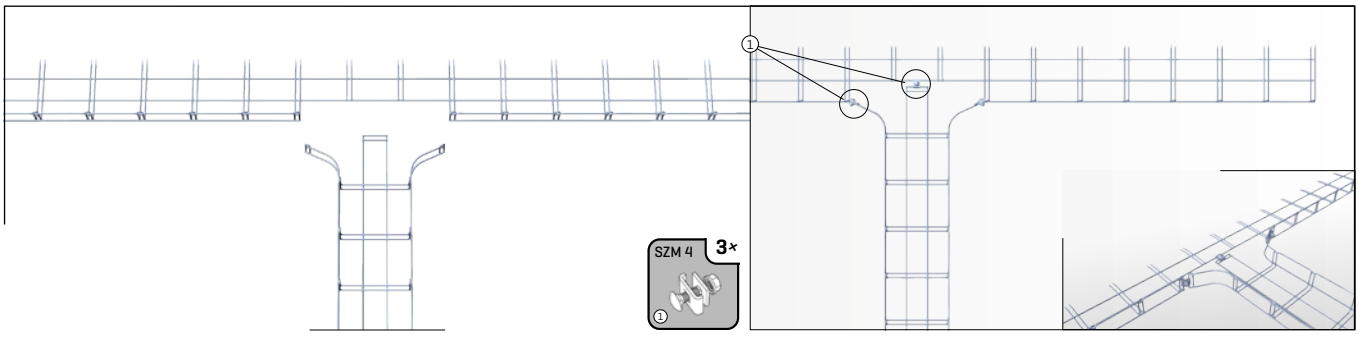
150 mm

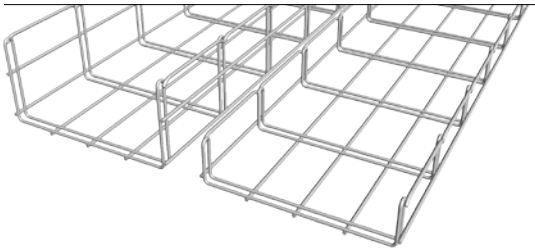
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.





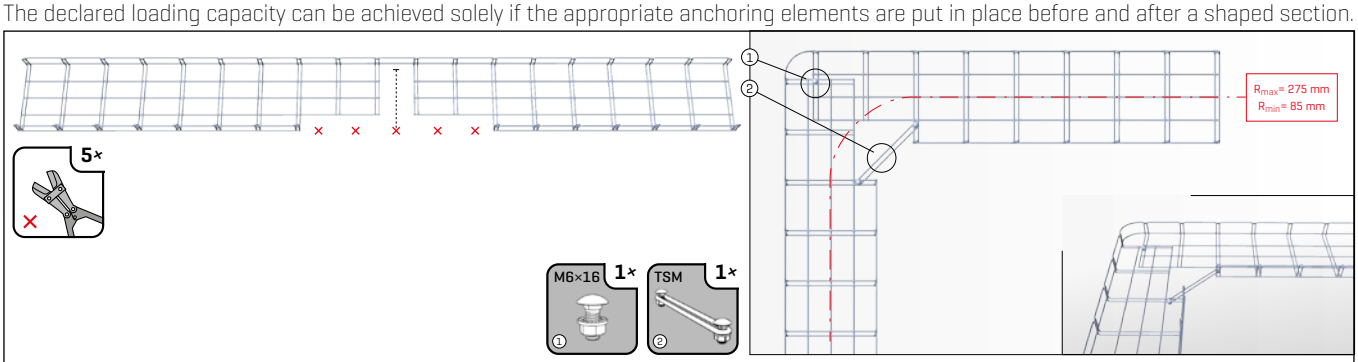


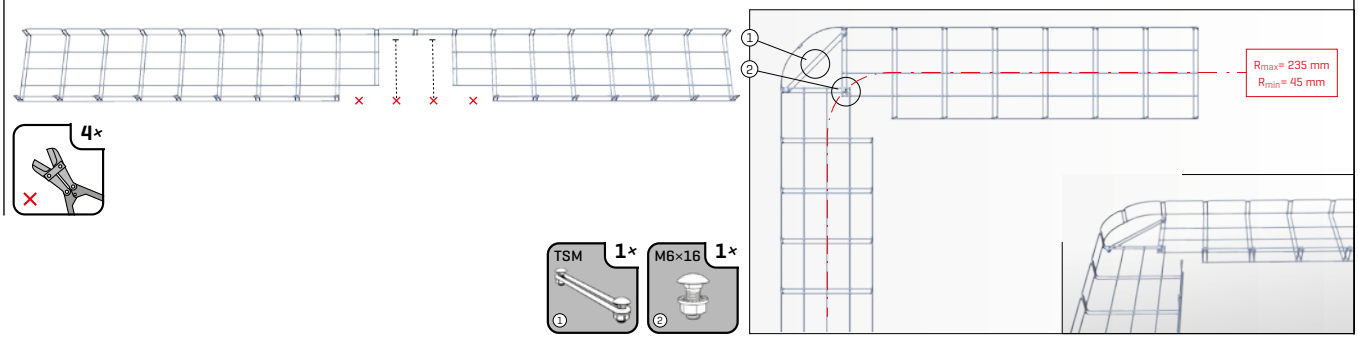


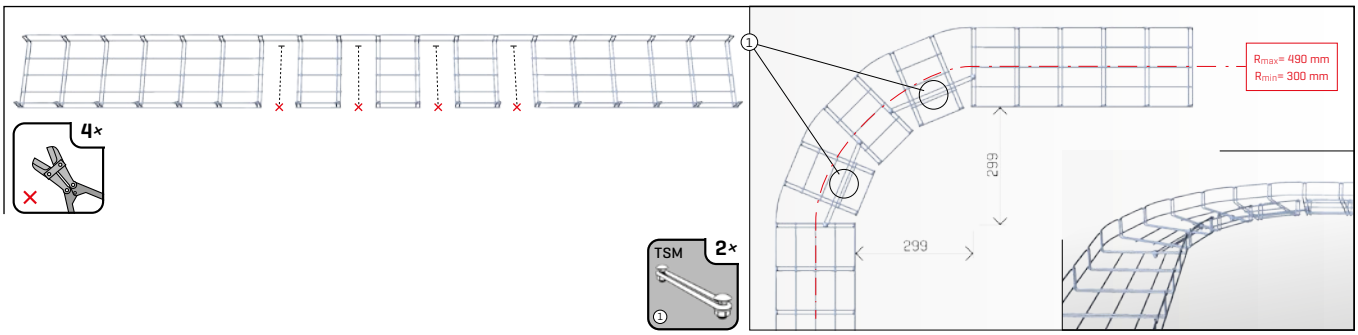


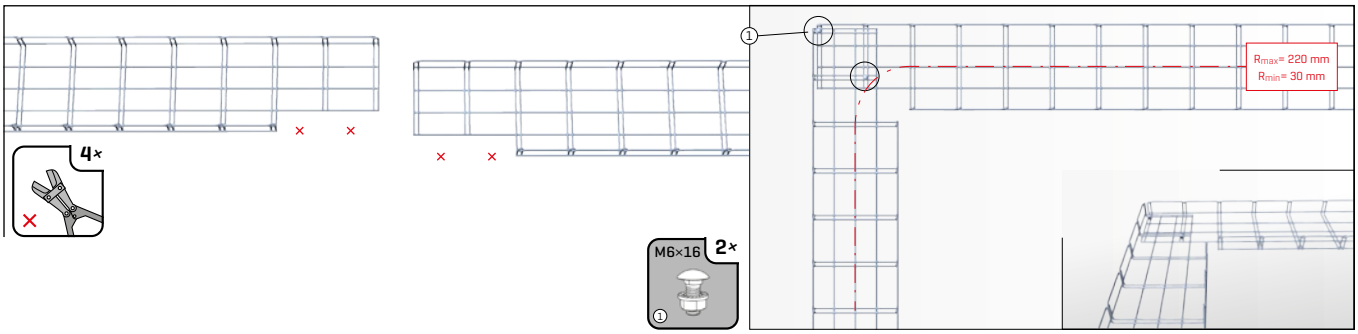
200 mm

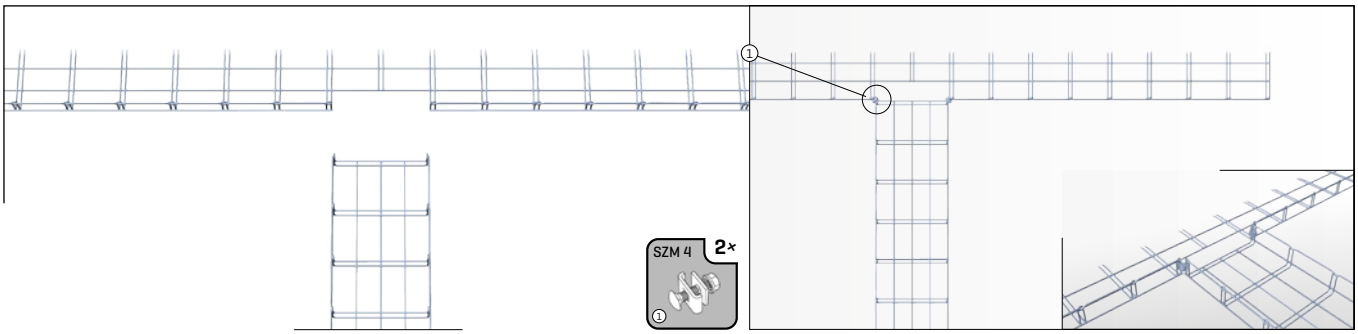
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

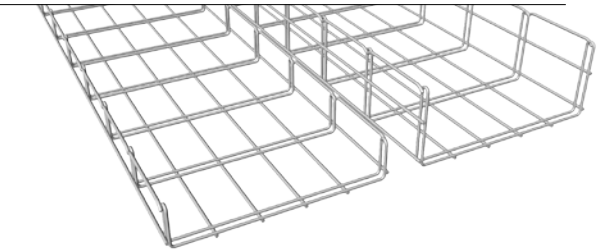






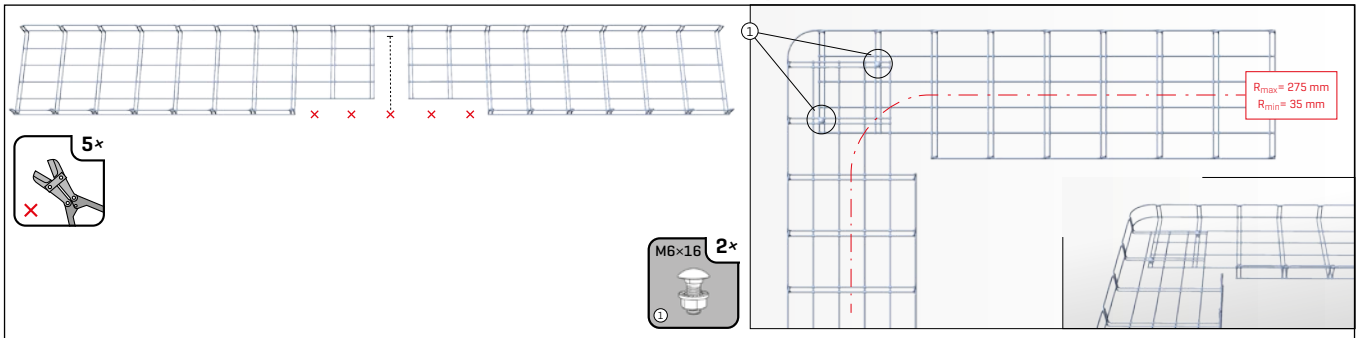


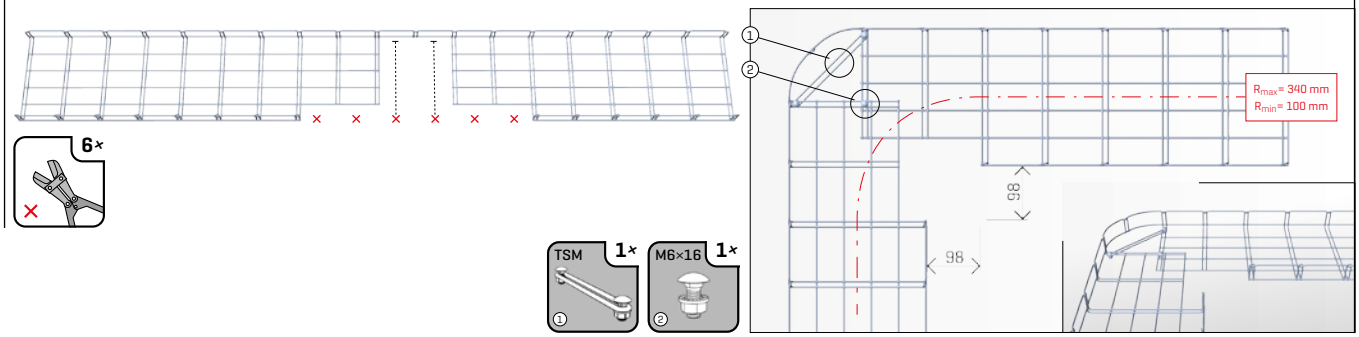


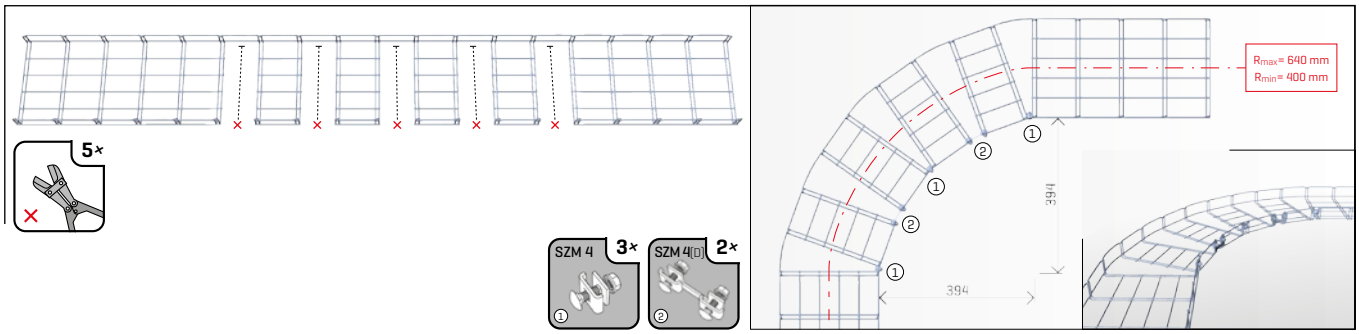


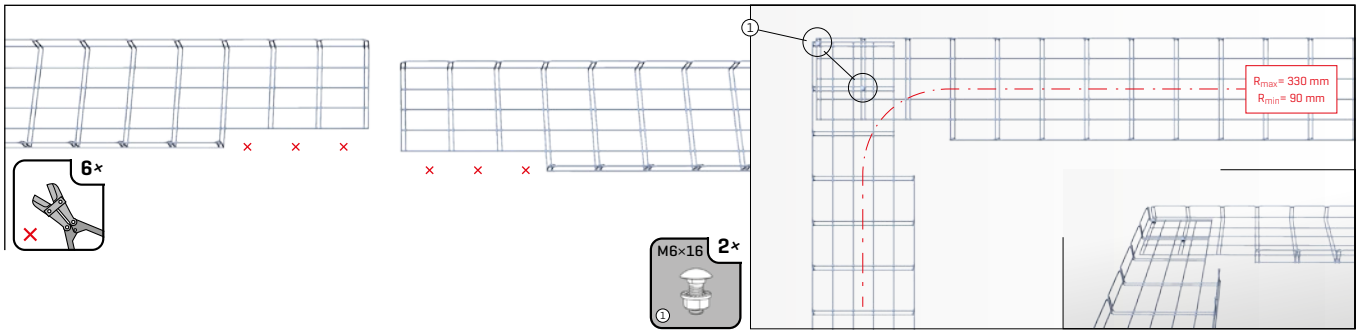
250 mm

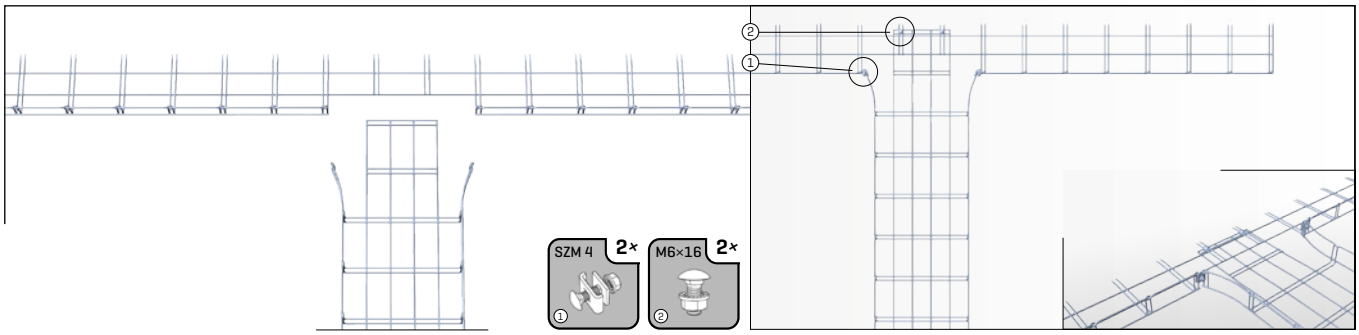
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

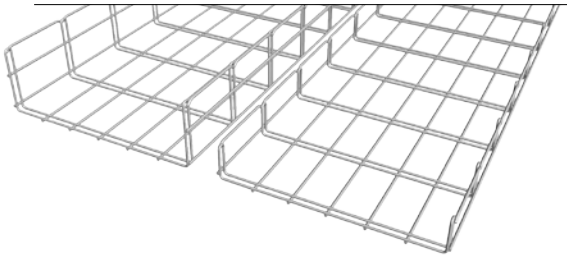






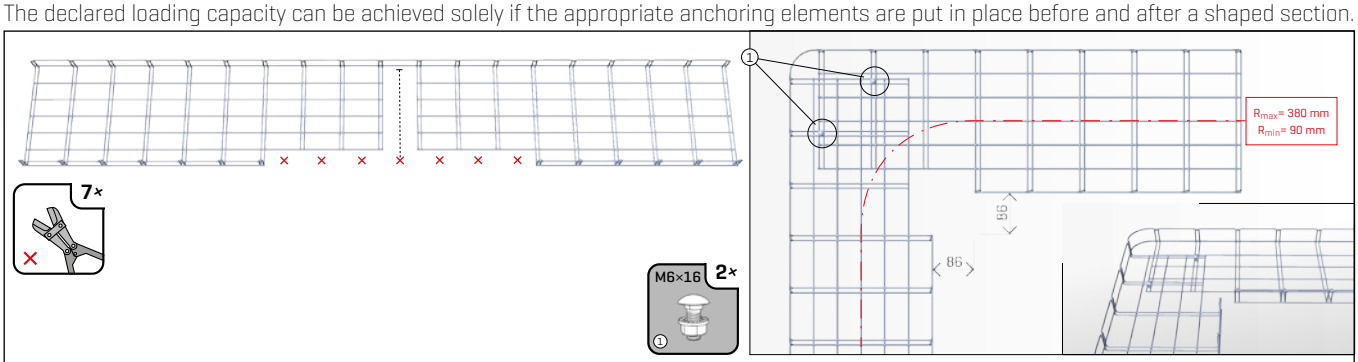


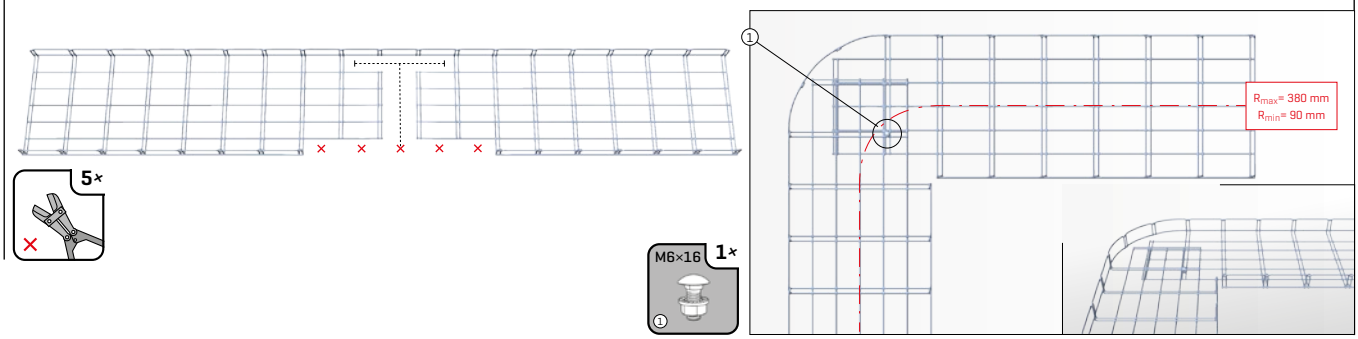


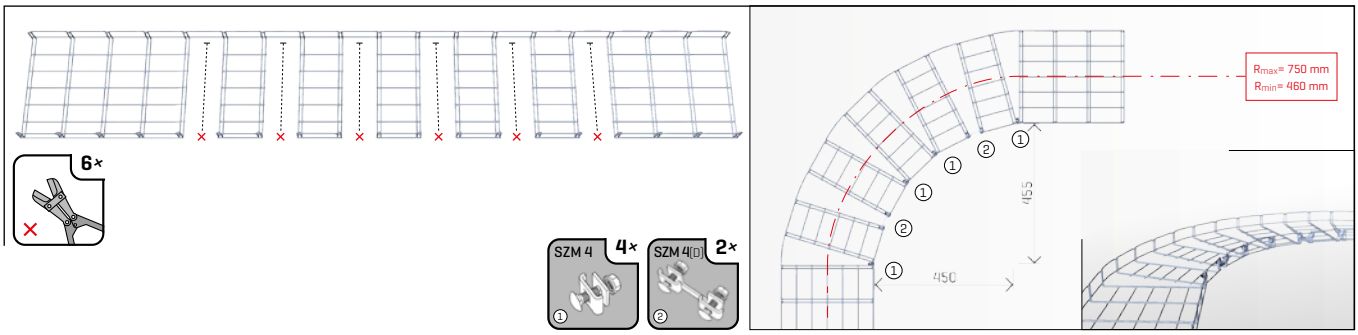


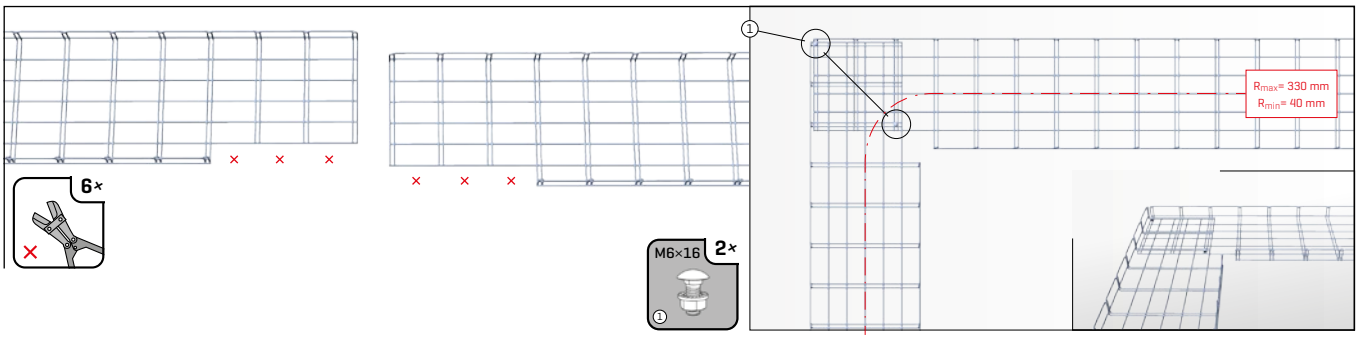
300 mm

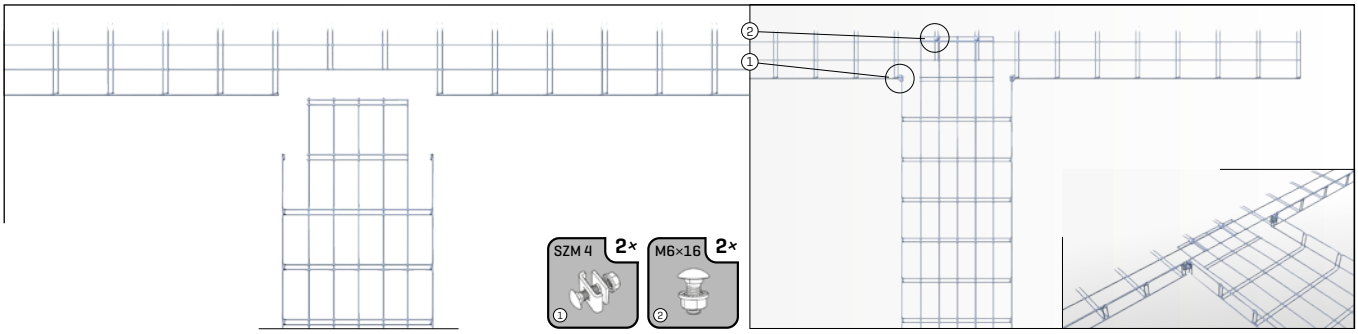
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

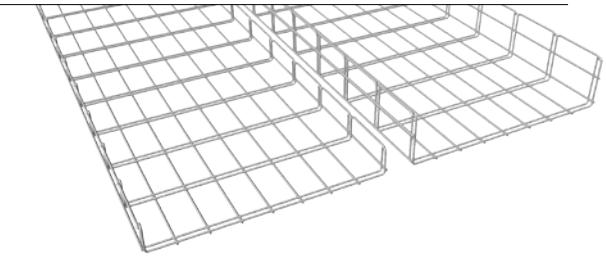






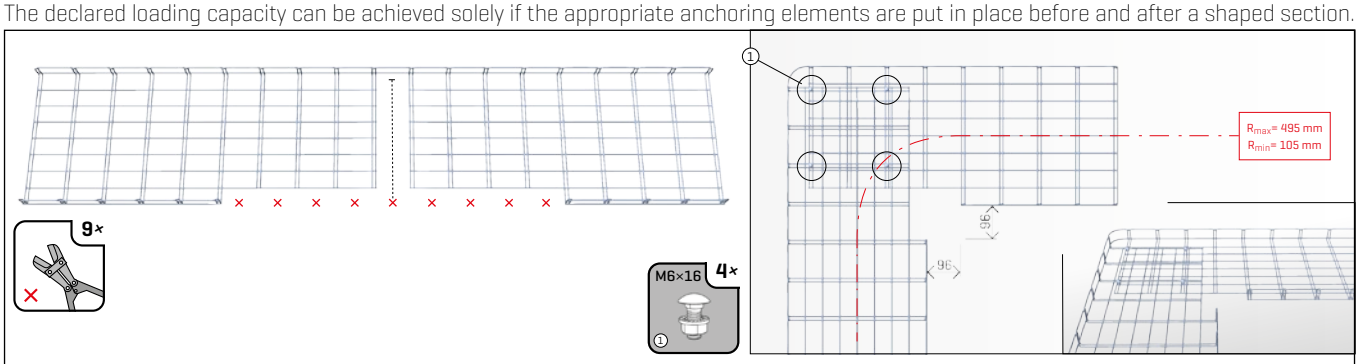


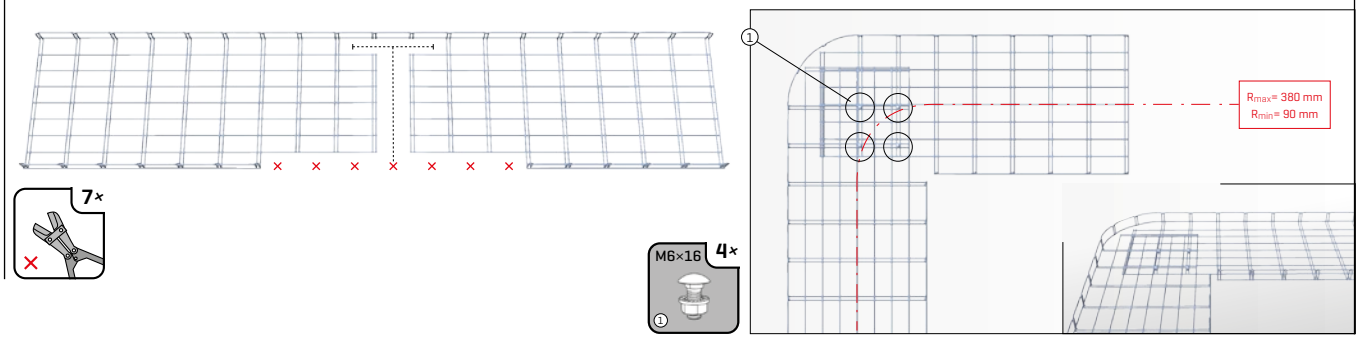


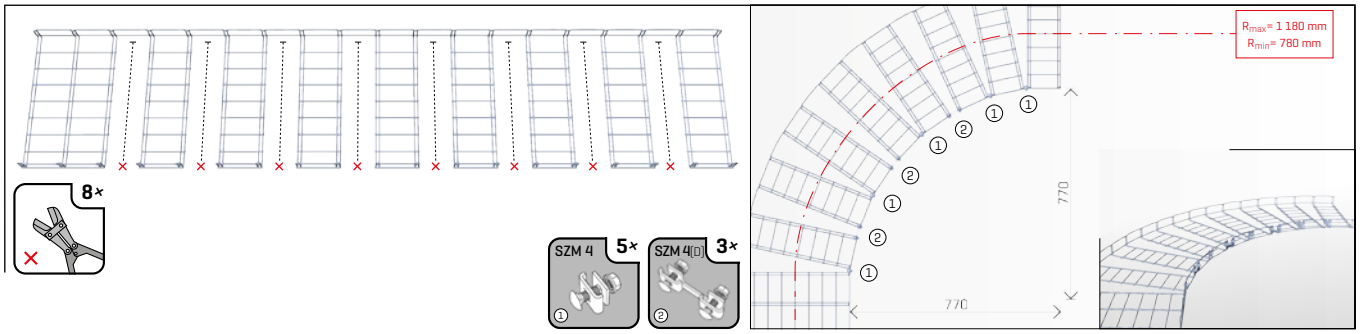


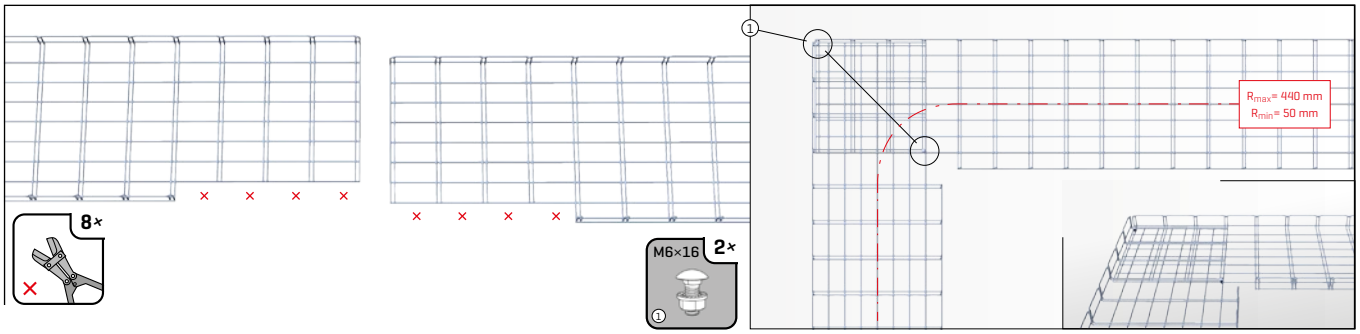
400 mm

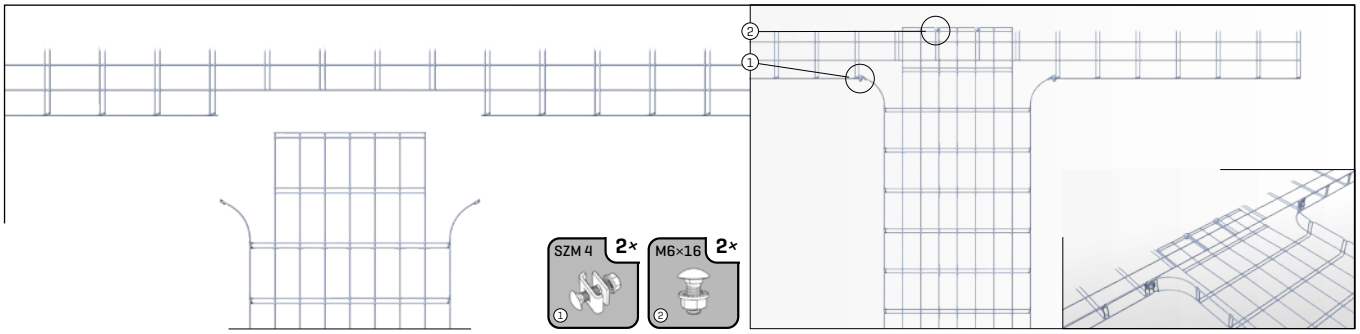
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

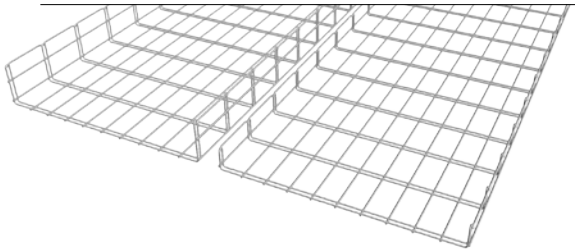






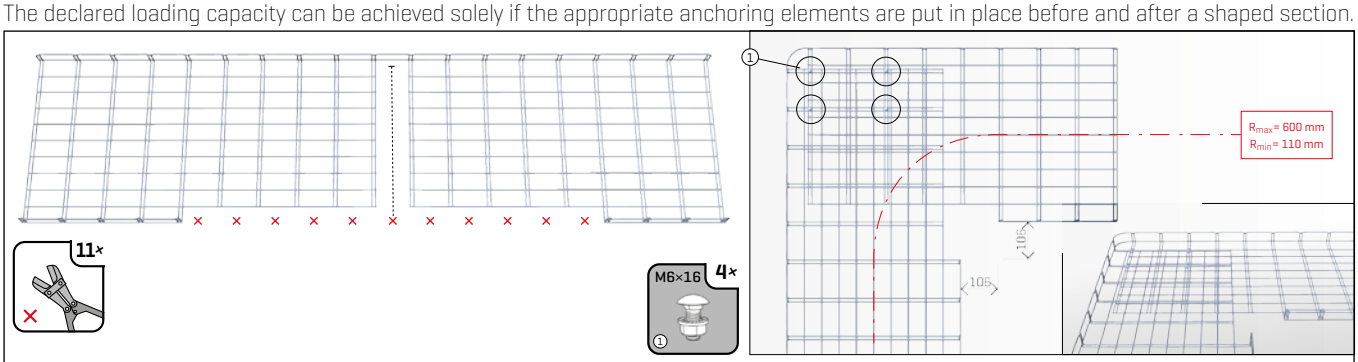


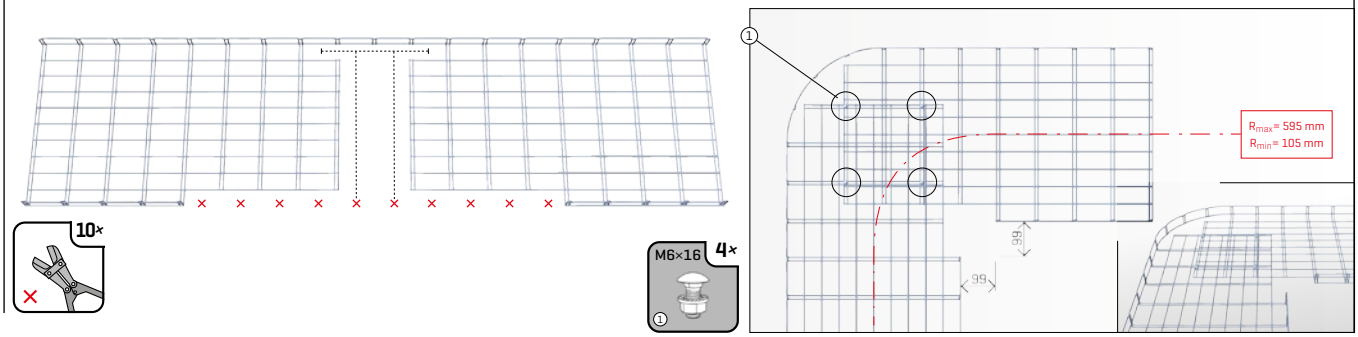


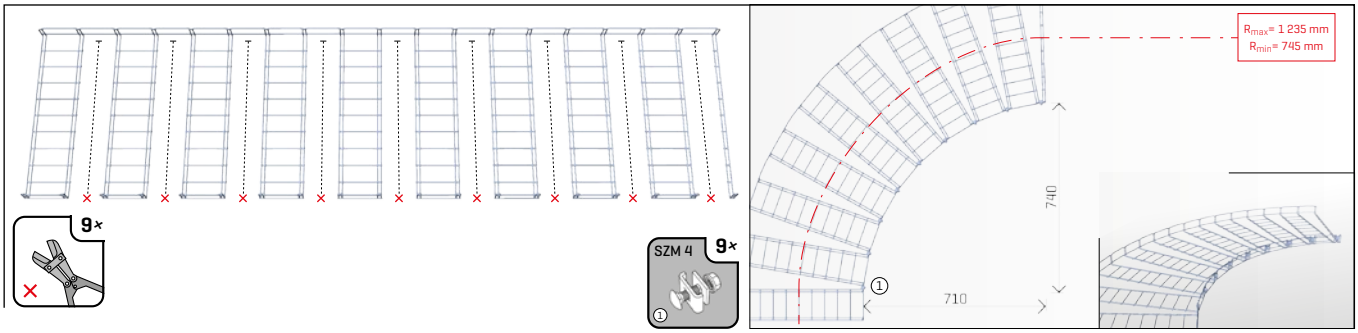


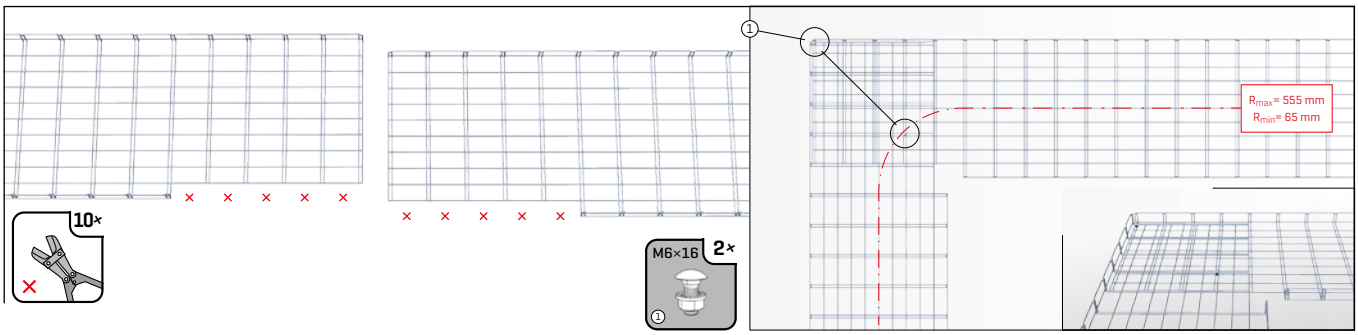
500 mm

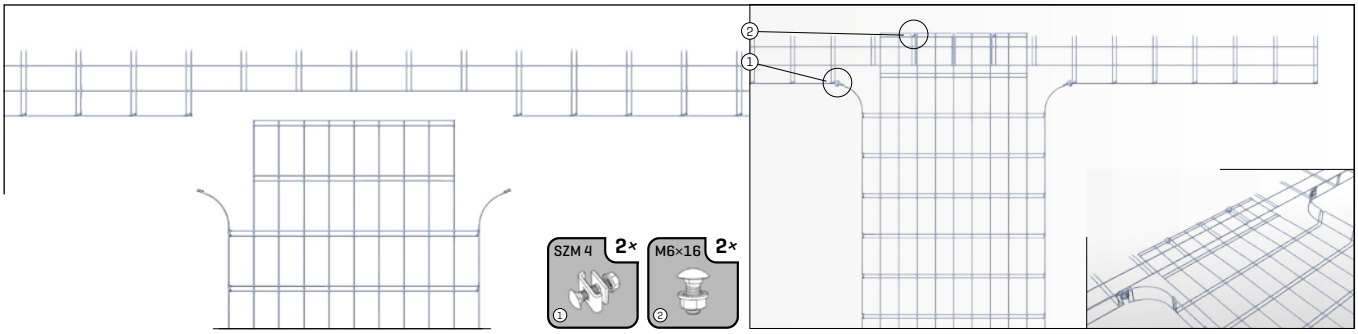
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

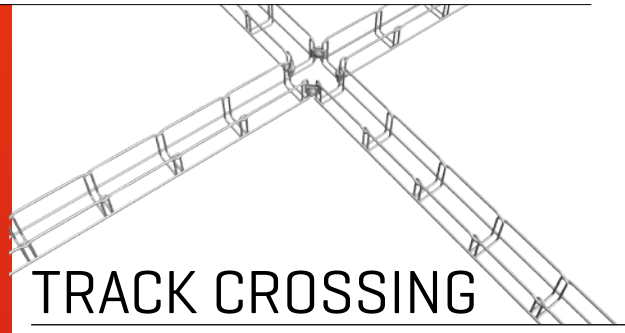








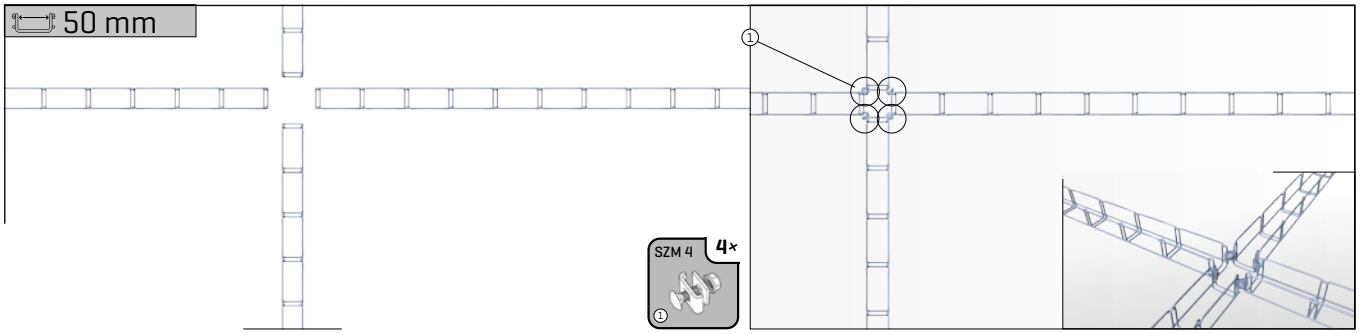




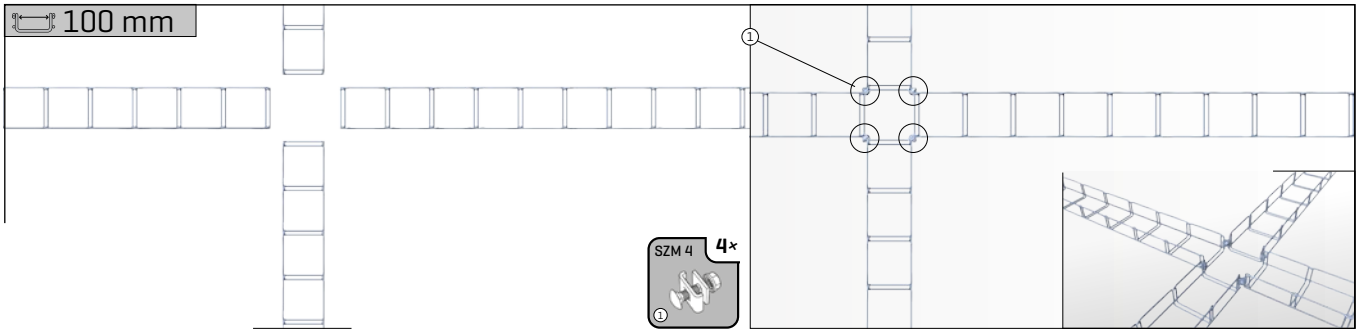
TRACK CROSSING

The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

50 mm

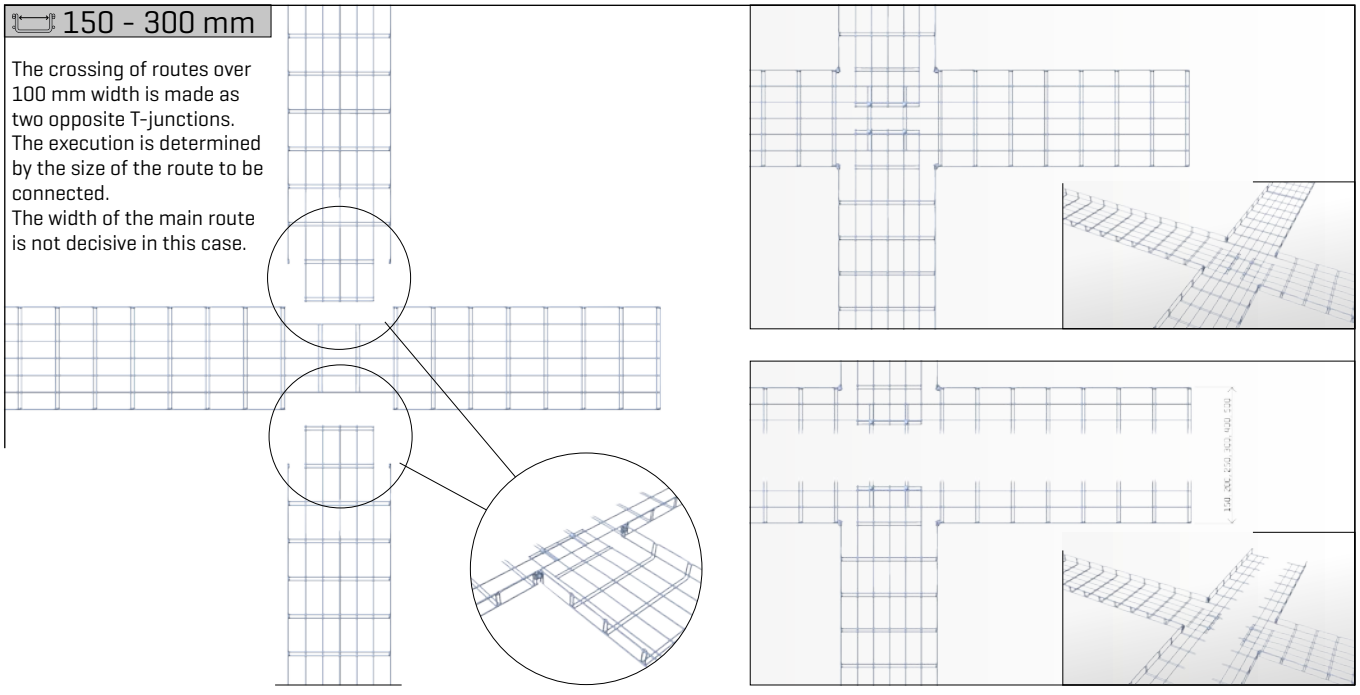


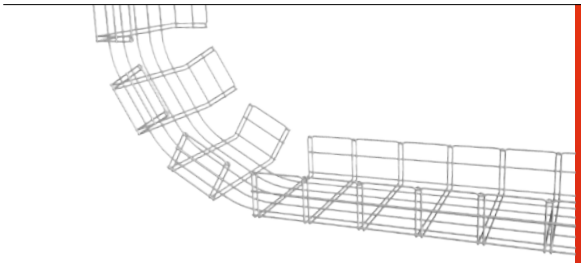
100 mm



150 - 300 mm

The crossing of routes over 100 mm width is made as two opposite T-junctions.
The execution is determined by the size of the route to be connected.
The width of the main route is not decisive in this case.

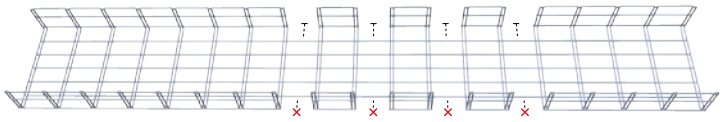




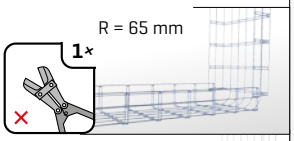
SPATIAL SHAPING

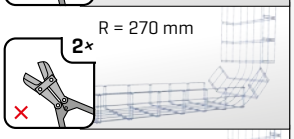
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

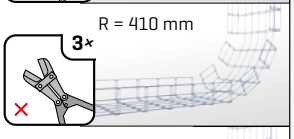
50, 100 mm

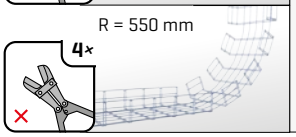


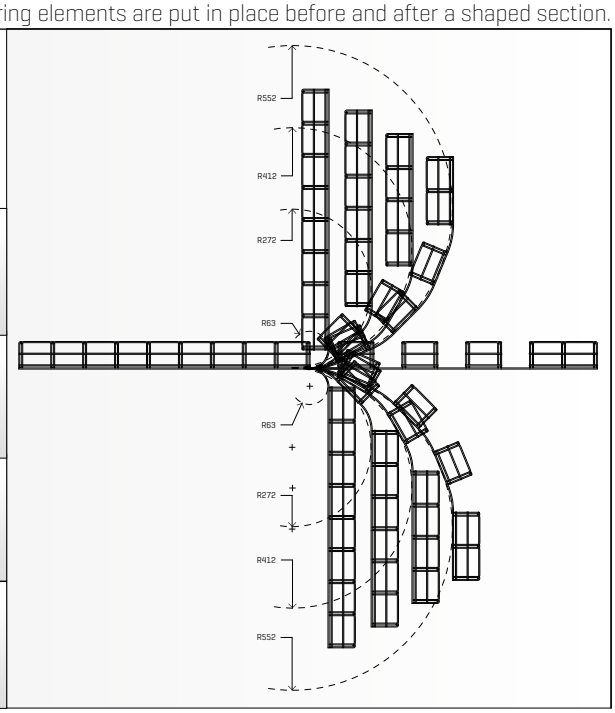
Bending of tracks in space as transitions from horizontal to vertical mounting should be implemented according to the desirable radius of the track curvature. By making more cuts even large radius of curvatures can be reached. The radius of bends and the bending diagram are also valid for 50 mm height of the sidewall.



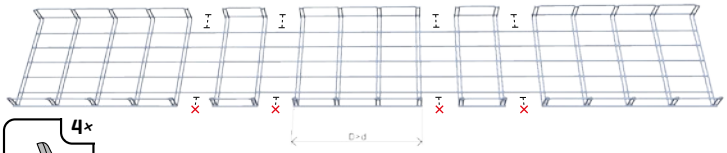




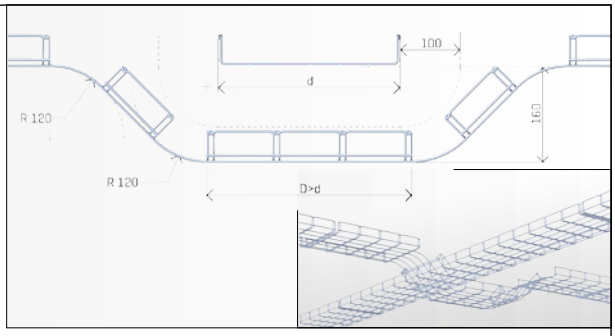




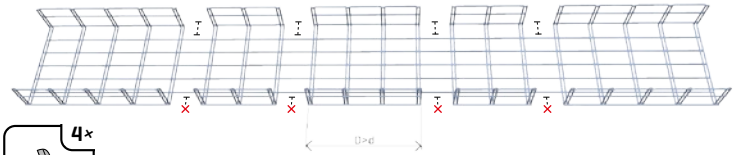
50 mm



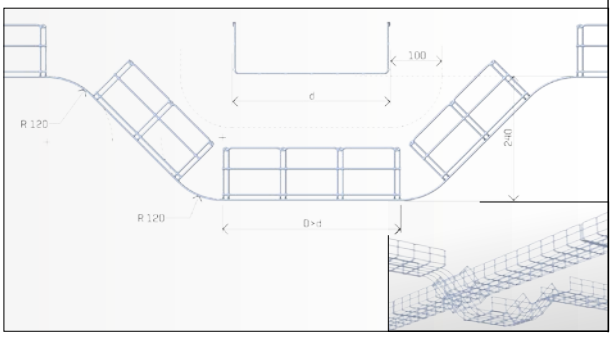
Spatial passing by is governed by the dimension of the main route and the height of the sidewall of the route to be bent.

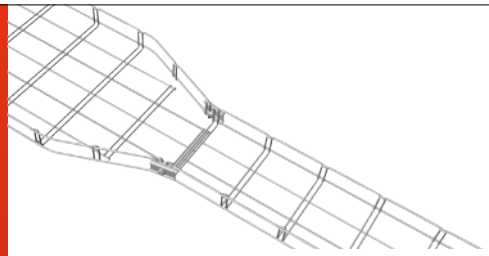


100 mm



Spatial passing by is governed by the dimension of the main route and the height of the sidewall of the route to be bent.

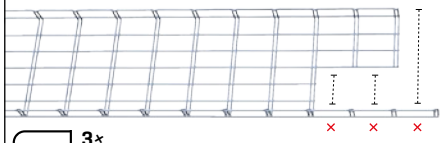


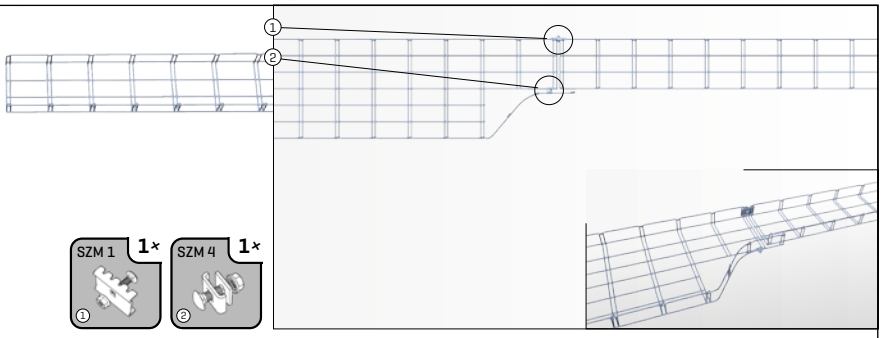


JOINING OF TRACKS

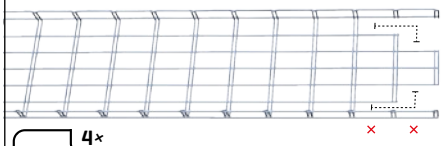
The declared loading capacity can be achieved solely if the appropriate anchoring elements are put in place before and after a shaped section.

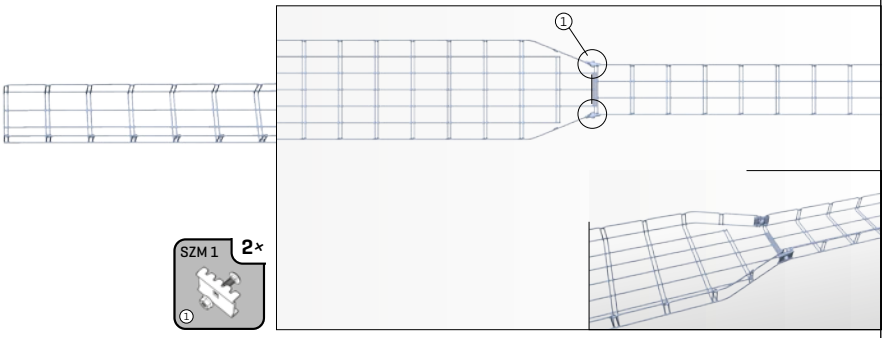
lateral joints



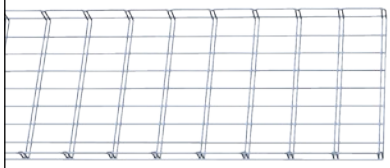


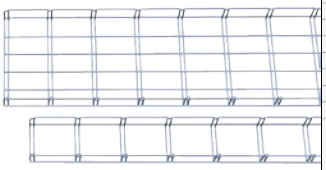
central joints

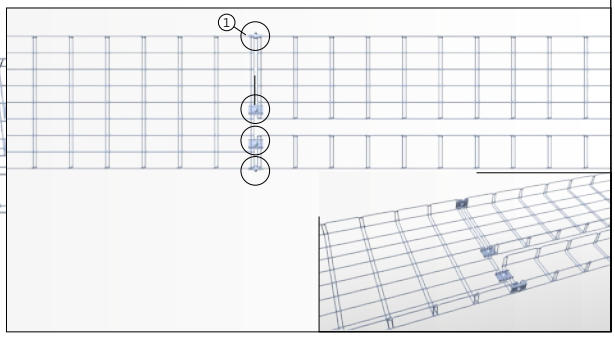




combined joints







INDEX
COMPLETE LIST OF ALL SYSTEM COMPONENTS

SPATIAL BRACKETS (NZMC)

SUPPORTS (PZM)

SUPPORTS - FIRE RESISTANT (PZMP)

SPATIAL STRUTS (STPM)

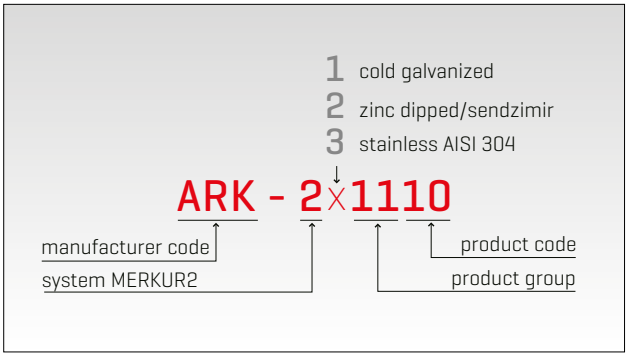
WALL STRUTS (STNM)

CONNECTING ELEMENTS

ANCHORING ELEMENTS

TOOLS AND PROTECTIVE COMPONENTS

Key for reading the product codes



NOTES

MERKUR 2 CABLE ROUTES CONFIGURATOR

Smart tool for preparation and realization of cable routes

Helps to plan the route
Suggests many different types of route installation
Creates the list of necessary components
Sends the pricing request
Unfortunately, the installation process is in your hands :-)

Find M2 configurator app on:
www.merkur2.cz

CABLE ROUTES
SIMPLE AND EASY

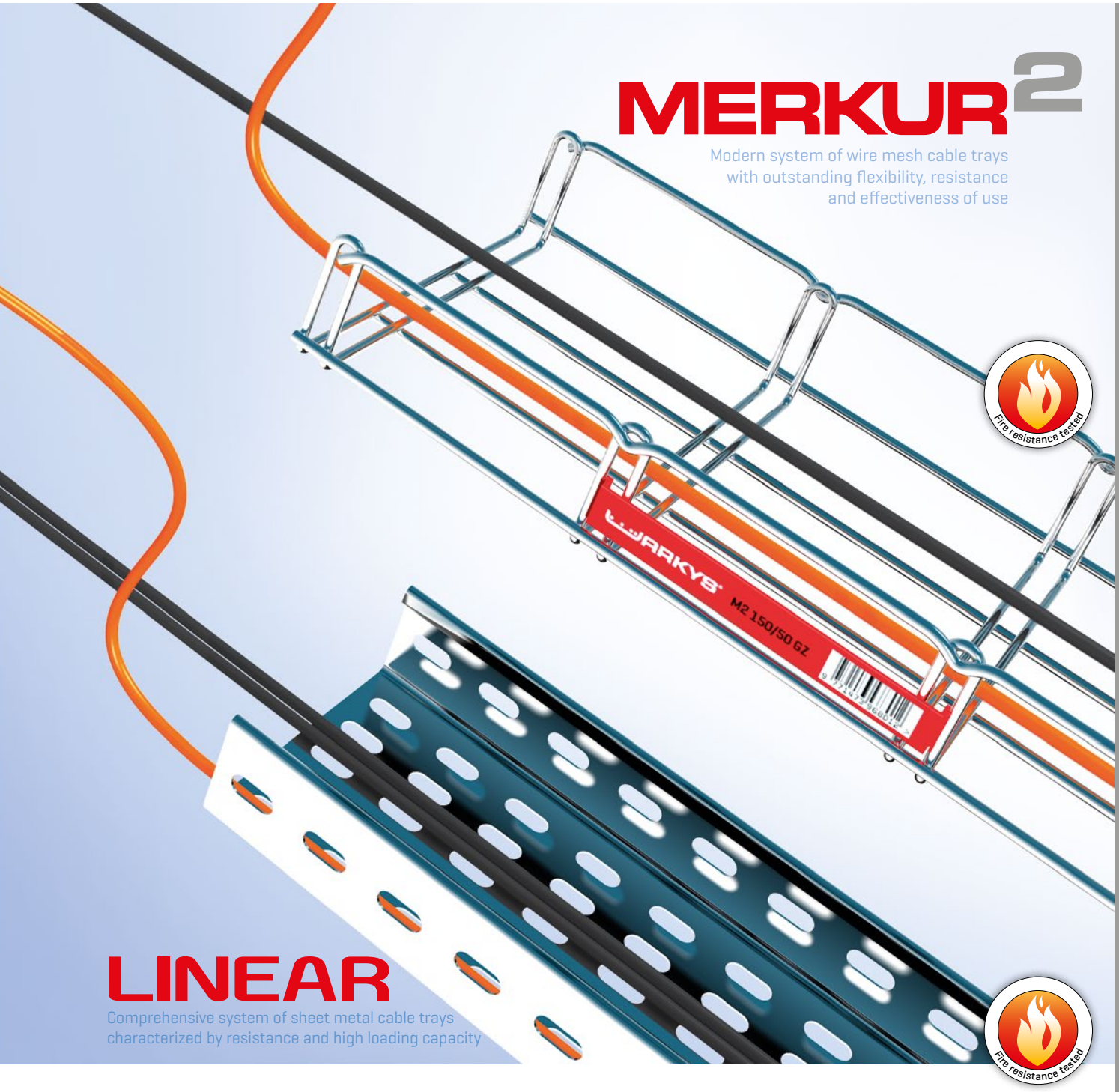
with new **MERKUR 2 CABLE ROUTES CONFIGURATOR** web application

The M2 cable routes configurator enables you to plan your cable routes in much faster and simpler way comparing to standard routine. The configurator helps you to gather the data for a price quote, to create the list of all components indispensable for the installation, to select the right combination of cable trays and installation mode.
M2 configurator app is on **www.merkur2.cz**

ARKYS®

www.arkys.com

NOTES



MERKUR 2

Modern system of wire mesh cable trays
with outstanding flexibility, resistance
and effectiveness of use

LINEAR

Comprehensive system of sheet metal cable trays
characterized by resistance and high loading capacity

CABLE ROUTES

HIGHLIGHTING FUNCTIONALITY AND QUALITY

MERKUR 2 and LINEAR flawless quality solution for cable routes

the Czech market acknowledges our complex and rounded-off solutions for the installation of cable routes complying with the most demanding requirements related to safety, effectiveness, functionality, and quality.

ARKYS®

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