

FUNCTION IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-083-16-NURE

Cable bearing system VERGOKAN with cables of company DÄTWYLER

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FUNCTION IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION IN ACCORDANCE WITH ČSN 73 0895

FIRES-JR-083-16-NURE

Name of the product: Cable bearing system VERGOKAN with cables of company DÄTWYLER

Sponsor: VERGOKAN
Meersbloem Melden 16
9700 Oudenaarde
Belgium

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1. INTRODUCTION

This expert judgement report with classification defines the function in fire classification assigned to element „cable bearing system VERGOKAN with cables DÄTWYLER” in accordance with the classes given in ČSN 73 0895.

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

This products have already been classified by FIRES, s.r.o. and number of previous fire resistance expert judgement report with classification is FIRES-JR-037-11-NURE Issue 2, issued on 14. 12. 2011 with validity until 06. 07. 2016. Document FIRES-JR-083-16-NURE replaces expert judgement report with classification FIRES-JR-037-11-NURE Issue 2.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Cable bearing system VERGOKAN with cables DÄTWYLER, is defined as a cable bearing system for power and communication halogen free cables with circuit integrity maintenance in fire.

2.2 PRODUCT DESCRIPTION

The element comprise of cable bearing system VERGOKAN – cable trays with accessories (consoles, brackets, screws etc.) with power and communication halogen free cables DÄTWYLER with circuit integrity maintenance in fire.

Cable trays KBSI

Cable trays are made of steel sheet 1,0 mm thick. Height of side wall is 60 mm. Width of tray is 400 mm. The trays are perforated on the sides and on the bottom. Cable tray is equipped with integrated junction. Trays are jointed together with 5 pcs of screws (new trademark is VMK6.10). Maximum load of trays is 20 kg.m⁻¹. Tested trays were KBSI 60x400x1,00 (new trademark is KBSI60.400.100).

Cable trays KBSTI

Cable trays are made of steel sheet 1,0 mm thick. Height of side wall is 60 mm. Width of tray is 400 mm. The trays are perforated on the sides and on the bottom. Cable tray is equipped with integrated junction. Trays are jointed together with 3 pcs of screws VMK 6x10 (new trademark is VMK6.10). Maximum load of trays is 20 kg.m⁻¹. Tested trays were KBSTI 60x400x1,00 (new trademark is KBSTI60.400.100).

Brackets WKM

Brackets are made of steel sheet 2,5 mm thick. Dimensions of the base steel sheet is (70x175) mm and 8,0 mm thick and is equipped by holes for installation. Holes for installation of trays are in upper part of the brackets.

Tested brackets were WKM 400 (new trademark is HDWKM400).

Consoles HSMU

Consoles are made from steel sheet and are composed of a head plate and the U 50 profile. Dimensions of the base head is (123x123) mm and 4,0 mm thick or (135x135) mm and 5,0 mm thick and is equipped by holes for installation. Dimensions of the U profile is (50x50) mm and 2,5 mm thick and is equipped by holes for installation of brackets. Tested consoles were HSMU 50x1000 (new trademark is HDHSMU50.1000).

SPACER TSU50 and HDTSU50

Spacers are made of steel sheet 1,0 mm thick (TSU50) or 1,5 mm thick (HDTSU50).

Cables

Power and communication free halogen cables are specified for stationary distribution of electrical energy in dry and damp premises. Since they are free from halogens and exhibit enhanced fire performance, these cables are used in those applications where in the event of fire, the negative effect on concentrations of people and valuable material goods must be minimized. Suitable for hotels, hospitals,



underground railways, airport etc. to protect people and technical building equipment in the event of fire where there is requirement for maintaining the functional integrity all cable installation in the event of fire. The cables develop in case of fire low heat released rate and smoke and no burning particles drop away during fire accident. Functional integrity all cable installation in the event of fire is guaranteed only with use specified supporting member and cables grips.

Used cables by test: (producer Dätwyler AG, Gotthardstrasse 31, CH-6460 Altdorf, Switzerland)

- type (N)HXH FE180 E30-E60 4x50 RM (4x);
- type (N)HXH FE180 E30-E60 4x1,5 RE (4x);
- type (N)HXCH FE180 E30-E60 4x50 RM/25 (4x);
- type (N)HXCH FE180 E30-E60 4x1,5 RE/1,5 (4x);
- type (N)HXH FE180 E90 4x50 RM (4x);
- type (N)HXH FE180 E90 4x1,5 RE (4x);
- type (N)HXCH FE180 E90 4x50 RM/25 (4x);
- type (N)HXCH FE180 E90 4x1,5 RE/1,5 (4x);
- type JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 (4x);
- type JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 (4x).

The length of supporting constructions and cables was 5,5 m, 4 m from that was exposed to fire. Power and communication cables were fixed to the steel sheet trays in the points of allowed bending radius by steel clamps according to the cable diameter.

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

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

3.1 TEST REPORTS AND EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsors	Test report No.	Date of the test	Test method
[1]	FIRES, s.r.o., Batizovce, SK	VERGOKAN, Meersbloem Melden 16, 9700 Oudenaarde, Belgium	FIRES-FR- 118-11-AUNE	01. 06. 2011	DIN 4102 – 12:1998-11

3.2 TEST RESULTS

Test report No. /Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] DIN 4102-12	S1	cable (N)HXH FE180 E30-E60 4x50 RM	X1-A	93 minutes no failure / interruption
	S2	cable (N)HXH FE180 E30-E60 4x50 RM	X1-A	93 minutes no failure / interruption
	S3	cable (N)HXH FE180 E30-E60 4x1,5 RE	X1-A	93 minutes no failure / interruption
	S4	cable (N)HXH FE180 E30-E60 4x1,5 RE	X1-A	93 minutes no failure / interruption
	S5	cable (N)HXCH FE180 E30-E60 4x50 RM/25	X1-B	93 minutes no failure / interruption
	S6	cable (N)HXCH FE180 E30-E60 4x50 RM/25	X1-B	93 minutes no failure / interruption
	S7	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5	X1-B	93 minutes no failure / interruption
	S8	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5	X1-B	93 minutes no failure / interruption
	S9	cable (N)HXH FE180 E90 4x50 RM	X1-C	93 minutes no failure / interruption
	S10	cable (N)HXH FE180 E90 4x50 RM	X1-C	93 minutes no failure / interruption
	S11	cable (N)HXH FE180 E90 4x1,5 RE	X1-C	93 minutes no failure / interruption
	S12	cable (N)HXH FE180 E90 4x1,5 RE	X1-C	93 minutes no failure / interruption
	S13	cable (N)HXCH FE180 E90 4x50 RM/25	Y1-D	93 minutes no failure / interruption
	S14	cable (N)HXCH FE180 E90 4x50 RM/25	Y1-D	93 minutes no failure / interruption
	S15	cable (N)HXCH FE180 E90 4x1,5 RE/1,5	Y1-D	93 minutes no failure / interruption
	S16	cable (N)HXCH FE180 E90 4x1,5 RE/1,5	Y1-D	93 minutes no failure / interruption



Test report No. /Test method	Specimen No.	Cables	Track No.	Time to first failure / interruption of conductor
[1] DIN 4102-12	S17	cable (N)HXH FE180 E90 4x50 RM	Y1-E	93 minutes no failure / interruption
	S18	cable (N)HXH FE180 E90 4x50 RM	Y1-E	93 minutes no failure / interruption
	S19	cable (N)HXH FE180 E90 4x1,5 RE	Y1-E	93 minutes no failure / interruption
	S20	cable (N)HXH FE180 E90 4x1,5 RE	Y1-E	93 minutes no failure / interruption
	S21	cable (N)HXCH FE180 E30-E60 4x50 RM/25	Z1-F	93 minutes no failure / interruption
	S22	cable (N)HXCH FE180 E30-E60 4x50 RM/25	Z1-F	93 minutes no failure / interruption
	S23	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5	Z1-F	93 minutes no failure / interruption
	S24	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5	Z1-F	93 minutes no failure / interruption
	S25	cable (N)HXH FE180 E30-E60 4x50 RM	Z1-G	93 minutes no failure / interruption
	S26	cable (N)HXH FE180 E30-E60 4x50 RM	Z1-G	93 minutes no failure / interruption
	S27	cable (N)HXH FE180 E30-E60 4x1,5 RE	Z1-G	93 minutes no failure / interruption
	S28	cable (N)HXH FE180 E30-E60 4x1,5 RE	Z1-G	93 minutes no failure / interruption
	S29	cable (N)HXCH FE180 E90 4x50 RM/25	Z1-H	93 minutes no failure / interruption
	S30	cable (N)HXCH FE180 E90 4x50 RM/25	Z1-H	93 minutes no failure / interruption
	S31	cable (N)HXCH FE180 E90 4x1,5 RE/1,5	Z1-H	93 minutes no failure / interruption
	S32	cable (N)HXCH FE180 E90 4x1,5 RE/1,5	Z1-H	93 minutes no failure / interruption
	S52	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	X1-A	49 minutes
	S53	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	X1-B	46 minutes
	S54	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	X1-C	51 minutes
S55	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	Y1-D	54 minutes	
S56	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	Y1-E	23 minutes	
S57	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	Z1-F	72 minutes	
S58	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	Z1-G	74 minutes	
S59	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	Z1-H	48 minutes	

[1] The fire test was discontinued in 94th minute at the request of test sponsor.

Specimens S1 – S32 were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W. Specimens S52 – S59 were tested by one-phase voltage supply 1 x 110V with LED diodes 3V /0,03W. Circuit breakers with rating 3 A and performance characteristics B(gL) were used.

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 CLASSIFICATION ACCORDING TO ČSN 73 0895

The element, cable bearing system VERGOKAN – cable trays with accessories (consoles, brackets, screws etc.) with power and communication halogen free cables by company DÄTWYLER is classified according to the following combinations of performance parameters and classes as appropriate.

Used cables by test are classified as follows:

Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable
(N)HXH FE180 E30-E60	(N)HXH FE180 E30-E60 4x1,5 RE	In cable trays KBSI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X1-A.	P90-R	n x ≥ 1,5 mm ² n ≥ 2 P90-R
	(N)HXH FE180 E30-E60 4x50 RM		P90-R	
JE-H(St)H...Bd FE180 E30-E90	JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	Non-standard track X1-A and X1-C.	P30-R	n x 2 x ≥ 0,8 mm n ≥ 2 P30-R



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable
(N)HXCH FE180 E30-E60	(N)HXCH FE180 E30-E60 4x1,5 RE/1,5	In cable trays KBSI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X1-B.	P90-R	n x ≥ 1,5/1,5 mm ² n ≥ 2 P90-R
	(N)HXCH FE180 E30-E60 4x50 RM/25		P90-R	
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90	Non-standard track X1-B and Y1-D.	P30-R	n x 2 x ≥ 0,8 mm n ≥ 2 P30-R
(N)HXH FE180 E90	(N)HXH FE180 E90 4x1,5 RE	In cable trays KBSI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X1-C.	P90-R	n x ≥ 1,5 mm ² n ≥ 2 P90-R
	(N)HXH FE180 E90 4x50 RM		P90-R	
(N)HXCH FE180 E90	(N)HXCH FE180 E90 4x1,5 RE/1,5	In cable trays KBSI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track Y1-D.	P90-R	n x ≥ 1,5/1,5 mm ² n ≥ 2 P90-R
	(N)HXCH FE180 E90 4x50 RM/25		P90-R	
(N)HXH FE180 E90	(N)HXH FE180 E90 4x1,5 RE	In cable trays KBSTI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track Y1-E.	P90-R	n x ≥ 1,5 mm ² n ≥ 2 P90-R
	(N)HXH FE180 E90 4x50 RM		P90-R	
JE-H(St)H...Bd FE180 E30-E90	JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	Non-standard track Y1-E and Z1-G.	P15-R	n x 2 x ≥ 0,8 mm n ≥ 2 P15-R
(N)HXCH FE180 E30-E60	(N)HXCH FE180 E30-E60 4x1,5 RE/1,5	In cable trays KBSTI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track Z1-F.	P90-R	n x ≥ 1,5/1,5 mm ² n ≥ 2 P90-R
	(N)HXCH FE180 E30-E60 4x50 RM/25		P90-R	
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90	Non-standard track Z1-F and Z1-H.	P30-R	n x 2 x ≥ 0,8 mm n ≥ 2 P30-R



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable
(N)HXH FE180 E30-E60	(N)HXH FE180 E30-E60 4x1,5 RE	In cable trays KBSTI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ .	P90-R	n x ≥ 1,5 mm ² n ≥ 2 P90-R
	(N)HXH FE180 E30-E60 4x50 RM	Consoles in spacing of 1500 mm. Non-standard track Z1-G.	P90-R	
(N)HXCH FE180 E90	(N)HXCH FE180 E90 4x1,5 RE/1,5	In cable trays KBSTI60.400.100. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM400. Loading 20 kg.m ⁻¹ .	P90-R	n x ≥ 1,5/1,5 mm ² n ≥ 2 P90-R
	(N)HXCH FE180 E90 4x50 RM/25	Consoles in spacing of 1500 mm. Non-standard track Z1-H.	P90-R	

The element, cable bearing system **VERGOKAN** – cable trays with accessories (consoles, brackets, screws etc.) with power and communication halogen free cables by company **DÄTWYLER** are classified to classes according to achieved test results of tested cables at tracks. Other classification is not allowed.

4.2 FIELD OF APPLICATION

This classification is valid for the following end use applications:

General

- test results are applicable only for tested bearing systems **VERGOKAN** with cables **DÄTWYLER**;
- cable track functionality shall not be affected negatively by adjacent building or technological elements, another cable tracks, piping tracks or other technological device;
- test results are applicable only in case the cable track in practice will be fixed to a building construction which is sufficient in term of its statics performance for period of functionality in fire, i. e. the element meets the loadbearing criterion R according to EN 13501-2+A1;
- if the cable track is fixed directly to a building construction element made of material such as concrete, bricks, aerated concrete or steel supporting structure, such anchoring components shall be used, which, in term of their properties, are suitable with respect to used material, used installation method, required thermal attack curve, required period of functionality in fire, mechanical actions caused by cable support construction with cables;
- the cable track can be fixed for example by means of bolted joints, riveted joints, welded joints, joints of direct assembling (inserting). Suitability of fixing type for the purpose shall be demonstrated by a test or statics calculation;
- the number of cables placed on the cable support construction in horizontal arrangement is limited just by area disposition, but the maximal load acting on the cable support construction, stated by manufacturer, shall not be exceeded. Manufacturer specification of the number of cables, if available, shall also be respected;
- if cables run freely they need not be fixed by clips when they are arranged horizontally on trays or ladders;
- on their whole length the cables shall be installed in such a manner, that the minimal bend radius stated by manufacturer is observed;
- also cables without functionality in fire may be placed on cable system together with cables with functionality in fire but only under the condition, that minimum distance of 200 mm is observed between them or they are separated by means of suitable fire screen. In addition the common cable management is possible only in case when each power cable or conductor is insulated to maximal voltage used in power management system;



- communication, data and signal cables shall be placed in such a way, that at all events a distance minimum of 100 mm is provided between those cables and power cables;
- when the cable routes are installed in sloped or vertical position following shall be met: in points where it turns from horizontal to other orientation the cable route shall be effectively attached and in orientation other than horizontal the cables shall be fixed firmly also in places of bending whereas the allowable support position maximal distances and the allowable minimal bend radius are retained;
- cables with vertical orientation shall be installed individually into clips arranged with spacing maximum of 300 mm; to reduce the longitudinal tension they have to be effectively attached after each 3500 mm length;
- cable tracks installed in arrangement with the angle between the horizontal plane and their longitudinal axis is less than 20° are considered as horizontal;
- suitable methods for the longitudinal tension reduction are as follows: the standard clips of cables are protected from direct thermal attack by means of a fire casing or the meander dilatation arrangement or the sealing in floor apertures;

Cables and cable support systems

- test results are applicable to tested cable route, it means to combination of type, cross-section and manufacturer of the cable and of type and manufacturer of the cable support system;
Test results for power cables are directly applicable as follows:
- where test specimens according to ČSN 73 0895 are used, the worst test result obtained from testing of these specimens applies to all dimensions and tested arrangement method of tested cable;
- if cables with maximal cross-section of the core less than 50 mm² are tested, the worst test result applies to all cross-sections of cables in range of tested cross-sections;
- test result obtained from testing of cables with five or four conductors applies also to cables of the same type with smaller or greater number of conductors;
- in case only cables with minimal or maximal tested cross-section passed successfully the test, the test result is applicable only to the same type of cable, section and arrangement method as tested;
Test results obtained from testing of communication or signal cables are directly applicable as follows:
- test results are applicable to all constructions of specified type with diameter (cross-section) and number of cores equal to or greater than that of test specimen;
Test results obtained from testing of metallic data cables are directly applicable as follows:
- test results from perimeter integrity test apply for tested arrangement method for all dimensions of specified type with diameter (cross-section) and number of cores equal to or greater than that of test specimen;
Test results for cable supports systems are directly applicable as follows:
- in case the cables are attached into cable clips it is allowed to apply test results also to arrangement of more than one cable into one clip but maximum of 3. For arrangement of more than 3 cables into one clip it is necessary to demonstrate the functionality of the assembly by a separate test;
- test results obtained from testing of cables attached under the floor using clips are applicable also for attachment by means of cable clips to a wall horizontally;
- test results obtained from testing of installation on cable trays or cable ladders suspended on floor suspension devices are allowed to be applied to support constructions attached to a wall;
- In case the test was carried out with cable tray or ladder with jointing point placed in the middle between support constructions (± 5 % of their distance) the test results apply to any position of jointing point between support constructions;
- Test results from test with specimen of cable trays or ladders are applicable also to event when the surface is treated with a colour painting or spraying in layer of surface density $< 1,0 \text{ kg/m}^2$ or of thickness $< 1,0 \text{ mm}$ in accordance with EN 13501-1+A1. When the thickness or surface density of this layer is of greater value it is necessary to carry out a test according to this standard;
- When test specimens of support constructions made in conformity with EN 61537 ed. 2 form steel with surface treatment are used, the test results are directly applicable to support constructions of the same type made of stainless steel but not vice versa;
Test results for standard cable support constructions are directly applicable as follows:
- test results from tests of functionality of cables arranged on standard cable support construction by one manufacturer are applicable to tested standard cable support constructions made by another manufacturer. The applicability of test results between constructions which differ from standard constructions in any parameter is not possible;
- in case the test is carried out on nonstandard cable support construction differing from standard support construction just in one parameter, it is possible to apply the test results also to standard



cable support construction provided the different parameter within its range covers also parameter of standard cable support construction (e. g. nonstandard cable support construction with attachment spacing greater than that of standard support construction);

For non-standard cable support constructions the test results are directly applicable as follows:

- results from tests carried out on cable trays and cable ladders are applicable to all cable trays and cable ladders of identical construction of smaller width than tested.
- direct application of test results from test on a test specimen is not possible to different design nor to any other product made by another manufacturer;

Direct application for vertical arrangement:

- for cables arranged vertically or with a slope test results obtained from cables arranged individually in cable clips under the floor apply;
- test results carried out on horizontally arranged cable support constructions apply also to vertical or sloped arrangements provided the conditions given in this application;
- **test result is applicable to welded head plate to steel U-shaped ceiling profiles;**
- **heavy joined steel brackets WKM... shall be fixed to steel U-shaped ceiling profiles HSMU from one or from two sides, providing the maximum loading of U-shaped ceiling profiles is not more than during the fire test and only if sufficient type of fixation of the head plates to ceiling is provided;**
- **use the new type of spacer TSU50 instead of spacer HDTSU50;**
- **change the construction of tested console (base of console) type HDHSMU in accordance with drawings in annex.**

5. LIMITATIONS

Load-bearing construction elements for fixing of cable systems must be proved for at least the same fire resistance compare to classified function in fire of cable system.

The construction contractor is solely responsible for proper preparation.

This classification document does not represent type approval or certification of the product.

The classification is valid until 14. 06. 2021 provided that the product, field of application and standards and regulations are not changed.

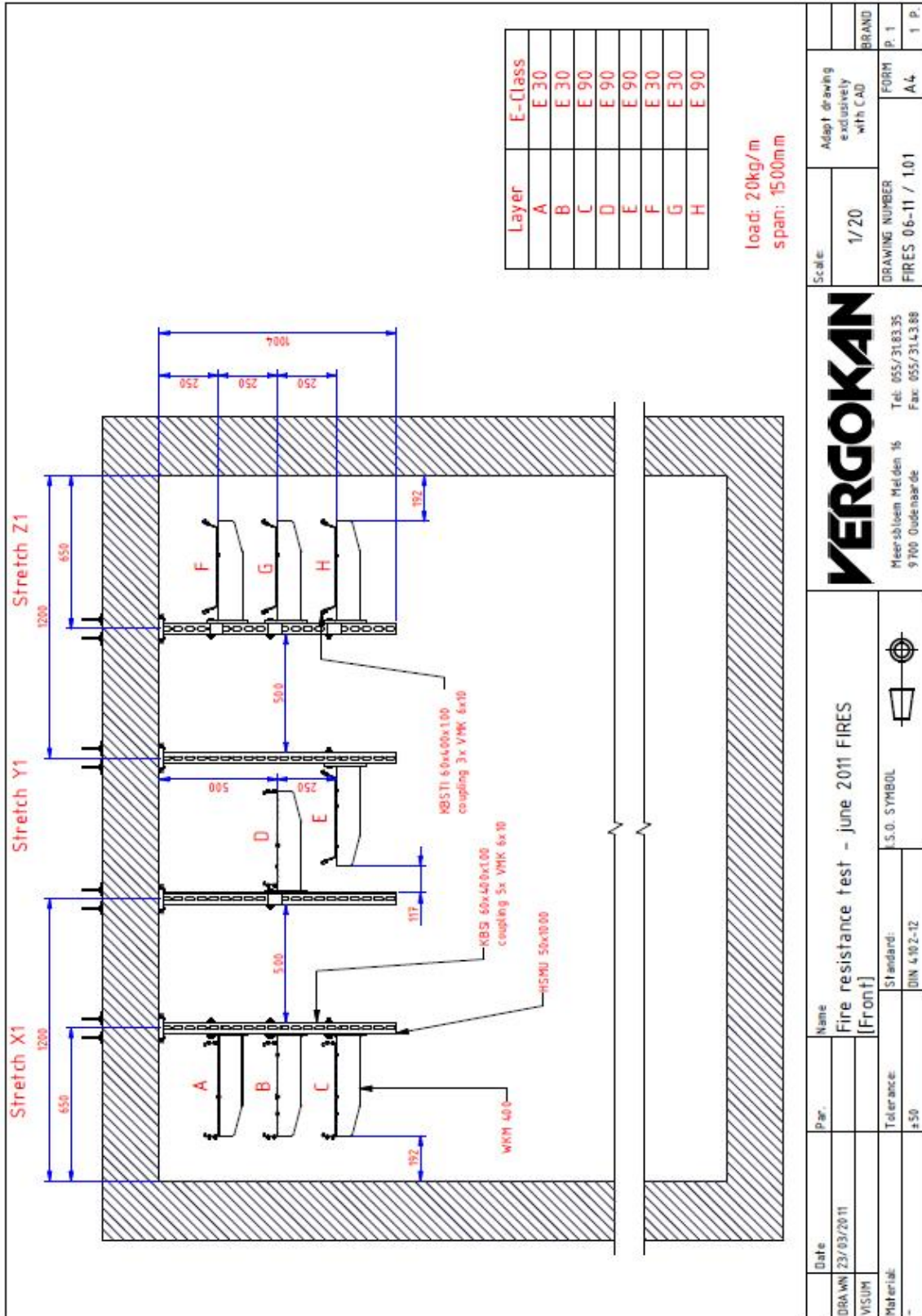
Approved:

Ing. Štefan Rástocký
leader of the testing laboratory



Signed:

Miroslav Hudák
technician of the testing laboratory



Date	23/03/2011	Name	Fire resistance test - june 2011 FIRES [Front]	Scale	1/20	Adapt drawing exclusively with CAD	BRAND	
DRAWN	VISUM	Par.		DRAWING NUMBER	FIRES 06-11 / 1.01	FORM	A4	P. 1
Material	-	Tolerance	+50	Standard	DIN 4102-12	S.O. SYMBOL		1 P.
						Meersbloem Meiden 16 9700 Oudenaarde Tel: 055/31.83.35 Fax: 055/31.43.88		



load: 20kg/m
span: 1,5m
no of layers: max. 3

5 VMK 6x10 in the coupling

Trays are fixated with 2 VMK 6x10 on each bracket.

D (1:5)

B (1:2)

C (1:5)

A (1:5)

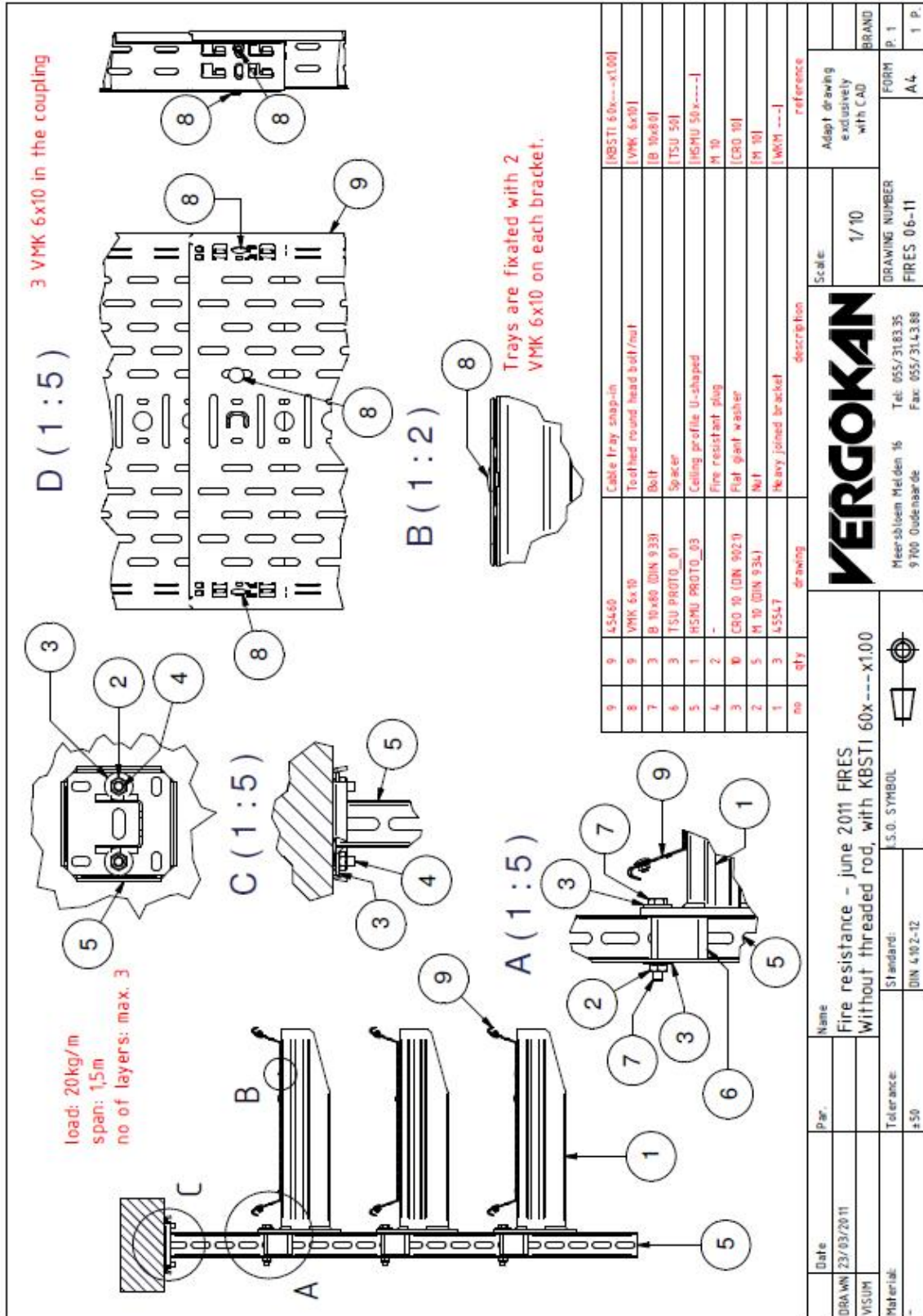
no	qty	drawing	description
9	3	L4001	Cable tray with interlocking ends
8	11	VMK 6x10	Teethed round head bolt/rod
7	3	B 10x60 (DIN 934)	Bolt
6	3	TSU PROT0_01	Spacer
5	1	HSMU PROT0_03	Ceiling profile U-shaped
4	2	-	Fire resistant plug
3	6	CR0 10 (DIN 9021)	Flat gasket washer
2	5	M 10 (DIN 934)	Nut
1	3	L5547	Heavy joined bracket
no	qty	drawing	description

VERGOKAN

Meersbloem Meiden 16
9700 Oudenaarde
Tel: 055/31.83.35
Fax: 055/31.43.88

Scale: 1/10
DRAWING NUMBER: FIRES 06-11
FORM P. 1
A4
1 P.

Date: 23/03/2011
DRAWN: VISUM
Material: -
Par.: +50
Tolerance: -
Standard: S.S.O. SYMBOL
DIN 4102-12
Name: Fire resistance - june 2011 FIRES
Without threaded rod, with KBSI 60x---x1.00





Material dikte : 0.8/1/1.25

NOT FOR PRODUCTION

Type	Binnenmaat breedte :	Maat B	MD 0.8	MD 1.0	MD 1.25
KBSI 60*75	73	74.6	75	75.5	75.5
KBSI 60*100	98	99.6	100	100.5	100.5
KBSI 60*150	148	149.6	150	150.5	150.5
KBSI 60*200	198	199.6	200	200.5	200.5
KBSI 60*250	248	249.6	250	250.5	250.5
KBSI 60*300	298	299.6	300	300.5	300.5
KBSI 60*350	348	349.6	350	350.5	350.5
KBSI 60*400	398	399.6	400	400.5	400.5
KBSI 60*500	498	499.6	500	500.5	500.5
KBSI 60*600	598	599.6	600	600.5	600.5

1	A	Verpakking afwerkingsplan (NF 682) laatste editie 25/05/2010	25/05/2010	—	—
Naam	Par.	Benaming	Material	GET.	VEUM
Get. van Component	<next>	Kabelbaan ineenstapbaar	Tekening enkel m.b.v. CAD aanpassen	—	—
VEUM	—	[KBSI 60*---*---]	Schaal : 1/4	—	—
Material : L.0037 (Bendingszet)	Toleranties : —	Maats : —	PLANNUMMER 44.001	FORM GS/MS	k 12
				—	12 p.



1	A	Scherptekening afschuifpatroon (NF 484) Schuifpatroon (NF 484) (20/08/2010)	20/08/2010	-
Aard		Mt:	Material	GET.
		Telering artikel n.l.v. CAD aanpassen		
		Schaal:	1/5	
		PLANNUMMER	4,4,001	FORM GS/MS
			/ 4 /	k. 1)
				12 p.

	Tel. 055/244335 Fax. 055/244348
Meer weten? Mailen 16 0100 Oudegrande	

Naam: _____ Datum: 02-01-08 Par: <xxx> Toelichting: _____ Toleranties: 1:0,5	Benaming: Kabelbaan ineen-schuifbaar Perforatiepatronen Norm: U.S.A. S78100
--	--

NOT FOR PRODUCTION



NOT FOR PRODUCTION

Type	dim WT	dim WT(in)	dim WB	material thickness
KBSTI 60x150	154	125	85	0.6-0.75-1
KBSTI 60x200	204	175	135	0.6-0.75-1
KBSTI 60x250	254	225	185	0.6-0.75-1
KBSTI 60x300	304	275	235	0.75-1
KBSTI 60x400	404	375	335	0.75-1

Datum		Benaming	
24/06/2016		KBS cable tray clickable	
MSUM		[KBSTI 60x---X---]	
Materiaal:		Norm:	
1.0037 (Sandzink)		IEC 61537	
Toleranties:		I.S.O. SYMBOL	
-			
Schaal:		Tekening enkel m.b.v. CAD aanspaken	
VERGOKAN		KBAAN	
Meer informatie vinden is 9700 Oudenaarde		PLANNUMMER 4.54-60	
Tel: 055/31.83.35		FORM P. 10	
Fax: 055/31.43.88		A4	
		12 P.	



KBSTI 300

KBSTI 400

KBSTI 150

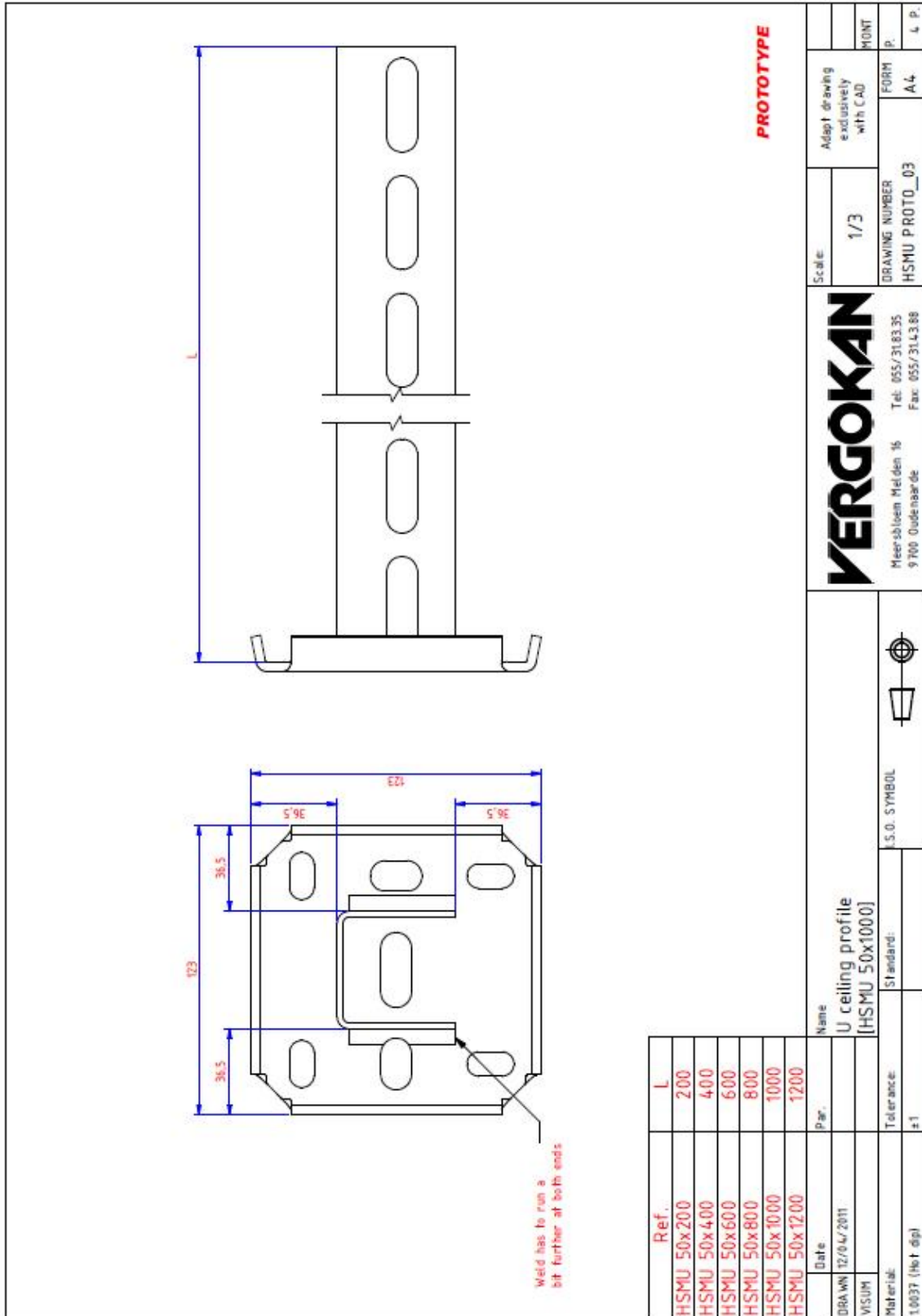
KBSTI 200

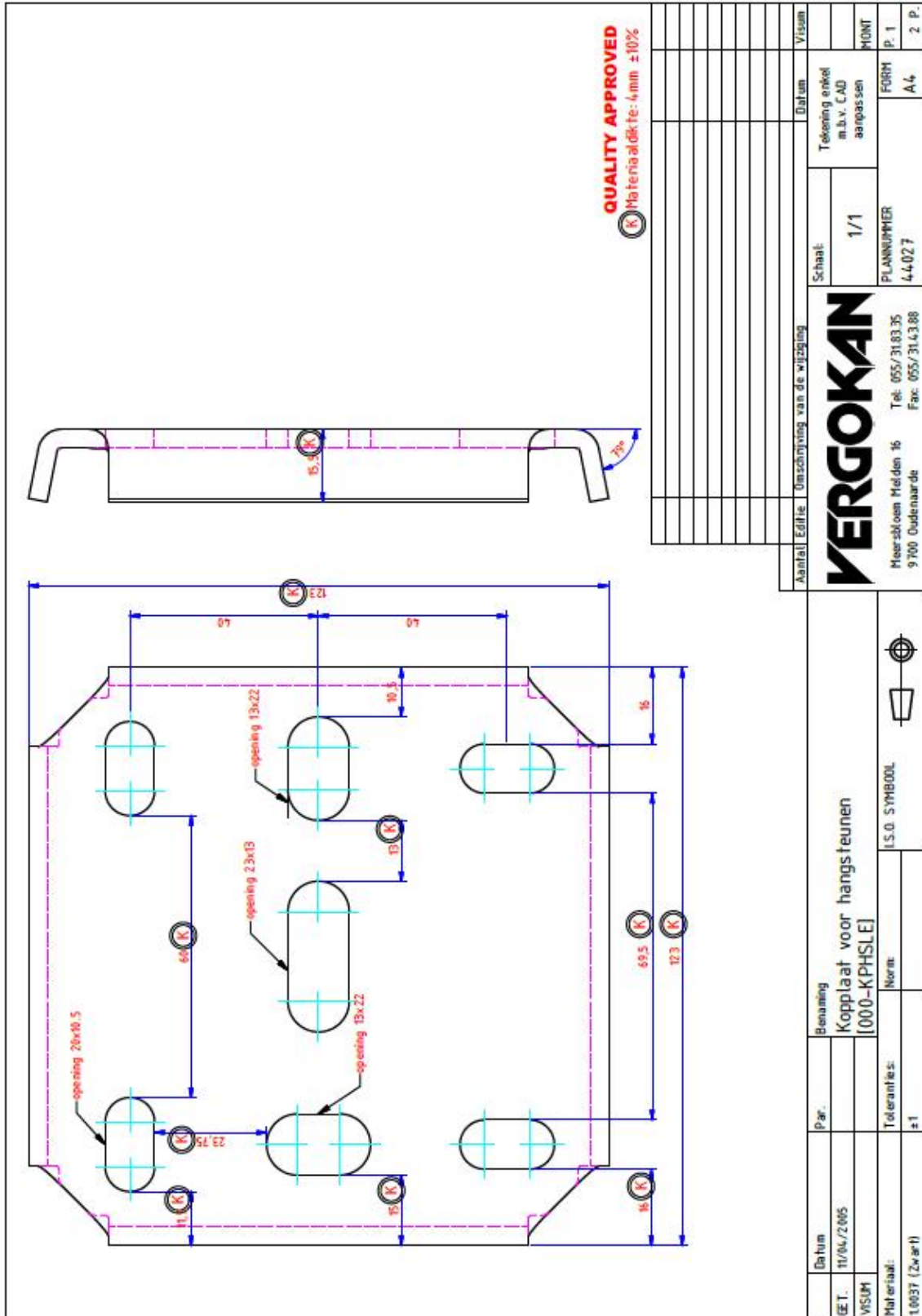
KBSTI 250

NOT FOR PRODUCTION

Revisie tabel : zie P1

Datum	Par.	Benaming	Schaal:	Tekening eekst m.b.v. CAD aanpassen	KBAAN
GET. 3/03/2009		Bodemperforatie : KBSTI 60x x	1/5		P. 12
VISUM		Bottom perforation	PLAANNUMMER	FORM	A.4
Materiaal: 1.0037 (Sendzimir)		Norm: S.S.O. SYMBOL	4.54.60		
		Toleranties: -	Meersbloem Merden 16 9700 Oudenaarde		
			Tel: 055/31.83.35 Fax: 055/31.43.88		
			VERGOKAN		





Aantal	Editie	Omschrijving van de wijziging	Datum	Visum
				Tekening enkel
				m.b.v. CAD
				aangepast
		Schaal:	1/1	FORM
		PLANNUMMER	4.4.027	p. 1
		Meerbladen	Melden 16	A4
		9700 Oudenaarde		2 p.
		Tel: 055/31.83.35		
		Fax: 055/31.43.88		

VERGOKAN		Kopplaat voor hangs teunen		I.S.O. SYMBOL	
		[000-KPHSLE]			
Datum	Par.	Benaming			
01/04/2005		Kopplaat voor hangs teunen			
MSUM		[000-KPHSLE]			
Material:	1.0037 (Zwart)	Tolerantie:	±1	Norm:	



The drawing shows a technical drawing of a head plate with dimensions and a 3D perspective view. The technical drawing includes dimensions: overall width 135, overall height 80, and a central width of 80. There are two circular holes with a diameter of $\varnothing 10.5$ and two elongated oval holes. A chamfered edge is indicated with a triangle 'A' and a radius of 4.0. A side view shows a thickness of 5.0. A 3D perspective view shows the plate with chamfered corners and the holes.

NOT FOR PRODUCTION

1	A	Toevoegen van gaten d10 (zonder Wf)	13/06/2014	SC	By
Number		Edition		Description of the modification	
				Date	
				Adapt drawing exclusively with CAD	
				Scale: 1 : 2	
				DRAWING NUMBER 46059	
				FORM A4	
				P.2	
				2 P.	

VERGOKAN

Meersbloem Melden 16
9700 Oudenaarde

Tel: 055/3183.35
Fax: 055/314.388

I.S.O. SYMBOL

Ref.	0KPHSLE3	Name	Head plate type HSLE3:---	Standard:	I.S.O. SYMBOL
Drawn	colpaest		[0KPHSLE3]		
Date	18/03/2014				
Material:	1.0332 (0D11 untreated)	Tolerance:	-		



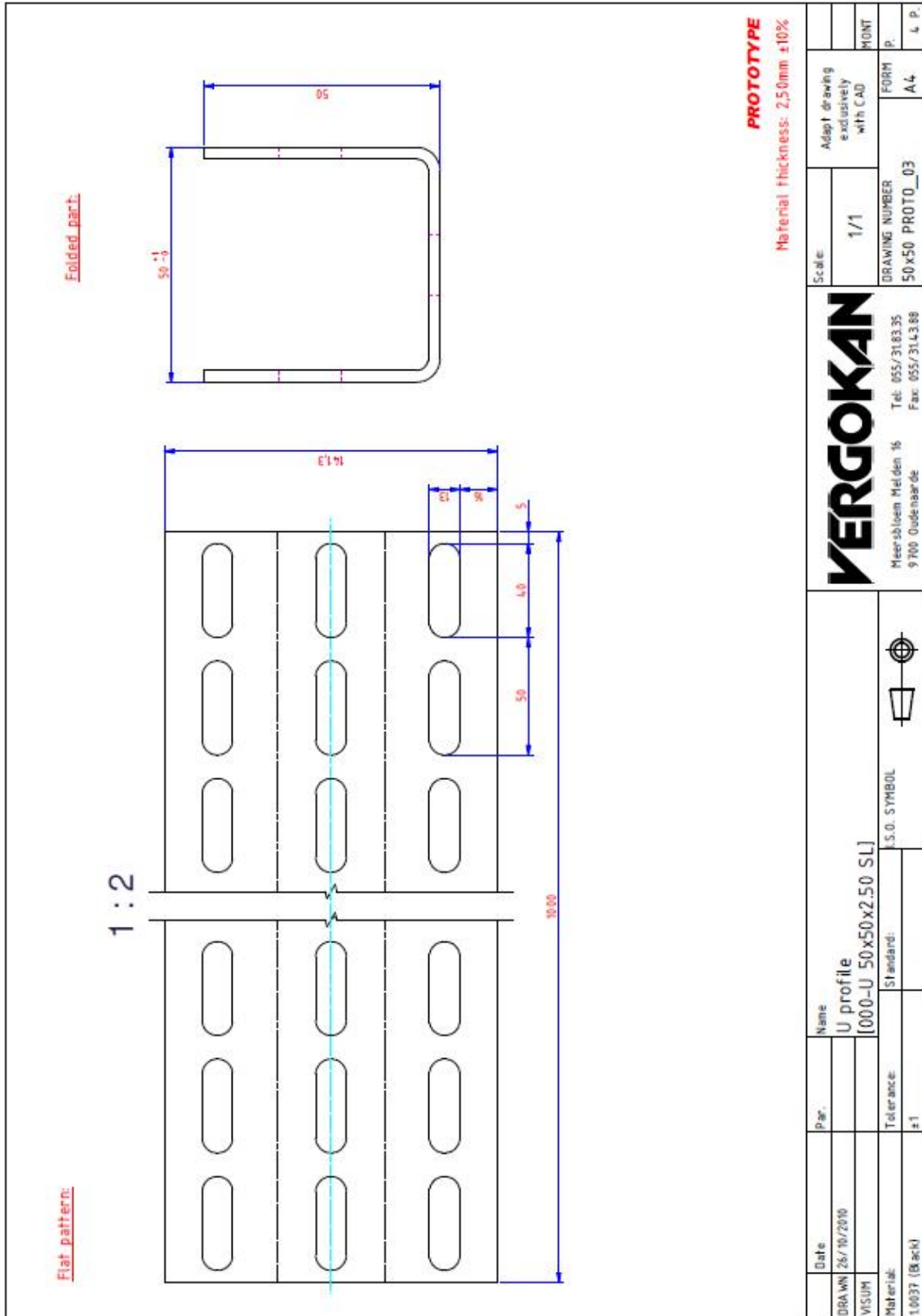
NOT FOR PRODUCTION

1	A	vlakke kopplaat	11/03/2015
Number		Edition	
Description of the modification			
Date			
By			

Ref.	L
HDHSMU50.200	200
HDHSMU50.300	300
HDHSMU50.400	400
HDHSMU50.500	500
HDHSMU50.600	600
HDHSMU50.800	800
HDHSMU50.1000	1000
HDHSMU50.1200	1200
HDHSMU50.1500	1500

Ref.	HDHSMU50.----		
Drawn	Paul Note		
Date	11/04./2011		
Material:	1.0332 (DD11 hot dip)		
Tolerance:	-		
Name:	Ceiling profile medium heavy, U shape [HDHSMU50.1000]		
Standard:	I.S.O. SYMBOL		

VERGOKAN	Meersbloem Meiden 16 9700 Oudenaarde	Tel: 055/3183.35 Fax: 055/314.388	
Scale: 1 : 2		FORM P.1	
DRAWING NUMBER 45732		A4	
Adapt drawing exclusively with CAD		MONT	





1	1	45729	[2TSU50]	TSU verzinkt
2	1	B 10x80 (DIN 933)	[HDB10.80]	HD Zeskantbout
3	2	CR0 10 (DIN 9021)	[HDCRO.10]	HD Carrossieronderstel
4	1	M 10 (DIN 934)	[HDM10]	Zeskantmoer M10 (HD)
item	qty	drawing	reference	description

Parts list

NOT FOR PRODUCTION

Number	Edition	Description of the modification

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Ref.</td> <td>HOTSU--</td> </tr> <tr> <td>Drawn</td> <td>Paul Nofe</td> </tr> <tr> <td>Date</td> <td>15/06/2011</td> </tr> <tr> <td>Material:</td> <td>1.0037 (Hot-dip)</td> </tr> </table>	Ref.	HOTSU--	Drawn	Paul Nofe	Date	15/06/2011	Material:	1.0037 (Hot-dip)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Name</td> <td colspan="2">Spacer HDHSMU 50</td> </tr> <tr> <td>Standard:</td> <td colspan="2">[HDTSU50]</td> </tr> <tr> <td>Tolerance:</td> <td colspan="2">-</td> </tr> <tr> <td>I.S.O. SYMBOL</td> <td colspan="2" style="text-align: center;"> </td> </tr> </table>	Name	Spacer HDHSMU 50		Standard:	[HDTSU50]		Tolerance:	-		I.S.O. SYMBOL			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Scale:</td> <td>1 : 1</td> </tr> <tr> <td>DRAWING NUMBER</td> <td>45730</td> </tr> <tr> <td>FORM</td> <td>A4</td> </tr> <tr> <td>MONTP.</td> <td>3 P.</td> </tr> </table>	Scale:	1 : 1	DRAWING NUMBER	45730	FORM	A4	MONTP.	3 P.
Ref.	HOTSU--																													
Drawn	Paul Nofe																													
Date	15/06/2011																													
Material:	1.0037 (Hot-dip)																													
Name	Spacer HDHSMU 50																													
Standard:	[HDTSU50]																													
Tolerance:	-																													
I.S.O. SYMBOL																														
Scale:	1 : 1																													
DRAWING NUMBER	45730																													
FORM	A4																													
MONTP.	3 P.																													
<p>Meersbloem Melden 16 Tel: 055/3183.35 9700 Oudenaarde Fax: 055/314388</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Adapt drawing exclusively with CAD</td> <td>Date</td> </tr> <tr> <td>By</td> <td></td> </tr> </table>	Adapt drawing exclusively with CAD	Date	By																										
Adapt drawing exclusively with CAD	Date																													
By																														



1	M10x80 (DIN 933)	[B10.80]	Zeskantbout
2	M10 (DIN 9021)	[CRO10]	Carrossierondsel
3	M10 (DIN 934)	[M10]	Zeskantmoer
4	4.5728	[TTSU50]	Spacer, HSMU 50
item	qty	drawing	reference
Parts list			

NOT FOR PRODUCTION

1	A	Herontwerp naar aanleiding brandtesten 2015 (zie WF HDHSMU50.000 - 21 10 2015)	27/02/2015
Number	Edition	Description of the modification	Date

VERGOKAN	Scale: 1 : 2	Adapt drawing exclusively with CAD
Meersbloem Meiden 16 9700 Oudenaarde	DRAWING NUMBER 45730	FORM A4
Tel: 055/3183 35 Fax: 055/314388		MONT P. 3 P.



WKM 100 and WKM 200

WKM 300 and WKM 400

PROTOTYPE

Ref.	H	W
WKM 100	76,3	125
WKM 200	85,0	225
WKM 300	93,8	325
WKM 400	102,5	425

Date:		Name:	
DRAWN 21/03/2011		Heavy joined bracket	
VSUM		[WKM 400]	
Material:		Standard:	
1.0037 (Het dip)		S.O. SYMBOL	
Tolerance:			
±1			

VERGOKAN		Meerslootweg Meiden 16 9700 Oudenaarde	
Tel: 055/31.83.35 Fax: 055/31.43.88		Tel: 055/31.83.35 Fax: 055/31.43.88	
Scale: 1/5		DRAWING NUMBER	
Adapt drawing exclusively with CAD		WKM FIRES 05-2011	
MONT		FORM	
A4		A4	
14 P.		PROTTO_05	



Ref.	Head plate	Thickness head plate	Bracket	Thickness bracket	H	W
000-WKM 100	000-KPWK 300	5,00mm ±10%	000-CWKM 100	2,50mm ±10%	76,3	125
000-WKM 200	000-KPWK 400	5,00mm ±10%	000-CWKM 200	2,50mm ±10%	85,0	225
000-WKM 300	000-KPWKZ 300	8,00mm ±10%	000-CWKM 300	2,50mm ±10%	93,8	325
000-WKM 400	000-KPWKZ 300	8,00mm ±10%	000-CWKM 400	2,50mm ±10%	102,5	425

000-CWKM 100

000-CWKM 200

000-CWKM 300

000-CWKM 400

PROTOTYPE

Date		Name		Number Edition		Description of the modification		Date		Visum	
DRAWN 21/03/2011		Heavy joined bracket									
VISUM		[000-WKM 100]									
Material:		Tolerance:		Standard:		S.O. SYMBOL		Scale:		Adapt drawing exclusively with CAD	
1.0037 (Zwart)		±1						1/5		FORM P.	
								DRAWING NUMBER		FORM P.	
								WKM FIRES 05-2011		A4	
								PROTO_05		1x P.	

Meersbloem Meiden 16
9700 Oudenaarde
Tel: 055/31.83.35
Fax: 055/31.43.88