

FUNCTION IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-051-16-NURE

Cable bearing system VERGOKAN with cables DÄTWYLER

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

FIRES-JR-051-16-NURE

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

Sponsor: VERGOKAN
Meersbloem Melden 16
9700 Oudenaarde
Belgium

Prepared by: FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

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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 DIN 4102-12: 1998-11.

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-051-16-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 VMK 6x10 (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 DIN 4102-12: 1998-11

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.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	(N)HXH FE180 E30-E60 4x50 RM		E 90	
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.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable
(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.	E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E30-E60 4x50 RM/25		E 90	
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90	Non-standard track X1-B and Y1-D.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30
(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.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	(N)HXH FE180 E90 4x50 RM		E 90	
(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.	E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E90 4x50 RM/25		E 90	
(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.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	(N)HXH FE180 E90 4x50 RM		E 90	
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.	Without classification	Without classification
(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.	E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E30-E60 4x50 RM/25		E 90	
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90	Non-standard track Z1-F and Z1-H.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30



Cable	Type of tested cable, single cross-sections and number of conductors	Arrangement	Classification for type of tested cable (by cross-sections and number of conductors)	Classification for cable
(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 . Consoles in spacing of 1500 mm. Non-standard track Z1-G.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 90
	(N)HXH FE180 E30-E60 4x50 RM		E 90	
(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 . Consoles in spacing of 1500 mm. Non-standard track Z1-H.	E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E90 4x50 RM/25		E 90	

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:

- **test results are applicable only for tested bearing systems VERGOKAN with cables DÄTWYLER;**
- throughout the period during which circuit integrity is to be maintained, neighboring building components shall not have a negative effect on circuit integrity;
- although testing is only carried out on cables arranged horizontally, test results also apply to cables arranged either diagonally or vertically (e.g. risers), as long as the cable system is supported in transitional areas (i.e. where it switches from a horizontal to a vertical arrangement) in such a manner that the cables will not slip or kink at corners;
- test results of function in fire test of cables tested at standard supporting construction are also applicable for tested standard supporting construction of other producers;
- test results of function in fire test of cables tested at standard supporting construction are also applicable for cables of other producers tested at standard supporting construction;
- results of testing bunched cables on a ladder or tray also apply to support construction attached to a wall. However, such constructions required proof of suitability by means of a test certificate or other document issued by an accredited testing laboratory;
- test result is applicable to cable without connecting elements (e.g. sleeves and junction boxes);
- **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.

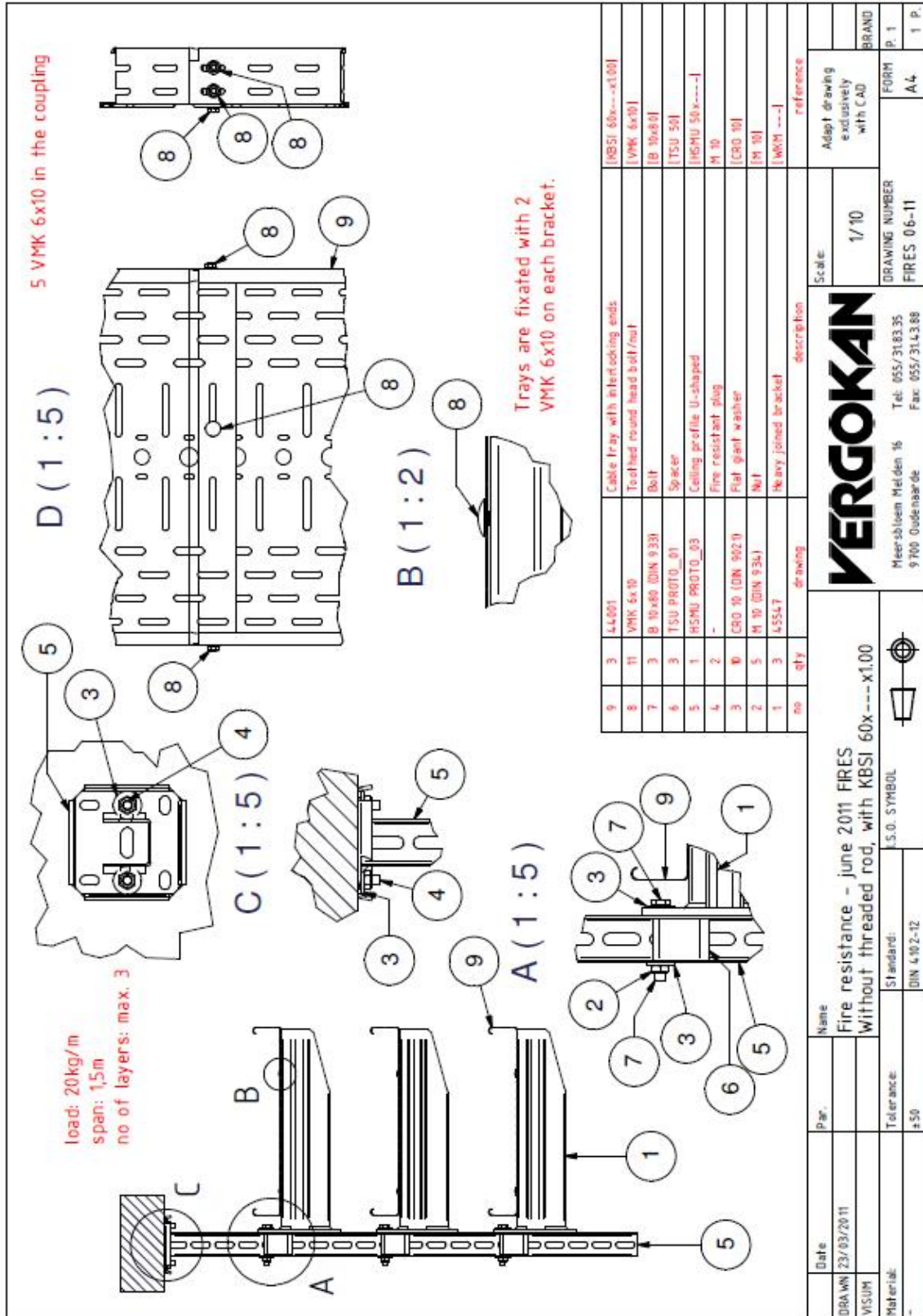
Approved:

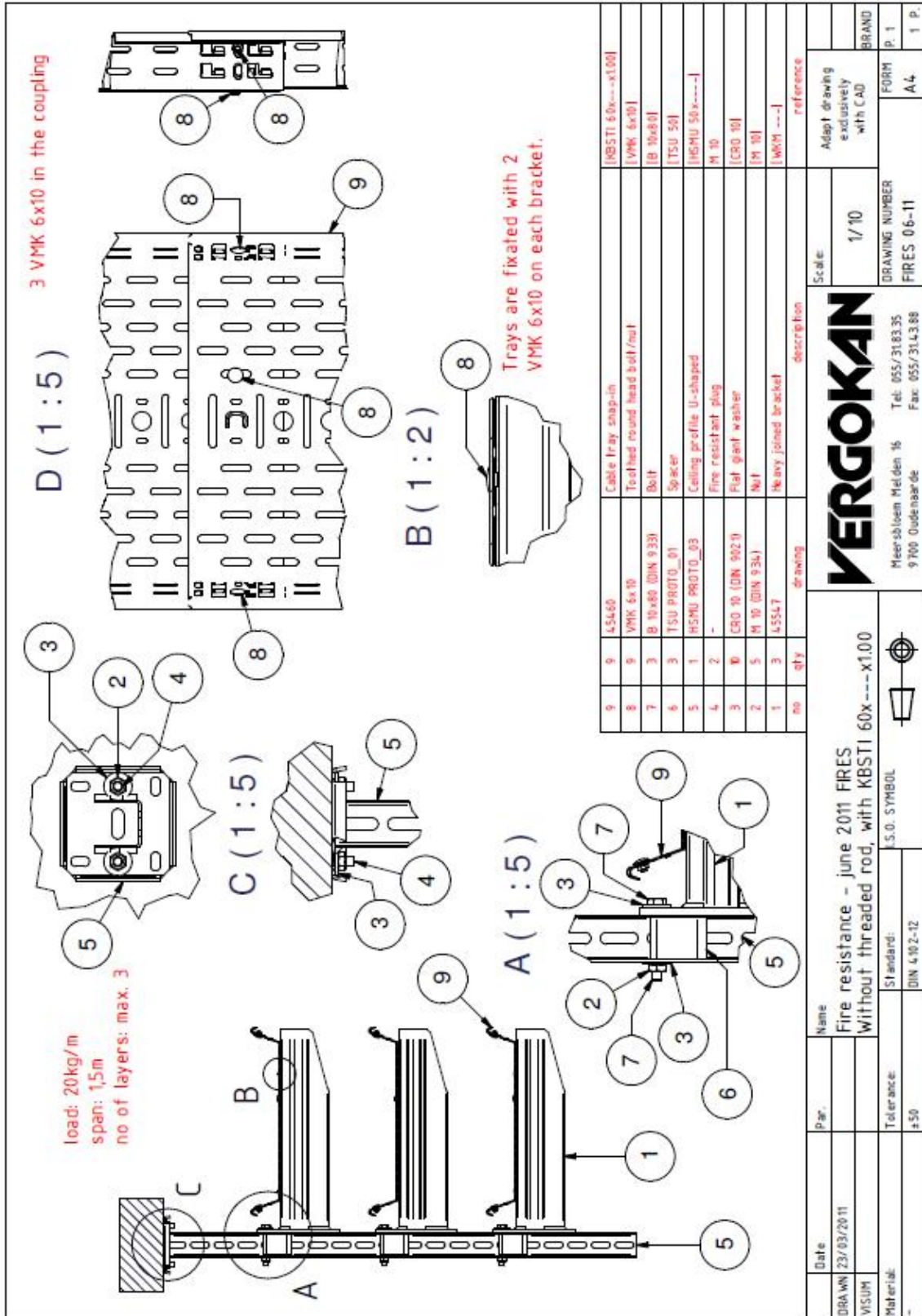
Signed:

Ing. Štefan Rástocký
leader of the testing laboratory



Miroslav Hudák
technician of the testing laboratory







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	Schaal:	Tekening enkel m.b.v. CAD aanspaken
GE T. 24/06/2016	KBSTI 60x---X---	PLANNUMMER	FORM P. 10
VISUM		45460	A4
Materiaal: 1.0037 (Sandzink)	Toleranties: -	Meerbl oem Melden 16 9700 Oudenaarde	12 P.
	Norm: I.S.O. SYMBOL	Tel: 055/31.83.35 Fax: 055/31.43.88	
	IEC 61537	VERGOKAN	



KBSTI 300

KBSTI 400

KBSTI 150

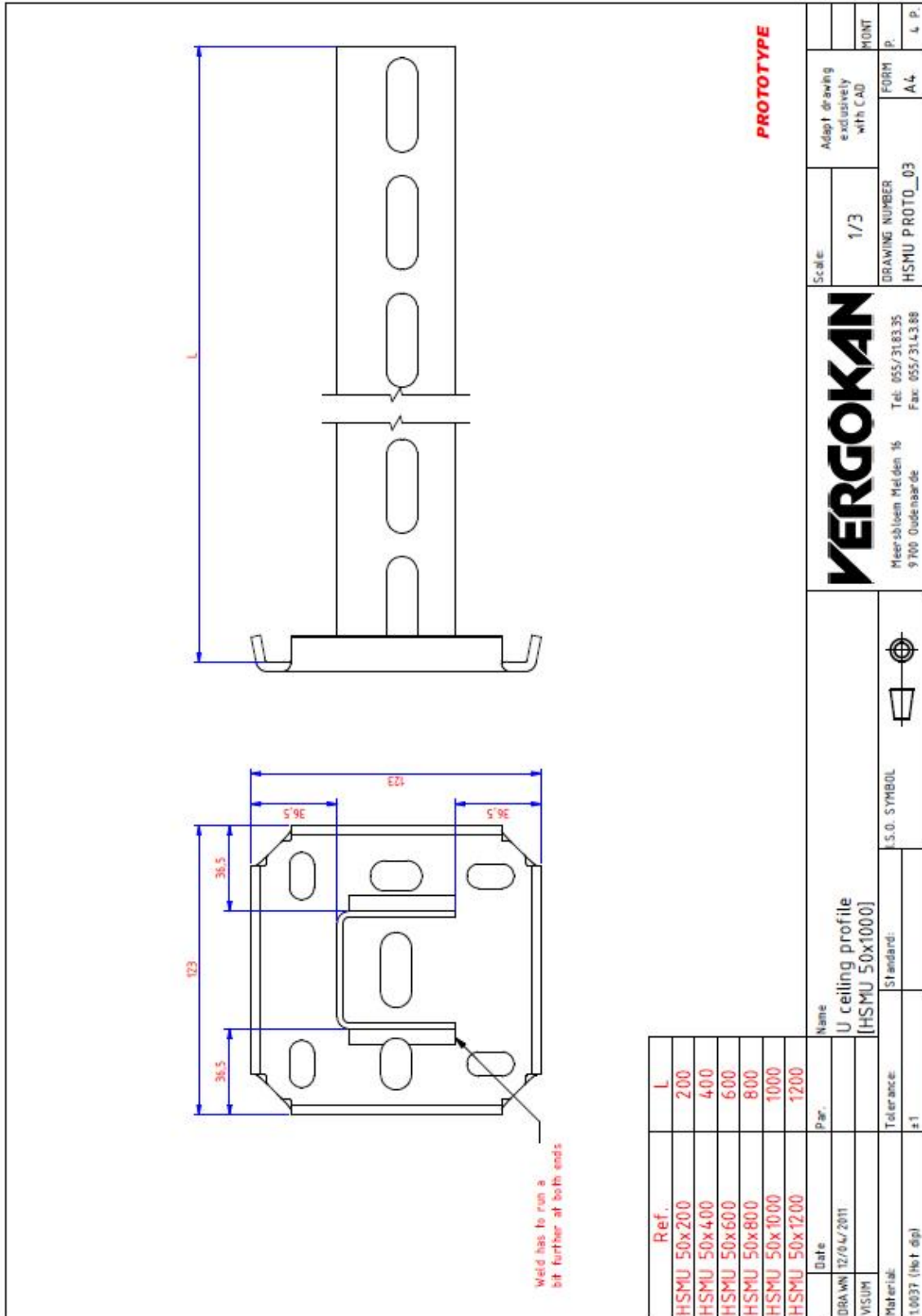
KBSTI 200

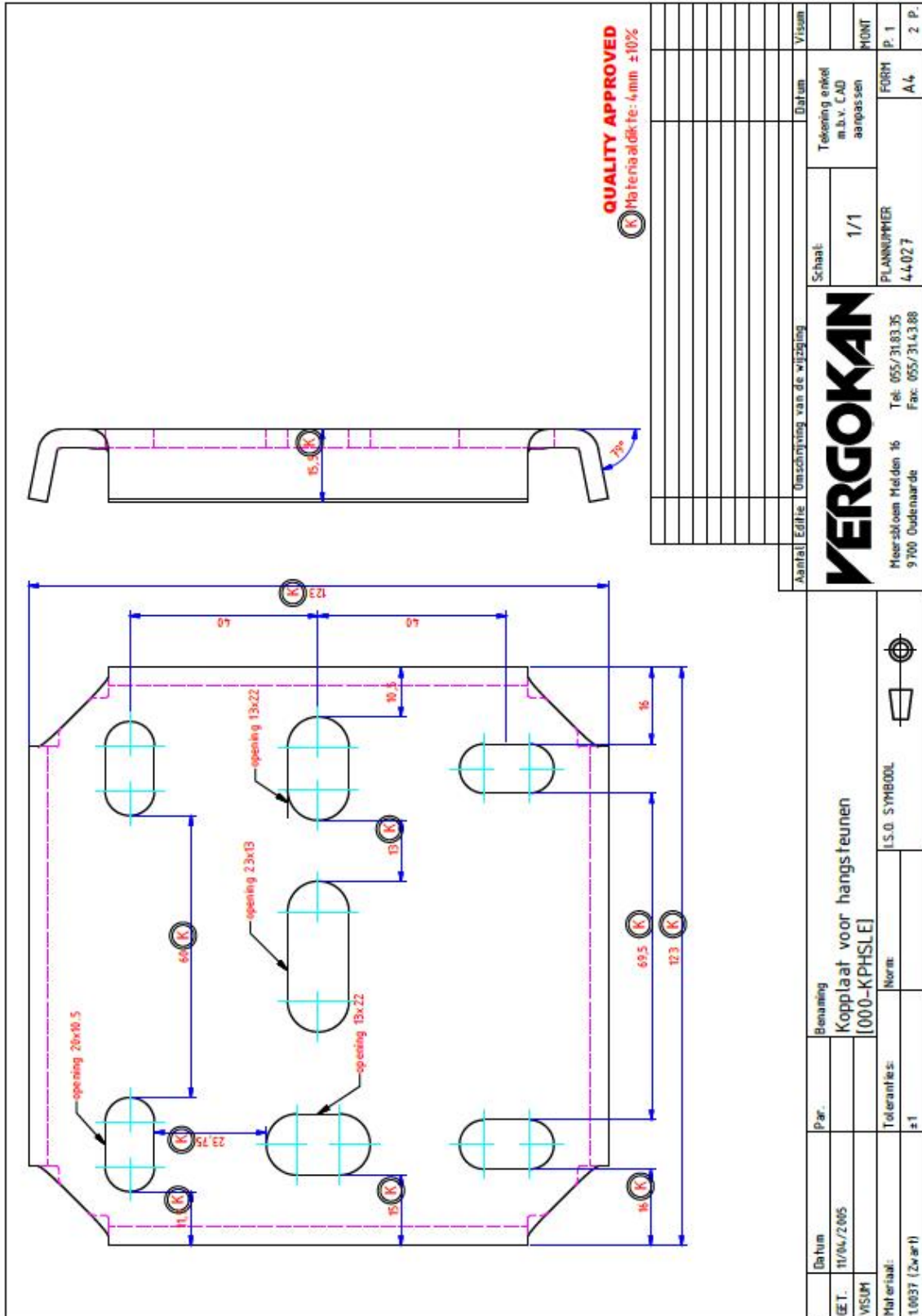
KBSTI 250

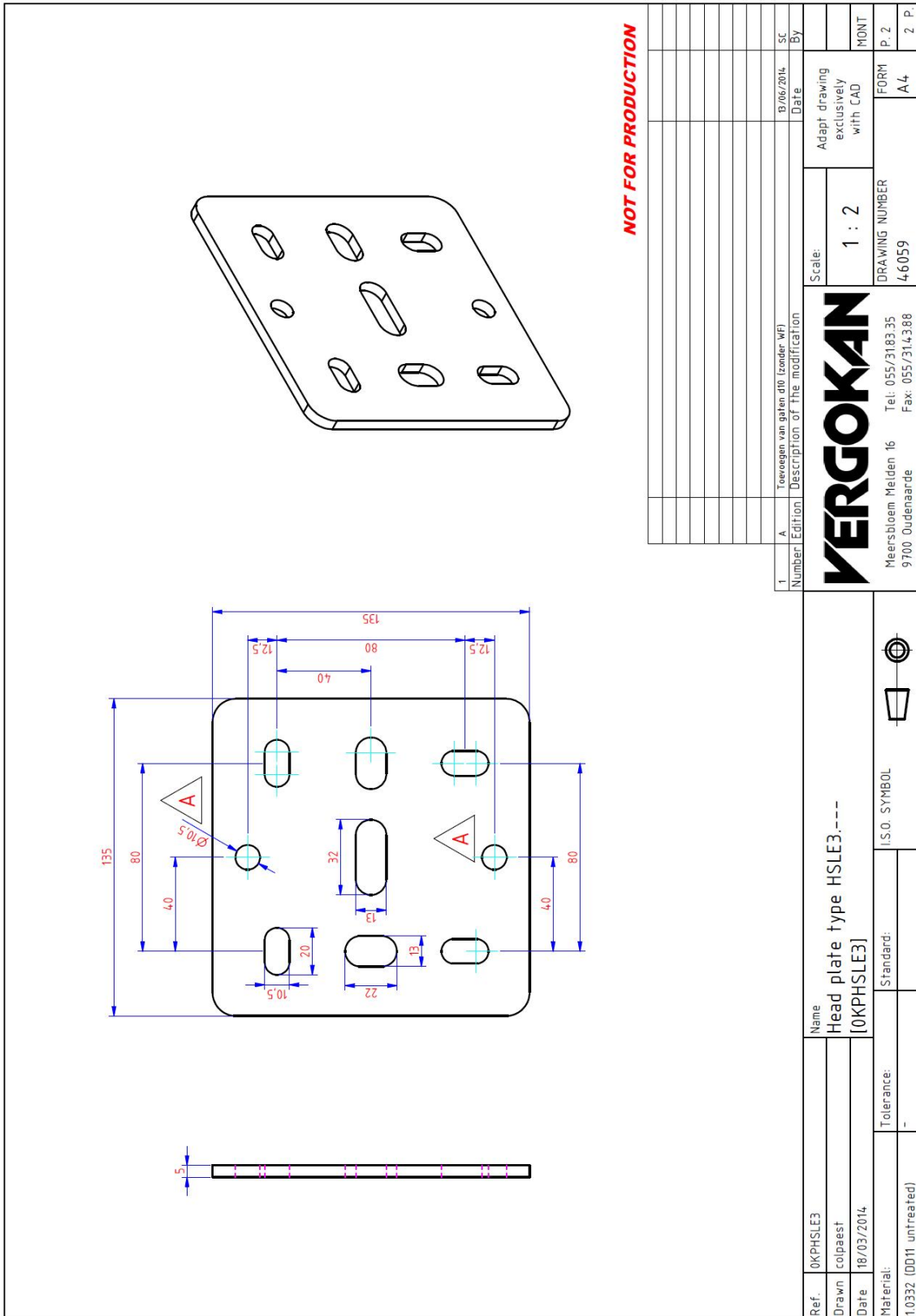
NOT FOR PRODUCTION

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









NOT FOR PRODUCTION

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

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

VERGOKAN

Meersbloem Meiden 16 Tel: 055/3183.35
9700 Oudenaarde Fax: 055/314.388

Name: Ceiling profile medium heavy, U shape
[HDHSMU50.1000]

Standard: I.S.O. SYMBOL

Tolerance: -

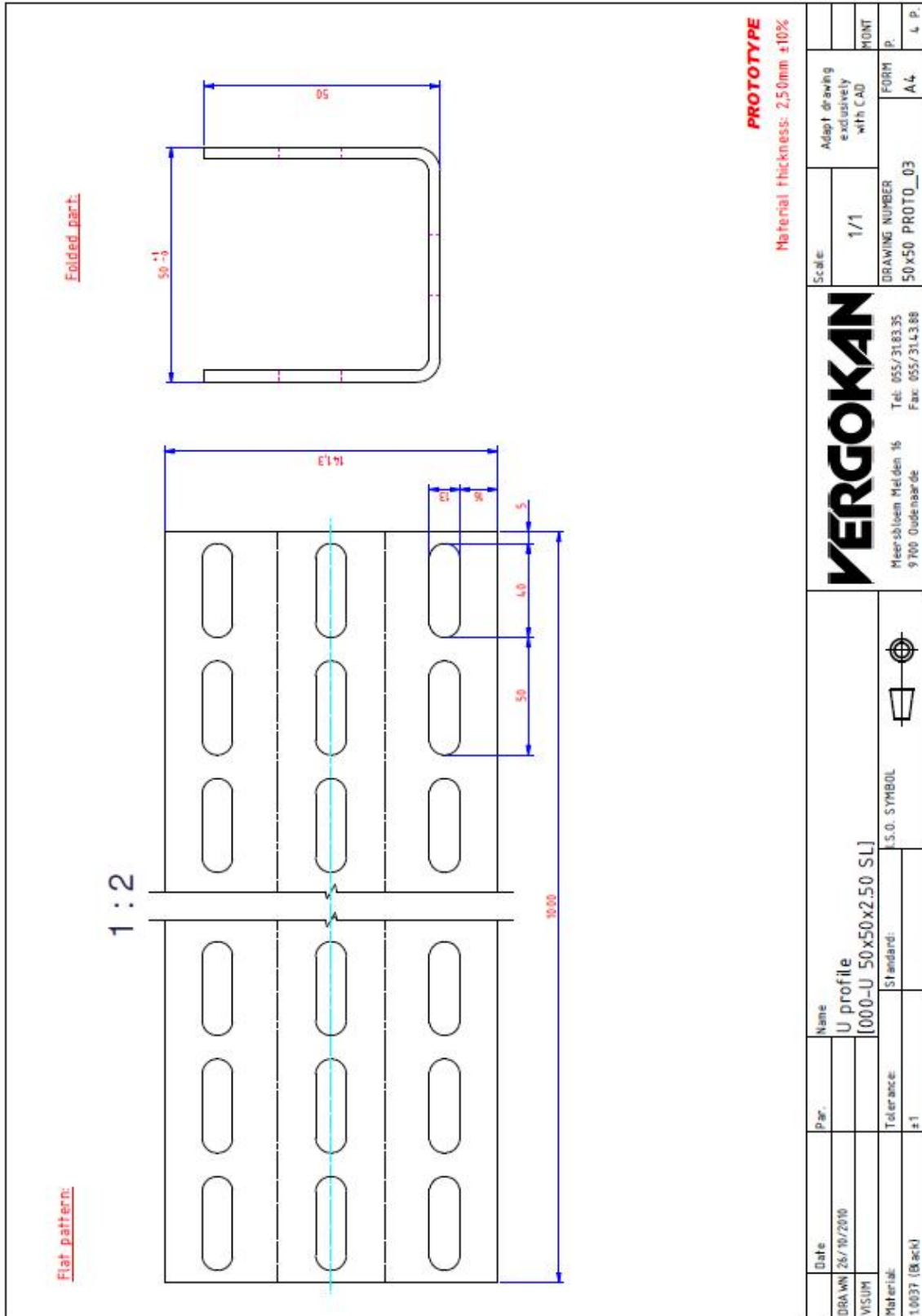
Material: 1.0332 (DD11 hot dip)

Scale: 1 : 2

DRAWING NUMBER: 45732

FORM: A4

P.1: 1 P.





1	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	description

Parts list	

NOT FOR PRODUCTION

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

Ref.	TSU--	Name	Spacer HDHSMU 50
Drawn		Paul Note	[TTSU50]
Date	15/06/2011	Tolerance:	-
Material:	1.0226 (DX51 Pregalva)	Standard:	I.S.O. SYMBOL

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



WKM 100 and WKM 200

WKM 300 and WKM 400

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

PROTOTYPE

VERGOKAN	Scale: 1/5	Adapt drawing exclusively with CAD	Mount
Meersbloem Meiden 16 9700 Oudenaarde	DRAWING NUMBER WKM FIRES_05-2011	FORM A4	PL P.
Tel: 055/31.83.35 Fax: 055/31.43.88	PROTO_05		

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



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

VERGOKAN

Meersbloem Meiden 16
9700 Oudenaarde

Tel: 055/31.83.35
Fax: 055/31.43.88

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