

FUNCTION IN FIRE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-066-16-NURE

Cable bearing system VERGOKAN with cables DÄTWYLER, FABER and PRAKAB

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

FIRES-JR-066-16-NURE

Name of the product: Cable bearing system VERGOKAN with cables DÄTWYLER, FABER and PRAKAB

Sponsor: VERGOKAN
Meersbloem Melden 16
9700 Oudenaarde
Belgium

Prepared by: FIRES, s.r.o.
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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, FABER and PRAKAB 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-062-12-NURE, issued on 10. 07. 2012 with validity until 31. 08. 2016. Document FIRES-JR-066-16-NURE replaces expert judgement report with classification FIRES-JR-062-12-NURE.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Cable bearing system VERGOKAN with cables DÄTWYLER, FABER and PRAKAB, 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, FABER and PRAKAB 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 300 mm or 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 60x300x0,75 (new trademark is KBSTI60.300.075) and KBSTI 60x400x1,00 (new trademark is KBSTI60.400.100).

Brackets WKM

Brackets are made of steel sheet 2,5 mm thick. Dimensions of the head plate 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 300 (new trademark is HDWKM300) and 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:

DÄTWYLER cables (producer Dätwyler AG, Gotthardstrasse 31, CH-6460 Altdorf, Switzerland)

cable (N)HXH FE180 E30-E60 4x50 RM (2x);
 cable (N)HXH FE180 E30-E60 4x1,5 RE (2x);
 cable (N)HXCH FE180 E30-E60 4x50 RM/25 (2x);
 cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5 (2x);
 cable (N)HXH FE180 E90 4x50 RM (2x);
 cable (N)HXH FE180 E90 4x1,5 RE (2x);
 cable (N)HXCH FE180 E90 4x50 RM/25 (2x);
 cable (N)HXCH FE180 E90 4x2,5 RE/2,5 (2x);
 cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 (6x);
 cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 (6x).

FABER cables (producer Klaus Faber AG, Lebacher Str. 152-156, D-66009 Saarbrücken, Germany)

cable (N)HXCH FE 180 E90 4x50 RM/25 FACAB (2x);
 cable (N)HXCH FE 180 E90 4x1,5 RE/1,5 FACAB (2x).

PRAKAB cables (producer PRAKAB PRAŽSKÁ KABELOVNA, s.r.o., Ke Kablu 278, 102 09 Praha 15, Czech Republic)

cable JE-H(St)H FE180 E90 2x2x0,8 (2x).

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- 172-11-AUNE	18. 08. 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 - Dätwyler	X2 - M	93 minutes no failure / interruption
	S2	cable (N)HXH FE180 E30-E60 4x50 RM - Dätwyler	X2 - M	93 minutes no failure / interruption
	S3	cable (N)HXH FE180 E90 4x50 RM - Dätwyler	X2 - N	93 minutes no failure / interruption
	S4	cable (N)HXH FE180 E90 4x50 RM - Dätwyler	X2 - N	93 minutes no failure / interruption
	S5	cable (N)HXCH FE180 E90 4x50 RM/25 - Dätwyler	X2 - O	93 minutes no failure / interruption
	S6	cable (N)HXCH FE180 E90 4x50 RM/25 - Dätwyler	X2 - O	93 minutes no failure / interruption
	S7	cable (N)HXCH FE180 E30-E60 4x50 RM/25 - Dätwyler	Y2 - P	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	S8	cable (N)HXCH FE180 E30-E60 4x50 RM/25 - Dätwyler	Y2 - P	93 minutes no failure / interruption
	S9	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5 - Dätwyler	Y2 - Q	93 minutes no failure / interruption
	S10	cable (N)HXCH FE180 E30-E60 4x1,5 RE/1,5 - Dätwyler	Y2 - Q	93 minutes no failure / interruption
	S11	cable (N)HXH FE180 E30-E60 4x1,5 RE - Dätwyler	Y2 - Q	93 minutes no failure / interruption
	S12	cable (N)HXH FE180 E30-E60 4x1,5 RE - Dätwyler	Y2 - Q	73 minutes
	S13	cable (N)HXCH FE180 E90 4x2,5 RE/2,5 - Dätwyler	Y2 - R	93 minutes no failure / interruption
	S14	cable (N)HXCH FE180 E90 4x2,5 RE/2,5 - Dätwyler	Y2 - R	93 minutes no failure / interruption
	S15	cable (N)HXH FE180 E90 4x1,5 RE - Dätwyler	Y2 - R	93 minutes no failure / interruption
	S16	cable (N)HXH FE180 E90 4x1,5 RE - Dätwyler	Y2 - R	93 minutes no failure / interruption
	S17	cable (N)HXCH FE 180 E90 4x50 RM/25 FACAB - Faber	Z2 - U	93 minutes no failure / interruption
	S18	cable (N)HXCH FE 180 E90 4x50 RM/25 FACAB - Faber	Z2 - U	81 minutes
	S19	cable (N)HXCH FE 180 E90 4x1,5 RE/1,5 FACAB - Faber	Z2 - U	93 minutes no failure / interruption
	S20	cable (N)HXCH FE 180 E90 4x1,5 RE/1,5 FACAB - Faber	Z2 - U	93 minutes no failure / interruption
	S52	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	X2 - M	35 minutes
	S53	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	X2 - N	24 minutes
	S54	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	X2 - O	23 minutes
	S55	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	Y2 - P	29 minutes
	S56	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	Z2 - S	33 minutes
	S57	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	Z2 - S	93 minutes no failure / interruption
	S58	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	Z2 - S	30 minutes
	S59	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	Z2 - S	93 minutes no failure / interruption
	S60	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	Z2 - T	41 minutes
	S61	cable JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8 -Dätwyler	Z2 - T	51 minutes
	S62	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	Z2 - T	35 minutes
	S63	cable JE-H(St)H...Bd FE180 E30-E90 2x2x0,8 - Dätwyler	Z2 - T	93 minutes no failure / interruption
	S64	cable JE-H(St)H FE180 E90 2x2x0,8 - Prakab	Z2 - U	93 minutes no failure / interruption
	S65	cable JE-H(St)H FE180 E90 2x2x0,8 - Prakab	Z2 - U	12 minutes

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

Specimens S1 – S20 were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
 Specimens S52 – S65 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, FABER and PRAKAB is classified according to the following combinations of performance parameters and classes as appropriate.

Cables DÄTWYLER used by the 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 KBSTI60.300.075. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM300. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X2-M and Y2-Q.	E 60	n x ≥ 1,5 mm ² n ≥ 2 E 60
	(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 X2-M and X2-N.	Without classification	Without classification
(N)HXCH FE180 E30-E60	(N)HXCH FE180 E30-E60 4x1,5 RE/1,5	In cable trays KBSTI60.300.075. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM300. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track Y2-P and Y2-Q.	E 90	n x ≥ 1,5/1,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E30-E60 4x50 RM/25		E 90	
(N)HXH FE180 E90	(N)HXH FE180 E90 4x1,5 RE	In cable trays KBSTI60.300.075. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM300. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X2-N and Y2-R.	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 4x2,5 RE/2,5	In cable trays KBSTI60.300.075. Ceiling consoles HDHSMU50.1000 wits brackets HDWKM300. Loading 20 kg.m ⁻¹ . Consoles in spacing of 1500 mm. Non-standard track X2-O and Y2-R.	E 90	n x ≥ 2,5/2,5 mm ² n ≥ 2 E 90
	(N)HXCH FE180 E90 4x50 RM/25		E 90	
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	Non-standard track X2-O and Y2-P.	Without classification	Without classification
JE-H(St)H... Bd FE180 E30-E90	JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	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 Z2-S.	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
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	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 Z2-S.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30
JE-H(St)H... Bd FE180 E30-E90	JE-H(St)H...Bd FE180 E30-E90 2x2x0,8	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 Z2-T.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30
JE-H(St)HRH... Bd FE180 E30-E90	JE-H(St)HRH...Bd FE180 E30-E90 2x2x0,8	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 Z2-T.	E 30	n x 2 x ≥ 0,8 mm n ≥ 2 E 30

Cables FABER used by the 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)HXCH FE 180 E90 FACAB	(N)HXCH FE 180 E90 4x1,5 RE/1,5 FACAB	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 Z2-U.	E 90	n x ≥ 1,5 mm ² n ≥ 2 E 60
	(N)HXCH FE 180 E90 4x50 RM/25 FACAB		E 60	

Cables PRAKAB used by the 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
JE-H(St)H FE180 E90	JE-H(St)H FE180 E90 2x2x0,8	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 Z2-U.	Without classification	Without classification

The element, cable bearing system **VERGOKAN** – cable trays with accessories (consoles, brackets, screws etc.) with power and communication halogen free cables by company **DÄTWYLER**, **FABER** and **PRAKAB** 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, FABER and PRAKAB;**
- 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.

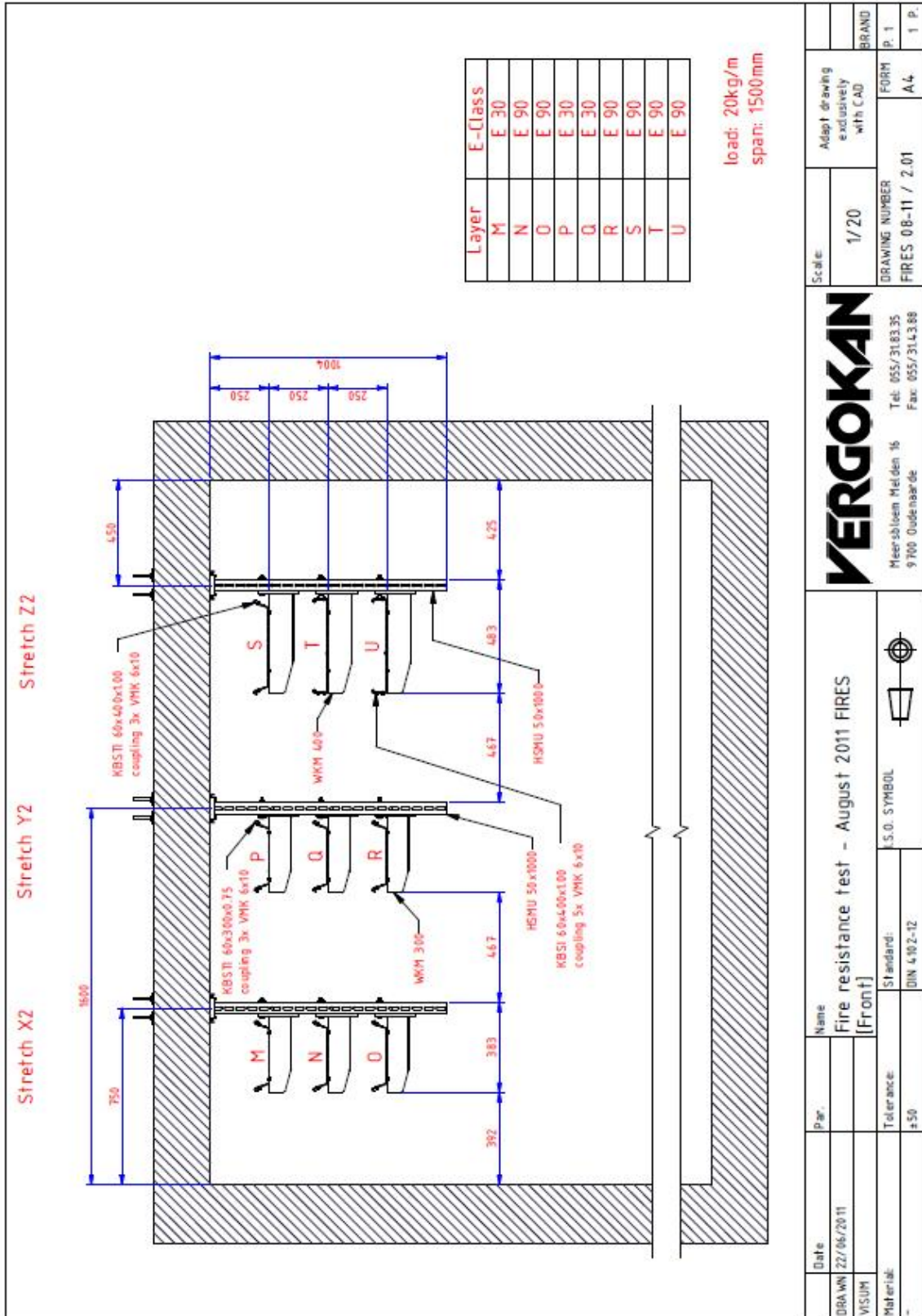
Approved:

Ing. Štefan Rástocký
leader of the testing laboratory



Signed:

Miroslav Hudák
technician of the testing laboratory



Date:	22/06/2011	Name:	Fire resistance test - August 2011 FIRES
DRAWN:	MSJM	Par.:	[Front]
Material:	-	Tolerance:	±50
		Standard:	DIN 4102-12
		S.O. SYMBOL:	
VERGOKAN		Meerslootse Meiden 16 9700 Oudehaarde	
Scale:		1/20	
DRAWING NUMBER:		FIRES_08-11 / 2.01	
Adapt drawing exclusively with CAD		FORM p. 1	
BRAND		A4	
BRAND		1 P.	



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

5 VMK 6x10 in the coupling

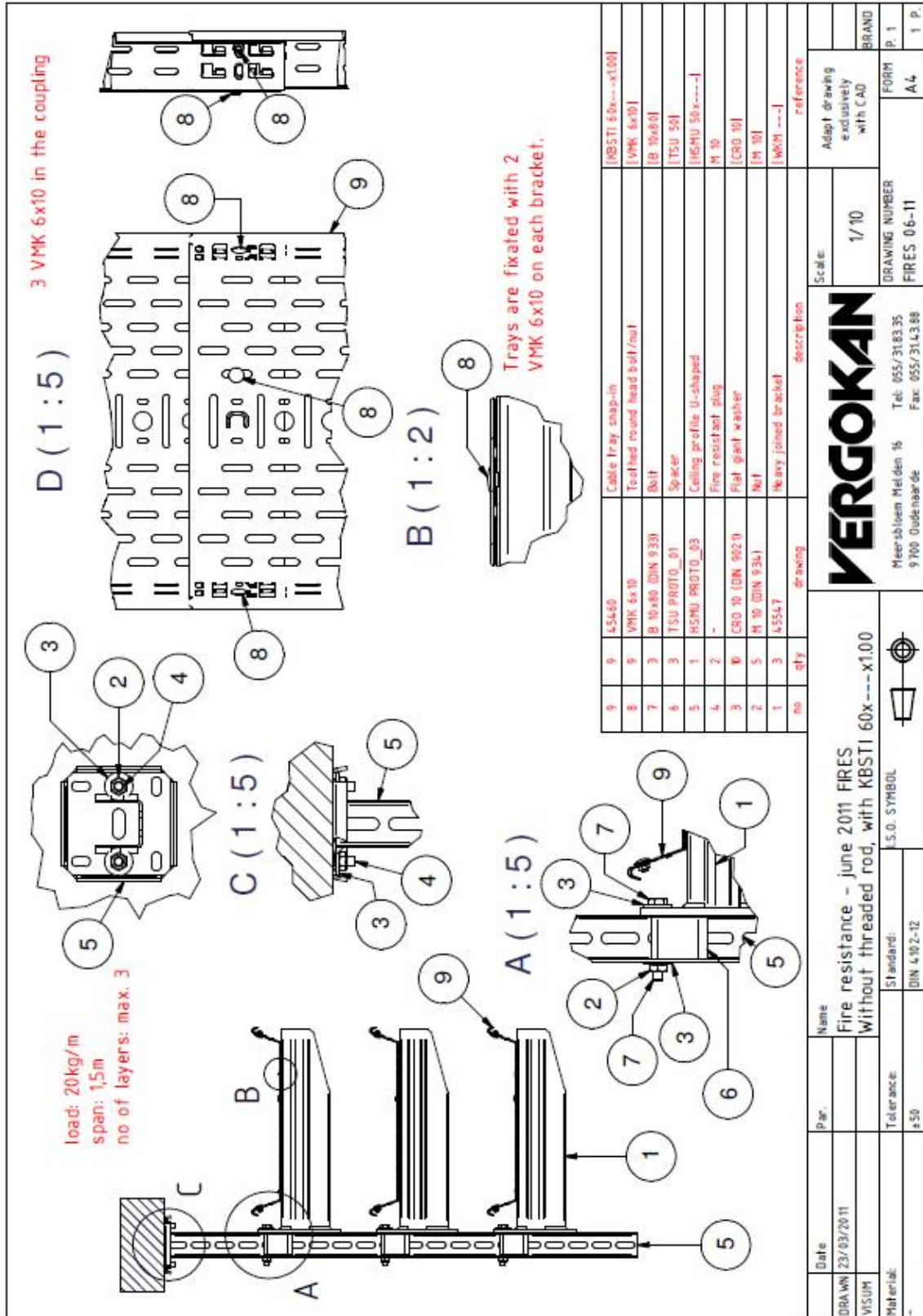
Trays are fixated with 2 VMK 6x10 on each bracket.

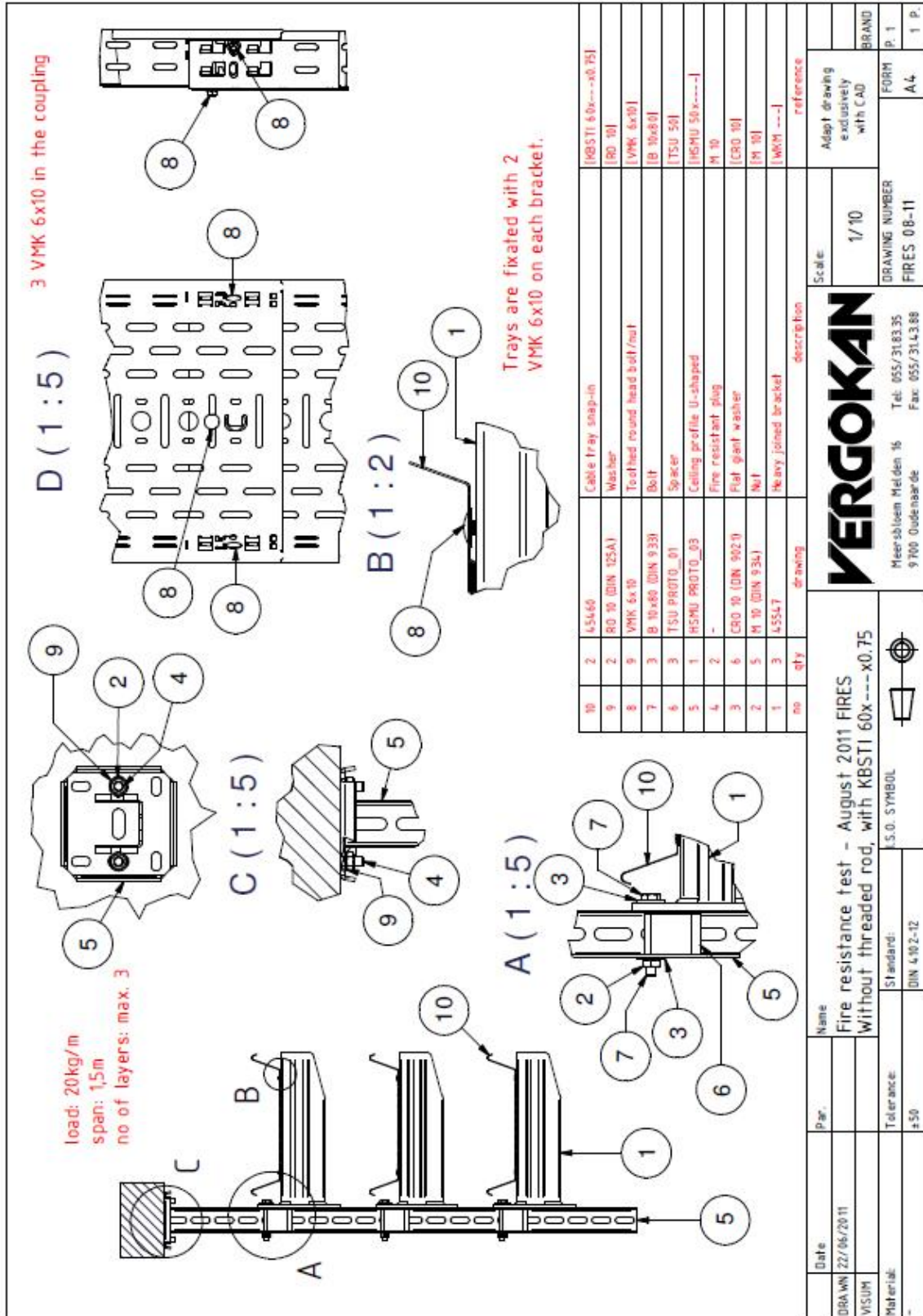
no	qty	drawing	description
9	3	L4001	Cable tray with interlocking ends
8	11	VMK 6x10	Teethed round head bolt/rod
7	3	B 10x60 (DIN 934)	Bolt
6	3	TSU PROT0_01	Spacer
5	1	HSMU PROT0_03	Ceiling profile U-shaped
4	2	-	Fire resistant plug
3	6	CR0 10 (DIN 9021)	Flat gasket washer
2	5	M 10 (DIN 934)	Nut
1	3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

Naam: Kabelbaan ineenschuifbaar
[KBSI 60*---*---*---]

Benaming: Kabelbaan ineenschuifbaar

U.S. SYMBOL:

Par. <REV>

Datum: 02-01-08

Toleranties: --

Naam: --

U.S. SYMBOL:

GET. 1.0037 (Bendrijn:1)

VERM. --

Material dikte : 0.8/1/1.25

PLANNUMMER: 44.001 / 4 / --

FORM: GS/MS

12 p.

1.0037 (Bendrijn:1)

GET. 1.0037 (Bendrijn:1)

VERM. --

PLANNUMMER: 44.001 / 4 / --

FORM: GS/MS

12 p.

1.0037 (Bendrijn:1)

GET. 1.0037 (Bendrijn:1)

VERM. --

PLANNUMMER: 44.001 / 4 / --

FORM: GS/MS

12 p.



1	A	Scherpteek afwerkingspatroon (NF 666) voor type 100 20/05/2010	05/05/2010	-	-
soort	Nr.	omschrijving afwijking	tabak	GET.	VISION
		Schaal :	1/5	Telefoon artikel	
				n.l.v. CAD	
				aanpassen	
		PLANNUMMER	4,4,001	FORM	GS/MS
				/	4 / -
					k. 1)
					12 p.

	Tel. 055/340335 Fax. 055/343368
Meer weten? Mailen! 6 0100 Oudegracht	

Naam: _____ Datum: 02-01-08 Par.: <xxx> GET.: _____ VISION: _____	Benaming: Kabelbaan ineenstuurbaar Perforatiepatronen Naam: _____ U.S. SYMBOOL: _____ Toleranties: 10 - 5 1.0037 - 5enheidslijst
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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

Daum	Par.	Benaming	KBS cable tray clickable [KBSTI 60x---X---]	Norm: IEC 61537	I.S.O. SYMBOL	
GE.T.	24/06/2010					
VISUM						
Materiaal:		Toleranties:				
1.0037 (Sandzink)						

VERGOKAN

Meer sbl oem Melden 16
9700 Oudenaarde

Tel: 055/31.83.35
Fax: 055/31.43.88

Schaal: PLANNUMMER 4.54-60

Tekening enkel m.b.v. CAD aanspaa sen

FORM P. 10 A4 12 P.



KBSTI 300

KBSTI 400

KBSTI 150

KBSTI 200

KBSTI 250

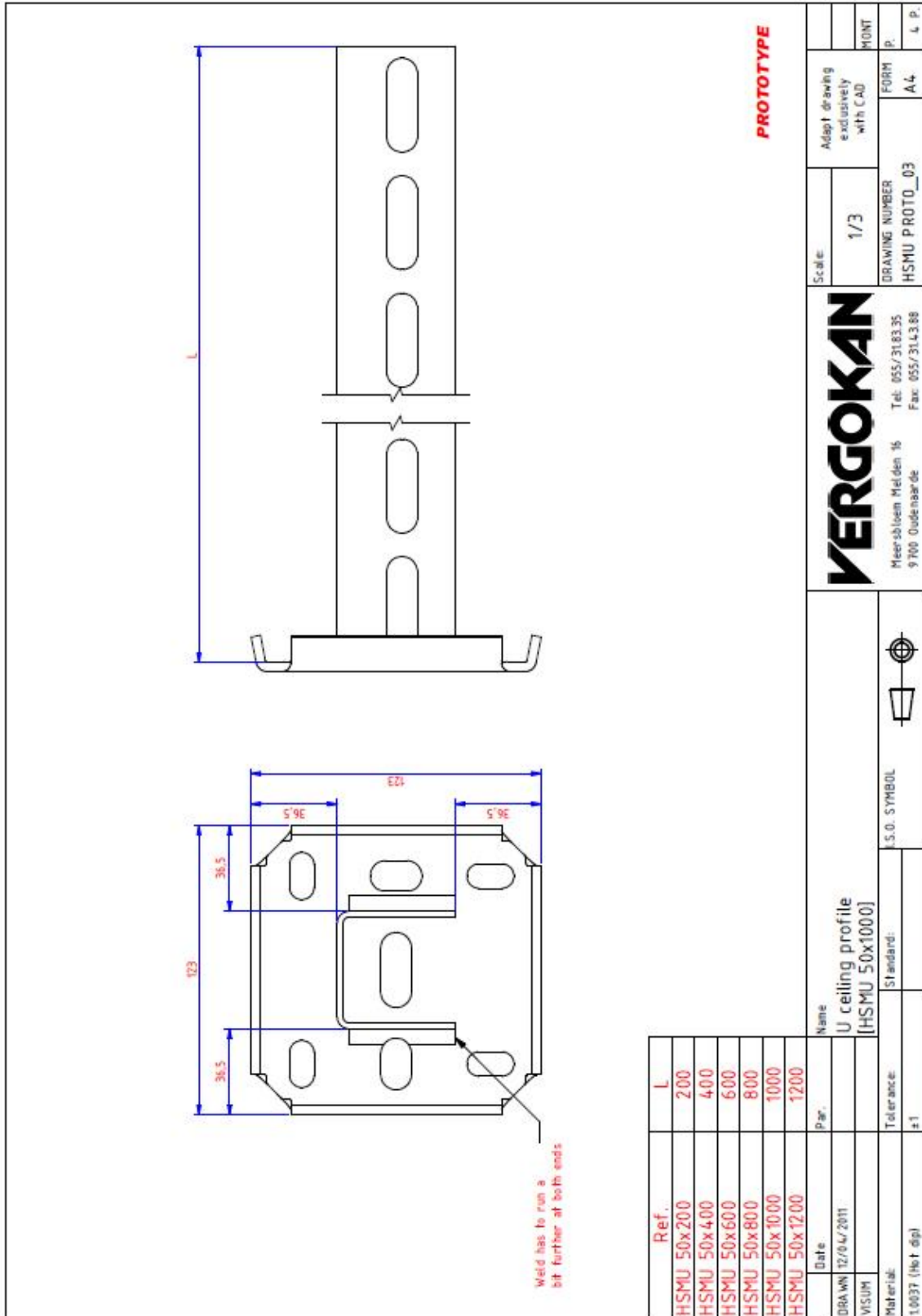
NOT FOR PRODUCTION

Revisie tabel : zie P1

Datum	Par.	Benaming	Schaal:	Tekening eekst	KBAAN
GET. 3/03/2009		Bodemperforatie : KBSTI 60x x	1/5	m.b.v. CAD	
VISUM		Bottom perforation	PLAANNUMMER	aangepassen	FORM
Materiaal:		Norm:	45460		P. 12
1.0037 (Sendzimir)		S.S.O. SYMBOL			A4
					12 P.

VERGOKAN

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 9700 Oudenaarde Fax: 055/31.43.88





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 thickness of 5. The plate features several holes: two circular holes with diameter $\phi 10.5$ and two elongated oval holes. Specific dimensions for the holes and their positions are provided, such as 40, 12.5, 80, 20, 10.5, 32, 22, 13, and 4.0. A 3D perspective view shows the plate with chamfered corners and the holes in a perspective view.

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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.	

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

VERGOKAN
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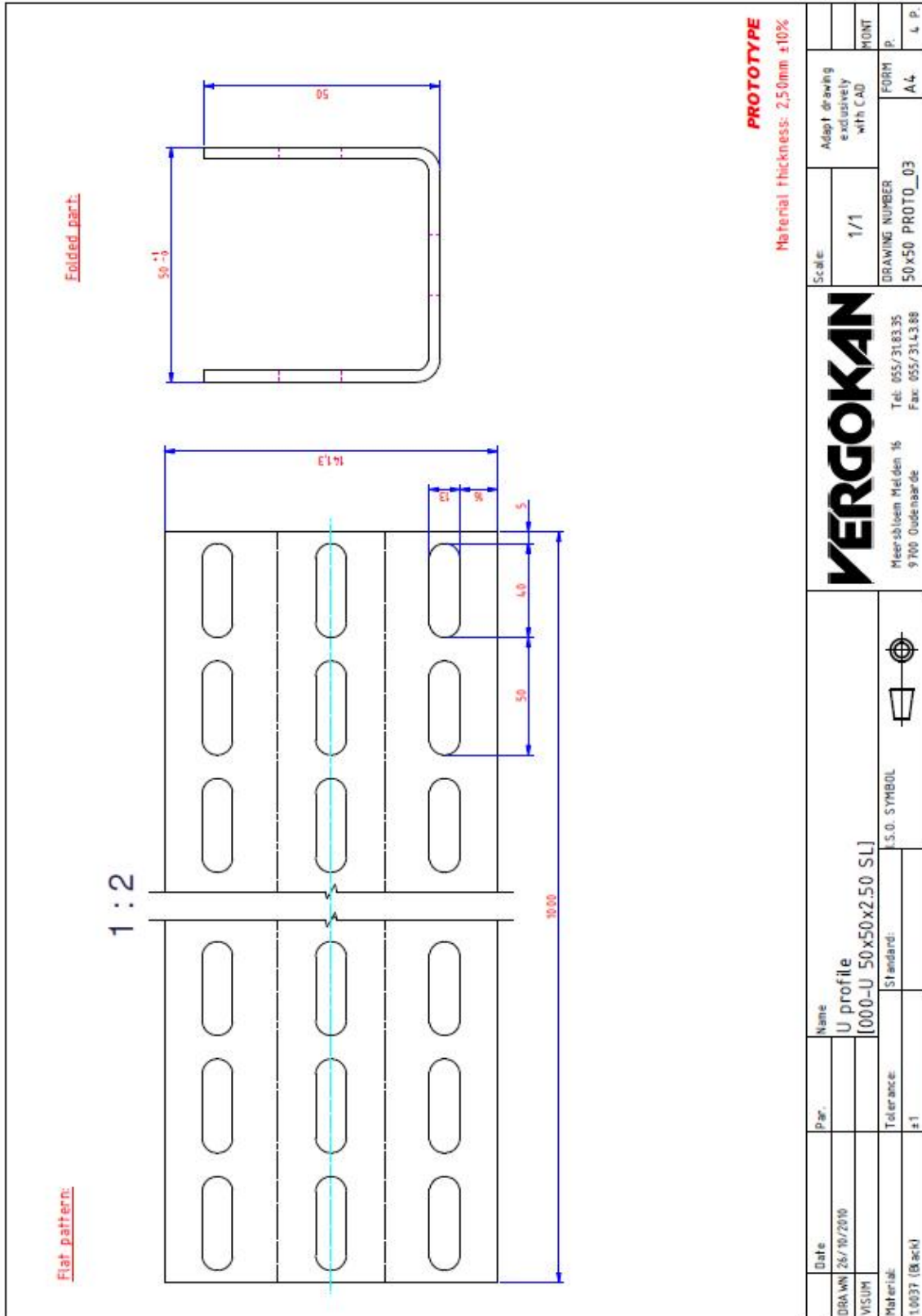
NOT FOR PRODUCTION

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.----	Name
Drawn	Paul Note	Ceiling profile medium heavy, U shape
Date	11/04/2011	[HDHSMU50.1000]
Material:	1.0332 (DD11 hot dip)	Tolerance:
		-
		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		1 P.





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

Parts list

NOT FOR PRODUCTION

Ref. HOTSU--	Name	Scale:	Date	By
Drawn Paul Note	Spacer HDHSMU 50	1 : 1	Adapt drawing exclusively with CAD	
Date 15/06/2011	[HDTSU50]	DRAWING NUMBER	FORM	MONT
Material: 1.0037 (Hot-dip)	Standard:	45730	P.	3 P.
Tolerance: -	I.S.O. SYMBOL			

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1	M10x80 (DIN 933)	[B10.80]	Zeskantbout
2	M10 (DIN 9021)	[CRO10]	Carrossieronderstel
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
		Scale:	Adapt drawing exclusively with CAD
		1 : 2	FORM
		DRAWING NUMBER	MONT
		45730	P.
		Tel. 055/3183 35	3 P.
		Fax. 055/314388	
		Meersbloem Meiden 16	
		9700 Oudenaarde	



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:	21/03/2011	Name:	Heavy joined bracket [WKM 4.00]
Material:	1.0037 (Hot dip)	Standard:	S.O. SYMBOL
Tolerance:	±1		
DRAWN		Scale: 1/5	
MSUM		Adapt drawing exclusively with CAD	
MONT		FORM P.	
Material:		DRAWING NUMBER	
1.0037 (Hot dip)		WKM FIRES 05-2011	
		PROTTO_05	
		FORM P.	
		A4	
		1x P.	

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