

Certificates



Maintaining electrical functionality

Mesh cable tray GR-Magic®

General building authority test certificate no. P-MPA-E-12-011, valid until 16.07.2022

This is a translation of the original German version, which has neither been checked nor approved by the NRW Materials Testing Office. Only the original German document is valid.

Fire protection systems for the highest level of safety



Be it in a residential building or an industrial complex – OBO has the appropriate solution for fireproof electrical installations. Our tested and certified fire protection systems cover all the relevant fire protection guidelines and provide you with an electrical installation that really serves its purpose. We will be happy to provide you with more details – on our website or personally.

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Erwitte Branch Office • Auf den Thränen 2 • 59597 Erwitte • Tel. +49 (0)2943 897-0 • Fax +49 (0)2943 897-33 • E-mail: erwitte@mpanrw.de

Renewal notice for general building authority test certificate

Test certificate number: P-MPA-E-12-011

Subject: Cable system with integrated maintenance of electrical function in the classes E30 to E90 as described in DIN 4102-12: 1998-11 pursuant to Building Rules List A Part 3, No. 2.9 (Edition 2015-2)

Applicant: OBO Bettermann GmbH & Co. KG
Hüingser Ring 52
58710 Menden

Date of issue: 17.07.2017

Valid until: 16.07.2022

The aforementioned product can be used in compliance with the state building regulations based on this general building authority test certificate.

This general building authority test certificate comprises 3 pages and 1 annex.

1 Subject matter and scope of application

1.1 Subject

1.1.1

The general building authority test certificate P-MPA-E-12-011 dated 17.07.2012 is hereby extended.

This general building authority test certificate applies to the manufacture and use of the cable system with integrated maintenance of electrical function as a construction type. The cable system with integrated maintenance of electrical function allows classification into function maintenance classes E 30 to E 90 (depending on the cable construction type) as described in DIN 4102-12 (edition 11/1998).

1.1.2 Cable system with integrated maintenance of electrical function

Each cable installation must be permanently marked with a plate or sticker attached to the cable support structure and displaying the following information:

- Name of the contractor who manufactured the cable system with integrated maintenance of electrical function;
- Cable system with integrated maintenance of electrical function E... pursuant to DIN 4102-12:1998-11;
- General building authority test certificate no. P-MPA-E-12-011 dated 17.07.2017, MPA Erwitte;
- Holder of the general building authority test certificate OBO Bettermann GmbH & Co. KG, Hüingser Ring 52, 58710 Menden;
- Year of manufacture.

2 Proof of conformity

The construction type described in this general building authority test certificate requires proof of conformity (compliance certificate) as defined by the specifications of Building Rules List A Part 3 (no. C 2.9), according to which the manufacturer (contractor) must issue a declaration of conformity.

The contractor who manufactures the cable system must issue a written declaration of conformity to the client certifying that the cable system complies with the provisions of this general building authority test certificate.

3 Legal basis

This general building authority test certificate is issued on the basis of § 22 of the building regulations of the state of North Rhine-Westphalia (BauO NW) dated 22.07.2003 in conjunction with Building Rules List A, Edition 2015/2. The state building codes of the other federal states contain equivalent legal bases.

4 Legal information

Objection may be raised to this notification, within one month of its publication, at the Gelsenkirchen Administrative Court, Bahnhofsvorplatz 3, 45879 Gelsenkirchen, Germany, in writing, or for the record of the clerk of that court's office. The objection must designate the plaintiff, the defendant and the subject of the claim and should entail a specific request. The facts and evidence serving as grounds must be stated and the original or a copy of the contested notification should be attached. Copies for the other parties involved should be attached to the objection.

5 General information

This general building authority test certificate proves the usability of the construction product/applicability of the construction type in compliance with the state building regulations.

The general building authority test certificate does not replace the permits, approvals and certificates required by law when carrying out building projects.

This general building authority test certificate is issued without prejudice to the rights of third parties, in particular private property rights.

Manufacturers and distributors of the construction product/type shall, without prejudice to further regulations in the "Special Provisions", provide the user of the construction product/type with copies of the general building authority test certificate and indicate that the general building authority test certificate must be available at the place of use. Copies of the general building authority test certificate shall be provided to the authorities involved on request.

The general building authority test certificate may only be duplicated in its entirety. The publication of extracts requires the consent of the testing centre. Text and drawings in promotional literature must not contradict the general building authority test certificate. Translations of the general building authority test certificate must include the note "This is a translation of the original German version and has not been checked by the NRW Materials Testing Office".

This general building authority test certificate is revocable. The provisions of the general building authority test certificate may be added to or amended later, especially if technical findings so dictate.

The test reports for this general building authority test certificate have been communicated to MFA NRW by the client.

Erwitte, 17.07.2017

On behalf of

Diekmann

Director of the Testing Centre

Sample for

Declaration of Compliance

- Name and address of the contractor who manufactured the cable system with integrated maintenance of electrical function;
- Construction site or building:
- Date of manufacture:
- Maintenance of electrical function class required by the cable system(s) with integrated maintenance of electrical function: E...

It is hereby confirmed that the cable system(s) with integrated maintenance of electrical function of class E... has/have been manufactured and installed professionally in every respect and in compliance with all the provisions of general building authority test certificate No. P-MPA-E-12-011 issued by MPA NRW on 17.07.2017.

For construction products or individual parts not manufactured by the undersigned (e.g. cable construction types), this is also hereby confirmed on the basis of:

- the markings on the parts in compliance with the provisions of the general building authority test certificate; *)
- internal checks; *)
- corresponding written confirmations from the manufacturers of the construction products or parts, which the signatory has kept on file. *)

Place, date

Stamp and signature

(The certificate is to be given to the builder so that it can be passed on to the responsible building inspection authorities.)

*) Delete where not applicable

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Erwitte Branch Office • Auf den Thränen 2 • 59597 Erwitte • Tel +49 (0)2943 897-0 • Fax +49 (0)2943 897-33 • E-mail: erwitte@mpanrw.de

General building authority test certificate

Test certificate number: P-MPA-E-12-011

Subject: Cable system of maintenance of electrical function class E30 to E90 for guaranteeing a power supply to electrical systems in the event of fire, pursuant to Building Rules List A, Part 3, No. 2.9

Applicant: OBO Bettermann GmbH & Co. KG
Hüingser Ring 52
58710 Menden, Germany

Date of issue: 17.07.2012

Valid until: 16.07.2017

The aforementioned product can be used in compliance with the state building regulations based on this general building authority test certificate.

This general building authority test certificate comprises 9 pages and 5 annexes.

1 Subject matter and scope of application

1.1 Subject

1.1.1

This general building authority test certificate applies to the manufacture and use of the cable system with integrated maintenance of electrical function as a construction type. The cable system with integrated maintenance of electrical function allows classification into function maintenance classes E 30 to E 90 (depending on the cable construction type) as described in DIN 4102-12:1998-11.

1.1.2

The cable system with integrated maintenance of electrical function must consist of the cable construction types described in Section 2.1 and a cable support structure as described in Section 2.2.

1.2 Area of application

1.2.1

The area of application is limited to cables with nominal voltages of ≤ 1 kV. When dimensioning cable systems with integrated maintenance of electrical function, the possibility of the cables becoming functionally impaired due to thermally induced resistance increases must be considered.

1.2.2

The classification also applies to equivalent inclined and vertical cable installations (e.g. ascending routes).

1.2.3

In the case of inclined and vertical cable installations with integrated maintenance of electrical function, the cables must be supported in the vertical-horizontal transition area, so as to prevent the cable from slipping or kinking. In the case of continuous vertical cables (e.g. ascending routes and single installations), ensure that effective support (distance $a \leq 3,500$ mm) is provided. Another possibility is to arrange a ceiling seal with equivalent classification.

1.2.4

A combination of cables of different construction types is permissible, provided they have the same maintenance of electrical function classes.

1.2.5

If there are different requirements, these must be demonstrated separately.

2 Provisions for execution

The cable system must be designed in accordance with the following details.

2.1 Cable construction types

Only the following cable construction types, pursuant to the cable support structure tables and with a valid VDE approval, may be used.

2.2 Cable support structures

The cable construction must be made of steel (minimum grade 235).

Table 1

1 Mesh cable trays made by OBO Bettermann GmbH & Co. KG Menden			
1.1 Ceiling-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... on suspended support US3K/..., US5K/... or US7K/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)			
1.2 Wall-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)			
Cable construction type: Manufacturer's designation EUPEN EUCASAFE	Installation type no.:	Dimension: wire count x cross-section [n x mm ²] or wire count x 2 x diameter [n x 2 mm]	Classification: pursuant to DIN 4102-12 1998-11
(N)HXH... FE180 E30 VDE 0266 VDE reg. no. 8512 and 7581	1.1; 1.2	n x ≥ 1.5	E30
(N)HXCH... FE180 E30 VDE 0266 VDE reg. no. 8512 and 7581	1.1; 1.2	n x ≥ 1.5/1.5	E30
(N)HXH... FE180 E90 VDE 0266 VDE reg. no. 8566 and 8513	1.1; 1.2	n x ≥ 1.5	E30
	1.1; 1.2	n x ≥ 1.5	E60
	1.1; 1.2	n x ≥ 1.5	E90
NHXCH... FE180 E90 VDE 0266 VDE reg. no. 8566 and 8513	1.1; 1.2	n x ≥ 1.5/1.5	E30
	1.1; 1.2	n x ≥ 1.5/1.5	E60
	1.1; 1.2	n x ≥ 1.5/1.5	E90
JE-H(St)H... FE180 E30 VDE reg. no. 7510	1.1; 1.2	n x 2 x 0.8	E30
JE-H(St)H... FE180 E90 VDE reg. no. 7510	1.1; 1.2	n x 2 x 0.8	E30
	1.1; 1.2	n x 2 x 0.8	E60
	1.1; 1.2	n x 2 x 0.8	E90

Table 1 (continued)

1	Mesh cable trays made by OBO Bettermann GmbH & Co. KG Menden		
1.1	Ceiling-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... on suspended support US3K/..., US5K/... or US7K/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)		
1.2	Wall-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)		
	Cable construction type: Manufacturer's designation Dätwyler Pyrofil Keram	Installation type no.:	Dimension: wire count x cross-section [n x mm ²] or wire count x 2 x diameter [n x 2 mm]
	(N)HXH... FE180 E30-E60 VDE reg. no. 7780	1.1; 1.2	n x ≥ 1.5 E30
	(N)HXCH... FE180 E30-E60 VDE reg. no. 7780	1.1; 1.2	n x ≥ 1.5/1.5 E30
	(N)HXH... FE180 E90 VDE reg. no. 7780	1.1; 1.2	n x ≥ 1.5 E30
		1.1; 1.2	n x ≥ 1.5 E60
		1.1; 1.2	n x ≥ 1.5 E90
	(N)HXCH... FE180 E90 VDE reg. no. 7780	1.1; 1.2	n x ≥ 1.5/1.5 E30
		1.1; 1.2	n x ≥ 1.5/1.5 E60
		1.1; 1.2	n x ≥ 1.5/1.5 E90
	JE-H(St)H... FE180 E30-E90 VDE reg. no. 9361	1.1; 1.2	n x 2 x 0.8 E30
		1.1; 1.2	n x 2 x 0.8 E60
	JE-H(St)HRH... FE180 E30-E90 VDE reg. no. 9361	1.1; 1.2	n x 2 x 0.8 E30
		1.1; 1.2	n x 2 x 0.8 E60

Table 1 (continued)

1	Cable trays made by OBO Bettermann GmbH & Co. KG Menden		
1.1	Ceiling-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... on suspended support US3K/..., US5K/... or US7K/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)		
1.2	Wall-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)		
	Cable construction type: Manufacturer's designation NEXANS RHEYHALON	Installation type no.:	Dimension: wire count x cross-section [n x mm ²] or wire count x 2 x diameter [n x 2 mm]
	N2XH... FE180 E30-E60 VDE reg. no. 119006	1.1; 1.2	n x ≥ 1.5 E30
	N2XCH... FE180 E30-E60 VDE reg. no. 119006	1.1; 1.2	n x ≥ 1.5/1.5 E30
		1.1; 1.2	n x ≥ 1.5/1.5 E60
	JE-H(St)H... FE180 E30 VDE reg. no. 8065	1.1; 1.2	n x 2 x 0.8 E30

Table 1 (continued)

1 Cable trays made by OBO Bettermann GmbH & Co. KG Menden			
1.1 Ceiling-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... on suspended support US3K/..., US5K/... or US7K/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)			
1.2 Wall-mounted, one- to two-layered Mesh cable tray GRM55/... on bracket AW15/... or AWG15/... (a ≤ 1,500 mm) (b ≤ 400 mm) (g ≤ 15 kg/m)			
Cable construction type: Manufacturer's designation PRYSMIAN SIENOPYR-PLUS	Installation type no.:	Dimension: wire count x cross-section [n x mm ²] or wire count x 2 x diameter [n x 2 mm]	Classification: pursuant to DIN 4102-12 1998-11
JE-H(St)H... FE180 E30 VDE reg. no. 7787	1.1; 1.2	n x 2 x 0.8	E30
	1.1; 1.2	n x 2 x 0.8	E60

2.3 Other provisions and labelling

2.3.1 Other provisions

The cable support structure must be designed in accordance with Section 2.2.

Colour coatings and paints with commercially available thicknesses of up to 150 µm are permissible.

The following points should be observed:

The ceiling/wall suspensions must be made of steel in compliance with Section 2.2; the suspensions and other components under tensile stress should be dimensioned in such a way that their calculated tensile stress is not greater than 9 N/mm² (classifications E30 and E60) or not greater than 6 N/mm² (classification E90) as defined in Table 109 of DIN 4102-4:1994-03.

The suspended supports and brackets must be fixed to the solid ceiling or wall using steel anchors suitable for the substrate involved.

Anchors must comply with the specifications of the applicable general building authority approvals issued by Deutsches Institut für Bautechnik (the German Institute of Construction Technology), Berlin, and must also be installed twice as deep as specified in the approval notice – and at least 6 cm deep – unless otherwise stated in the approval; the calculated tensile load per anchor shall not exceed 500 N, cf. DIN 4102-4:1994-03, Section 8.5.7.5. Alternatively, anchors may be used whose suitability for fire protection is demonstrated by a

general building authority approval or a general building authority test certificate. They must be installed in accordance with the specifications in the general building authority approval or general building authority test certificate.

The general building authority test certificate only applies if:

- the cables or lines are designed without connecting elements;
- it is ensured that cable systems with integrated maintenance of electrical function are not negatively impacted in their function maintenance class by surrounding components, and that the cable system is designed and built accordingly.

2.3.2 Labelling

Valid VDE approvals must be used for cables of the tested cable types and they must be marked in accordance with the VDE regulations.

Each cable installation must be permanently marked with a plate or sticker attached to the cable support structure and displaying the following information:

- Name of the contractor who manufactured the cable system with integrated maintenance of electrical function;
- Cable system with integrated maintenance of electrical function E... pursuant to DIN 4102-12:1998-11;
- General building authority test certificate no. P-MPA-E-12-011 dated 17.07.2012;
- Holder of the general building authority test certificate, including name and address;
- Year of manufacture.

3 Proof of conformity

The construction type described in this general building authority test certificate requires proof of conformity (compliance certificate) as defined by the specifications of Building Rules List A Part 3 (no. C 2.9), according to which the user must issue a declaration of conformity.

The contractor who installs the cable system must issue a written declaration of general conformity to the client, in which they certify that the cable system has been executed in accordance with the provisions of the general building authority test certificate and that the construction products used in the process comply with the provisions of the general building authority test certificate.

4 Legal basis

This general building authority test certificate is issued on the basis of § 22 III of the building regulations of the state of North Rhine-Westphalia (BauO NW) dated 22.07.2003, in conjunction with Building Rules List A, each in its latest version. The state building codes of the other federal states contain equivalent legal bases.

5 Legal information

Objection may be raised to this notification, within one month of its publication, at the Gelsenkirchen Administrative Court, Bahnhofsvorplatz 3, 45879 Gelsenkirchen, Germany, in writing, or for the record of the clerk of that court's office. The objection must designate the plaintiff, the defendant and the subject of the claim and should entail a specific request. The facts and evidence serving as grounds must be stated and the original or a copy of the contested notification should be attached. Copies for the other parties involved should be attached to the objection.

6 General information

This general building authority test certificate proves the usability of the construction product/applicability of the construction type in compliance with the state building regulations.

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Manufacturers and distributors of the construction product/type shall, without prejudice to further regulations in the "Special Provisions", provide the user of the construction product/type with copies of the general building authority test certificate and indicate that the general building authority test certificate must be available at the place of use. Copies of the general building authority test certificate shall be provided to the authorities involved on request.

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This general building authority test certificate is revocable. The provisions of the general building authority test certificate may be added to or amended later, especially if technical findings so dictate.

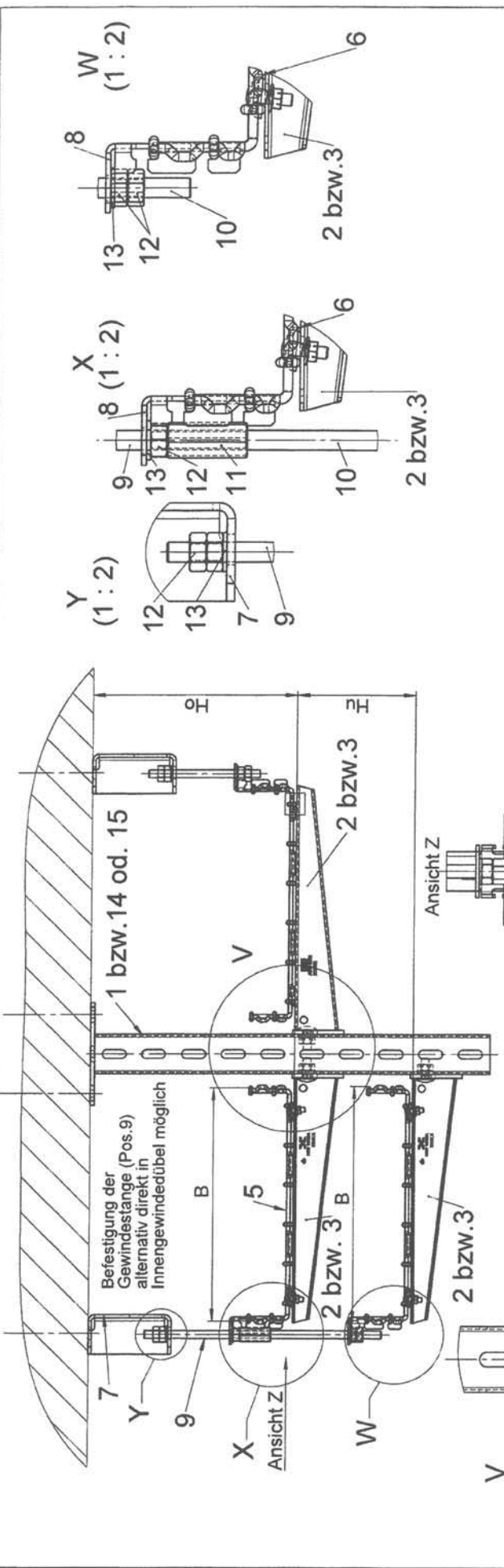
The test reports on which this general building authority test certificate is based have been made known by the client in writing.

Erwitte, 17.07.2012

On behalf of

Diekmann

Director of the Testing Centre



Pos. Stck.	Benennung	Zeichnung-Nr. / Normteil	Werkstoff/Bemerkung
16 ⁵	Großflächenscheibe	DIN 440/11	St / verzinkt
15	Hängestiel	US7K/...	St / verzinkt
14	Hängestiel	US5K/...	St / verzinkt
13	Scheibe	966/M*	St / verzinkt
12	Sechskantmutter	934/M*	St / verzinkt
11	Verbindungsmuffe	12005/M*x40	St / verzinkt
10	Gewindestange	2078/M*, L=Hu	St / verzinkt
9	Gewindestange	2078/M*	St / verzinkt
8	Anschlussbauteil	TYP ABC	St / verzinkt
7	Brandschutzbügel	B58	St / verzinkt
6 ²	Klemmstück	GKS 34	St / verzinkt
5	Gitterrinne	GRM55	St / verzinkt
4	Flachrundschrabe kpl.	FRS10x25	St / verzinkt
3	Ausleger	AWG15/...	St / verzinkt
2	Ausleger	AW15	St / verzinkt
1	Hängestiel	US3K/...	St / verzinkt

Freigabe für / released:	Benennung	Zeichnung-Nr. / Normteil	Werkstoff / material:
1	Gitterrinne	GRM55... mit U-Hängestiel	St / verzinkt
2	Ausleger	AWG15/...	St / verzinkt
3	Ausleger	AW15	St / verzinkt
4	Flachrundschrabe kpl.	FRS10x25	St / verzinkt
5	Klemmstück	GKS 34	St / verzinkt
6	Brandschutzbügel	B58	St / verzinkt
7	Anschlussbauteil	TYP ABC	St / verzinkt
8	Gewindestange	2078/M*	St / verzinkt
9	Gewindestange	2078/M*, L=Hu	St / verzinkt
10	Verbindungsmuffe	12005/M*x40	St / verzinkt
11	Sechskantmutter	934/M*	St / verzinkt
12	Scheibe	966/M*	St / verzinkt
13	Hängestiel	US5K/...	St / verzinkt
14	Hängestiel	US7K/...	St / verzinkt
15	Großflächenscheibe	DIN 440/11	St / verzinkt

Freigabe für / released:	Benennung	Zeichnung-Nr. / Normteil	Werkstoff / material:
1	Gitterrinne	GRM55... mit U-Hängestiel	St / verzinkt
2	Ausleger	AWG15/...	St / verzinkt
3	Ausleger	AW15	St / verzinkt
4	Flachrundschrabe kpl.	FRS10x25	St / verzinkt
5	Klemmstück	GKS 34	St / verzinkt
6	Brandschutzbügel	B58	St / verzinkt
7	Anschlussbauteil	TYP ABC	St / verzinkt
8	Gewindestange	2078/M*	St / verzinkt
9	Gewindestange	2078/M*, L=Hu	St / verzinkt
10	Verbindungsmuffe	12005/M*x40	St / verzinkt
11	Sechskantmutter	934/M*	St / verzinkt
12	Scheibe	966/M*	St / verzinkt
13	Hängestiel	US5K/...	St / verzinkt
14	Hängestiel	US7K/...	St / verzinkt
15	Großflächenscheibe	DIN 440/11	St / verzinkt

Freigabe für / released:	Benennung	Zeichnung-Nr. / Normteil	Werkstoff / material:
1	Gitterrinne	GRM55... mit U-Hängestiel	St / verzinkt
2	Ausleger	AWG15/...	St / verzinkt
3	Ausleger	AW15	St / verzinkt
4	Flachrundschrabe kpl.	FRS10x25	St / verzinkt
5	Klemmstück	GKS 34	St / verzinkt
6	Brandschutzbügel	B58	St / verzinkt
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11	Sechskantmutter	934/M*	St / verzinkt
12	Scheibe	966/M*	St / verzinkt
13	Hängestiel	US5K/...	St / verzinkt
14	Hängestiel	US7K/...	St / verzinkt
15	Großflächenscheibe	DIN 440/11	St / verzinkt

*= siehe Tabelle
 1= pro Lage
 2= nur erforderlich zusammen mit Pos.15
 X= Stückzahl ist abhängig von der Anzahl der Lagen
 3= nur erforderlich zusammen mit Pos. 2

Gewindestangenlänge (Pos.9)
 -Ausführung mit Brandschutzbügel (Pos. 7) L= Ho-120mm
 -Montage der Gewindestange direkt in Innengewindedübel
 L= Ho -40mm + Einschraubtiefe in Dübel

Rinnenbreite	Pos. 2	Pos.3	Länge	C
100	AW15/11	AWG15/11	110	130
200	AW15/21	AWG15/21	210	230
300	AW15/31	AWG15/31	310	330
400	AW15/41	AWG15/41	410	430

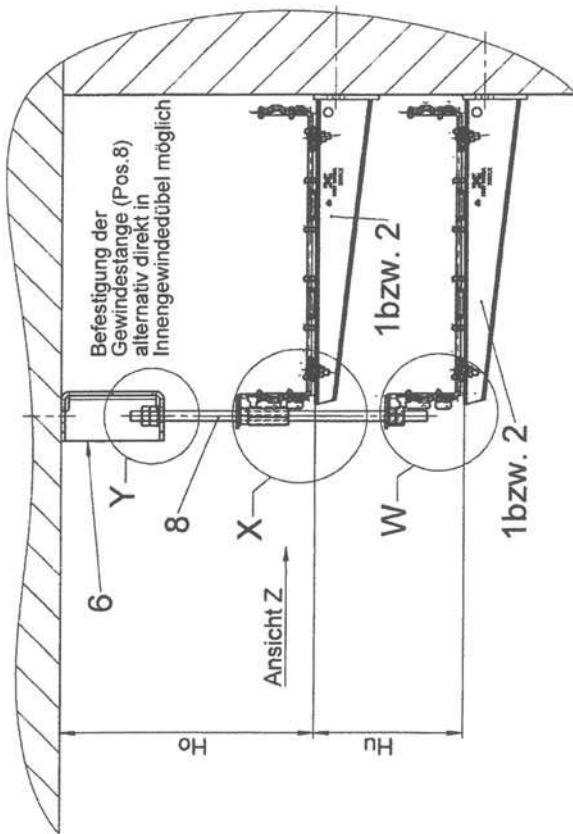
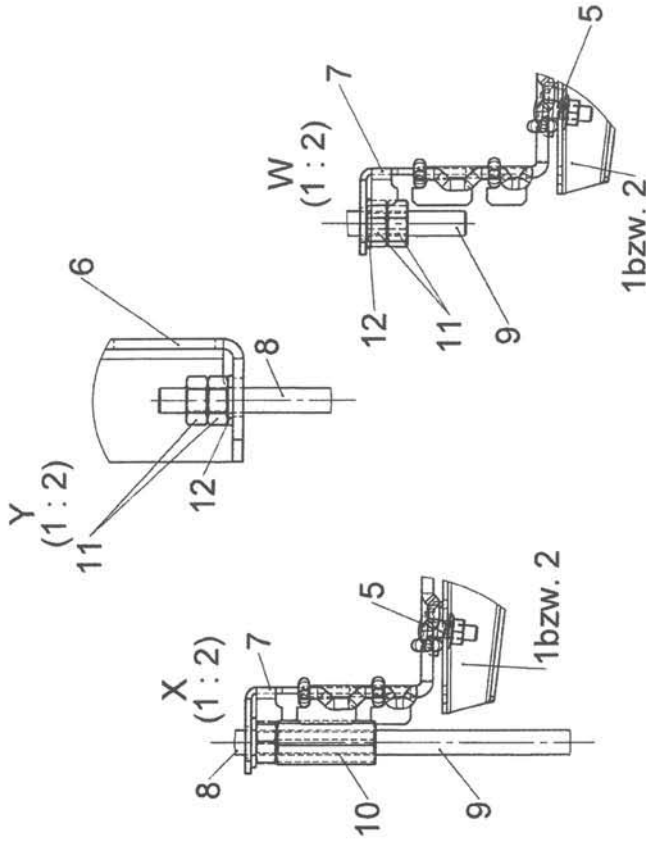
Stützweite: max. 1.5m
 Kabelbelegung pro Lage max. 15kg/m

Gewindestange	Skrt-Mutter	Unterlegscheibe	Verbindungsmuffe
Pos. 9	Pos.10	Pos. 12	Pos. 11
M10	M10	M10	M10x40
M10	M10	M10	M12x40
M12	M12	M12	M12x40

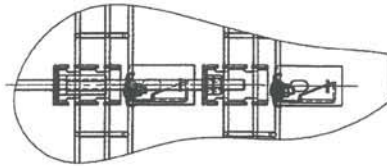


Freigabe für / released:	Benennung	Zeichnung-Nr. / Normteil	Werkstoff / material:
1	Gitterrinne	GRM55... mit U-Hängestiel	St / verzinkt
2	Ausleger	AWG15/...	St / verzinkt
3	Ausleger	AW15	St / verzinkt
4	Flachrundschrabe kpl.	FRS10x25	St / verzinkt
5	Klemmstück	GKS 34	St / verzinkt
6	Brandschutzbügel	B58	St / verzinkt
7	Anschlussbauteil	TYP ABC	St / verzinkt
8	Gewindestange	2078/M*	St / verzinkt
9	Gewindestange	2078/M*, L=Hu	St / verzinkt
10	Verbindungsmuffe	12005/M*x40	St / verzinkt
11	Sechskantmutter	934/M*	St / verzinkt
12	Scheibe	966/M*	St / verzinkt
13	Hängestiel	US5K/...	St / verzinkt
14	Hängestiel	US7K/...	St / verzinkt
15	Großflächenscheibe	DIN 440/11	St / verzinkt

Version / version: 0.1
 Blatt / sheet: 1 of 1
 T. Fabry 18.06.12



Ansicht Z



Stützweite: max. 1,5m
Kabelbelegung
pro Lage max. 15Kg/m

*= siehe Tabelle
1= pro Lage
X= Stückzahl ist abhängig von der Anzahl der Lagen
3= nur erforderlich zusammen mit Pos. 1

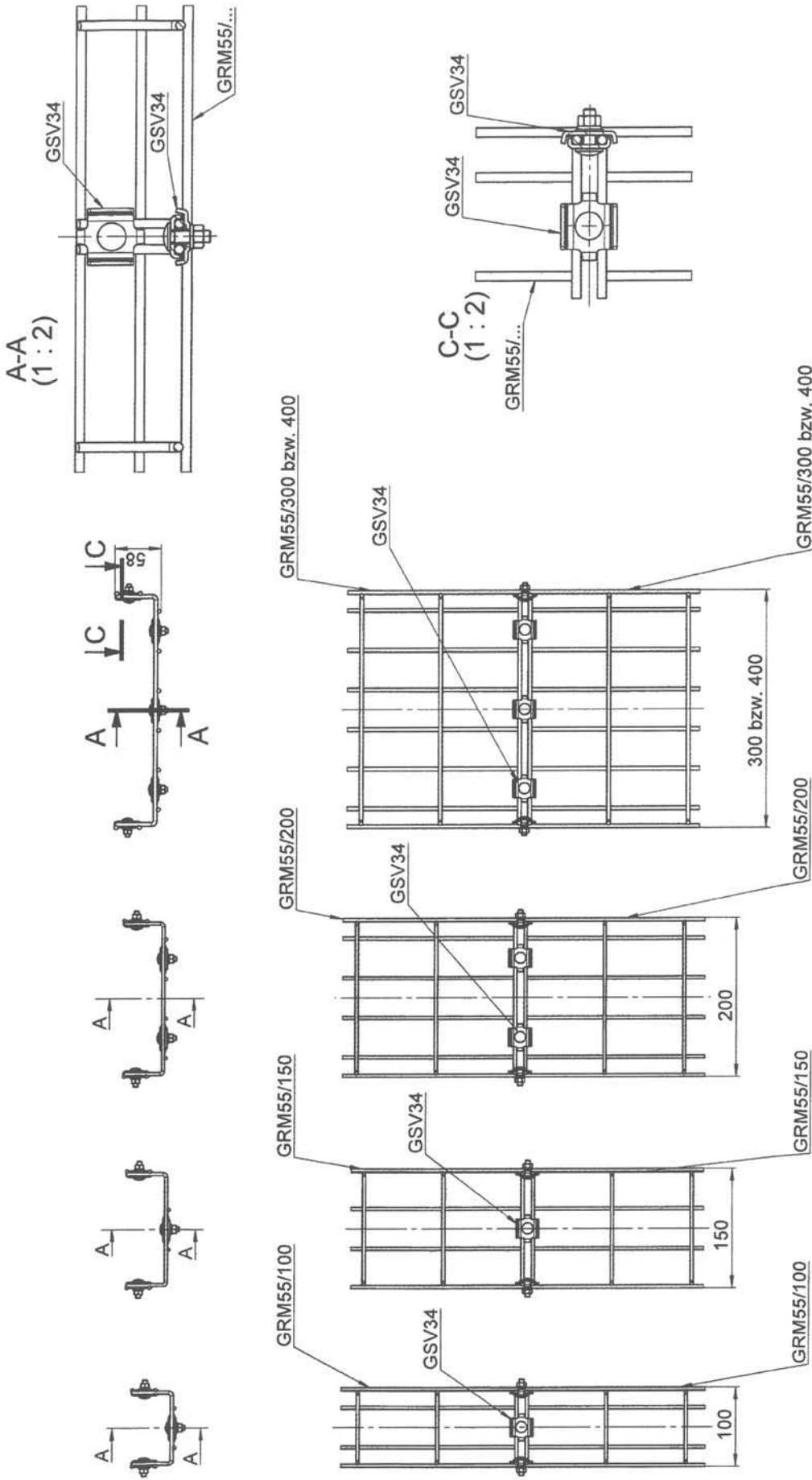
Gewindestangenlänge (Pos.8)
-Ausführung mit Brandschutzbügel (Pos. 6) L= Ho-120mm
-Montage der Gewindestange direkt in Innengewindedübel
L= Ho -40mm + Einschraubtiefe in Dübel

Rinnenbreite POS. 4	Ausleger TYP		
	Pos. 1	Pos.2	Pos. 3
100	AW15/11	AWG15/11	110
200	AW15/21	AWG15/21	210
300	AW15/31	AWG15/31	310
400	AW15/41	AWG15/41	410

Lagenanzahl pro Seite	Gewindestange		Skt-Mutter		Unterlegscheibe		Verbindungsstücke	
	Pos. 8	Pos.9	Pos. 10	Pos. 11	Pos. 12	Pos. 13	Pos. 14	
1	M10	M10	M10	M10	M10	M10	M10	
2	M10	M10	M10	M10	M10	M10	M10	
3	M12	M12	M12	M12	M12	M12	M12	

Pos.	Stück	Benennung	Zeichnung-Nr. / Normteil	Werkstoff/Bemerkung
12	x	Scheibe	966/M*	St / verzinkt
11	x	Sechskantmutter	934/M*	St / verzinkt
10	x	Verbindungsstücke	12005/M*40	St / verzinkt
9	x	Gewindestange	2078/M*, L=Hu	St / verzinkt
8	x	Gewindestange	2078/M*	St / verzinkt
7	1*	Anschlussbauteil	TYP ABC	St / verzinkt
6	1*	Brandschutzbügel	BSB	St / verzinkt
5*	2*	Klemmstück	GKS 34	St / verzinkt
4	1*	Gitterrinne	GRM55	St / verzinkt
3	1*	Flachrundschraube kpl.	FRS 10x25	St / verzinkt
2	1*	Ausleger	AWG15/...	St / verzinkt
1	1*	Ausleger	AW15	St / verzinkt

Freigabe für / release for		Werkstoff / material		Merkmal / scale: 1:3	
Oberfläche / surface		Bemerkung / description:		Vorfertigung	
Ersteller / creator:	05.06.12	Hersteller / manufacturer:	OBO	Form / form:	A3
Revisor / reviewer:	05.06.12	Produkt / product:	BETTERMANN	Skizze / sketch:	0.1
Erstellt für / created for:	05.06.12	Werkzeug-Nr. / drawing no.:	05 200 - 058769	Blatt / sheet:	1 of 1
Erstellt durch / created by:	05.06.12	Werkzeug-Nr. / drawing no.:	05200-058769	Blatt / sheet:	1 of 1
Erstellt durch / created by:	05.06.12	Werkzeug-Nr. / drawing no.:	05200-058769	Blatt / sheet:	1 of 1



Freigabe für / released		zulässige Abweichung / allowance		Werkstoff / material	
Oberfläche / surface		Diam / size		Stahl verzinkt	
		Ersteller / creator		Gewicht / weight	
		27.09.11		Maßstab / scale: 1:3	
		Benutzer / editor		Bezeichnung / description:	
		27.09.11		Gitterrinne	
		Geplant / planned		GRM 55... Stoßstellenverbindung	
		Ersatz für / replacement for		zu / for:	
		5561 für / 5561 for		mit Verbinder GSV34	
		mit / with		Funktionseinh. n. DIN 4102 Teil 12	
		OBO		PE PE Zeichnungs-Nr. / drawing no:	
		BETTERMANN		05 200 - 047223	
		OBO BETTERMANN GmbH & Co. KG		Werkzeug-Nr. / tool no.: 05200-047223BL_1	
Incl. Änderung / modification				Menge / quantity	
				0.1	
				Blatt / sheet	
				1 von / of	
				2	
				Jahr / year	
				18.06.12	

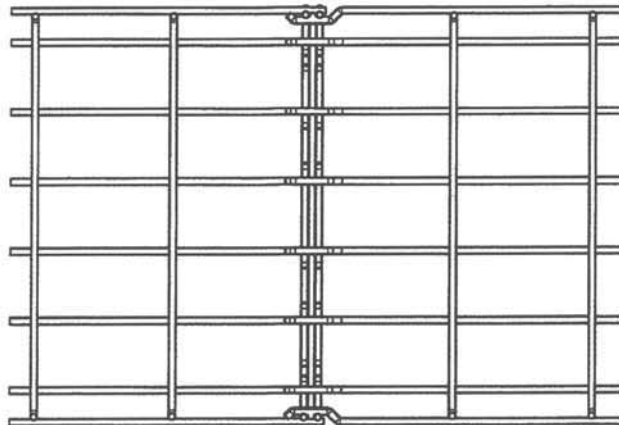
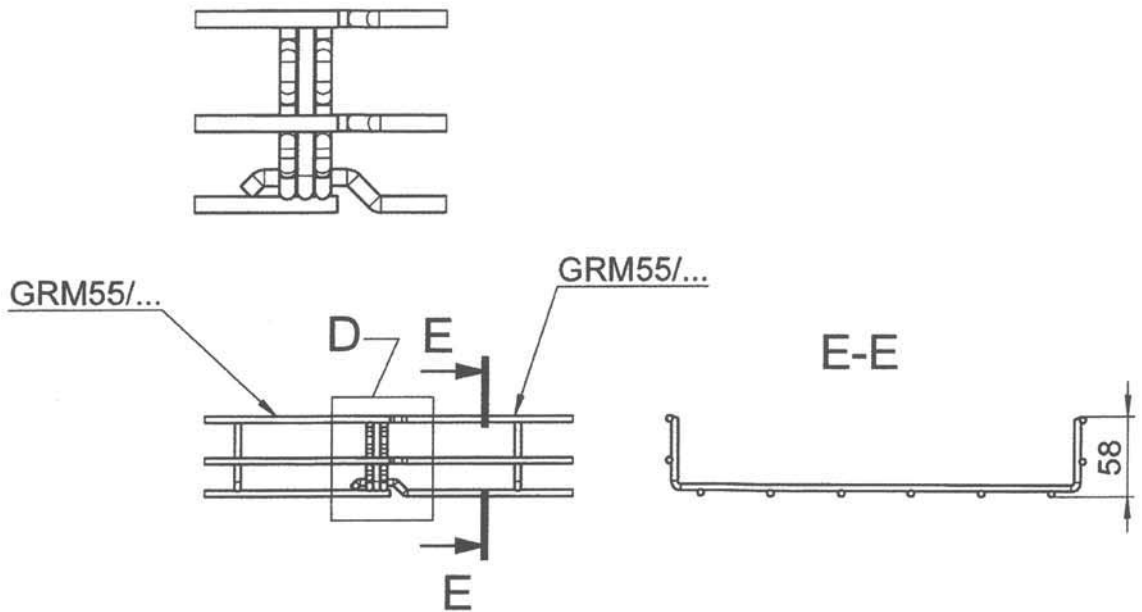
Vorfertigung



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D
(1 : 2)



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Freigabe für / released:

Oberfläche / surface:

zulässige Abweichung / allowance:

Werkstoff / material:

Stahl verzinkt

Datum / date	Name / name
Ersteller / creator: 23.03.12	C. Groene
Bearbeiter / editor: 23.03.12	C. Groene
Geprüft / tested:	
Ersatz für / subst. for:	
ersetzt durch / repl. through:	

Gewicht / weight: Maßstab / scale: 1:5

Benennung / description:
Gitterrinne
 GRM 55/.. Stoßstellenverbindung
 zu / to:
 schraubenlos
 Funktionserhalt n. DIN 4102 Teil 12



OBO BETTERMANN GmbH & Co. KG

PE PF Zeichnungs-Nr. / drawing-no:	Version / version:	Format / sheet size:
05 200-047223	0.1	A4
Werkzeug-Nr. / artikel-Nr. / tool-no / article-no.:	Blatt / sheet:	von / of:
05200-047223BL:2	2	2

Vorfriegabe



Trennsteg TSG 45 / TSG 60 (wahlweise)

GRM55/...

Klemmstück GKT 38

Vorfertigung

Freigabe für / released	Zulassung / Abweichung / allowance		Weichheit / modulus	
	Diam. / size	Name / name	Gewicht / weight	Maßstab / scale: 1:1
Oberrichter / surface	Einheit / unit	C. Grotte	Benennung / description: Trennstegmontage TSG45 / TSG 60 Stahl verzinkt	
	Seiten / side	C. Grotte	zu / to: Gitterrinne GRM55, Funktionserhalt nach DIN 4102-12	
	Geometrie / geometry		PE PF Zeichnung-Nr. / drawing-no:	
	Spezifikation / specification		05 200 - 058770	
	Maßstab / scale		Werkzeug-Nr. / tool-no: 05200-058770	
			Stück / piece: 0.1	
			Blatt / sheet: 1	
			von / of: 1	
Int. Anweisung / modification			T. Fabry 18.06.12	
	OBO BETTERMANN GmbH & Co. KG			

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Sample for

Declaration of Compliance

- Name and address of the contractor who manufactured the cable system with integrated maintenance of electrical function;
- Construction site or building:
- Date of manufacture:
- Maintenance of electrical function class required by the cable system(s) with integrated maintenance of electrical function: E...

It is hereby confirmed that the cable system(s) with integrated maintenance of electrical function of class E... has/have been manufactured and installed professionally in every respect and in compliance with all the provisions of general building authority test certificate No. P-MPA-E-12-011 issued by MPA NRW on 17.07.2017.

For construction products or individual parts not manufactured by the undersigned (e.g. cable construction types), this is also hereby confirmed on the basis of:

- the markings on the parts in compliance with the provisions of the general building authority test certificate; *)
- internal checks; *)
- corresponding written confirmations from the manufacturers of the construction products or parts, which the signatory has kept on file. *)

Place, date

Stamp and signature

(The certificate is to be given to the builder so that it can be passed on to the responsible building inspection authorities.)

*) Delete where not applicable





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Building Connections

