



Certificates



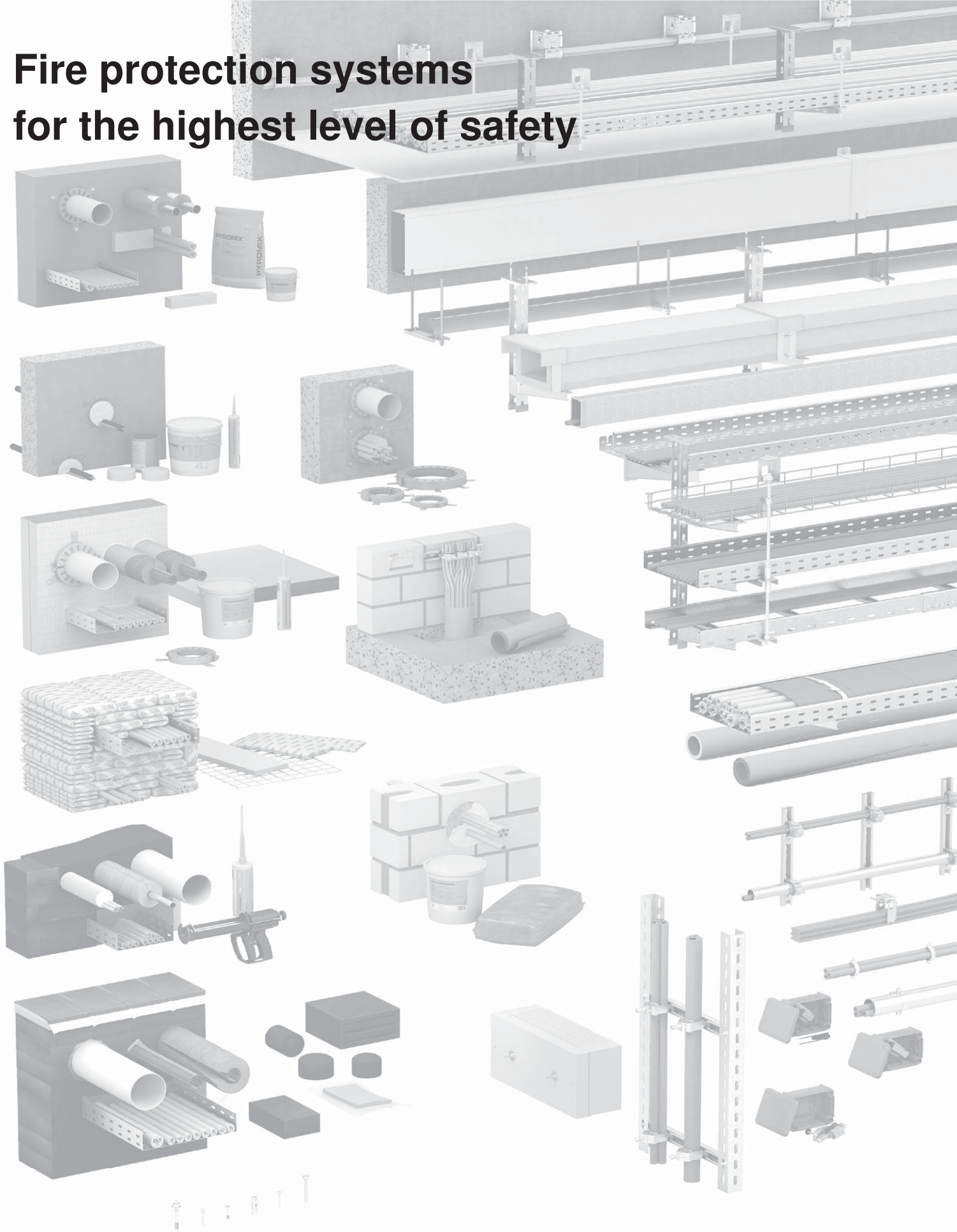
Maintaining electrical functionality

Grouped Support Grip M

General building authority test certificate no. P-MPA-E-09-007, valid until 06.05.2029

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.

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.

General building authority test certificate

Test certificate number: P-MPA-E-09-007

Subject: Cable systems with integrated maintenance of electrical function in the function maintenance classes E30, E60 and E90 as described in DIN 4102-12: 1998-11

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

Date of issue: 02.05.2024

Valid until: 06.05.2029

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

This general building authority test certificate comprises twelve pages and five annexes.

1 Subject 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 E30, E60 and E90 (depending on the cable construction type) as described in DIN 4102-12 (edition 11/1998).

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

In the case of inclined and vertical cable installations (e.g. ascending routes and single 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 at the edges.

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.

1.2.3

A combination of different laying methods is permissible, provided they have the same maintenance of electrical function classes.

1.2.4

If there are additional 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

The only cable construction types that may be used are those made by Dätwyler AG Kabel + Systeme, Gotthardstrasse 31, 6460 Altdorf, Switzerland, LEONI Studer AG, Herrenmattstrasse 20, 4658 Däniken, Switzerland, PRYSMIAN Kabel und Systeme GmbH, Siemensstrasse 1, 19057 Schwerin, Germany, and Kabelwerk Eupen AG, Malmedyer Strasse 9, 4700 Eupen, Belgium, as listed in Table 1 and with valid VDE approval. The structural design of the cable construction types is on file at MPA NRW.

2.2 Cable support structures

The cable support structure must be made of steel (minimum steel grade: S 235). The cable support structure and clips may be coated with plastics or fire protection paint up to a thickness of 1.5 mm.

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

The following points should be observed:

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 11.1 of DIN 4102-4:2016-05.

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, a European Technical Approval or Assessment, 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 the surrounding components.

2.2.1 Supporting construction – grouped support

The laying of cables in grouped supports must be done in compliance with the following table and the appendices to this general building authority test certificate.

Table 1

Installation type			
1. Laid in bundle with grouped support Type 2031-M/15		3. Laid in bundle with grouped support Type 2031-M/70	
1.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾		3.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
1.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 7.0 kg/m) ³⁾	
1.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
		3.4 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾	
2. Laid in bundle with grouped support Type 2031-M/30		4. Laid in bundle with grouped support Type 2031-M/15 and long trough type 2031/LW	
2.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 2.5 kg/m) ³⁾		4.1 Laid in bundle with grouped support and long trough on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾	
2.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.5 kg/m) ³⁾			
2.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾			
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]	Classification: pursuant to DIN 4102-12 1998-11
(N)HXH... FE180 E30–E60 VDE reg. no. 7780	1.2	n x 1.5–4	E30
	2.1	n x 1.5–16	E30
	3.1	n x ≥ 1.5	E30
	2.1	n x 16	E60
	1.2	n x 1.5–4	E60
	3.1	n x 50	E60
(N)HXCH... FE180 E30–E60 VDE reg. no. 7780	2.1	n x 1.5/1.5–16/16	E30
	3.1	n x ≥ 1.5/1.5	E30
	2.1	n x 1.5/1.5–16/16	E60
	3.1	n x ≥ 1.5/1.5	E60
	2.1	n x 1.5/1.5	E90

(N)HXH... FE180 E90 VDE reg. no. 7780	1.3	$n \times 1.5-4$	E30
	1.2	$n \times 4$	E30
	2.1	$n \times 1.5-16$	E30
	3.1	$n \times \geq 1.5$	E30
	1.3	$n \times 1.5-4$	E60
	1.2	$n \times 4$	E60
	2.1	$n \times 1.5-16$	E60
	3.3	$n \times 50$	E60
	1.3	$n \times 1.5-4$	E90
	1.2	$n \times 4$	E90
	2.1	$n \times 1.5-16$	E90
	3.3	$n \times 50$	E90
(N)HXCH... FE180 E90 VDE reg. no. 7780	2.3	$n \times 1.5/1.5-16/16$	E30
	3.1	$n \times \geq 1.5/1.5$	E30
	2.3	$n \times 1.5/1.5-16/16$	E60
	3.1	$n \times 50/25$	E60
	2.3	$n \times 16/16$	E90
	3.1	$n \times 50/25$	E90
JE-H(St)H... FE180 E30-E90 VDE reg. no. 9361	2.1; 3.1	$n \times 2 \times 0.8$	E30
JE-H(St)HRH... FE180 E30-E90 VDE reg. no. 9361	2.1; 3.1	$n \times 2 \times 0.8$	E30
JE-H(St)H... FE180 E30 L VDE reg. no. 9361	1.2; 2.3; 3.4	$n \times 2 \times 0.8$	E30

2) Support spacing

3) Load

Table 1 (continued)

Installation type			
1. Laid in bundle with grouped support Type 2031-M/15		3. Laid in bundle with grouped support Type 2031-M/70	
1.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾		3.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
1.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 7.0 kg/m) ³⁾	
1.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
		3.4 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾	
2. Laid in bundle with grouped support Type 2031-M/30		4. Laid in bundle with grouped support Type 2031-M/15 and long trough type 2031/LW	
2.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 2.5 kg/m) ³⁾		4.1 Laid in bundle with grouped support and long trough on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾	
2.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.5 kg/m) ³⁾			
2.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾			
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 reg. no. 8512 and 7581	1.2	n x 1.5–4	E30
	2.2	n x 1.5–16	E30
	3.1	n x ≥ 1.5	E30
	1.2	n x 1.5–4	E60
	2.2	n x 1.5–16	E60
	3.1	n x 50	E60
	3.1	n x 50	E90
(N)HXCH... FE180 E30 VDE reg. no. 7581	2.3	n x 1.5/1.5–16/16	E30
	3.1	n x ≥ 1.5/1.5	E30
	2.3	n x 16/16	E60
	3.1	n x 50/25	E60
(N)HXH... FE180 E90 VDE reg. no. 8513 and 8566	1.2	n x 1.5	E30
	2.1	n x 1.5–6	E30
	3.3	n x ≥ 1.5	E30
	4.1	n x 1.5	E30

	1.2	$n \times 1.5$	E60
	2.1	$n \times 1.5-6$	E60
	3.3	$n \times \geq 1.5$	E60
	4.1	$n \times 1.5$	E60
	1.2	$n \times 1.5$	E90
	2.1	$n \times 1.5-6$	E90
	3.1	$n \times 50$	E90
	4.1	$n \times 1.5$	E90
(N)HXCH... FE180 E90 VDE reg. no. 8513	2.3	$n \times 1.5/1.5-16/16$	E30
	3.1	$n \times \geq 1.5/1.5$	E30
	2.3	$n \times 1.5/1.5-16/16$	E60
	3.1	$n \times \geq 1.5/1.5$	E60
	2.3	$n \times 1.5/1.5-16/16$	E90
	3.1	$n \times \geq 1.5/1.5$	E90
JE-H(St)H... FE180 E30 VDE reg. no. 7510	1.2; 2.2; 3.1	$n \times 2 \times 0.8$	E30
JE-H(St)H... FE180 E90 VDE reg. no. 7510	1.2; 2.3	$n \times 2 \times 0.8$	E30
	1.2; 2.3	$n \times 2 \times 0.8$	E60

²⁾ Support spacing

³⁾ Load

Table 1 (continued)

Installation type			
1. Laid in bundle with grouped support Type 2031-M/15		3. Laid in bundle with grouped support Type 2031-M/70	
1.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾		3.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
1.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 7.0 kg/m) ³⁾	
1.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
		3.4 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾	
2. Laid in bundle with grouped support Type 2031-M/30		4. Laid in bundle with grouped support Type 2031-M/15 and long trough type 2031/LW	
2.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 2.5 kg/m) ³⁾		4.1 Laid in bundle with grouped support and long trough on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾	
2.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.5 kg/m) ³⁾			
2.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾			
Cable construction type: Manufacturer's designation LEONI Studer BETAflam	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–E60 S VDE reg. no. 8849	1.1	n x 1.5–4	E30
	1.2	n x 1.5	E30
	3.1	n x 1.5–16	E30
(N)HXH... FE180 / E30–E60 VDE reg. no. 9803	3.1	n x ≥ 16	E30
(N)HXCH... FE180 / E30–E60 VDE reg. no. 9803	1.1	n x 1.5/1.5–4/4	E30
	2.3	n x 1.5/1.5–16/16	E30
	3.1	n x ≥ 1.5/1.5	E30
	1.1	n x 1.5/1.5	E60
	2.3	n x 1.5/1.5–16/16	E60
	3.1	n x ≥ 1.5/1.5	E60
(N)HXH... FE180 / E90 VDE reg. no. 9803	1.1	n x 1.5–16	E30
	2.3	n x 1.5–16	E30
	3.1	n x ≥ 1.5	E30
	1.1	n x 1.5–16	E60

	2.3	$n \times 1.5-16$	E60
	3.1	$n \times \geq 1.5$	E60
	1.1	$n \times 1.5-16$	E90
	2.3	$n \times 1.5-16$	E90
	3.1	$n \times \geq 1.5$	E90
(N)HXCH... FE180 / E90 VDE reg. no. 9803	1.1	$n \times 1.5/1.5-16/16$	E30
	2.3	$n \times 1.5/1.5-16/16$	E30
	3.1	$n \times \geq 1.5/1.5$	E30
	1.1	$n \times 1.5/1.5-16/16$	E60
	2.3	$n \times 1.5/1.5-16/16$	E60
	3.1	$n \times \geq 1.5/1.5$	E60
	1.1	$n \times 1.5/1.5-16/16$	E90
	2.3	$n \times 1.5/1.5-16/16$	E90
	3.1	$n \times \geq 1.5/1.5$	E90
JE-H(St)H... FE180 / E30 S VDE reg. no. 8447	3.1	$n \times 2 \times 0.8$	E30
JE-HH... FE180 / E30 S VDE reg. no. 8619	2.3	$n \times 2 \times 0.8$	E30
JE-H(St)H... FE180 / E30-E90 VDE reg. no. 9593	1.2; 2.3; 3.4	$n \times 2 \times 0.8$	E30
	1.2; 2.3; 3.4	$n \times 2 \times 0.8$	E60
JE-H(St)HRH .. FE180 / E30-E90 VDE reg. no. 8238	1.2; 2.3; 3.4	$n \times 2 \times 0.8$	E30
	1.2; 2.3; 3.4	$n \times 2 \times 0.8$	E30

²⁾ Support spacing

³⁾ Load

Table 1 (continued)

Installation type			
1. Laid in bundle with grouped support Type 2031-M/15		3. Laid in bundle with grouped support Type 2031-M/70	
1.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾		3.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
1.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 7.0 kg/m) ³⁾	
1.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.5 kg/m) ³⁾		3.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 6.0 kg/m) ³⁾	
		3.4 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾	
2. Laid in bundle with grouped support Type 2031-M/30		4. Laid in bundle with grouped support Type 2031-M/15 and long trough type 2031/LW	
2.1 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 2.5 kg/m) ³⁾		4.1 Laid in bundle with grouped support and long trough on ceiling or horizontally on wall (a ≤ 500 mm) ²⁾ , (g ≤ 1.1 kg/m) ³⁾	
2.2 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 800 mm) ²⁾ , (g ≤ 3.5 kg/m) ³⁾			
2.3 Laid in bundle with grouped support – on ceiling or horizontally on wall (a ≤ 600 mm) ²⁾ , (g ≤ 3.0 kg/m) ³⁾			
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
(N)HXH... FE180 E30 VDE reg. no. 7551	2.1	n x 1.5	E30
JE-H(St)H... FE180 E30 VDE reg. no. 7787	1.1; 2.1; 3.1	n x 2 x 0.8	E30
JE-H(St)HRH... Bd FE180 E30 VDE reg. no. 7787	3.1	n x 2 x 0.8	E30

²⁾ Support spacing³⁾ Load

2.3 Labelling

2.3.1 Cable construction types

The cable must be labelled in accordance with VDE regulations.

2.3.2 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 class E90 or E60 or E30 pursuant to DIN 4102-12:1998-11;
- ☐ General building authority test certificate no. P-MPA-E-09-007 dated 02.05.2024, MPA Erwitte;
- ☐ Holder of the general building authority test certificate OBO-Bettermann GmbH & Co. KG, Hüingser Ring 52, 58710 Menden;
- ☐ 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 VVTB (Administrative Provision – Technical Building Regulations) Part 4 (no. C 4.9), 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.

4 Legal basis

This general building authority test certificate is issued on the basis of § 16a and § 22 of the building regulations of the state of North Rhine-Westphalia (BauO NW) in conjunction with the VVTB for the state of North Rhine-Westphalia, 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.

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. 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 on which this general building authority test certificate is based have been named by the client.

Erwitte, 02.05.2024

On behalf of

Friedrichs

Deputy Director of the Testing Centre

Diekmann

Clerk

Muster für
Übereinstimmungserklärung

- Name und Anschrift des Unternehmens, der die Kabelanlage mit integriertem Funktionserhalt erstellt hat
- Baustelle bzw. Gebäude:
- Datum der Herstellung:
- Geforderte Funktionserhaltsklasse der Kabelanlage (n) mit integriertem Funktionserhalt: „E ...“

Hiermit wird bestätigt, daß die Kabelanlage (n) mit integriertem Funktionserhalt der Funktionserhalts- klasse „E ...“ hinsichtlich aller Einzelheiten fachgerecht und unter Einhaltung aller Bestimmungen des allgemeinen bauaufsichtlichen Prüfzeugnisses Nr. P-MPA-E-09-007 des MPA NRW vom 02.05.2024 hergestellt und eingebaut wurde(n).

Für die nicht vom Unterzeichner selbst hergestellten Bauprodukte oder Einzelteile (z.B. (Kabelbauarten) wird dies hiermit ebenfalls bestätigt aufgrund

- der vorhandenen Kennzeichnung der Teile entsprechend den Bestimmungen des allgemeinen bauaufsichtlichen Prüfzeugnisses *)
- eigener Kontrollen *)
- entsprechender schriftlicher Bestätigungen der Hersteller der Bauprodukte oder Teile, die der Unterzeichner zu seinen Akten genommen hat *)

Ort, Datum

Stempel und Unterschrift

(Diese Bescheinigung ist dem Bauherrn zur Weitergabe an die zuständige Bauaufsichtsbehörde auszuhändigen)

*) Nichtzutreffendes streichen

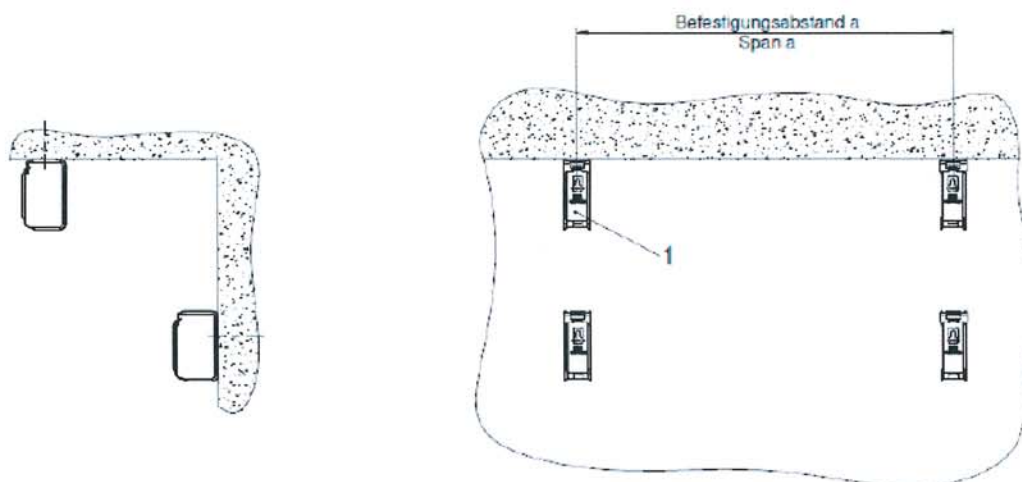
Sammelhalterung GRIP-M

Collecting clamp GRIP-M



Wand- und Deckenmontage

Wall- and ceiling mounting



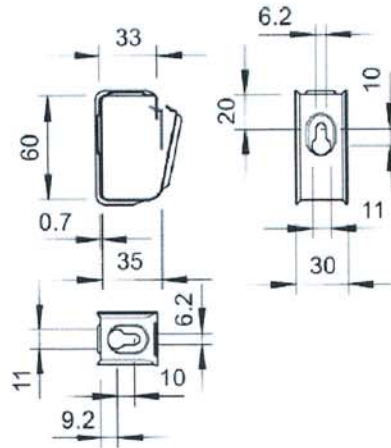
	Pos.	Typ / Type	Material	Material
Sammelhalterung Collecting clamp	1	2031 M 15	St / verzinkt oder rostfrei	Steel galvanised or stainless steel
	1	2031 M 30		
	1	2031 M 70		



Sammelhalterung GRIP-M
Collecting clamp GRIP-M



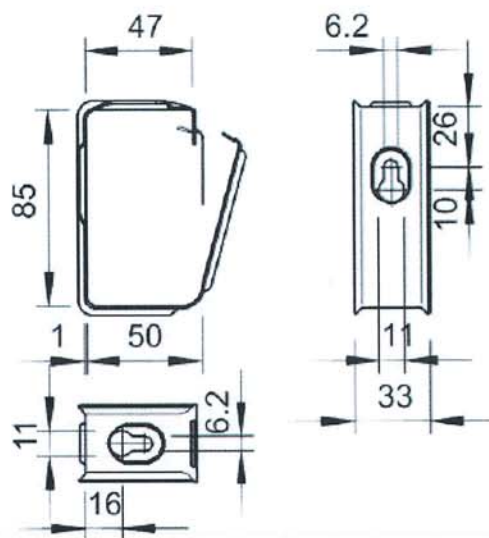
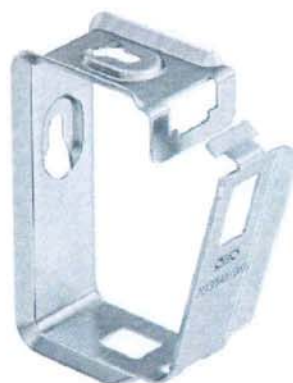
Typ / Type: 2031 M 15



Sammelhalterung GRIP-M
Collecting clamp GRIP-M



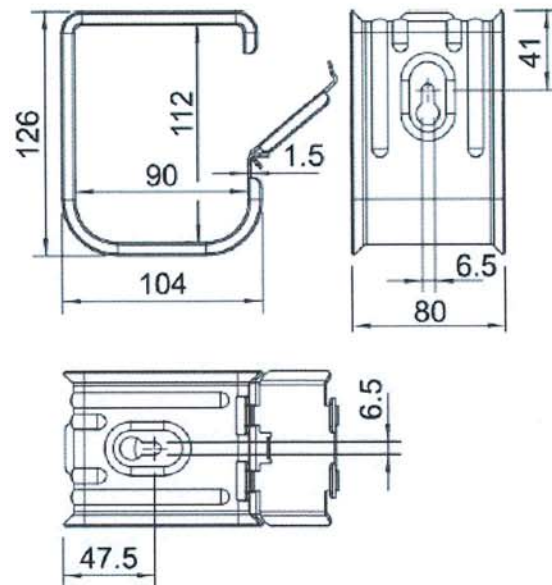
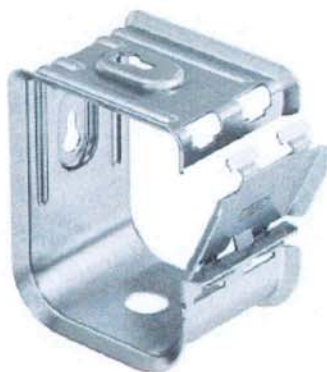
Typ / Type: 2031 M 30



Sammelhalterung GRIP-M
Collecting clamp GRIP-M



Typ / Type: 2031 M 70



OBO Bettermann Vertrieb Deutschland GmbH & Co. KG

Langer Brauck 25

58640 Iserlohn

DEUTSCHLAND

Kundenservice Deutschland

Tel.: +49 23 71 78 99-20 00

Fax: +49 23 71 78 99-25 00

info@obo.de

www.obo.de

© OBO Bettermann

Building Connections







OBO Bettermann Holding GmbH & Co. KG

P.O. Box 1120
58694 Menden
GERMANY

Customer Service

Tel.: +49 23 73 89-13 00
Fax: +49 23 73 89-71 442
toi@obo.de

www.obo-bettermann.com

© OBO Bettermann

Building Connections

