



Certificates



Maintaining electrical functionality

Effective support measures for vertical cable routing

Expert opinion no. GA-2020/049 - Nau, valid until 13-05-2030

[illegible]

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.

EXPERT OPINION

Document no.:	GA-2020/049 – Nau dated 13.05.2025
Client:	OBO BETTERMANN Produktion Deutschland GmbH & Co. KG Hüingser Ring 52 D-58710 Menden
Order date:	27.04.2020 / 23.05.2025
Order symbol:	Order no. 494320/ 06O047700
Order receipt:	27.04.2020 / 23.05.2025
Content of the order:	Expert opinion on the fire behaviour of cable systems with integrated maintenance of electrical function in accordance with DIN 4102-12: 1998-11 when using “standard support constructions” (vertical cable routing) in conjunction with effective support measures within the meaning of section 8.3 of DIN 4102-12.

This expert opinion replaces the version dated 12.05.2020 and comprises 8 pages and 7 annexes.

This expert opinion may only be disseminated in its entirety and unchanged. Excerpts or reductions require the written approval of IBB GmbH Groß Schwülper. Translations of this document not arranged by the IBB GmbH, Groß Schwülper must contain the note “Translation of the original German version not checked by the IBB GmbH, Groß Schwülper”. Expert opinions without signature are not valid.

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1 Order and occasion

IBB GmbH, Groß Schwülper was commissioned by OBO BETTERMANN Produktion Deutschland GmbH & Co. KG Menden with order no. 494320 dated 27.04.2020 and order no. 06O047700 dated 23.05.2025 to provide a fire protection assessment of cable systems with integrated maintenance of electrical function when using standard support constructions from OBO BETTERMANN Produktion Deutschland GmbH & Co. KG, Menden, in conjunction with effective support measures according to DIN 4102-12.

2 Fundamentals and documents of this expert opinion

This expert opinion is based upon the following fundamentals and documents:

- [1] Test certificates and test reports as well as general construction test certificates for cable systems with integrated functional maintenance in conjunction with standard support structures in accordance with DIN 4102-12,
- [2] Expert opinion for the evaluation of rising sections as standard support structure according to DIN 4102-12,
- [3] General type approval no. Z-19.53-2338 dated 21.02.2024 regarding fire-resistant insulations for electrical cables and/or pipelines made of plastic or metal “PYROSIT NG”, issued to OBO Bettermann Produktion Deutschland GmbH & Co. KG, Menden.
- [4] General type approval no. Z-19.53-2391 dated 20.08.2024 regarding fire-resistant insulations for electrical cables and/or pipelines made of plastic or metal „PYROPLUG Block“, issued to OBO Bettermann Produktion Deutschland GmbH & Co. KG.
- [5] DIN 4102-12: 1998-11 and,
- [6] Detailed construction drawings according to annexes 1 to 7 of this expert opinion.

In addition to these documents, the extensive fire protection experience of the author of this expert opinion from fire tests on various support constructions of cable systems with integrated functional maintenance in conjunction with effective support measures are incorporated into the fire protection assessment. The author of this expert opinion gained over 30 years of professional experience, among other things, through continuous work at approved testing laboratories, so that this provides equivalent significance to that of an approved material testing laboratory. This is also confirmed by the fact that expert opinions from the author are accepted by both the lower and higher building supervisory authorities on an equal basis with opinions from approved material testing laboratories.

This expert opinion only applies in terms of fire protection and functional maintenance. Further requirements may arise from the technical building regulations applicable to the constructions being assessed and the respective “Landesbauordnung” (state building regulations) or the regulations for special buildings.

The overall fire protection concept of buildings is not the subject of this expert opinion.

3 Description of the construction

Only the technical details relating to fire and maintenance of electrical function are described below.

The effective support measures to be evaluated for strain relief should be used for vertical cable routing directly on the wall with single clips or with clamp clips on profile rails or vertical ladders or on suspended vertical ladders. According to the client, the above-mentioned support structures comply with the conditions for standard support structures in accordance with DIN 4102-12.

The panelling measure to protect the fastenings of the cables as effective support measures in accordance with DIN 4102-12 at a distance ≤ 3.5 m is carried out with a 3-sided housing for direct wall mounting or 4-sided housing for suspended mounting. The housing consists of 25 mm thick Promatect-H or Promatect-LS panels with the maximum dimensions $d \times w \times h = 200 \text{ mm} \times 700 \text{ mm} \times 200 \text{ mm}$. The hollow space inside the boxing is filled with foam block "PYROPLUG Block FBA-B200-14" or fire protection foam "PYROSIT NG FBS-S" on the basis of the general type approvals according to [3] and [4]. When using the above-mentioned foam blocks, the gaps are sealed with the filler "PYROPLUG Screed FBA-SP". For the 4-sided cladding of the suspended vertical ladder, additional steel lock plates are arranged on the back.

To attach the described fire protection panel cladding, the front panels of 3-sided enclosures are anchored with M8 threaded rods either directly in the wall or, if necessary, in the C-rail. For 4-sided panel cladding of the suspended vertical ladder, the back panel is bolted to the steel lock plate on the ladder uprights and the M10 threaded rods are attached to the bolt using a connection sleeve.

Further construction details can be found in annexes 1-7 to this statement, so that no further description is required.

4 Fire protection evaluation of the cable support structures

Based on the available test results there are no concerns in terms of functional maintenance and fire protection, despite in section 3 described deviations of the support constructions from the above-mentioned expert opinions regarding standard support constructions according to DIN 4102-12.

Based on the available test results as well as further testing experience on cable systems with integrated functional maintenance from OBO Bettermann Produktion Deutschland GmbH & Co KG Menden, the cable systems with integrated functional maintenance according to section 3 can be classified as

Functional maintenance classes “E30”, “E60” or “E90” according to DIN 4102-12: 1998-11

if...

- a functional maintenance class “E30”, “E60” or “E90” (depending on the cables used) according to DIN 4102-12: 1998-11 is available for the routing type “rising sections”, “profile rails with clamp clips” or “single clamp installations”,
- a general construction test certificate or an expert opinion for rising sections (standard support structure) is available for the cable support structures and
- otherwise, the boundary conditions and construction principles of the corresponding general construction test certificate for cable systems with integrated functional maintenance must be observed in conjunction with expert opinions for rising sections authority test certificates for cable systems with integrated functional integrity must be observed in conjunction with the expert opinions for riser routes (standard support structure).

The cable systems with integrated functional maintenance described in section 3 and shown in annexes 1 to 7 in conjunction with the effective support measures do not represent a significant deviation from classified constructions if the above-mentioned boundary conditions are complied with.

This expert opinion can be used together with the corresponding general construction test certificate for cable systems with integrated functional maintenance in conjunction with the expert opinions for rising sections (standard support structure) in the building authority procedure.

The design variants according to section 3 and annex 1-7 of this expert opinion can be assessed as effective support measures within the meaning of section 8.3 of DIN 4102-12.

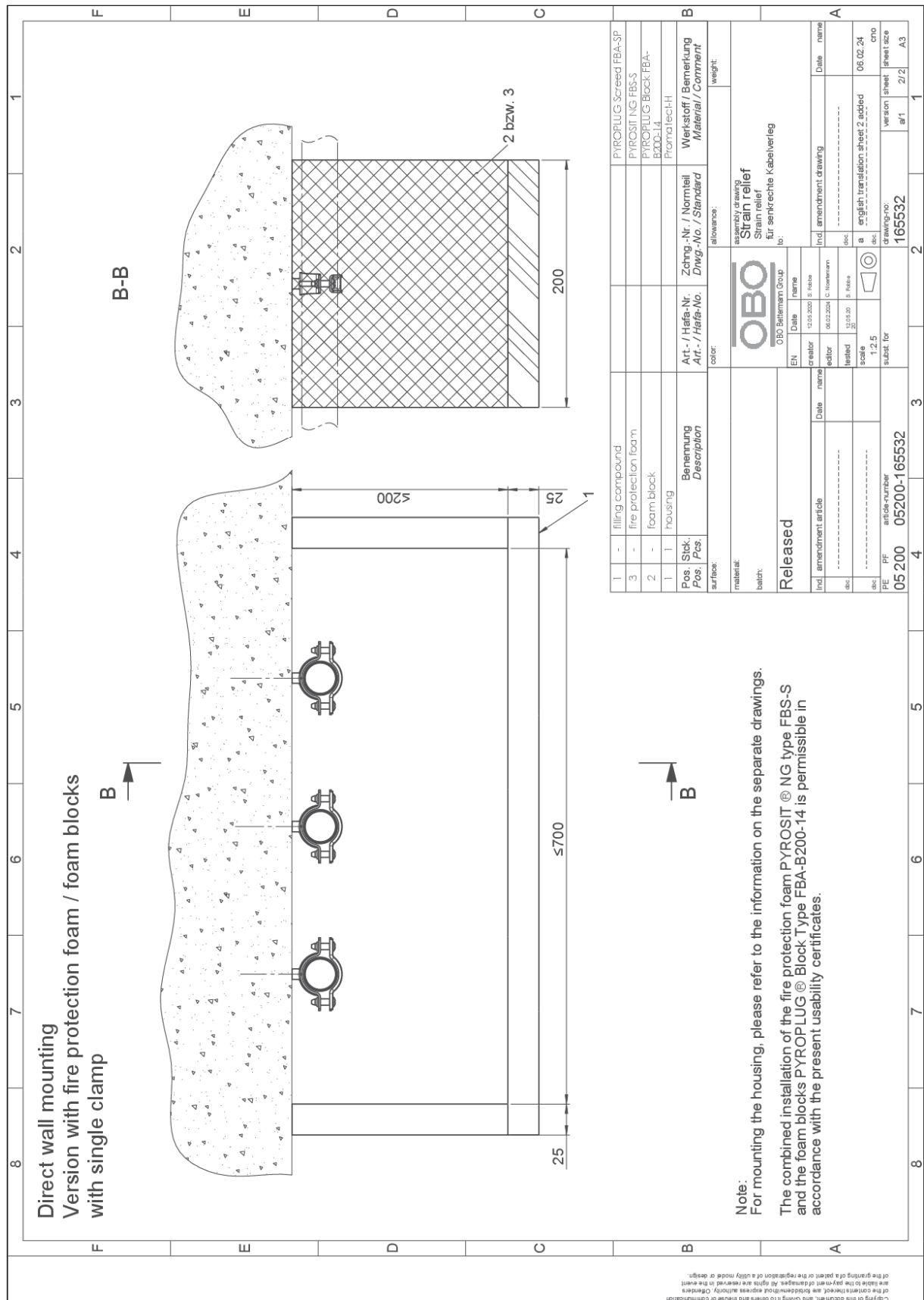
5 Special information

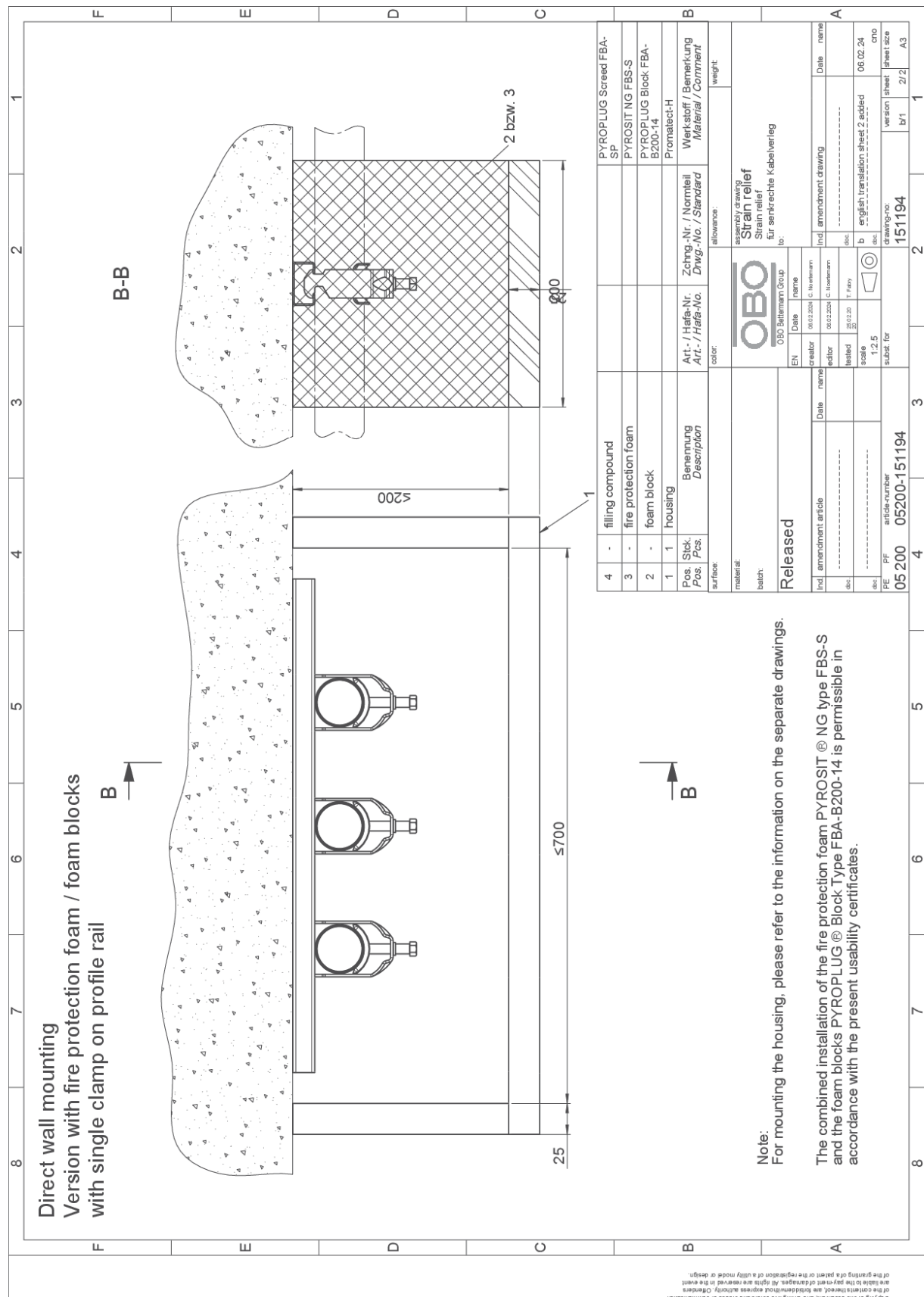
- This expert opinion in conjunction with the corresponding general construction test certificate can be used in the building regulation procedure as basis for the certificate of conformity, as the deviations from the certificate mentioned above are evaluated as “not significant” in terms of fire protection. The manufacturer of the construction is responsible for issuing a certificate of conformity for the construction (stating that the construction is a “non-significant” deviation from the design principles and boundary conditions in accordance with the aforementioned fire protection certificate)
- Changes and additions to construction details (derived from this expert opinion) are only possible after consultation with IBB GmbH, Groß Schwülper.
- This expert opinion only applies if the adjoining load-bearing (reinforcing or load-disturbing) building elements have at least the same fire resistance class as the cable system.
- The proper execution is the sole responsibility of the executing company.
- The manufacturer’s valid processing guidelines must be observed when processing the specified building materials or products.
- The validity of this expert opinion ends on 13.05.2030
- The period of validity can be extended upon request and depending on the state of the art.

Best regards
Dr.-Ing. Peter Nause
Expert for fire protection

Translation of the original German version not checked by “IBB GmbH, Groß Schwülper”. This translation was commissioned by OBO Bettermann Produktion Deutschland GmbH & Co. KG. This translation is only for better understanding in other countries. In case of doubt, the original German version of the expert opinion applies exclusively.

Date of translation of this Expert Opinion: 18.06.2025

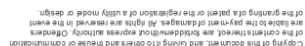


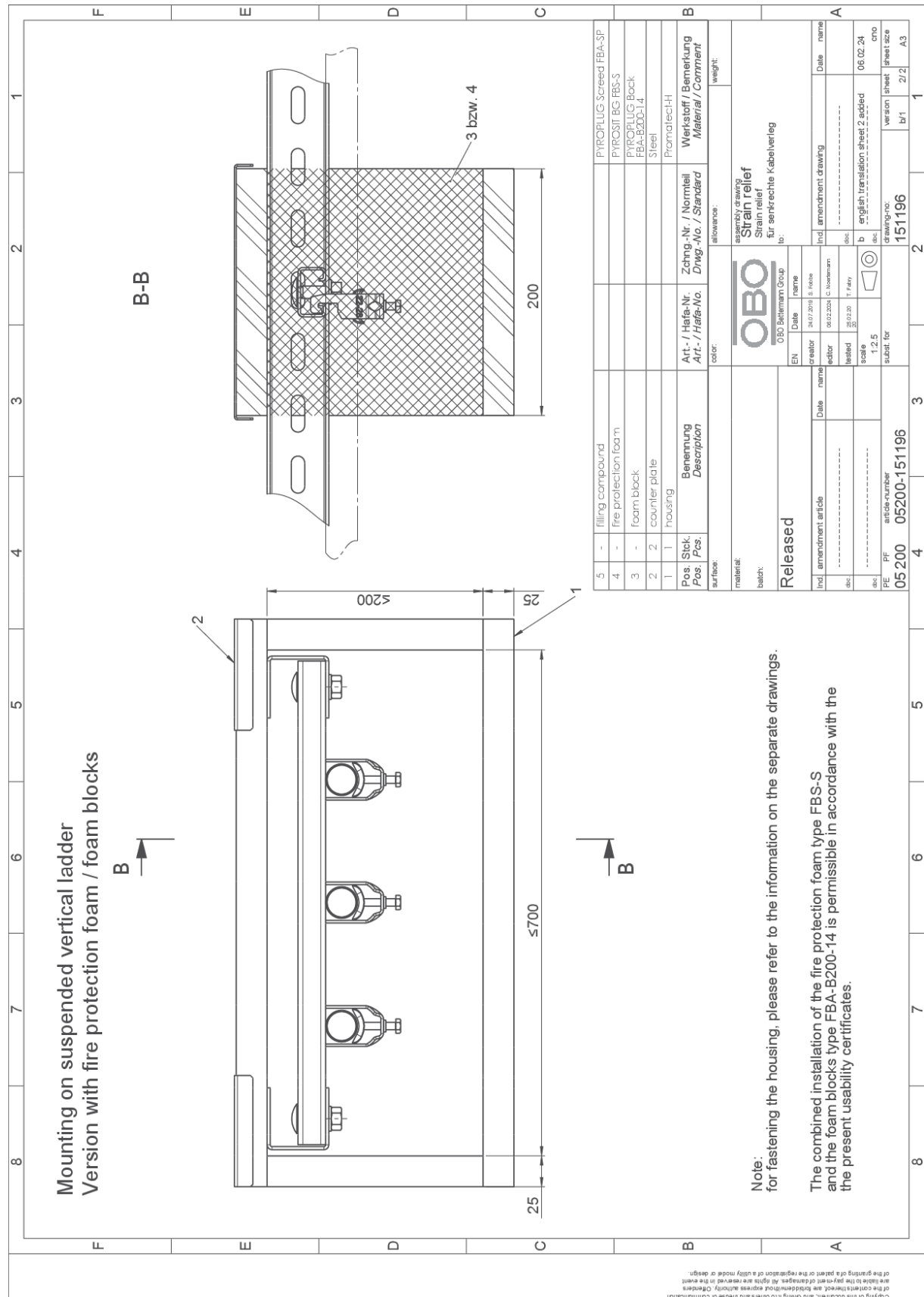


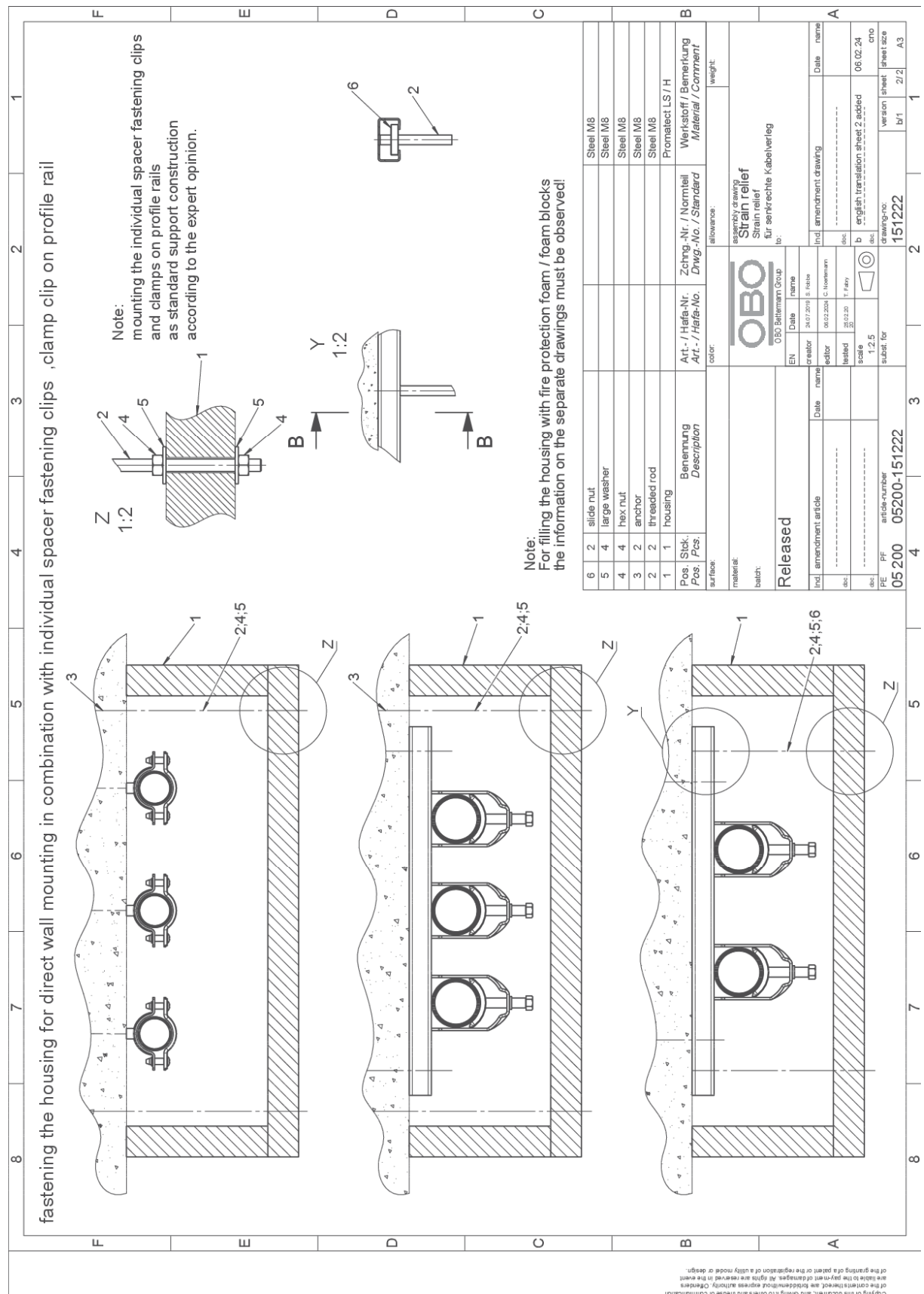
Note:
For mounting the housing, please refer to the information on the separate drawings.

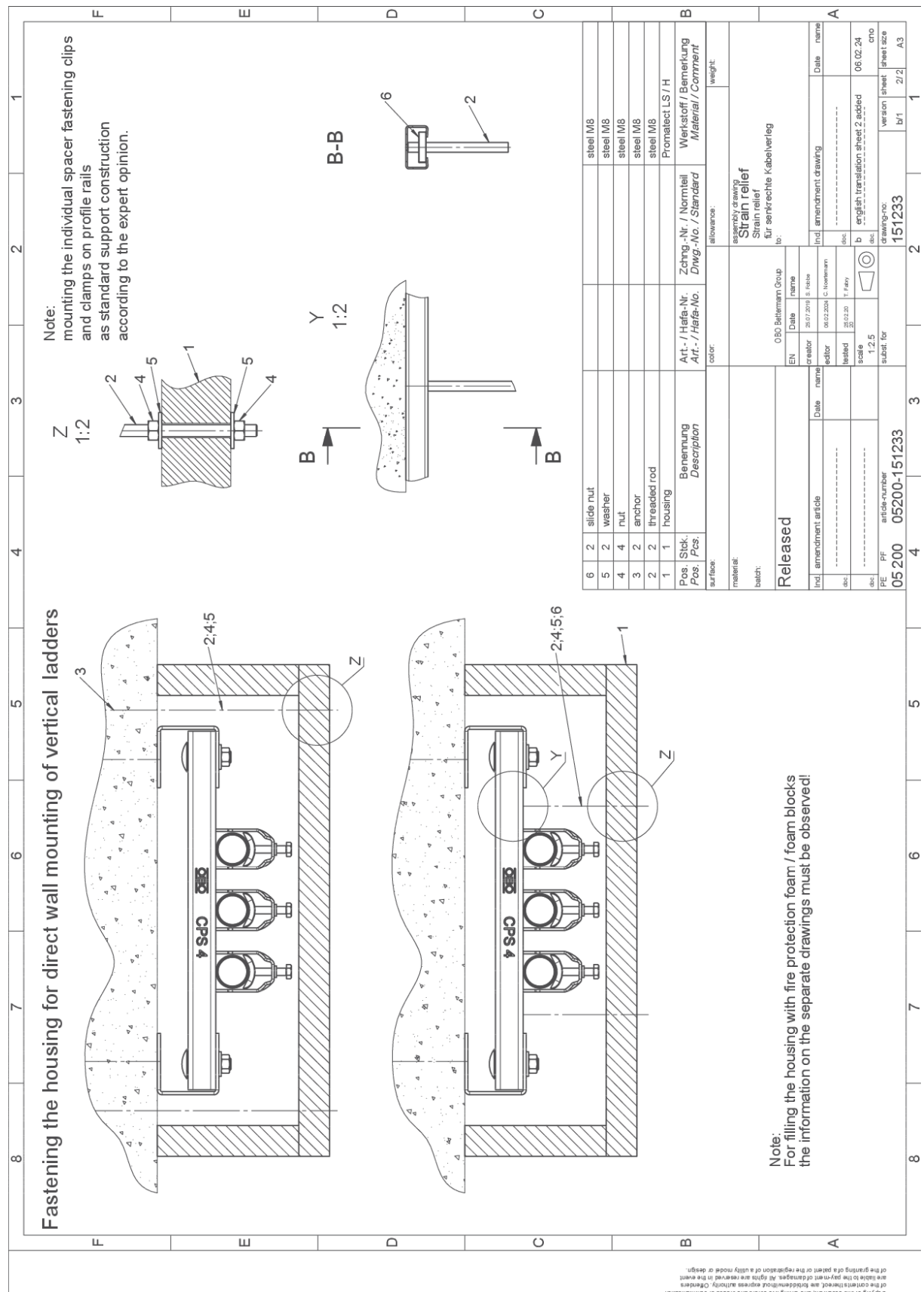
The combined installation of the fire protection foam PYROSIT® NG type FBS-S and the foam blocks PYROPLUG® Block Type FBA-B200-14 is permissible in accordance with the present usability certificates.

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