European Technical Assessment

ETA 20/0932

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UBAtc Assessment Operator

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**Technical Assessment Body issuing the European Technical Assessment: UBAtc.
UBAtc has been designated according to Article 29 of Regulation (EU) No 305/2011 and is member of EOTA (European Organisation for Technical Assessment)**

Trade name of the construction product:	PROMATECT® 100X
Product family to which the construction product belongs:	Fire Protective board
Manufacturer:	ETEX BUILDING PERFORMANCE NV Bormstraat 24 B-2830 Tisselt (Belgium)
Manufacturing plant(s):	ETEX BUILDING PERFORMANCE production plants 07, 10 & 25
Website:	www.promat-international.com
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	European Assessment Document (EAD): EAD 350142-00-1106
This ETA replaces	ETA 20/0932, issued on 18 December 2020 by UBAtc
This European Technical Assessment contains:	38 pages, including 2 annexes, which form an integral part of the document.

European Organisation for Technical Assessment

Legal bases and general conditions

1 This European Technical Assessment is issued by UBAtc (Union belge pour l'Agrément technique de la construction, i.e. Belgian Union for technical Approval in construction), in accordance with:

- Regulation (EU) No 305/2011 [1] of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
- Commission Implementing Regulation (EU) No 1062/2013 [2] of 30 October 2013 on the format of the European Technical Assessment for construction products
- European Assessment Document:
  EAD 3501-42-00-1106 (2017) : Fire protective products - Fire protective board, slabs and mat products and kits.

2 Under the provisions of Regulation (EU) No 305/2011, UBAtc is not authorized to check whether the provisions of this European Technical Assessment are met once the ETA has been issued.

3 The responsibility for the conformity of the performances of the products with this European Technical Assessment and the suitability of the products for the intended use remains with the holder of the European Technical Assessment.

4 Depending on the applicable Assessment and verification of constancy of performance (AVCP) system, (a) notified body(ies) may carry out third-party tasks in the process of assessment and verification of constancy of performance under this Regulation once the European Technical Assessment has been issued.

5 This European Technical Assessment allows the manufacturer of the construction product covered by this ETA to draw up a declaration of performance for the construction product.

6 CE marking should be affixed to all construction products for which the manufacturer has drawn up a declaration of performance.

7 This European Technical Assessment is not to be transferred to other manufacturers, agents of manufacturers, or manufacturing plants other than those indicated on page 1 of this European Technical Assessment.

8 The European Technical Assessment holder confirms to guarantee that the product(-s) to which this assessment relates, is/are produced and marketed in accordance with and comply with all applicable legal and regulatory provisions, including, without limitation, national and European legislation on the safety of products and services. The ETA-holder shall notify the UBAtc immediately in writing of any circumstance affecting the aforementioned guarantee. This assessment is issued under the condition that the aforementioned guarantee by the ETA-holder will be continuously observed.

9 According to Article 11(6) of Regulation (EU) No 305/2011, when making a construction product available on the market, the manufacturer shall ensure that the product is accompanied by instructions and safety information in a language determined by the Member State concerned which can be easily understood by users. These instructions and safety information should fully correspond with the technical information about the product and its intended use, which the manufacturer has submitted to the responsible Technical Assessment Body for the issuing of the European Technical Assessment.

10 Pursuant to Article 11(3) of Regulation (EU) No 305/2011, manufacturers shall adequately take into account changes in the product-type and in the applicable harmonised technical specifications. Therefore, when the contents of the issued European Technical Assessment do not any longer correspond to the product-type, the manufacturer should refrain from using this European Technical Assessment as the basis for their declaration of performance.

11 All rights of exploitation in any form and by any means of this European Technical Assessment is reserved for UBAtc and the ETA-holder, subject to the provisions of the applicable UBAtc regulations.

12 Reproduction of this European Technical Assessment including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of UBAtc. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Assessment.

13 Subject to the application introduced, this European Technical Assessment is issued in English and may be issued by the UBAtc in its official languages. The translations correspond fully to the English reference version circulated in EOTA.

14 This European Technical assessment was first issued by UBAtc on 18 December 2020. The modifications in this version of the ETA, dated 30 July 2024, concern the addition of the manufacturing plants 10 and 25, and a correction in the title of Annex 2.2.

[1]: OJEU, L 88 of 2011/04/04

[2]: OJEU, L 289 of 2013/10/31

Technical Provisions

1 Technical description of the product

1.1 General

PROMATECT® 100X is a non-combustible fire protective board, based on the PromaX® technology. It is made of aerated calcium sulphate di-hydrate, reinforcing glass fibres, functional additives, and water. The core is reinforced by glass-mat facers on the front and back of the boards. It is specifically designed for fire compartmentation in buildings, such as partitions and ceilings, when high fire protection performance is required.

PROMATECT® 100X has smooth surface finishes on the front and back sides. The front and back sides of the board are coloured blue. The board is printed on its backside. The board exhibits square or tapered edges on its longitudinal sides and square edges on its transversal sides.

PROMATECT® 100X is manufactured at ETEX BUILDING PERFORMANCE plants 07, 10 and 25 (known at UBAtc).

1.2 Dimensions and density

Dimensions and density of the boards are given in Table 1.

Table 1 : Dimensions and density PROMATECT® 100X (EN 12467)

Apparent density [3]: 840 kg/m³ ± 10%			
Thickness	**Tolerance on thickness**	**Length x width**	**Tolerances on length and width**
(mm)	**(mm)**	**(mm)**	**(mm)**
12	0 / +1	3000 x 1200 2500 x 1200 2000 x 1200	-5/+0
20	0 / +2,5		

The tolerance on the squareness is +/-2,5 mm/m.

Other dimensions (length and width), inferior to the above values, and other thicknesses between the above minimum and maximum thickness, may be available on special request.

1.3 Ancillary products

Ancillary products referred to in this ETA, as a part of installation provisions or in the framework of determining performances (e.g. fire resistance test), are not covered by this ETA and may not be CE-marked based on it.

2 Specification of the intended use(s) in accordance with the applicable EAD

2.1 Intended uses

This ETA covers fire protective PROMATECT® 100X intended for :

- Internal use (EAD 350142-00-1106, type Z_2).
- Internal and semi-exposed use (EAD 350142-00-1106, Type Y)

PROMATECT® 100X is intended to protect elements or to be used in assemblies as specified in Table 2.

Table 2: Intended use

Protection of	**EAD 350142-00-1106 reference**
Horizontal membrane protection incl. suspended ceilings acc. to EN 13964	Type 1
Vertical membrane protection	Type 2
Load-bearing concrete elements	Type 3
Load-bearing steel elements	Type 4
Load-bearing flat concrete profiled sheet composite elements	Type 5
Load-bearing concrete filled hollow steel columns	Type 6
Load-bearing timber elements	Type 7
Fire separating assemblies with no load-bearing requirements	Type 8
Technical services assemblies in buildings	Type 9
Uses not covered by types 1-9	Type 10

Table 2 shows the possible intended uses of the boards. Not all of these have been assessed in the framework of this ETA with regard to fire resistance performance. Annex II of this ETA shows a list of the uses for which fire resistance assessment was carried out. This ETA covers assemblies installed in accordance with the provisions given in Annex II of this ETA.

With regard to fire resistance performance, the other intended uses may be supported by other means at national level (as specified in the note in paragraph 3.2.2 of this ETA).

The provisions made in this European Technical Assessment are based on an assumed intended working life of 25 years, provided that the assembled product is subject to appropriate use and maintenance, in accordance with this ETA.

Indications given regarding the working life may not be interpreted as a guarantee given by the producer or the UBAtc, but shall be regarded only as a means for choosing the appropriate product(s) in relation to the expected economically reasonable working life of the construction works.

[3] Apparent density after drying at 105°C for 24 h according to EN 12467. Average density at 20°C, 50% RH is 915 kg/m³.

2.2 Assumptions

2.2.1 Manufacturing directives

This European Technical Assessment is issued for PROMATECT® 100X boards on the basis of agreed data/information, deposited with the UBAtc, which identifies the product that has been assessed. Changes to the product/production process, which could result in the deposited data/information being incorrect should be notified to the UBAtc before the changes are introduced.

Raw materials are mixed in a continuous procedure to form a slurry. This slurry is poured on a fibreglass liner and covered by a second liner. The products pass through some rolls to form a long continuous board with the required thickness and width. The first hardening of the slurry occurs while the boards move over the continuous belt. When the boards have sufficiently hardened, the boards are cut to the required length. An identification is printed on each individual board. The boards pass through an oven for curing and drying.

2.2.2 Installation

2.2.2.1 Supporting structure

The distance between supports shall be in accordance with the information provided in the assemblies described in Annex II of this ETA.

2.2.2.2 Cutting and machining

The fire protective PROMATECT® 100X boards can be cut using the 'score and snap' method (similar to plasterboards) or with power tools. When machining the fire protective board, dust extraction shall take place and inhalation of dust shall be avoided.

A safety information sheet is available from the manufacturer upon request.

2.2.2.3 Joints

The realisation of joints between adjacent boards and the use and type of joint filler shall be in accordance with the assemblies described in Annex II of this ETA.

2.2.2.4 Mechanical fasteners

Fastening of PROMATECT® 100X boards onto the support structure shall be in accordance with the assembly information provided in Annex II of this ETA.

In the case multiple layers are used, each layer of boards is fixed to the supporting structure through the other layer(s), the joints of each layer offset by 500 mm in relation to (the) other layer(s).

2.2.2.5 Surface treatment

The PROMATECT® 100X board surface allows for most types of decoration. When applying a surface treatment, the absorption capacity and alkalinity of the boards have to be taken into account.

Assessment of the influence of surface treatment (such as plastering, painting, tiling, application of wallpaper), on the performance of the PROMATECT® 100X boards, has not been performed in the framework of this ETA.

2.2.2.6 Assembly

The PROMATECT® 100X boards shall be applied as specified in the assemblies presented in Annex II of this ETA.

2.3 Recommendations

2.3.1 Recommendations on packaging, transport and storage

The boards are delivered on pallets.

PROMATECT®-100X boards shall be horizontally stacked on a flat surface, in a dry and well-ventilated space.

The boards shall always be manipulated from the stack by 2 persons and then be transported vertically.

2.3.2 Recommendations on use, maintenance and repair

Future modifications to the building should not adversely affect the fire protective properties of the system in which PROMATECT® 100X boards are used. Care should be taken to prevent any reduction of fire performance as a result of increased applied load to protected elements of the works (e.g. beams, columns, ceilings, floors, or walls).

The assessment is based on the assumption that damage, for example caused by accidental impact, is repaired. It is further assumed that replacement of components during maintenance/repair will be undertaken using materials specified by the ETA.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR1)

This basic requirement for construction works is not relevant for PROMATECT® 100X boards according to EAD 350142-00-1106.

3.2 Safety in case of Fire (BWR2)

3.2.1 Reaction to fire

PROMATECT® 100X boards have a reaction to fire classification **A1** according to EN 13501-1.

3.2.2 Fire resistance

Assemblies incorporating PROMATECT® 100X boards have a resistance to fire classification according to EN 13501-2 as presented in Annex II of this ETA.

The tested assemblies, as presented in Annex II of this ETA, have a fire resistance classification of respectively

- **EI120** for a vertical non-loadbearing separating element on metal frame with a cladding made of 2 layers of 20 mm PROMATECT® 100X, and including two inspection hatches,
- **EI120** for a vertical non-loadbearing element made of a lining of one layer of 12 mm PROMATECT® 100X directly fixed to a plastered hollow-clay-masonry-unit wall and
- **EI120 (a←b)** for a horizontal non-loadbearing separating element, i.e. a suspended ceiling on metal frame with a membrane made of 2 layers of 20 mm PROMATECT® 100X, including a luminaire, inspection hatches and pipe penetration.

NOTE: *In accordance with EAD 350142-00-1106, until 10 years after the initial issuing of this ETA, or until the withdrawal of relevant national test and classification standards, CE-marking will cover a limited number of assemblies subjected to fire resistance assessment. As time progresses, the performance declaration for fire resistance covered by CE-marking should gradually be enlarged by the ETA-holder and incorporated in this ETA by amendment or revision. In the meantime, and taking into account the transitional arrangements for test and classification standards and the corresponding national legislation (see EC Guidance paper J), the ETA-holder shall be permitted to maintain and be able to use - on a national basis - his portfolio of test data for this characteristic, based on relevant national standards, next to the performance declaration covered by the CE-marking based on this ETA.*

3.3 Hygiene, Health and the environment (BWR3)

3.3.1 Air and/or water permeability

No performance assessed.

3.3.2 Release of dangerous substances

No performance assessed.

3.4 Safety in Use (BWR4)

3.4.1 Flexural strength

When tested in accordance with EN 12467, the PROMATECT® 100X boards have a longitudinal modulus of rupture (MOR) greater than or equal to 4,5 MPa and a transverse modulus of rupture (MOR) greater than or equal to 2,5 MPa.

The PROMATECT® 100X boards have sufficient flexural strength to support their own mass. The PROMATECT® 100X boards are not intended to support additional loads.

3.4.2 Dimensional stability

The PROMATECT®-100X boards, tested in accordance with EN 318, are dimensionally stable.

The manufacturer declares a dimensional stability (EN 318):

- 65 % RH / 20 °C to 85 % RH / 20 °C:
  - Longitudinal: 0,3 mm/m
  - Transverse: 0,3 mm/m
  - Thickness: 0,2 %
- 65 % RH / 20 °C to 30 % RH / 20 °C:
  - Longitudinal: -0,1 mm/m
  - Transverse: -0,1 mm/m
  - Thickness: -0,1 %

These values are guidance values, and do not reflect a statistical evaluation nor a maximum guaranteed value.

3.4.3 Resistance to impact and eccentric load

No performance assessed.

3.5 Energy economy and heat retention (BWR6)

3.5.1 Thermal conductivity

No performance assessed.

3.5.2 Water vapour permeability

No performance assessed.

3.6 Protection against noise (BWR5)

3.6.1 Airborne sound insulation

No performance assessed.

3.6.2 Sound absorption

No performance assessed.

3.6.3 Impact sound insulation

No performance assessed.

3.7 Aspects of durability, serviceability and identification

3.7.1 Durability and serviceability

3.7.1.1 Resistance to deterioration caused by water

This characteristic is not relevant for the intended use Z_2 (internal use) and Y (semi exposed). No performance assessed.

3.7.1.2 Resistance to soak/dry

This characteristic is not relevant for the intended use Z_2 (internal use) and Y (semi exposed). No performance assessed.

3.7.1.3 Resistance to freeze/thaw

The resistance to freeze/thaw according to EAD 3501 42 00 1106 was favourably assessed.

3.7.1.4 Resistance to heat/rain

This characteristic is not relevant for the intended use Z_2 (internal use) and Y (semi exposed). No performance assessed.

3.7.1.5 Basic durability assessment

Product performances confirm a working life of 25 years for the intended uses Z_2 (internal use) and Y (Internal and semi-exposed use).

3.7.2 Identification

3.7.2.1 Length, width (see Table 1)

The width of the PROMATECT® 100X boards is not greater than 1200 mm.

The length of the PROMATECT® 100X boards is not greater than 3000 mm. The standard length is 2000 mm or 2500 mm

3.7.2.2 Thickness (see Table 1)

The PROMATECT® 100X boards are available in thicknesses of 12 mm and 20 mm.

Other thicknesses between the above minimum and maximum may be available on special request.

3.7.2.3 Dimensional tolerances (see Table 1)

The tolerances of the PROMATECT® 100X boards are mentioned in table 1.

3.7.2.4 Apparent density (see Table 1)

The apparent density has been determined in accordance with EN 12467. The apparent density is 840 kg/m³ ± 10%.

The average density at 20°C, 50% RH is 915 kg/m³

3.7.2.5 Compressive strength

When tested in accordance with EAD 350142-00-1106 and EN 789, the PROMATECT® 100X boards have a compressive strength greater than or equal to 6,0 MPa.

This value is a guidance value, and does not reflect a statistical evaluation, nor a minimum guaranteed value. This value is not intended to be used as a calculation value as basis for structural design.

3.7.2.6 Tensile strength

When tested in accordance with EAD 350142-00-1106 and EN 319, the PROMATECT® 100X boards have a perpendicular tensile strength greater than or equal to 0,9 MPa.

When tested in accordance with EAD 350142-00-1106 and EN 789, the PROMATECT® 100X boards have a parallel tensile strength greater than or equal to 1,6 MPa (longitudinal) ad 1,4 MPa (transverse).

These values are guidance values, and do not reflect a statistical evaluation, nor minimum guaranteed values. These values are not intended to be used as calculation values as basis for structural design.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with Regulation (EU) N° 305/2011, Article 65, Directive 89/106/EEC is repealed, but references to the repealed Directive shall be construed as references to the Regulation.

The system of assessment and verification of constancy of performance, specified in the Decision of the Commission 1999/454/EC of 1999/06/22 [4], as amended, is specified in the following Table.

Table 3 – System of assessment and verification of constancy of performance applicable to PROMATECT® 100X

Product(s)	Intended use(s)	Level(s) or class(es)	Assessment and verification of constancy of performance system(s)*
Fire Protective Products	For fire compartmentation and/or fire protection or fire performance	Any	1
* See Annex V to Regulation (EU) N° 305/2011			
In addition, according to the decision 1999/454/EC of 1999/06/22 [3] of the European Commission, as amended, the systems of assessment and verification of constancy of performance specified in table 4 apply to fire protective products with regard to reaction to fire, as amended, and Commission Delegated Regulation (EU) 2016/364 of 2015/07/01 [5].			

Table 4 – Systems of assessment and verification of constancy of performance with respect to the reaction to fire

Product(s)	Intended use(s)	Level(s) or class(es) (reaction to fire)	Assessment and verification of constancy of performance system(s)[a]
Fire Protective Products	For uses subject to regulations on reaction to fire	(A1, A2, B, C)*	1
		(A1, A2, B, C)**, D, E, F	3
		(A1 to F)*** , NPD****	4

[a] Systems 1, 3 and 4 : See Regulation (EU) N° 305/2011, Annex V

* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)

** Products/materials not covered by footnote (*)

*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC [6], as amended)

**** 'No Performance Declared' in accordance with Regulation (EU) N° 305/2011, Article 6(f)[a] Systems1 and 2+ :See Regulation (EU) N° 305/2011, Annex V

5 Technical details necessary for the implementation of the AVCP system, as foreseen in EAD 350142-00-1106

5.1 Tasks for the ETA-holder

5.1.1 Factory production control (FPC)

The ETA-holder shall exercise permanent internal control of the production. All the elements, requirements and provisions adopted by the ETA-holder shall be documented in a systematic manner in the form of written policies and procedures. This factory production control system shall ensure that production is in conformity with this ETA.

The personnel involved in the production process shall be identified, sufficiently qualified and trained to operate and maintain the production equipment. Machinery equipment shall be regularly maintained, and this shall be documented. All processes and procedures of production shall be recorded at regular intervals.

The ETA-holder shall maintain a traceable documentation of the production process from purchasing or delivery of raw or basic raw materials up to the storage and delivery of finished products.

The factory production control system for the product includes relevant design specifications, including adequate drawings and written instructions for:

- type and quality of all materials
- overall dimensions
- packaging and transport protection

The production control system shall specify how the control measures are carried out, and at which frequencies.

ETA-holders which have an FPC system that complies with EN ISO 9001 and that addresses the requirements of this ETA are recognised as satisfying the FPC requirements.

Products that do not comply with requirements as specified in the ETA shall be separated from the conforming products and marked as such. The ETA-holder shall register non-compliant production and action(-s) taken to prevent further non-conformities. External complaints shall also be documented, as well as actions taken.

When materials/products are delivered for incorporation into the production process, verification of conformity with specifications in the quality manual shall take place and be recorded.

If supplied materials/components are not manufactured and tested by the supplier in accordance with agreed methods, or where the ETA-holder purchases materials/components on the open market, then where appropriate, they shall be subject to suitable documented checks/tests by the ETA-holder before acceptance.

The characteristics of incoming material and components, for which the supplier demonstrates documented compliance with a product specification, for an intended use that is appropriate for its use as a raw material or component of the product, shall be considered satisfactory and need, except in justified doubt, no further checking, unless the control plan specifies differently.

[4]: OJEU L178/52 of 1999/07/14

[5]: OJEU L68/4 of 2016/03/15

[6]: OJEU L267 of 1996/10/19

5.1.2 Testing of samples taken at the factory

5.1.2.1 General

At least the following minimum information shall be recorded:

- date and time of manufacture
- type of product produced (boards)
- material specification (dimensions and thickness)
- all results of the verifications performed within the agreed upon control plan

5.1.2.2 Maintenance, checking and calibration of equipment

All testing equipment shall be maintained, calibrated and/or checked against equipment or test specimens traceable to relevant international or nationally recognised reference test specimens (standards). In case no such reference test specimens exist, the basis used for internal checks and calibration shall be documented.

The ETA-holder shall ensure that handling, preservation and storage of test equipment is such that the performances are maintained

When production is intermittent, the ETA-holder shall ensure that any test equipment which may be affected by the interruption is suitably checked and/or calibrated before use. The calibration of all test equipment shall be repeated if any repair or failure occurs which could upset the calibration of the test equipment.

5.1.2.3 Testing as part of Factory Production Control

Table 5 specifies minimum requirements for testing as part of FPC.

If constituent materials or components are supplied by other manufacturers to the ETA-holder, the supplier shall perform FPC on those constituent materials or components. If that is the case, those suppliers should submit the relevant records to the ETA-holder.

Table 5 : FPC test plan for PROMATECT® 100X

Property	Minimum frequency
Determination of organic content (reaction to fire)	1 per week [7]
Determination of dimensional stability at high temperatures (fire resistance)	1 per week
Indirect test method (small oven test) [8]	1 per year
Dimensional stability	1 per year
Identification	
length, width	1 per day [9], per dimension
thickness	1 per day, per thickness
apparent density	1 sample per n boards
Flexural strength	1 sample per n boards

5.2 Initial Type Testing

The assessment tests will have been conducted by the UBAtc or under its responsibility (which may include a proportion conducted by an independent laboratory or by the ETA-applicant, witnessed by the UBAtc). The UBAtc will have assessed the results of these tests in accordance with chapter 3 of this ETA, as part of the ETA issuing procedure.

The results of assessment testing shall be used by notified bodies (cf. Regulation (EU) 305/2011, Annex V, clause 1.6).

6 Other marking and/or information

Each board shall at least be marked with product name and a traceability code. Each package is marked with the product name, traceability code, thickness of the boards, and dimensions of the boards.

[7]: A week represents 5 production days.
[8]: Production shall be subjected to a small oven test (test performed on one thickness).
[9]: A day represents a 24h time period in which production is considered to be as usual for the production facility concerned.

UBAtc asbl is a non-profit organization according to Belgian law. It is a Technical Assessment Body notified by the Belgian notifying authority, the Federal Public Services Economy, SMEs, Self-Employed and Energy, on 17 July 2013 in the framework of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC and is member of the European Organisation for Technical Assessment, EOTA (www.eota.eu).

This European Technical Assessment has been issued by UBAtc asbl, in Sint-Stevens-Woluwe, on the basis of the technical work carried out by the Assessment Operator, BCCA.

On behalf of UBAtc asbl,

Eric Winnepenninckx,
secretary general

Benny De Blaere,
director

On behalf of the Assessment Operator,
Buildwise and SECO Belgium, responsible for the
technical content of the ETA,

Olivier Vandooren,
CEO Buildwise

Bernard Heiderscheidt,
CEO SECO Belgium

The most recent version of this European Technical Assessment may be consulted on the UBAtc website (www.butgb-ubatc.be).

Annexes

Annex I: References

Reference number EAD 350142-00-1106
Document title Fire protective products - Fire protective board, slab and mat products and kits.

Reference number EN 13964:2014
Document title Suspended ceilings - Requirements and test methods.

Reference number EN 13501-1:2019
Document title Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests

Reference number EN 13501-2:2023
Document title Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services

Reference number EN 12467:2012+A2:2018
Document title Fibre-cement flat sheets - Product specification and test methods

Reference number EN 318:2002
Document title Wood based panels - Determination of dimensional changes associated with changes in relative humidity

Reference number EN 826:1996
Document title Thermal insulating products for building applications - Determination of compression behaviour

Reference number EN 1607:2013
Document title Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces

Reference number EN 1608:1996
Document title Thermal insulating products for building applications - Determination of tensile strength parallel to faces

Reference number EN ISO 9001:2015
Document title Quality management systems - Requirements

Reference number EN 1364-1:2015
Document title Fire resistance tests for non-loadbearing elements - Part 1: Walls

Reference number EN 1364-2:2018
Document title Fire resistance tests for non-loadbearing elements - Part 2: Ceilings

Reference number EN 1363-1:2020
Document title Fire resistance tests - Part 1: General requirements

NOTE: The editions of reference documents given above are those, which have been adopted by the UBAtc for its specific use when establishing this ETA. When new editions become available, these supersede the editions mentioned only when confirmed by the UBAtc.

Annex II : Fire resistance performances and assembly methods for uses of boards covered by this ETA

A 2.0 Overview of fire resistance performances for PROMATECT® 100X assemblies

The fire protective assemblies in Table A.2.0.1 have been assessed within the framework of this ETA. Assemblies installed according to the provisions given in this annex are covered by this ETA.

Table A 2.0.1

Assemblies assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use category according to EAD 350142-00-1106	Installation details	Date of addition to this ETA
vertical non-loadbearing separating element on metal frame with a cladding made of 2 layers of 20 mm PROMATECT® 100X, and including two inspection hatches	EI 120	EN 1363-1 EN 1364-1	Type 8	Annex 2.1	18/12/2020
vertical non-loadbearing element made of a lining of 1 layer of 12 mm PROMATECT® 100X directly fixed to a plastered hollow-clay-masonry-unit wall	EI 120	EN 1363-1 EN 1364-1	Type 2	Annex 2.2	18/12/2020
suspended ceiling on metal frame with a membrane made of 2 layers of 20 mm PROMATECT® 100X, including a luminaire, inspection hatches and pipe penetration	EI120 (a←b)	EN 1363-1 EN 1364-2	Type 1	Annex 2.3	18/12/2020

Annex 2.1: Specification of a non-load bearing partition (intended use type 8), composed of 2 layers of PROMATECT® 100X fire protective board (thickness 20 mm)

A.2.1.1 Date of addition to this ETA

This annex was added to ETA 20/0932 on 18/12/2020. This assembly was not covered by this ETA prior to the addition of this annex. It concerns a non-loadbearing wall with inspection hatches (Intended use type 8).

A 2.1.2 Classification

The assembly described in this annex has been tested according to EN 1364-1 and classified **E120** in accordance with EN 13501-2.

A.2.1.3 Installation requirements

Installation requirements in paragraph 2.2.2 of this ETA shall be taken into account.

A.2.1.4 Assessed installation

All installation details of the assessed installation are presented in paragraph A.2.3.7.

The dimensions of the assessed installation are 3170 mm width by 3200 mm height, with nominal partition thickness of 90 mm. The installations main components are :

- metal framework, nominal depth 50 mm, made from PregyMetal steel sections complying with standard EN 14195 and comprising:
  - horizontal tracks (1 ceiling and 1 floor) made from U50/40 U-shaped, galvanised-steel channel, nominal size 50 mm x 40 mm and nominal thickness 0,6 mm, secured to the test frame using metal nails placed at a nominal centre-to-centre distance of 500 mm;
  - studs made from C50/50 C-shaped galvanised-steel C section, nominal size 47 mm x 49 mm x 50 mm and nominal thickness 0,6 mm, placed at a nominal centre-to-centre distance of 600 mm with ends inserted in the above-mentioned tracks;

    an additional stud was inserted at the smaller inspection hatch to enable its installation;
- cladding, nominal thickness 40 mm, fitted to the unexposed face of the metal framework and formed by two layers of PROMATECT-100X silicate and sulphate-based boards with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm × 1200 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², arranged with staggered joints and secured to profiled sections of the metal framework using phosphate-coated steel self-tapping screws, nominal diameter 3,5 mm each and nominal length 35 mm for the first layer, where they are placed at a nominal centre-to-centre distance of 500 mm, and 55 mm for the second layer, where they are placed at a nominal centre-to-centre distance of 250 mm;

  2 openings were made in the cladding board in order to house 2 inspection hatches, nominal size of clear opening 200 mm x 200 mm and 580 mm × 540 mm, formed by :
  - outer frame made from sheet-steel angle bar, nominal size 41 mm × 28 mm and nominal thickness 1,0 mm, secured to the cladding by phosphate-coated steel self-tapping screws, nominal diameter 3,5 mm , having an additional sheet-steel angle bar on 3 sides, nominal size 10 mm × 10 mm and nominal thickness 1,0 mm, that acts as a rebate for the access panel;
  - access panel comprising:
    - perimeter frame made from sheet-steel angle bar, nominal size 41 mm × 28 mm and nominal thickness 1,0 mm;
    - infill, nominal thickness 40 mm, formed by two layers of PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², fastened to the abovementioned perimeter frame by phosphate-coated steel self-tapping screws, nominal diameter 3,5 mm and nominal length 55 mm, placed at a nominal centre-to-centre distance of 200 mm;
  - key-operated steel lock;
  - 2 steel hinges;
  - PROMASEAL-L graphite-based intumescent sealing strip, nominal size 10 mm x 1,8 mm, fitted around the edge of the access panel;

  the joints between the cladding boards were sealed on the exposed face with reinforcing tape and gypsum putty complying with standard EN 13963, whilst board fixing-screw heads and cladding-board and inspection hatch perimeter edges were sealed with gypsum putty alone.

A.2.1.5 Details

All mounting and fixing details shall be executed according to the drawings presented in the figures in paragraph A2.2.7.

A.2.1.6 Direct field of application

The classification is directly applicable to similar construction where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

- The decrease in height of the wall is permitted
- The increase of the thickness of the wall Is permitted
- The increase of the thickness of component materials is permitted

- The decrease in linear dimensions of boards or panels but not thickness is permitted
- The decrease in stud spacing is permitted
- The decrease in distance of fixing centres is permitted
- The increase in the number of vertical joints, of the type tested is permitted
- The use of installations such as electrical sockets, switches, etc. when tested as illustrated in Figures 9, 10 and 11 with the installations not more than 500 mm from the top edge is not allowed
- Horizontal and/or vertical joints, of the type tested are permitted
- The extension of width is permitted
- The extension of height is permitted

A.2.1.7 Figures

Symbol	Description
1	Metal framework - horizontal track: PregyMetal U50/40 ⌊⌋-shaped, galvanised-steel channel complying with standard UNI EN 14195:2015, nominal size 50 mm × 40 mm and nominal thickness 0,6 mm
2	Metal framework track/test frame fixing system: metal nail
3	Metal framework - stud: PregyMetal U50/40 ⌊⌋-shaped, galvanised-steel channel complying with standard UNI EN 14195:2015, nominal size 50 mm × 40 mm and nominal thickness 0,6 mm
4	Cladding: PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm × 1200 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
5	First layer of cladding board/metal framework fixing system: phosphate-coated steel self-tapping screw, nominal length 35 mm and nominal diameter 3,5 mm
6	Second layer of cladding board/metal framework fixing system: phosphate-coated steel self-tapping screw, nominal length 55 mm and nominal diameter 3,5 mm
7	Inspection hatch - outer frame: sheet-steel angle bar, nominal size 41 mm × 28 mm and nominal thickness 1,0 mm
8	Inspection hatch - outer frame/cladding fixing system: phosphate-coated steel self-tapping screw, nominal diameter 3,5 mm
9	Inspection hatch - outer frame: sheet-steel angle bar, nominal size 10 mm × 10 mm and nominal thickness 1,0 mm, acting as a rebate for the access panel
10	Inspection hatch - access panel - perimeter frame: sheet-steel angle bar, nominal size 41 mm × 28 mm and nominal thickness 1,0 mm
11	Inspection hatch - access panel - infill: PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
12	Inspection hatch - access panel - infill/perimeter frame fixing system: phosphate-coated steel self-tapping screw, nominal diameter 3,5 mm and nominal length 55 mm
13	Inspection hatch - key-operated steel lock
14	Inspection hatch - steel hinge
15	Inspection hatch - PROMASEAL-L graphite-based, intumescent sealing strip, nominal size 10 mm × 1,8 mm
16	Sealing of joints between cladding boards: reinforcing tape and gypsum putty complying with standard UNI EN 13963:2014
17	Sealing of board fixing-screw heads and cladding-board and inspection-hatch perimeter edges: gypsum putty complying with standard UNI EN 13963:2014
18	Test frame: warp-resistant reinforced-concrete outer frame, nominal density 2300 kg/m³

Figure A.2.1.7.1 Key

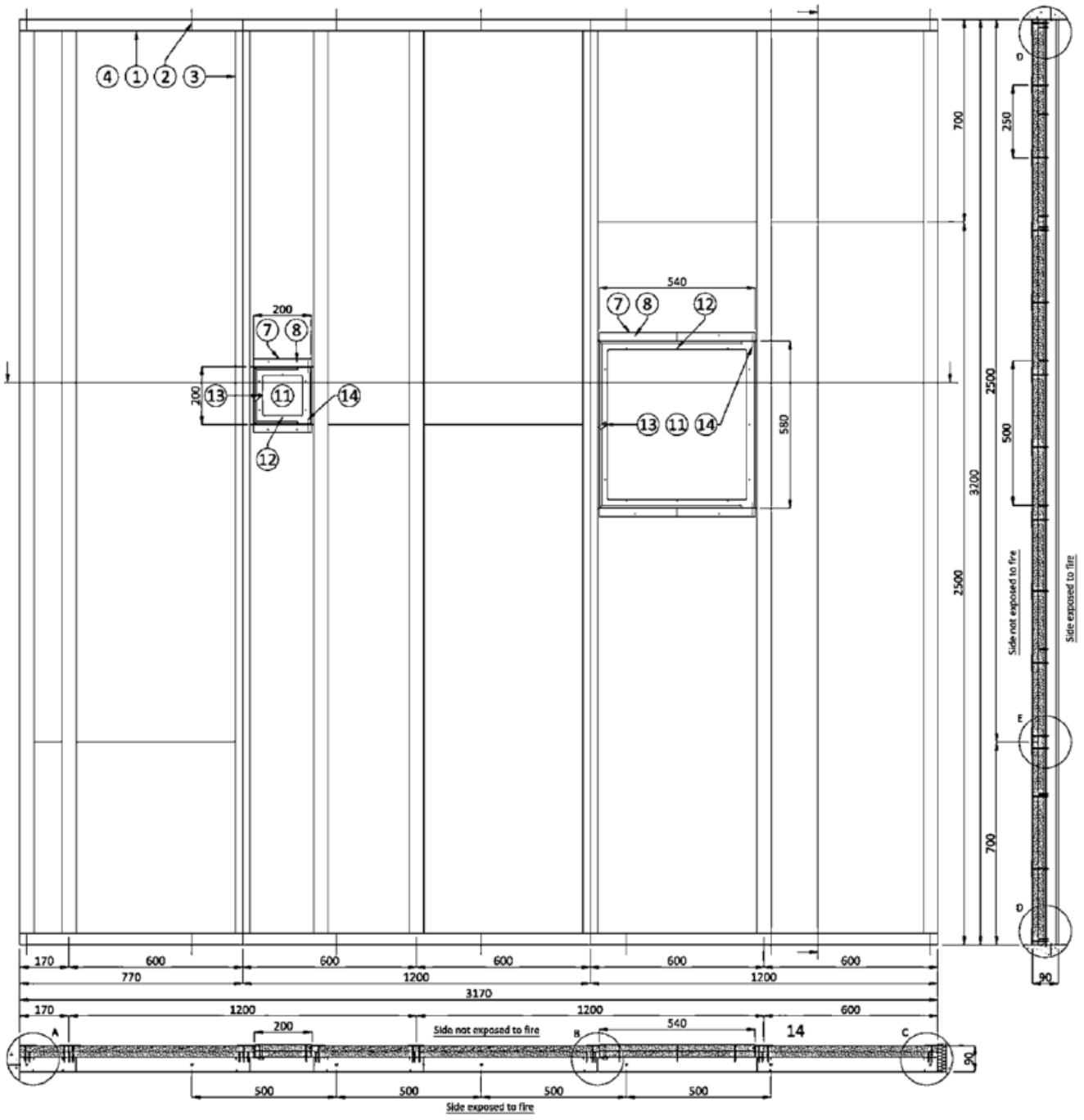

Figure A.2.1.7.2 Schematic presentation of the assessed installation

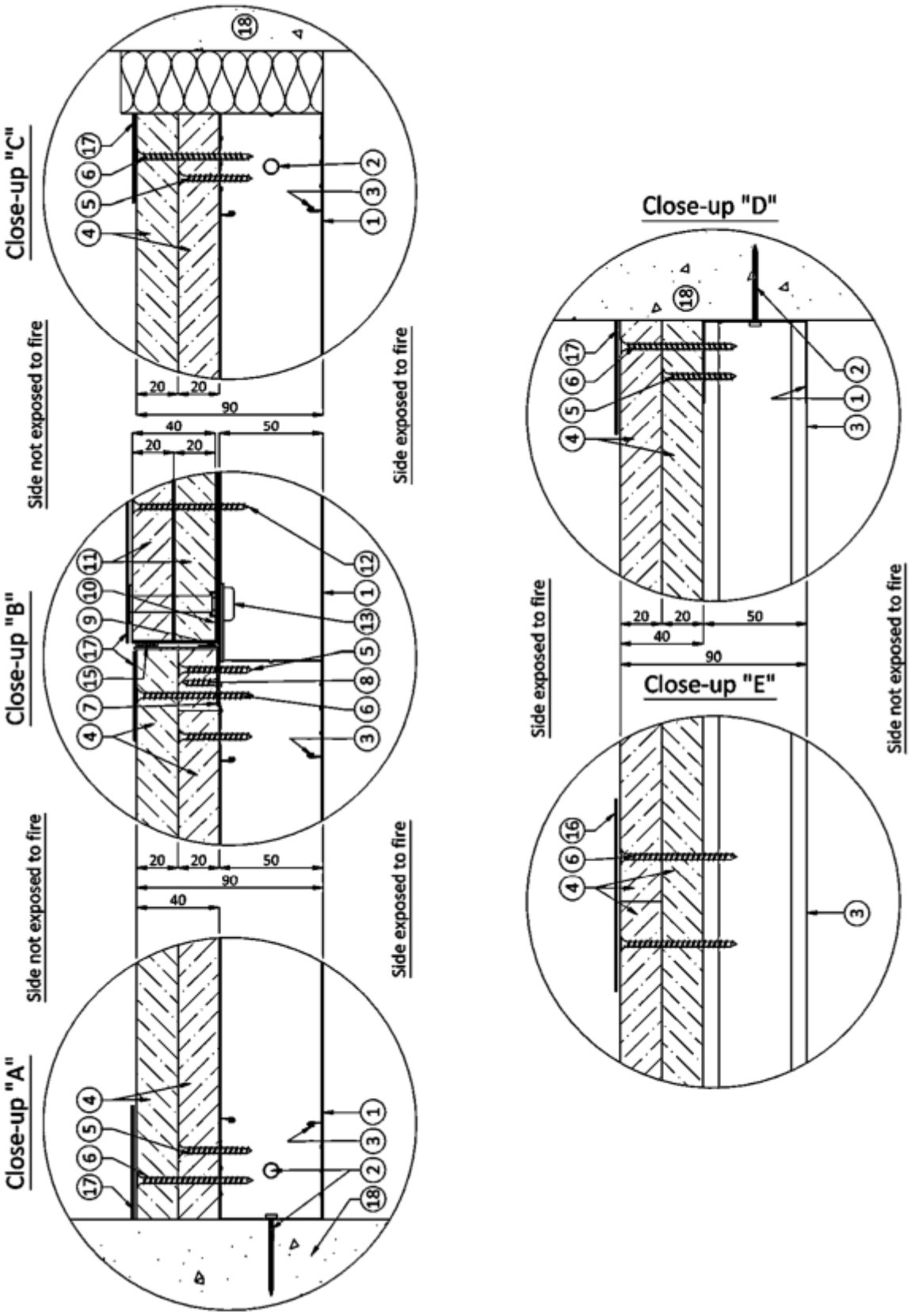

Figure A.2.1.7.3 Close ups op assessed installation sections

Annex 2.2: Specification of a non-load bearing partition (intended use type 2), composed of 1 layer of PROMATECT® 100X fire protective board (thickness 12 mm)

A.2.2.1 Date of addition to this ETA

This annex was added to ETA 20/0932 on 18/12/2020. This assembly was not covered by this ETA prior to the addition of this annex. It concerns a vertical non-loadbearing element named "Lining of PROMATECT-100X board placed on the unexposed face of a plastered hollow-clay-masonry-unit wall containing gang boxes and a chased electrical system" .

A 2.2.2 Classification

The assembly described in this annex has been tested according to EN 1364-1 and classified **E120** in accordance with EN 13501-2.

A.2.2.3 Installation requirements

Installation requirements in paragraph 2.2.2 of this ETA shall be taken into account.

A.2.2.4 Assessed installation

All installation details of the assessed installation are presented in paragraph A.2.3.7.

The dimensions of the assessed installation are 3170 mm width by 3200 mm height, with nominal partition thickness of 112 mm. The installations main components are :

- plastered wall, nominal thickness 100 mm, formed by:
  - masonry, nominal thickness 80 mm, comprising perforated clay blocks with 10 perforations arranged on 2 longitudinal rows, laid with perforations pointing in the horizontal plane, bonded with straight horizontal and vertical M5 standard-cement-mortar joints and having the physical characteristics specified in the following table:

Nominal width	250 mm
Nominal height	250 mm
Nominal thickness	80 mm
Weight approx.	3,10 kg

  - protection of both sides of the masonry provided by a layer of standard cement mortar plaster, nominal thickness 10 mm and nominal density 1450 kg/m³;
- lining, nominal thickness 12 mm, protecting the unexposed face of the plastered wall and comprising a layer of PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm × 1200 mm, nominal thickness 12 mm and nominal mass per unit area 10,5 kg/m², secured to the plastered wall using metal expansion anchors, nominal diameter 9 mm and nominal length 45 mm, placed at a nominal centre-to-centre distance of 400 mm along the longitudinal edges of the boards and a nominal maximum centre-to-centre distance of 800 mm at the centre of the boards, maintaining a distance of approx. 50 mm from the edge of the boards;
  the joints between the boards were sealed on the lining's exposed face with reinforcing tape and SINIAT P35 gypsum putty complying with standard EN 3963:2014 ("Jointing materials for gypsum plasterboards - Definitions, requirements and test methods"), whilst board fixing-screw heads and lining perimeter edges were sealed with SINIAT P35 gypsum putty alone;
  furthermore, an area of the lining's exposed face has also been repaired using reinforcing tape and SINIAT P35 gypsum putty complying with standard EN 13963:2014 that were applied to a surface tear, approx. length 350 mm and width about 20-30 mm, deliberately made one on of the lining's boards;
- electrical system composed of:
  - chased electrical system constructed on the plastered wall's unexposed face before fitting the lining and comprising 2 flush-mount plastic gang boxes, nominal size 110 mm × 72 mm and nominal depth 50 mm each, complete with plastic three-module support/cover, one positioned 1100 mm from the base of the item and the other within 500 mm of its top, recessed in the wall with the aid of standard cement mortar and connected to each other by electrical cables inserted in a plastic corrugated conduit, nominal diameter 25 mm, positioned in an L-shaped chase cut in the hollow-clay masonry, repairing the surface with standard cement mortar;
    before inserting the modules, the gang boxes were protected internally by applying a layer of PROMASEAL-A acrylic firestop sealant, nominal dry density 1800 kg/m³, to the bottom and sides before sealing the perimeter with the same sealant in order to fill the gap between lining boards and the gang boxes themselves;
  - chased electrical system constructed on the plastered wall's fire-exposed face and comprising a flush-mount plastic gang box, nominal size 110 mm x 72 mm and nominal depth 50 mm, complete with plastic threemodule support/cover, positioned within 500 mm of the item's top and simply recessed in the wall using standard cement mortar.

A.2.2.5 Details

All mounting and fixing details shall be executed according to the drawings presented in the figures in paragraph A2.2.7.

A.2.2.6 Direct field of application

The classification is directly applicable to similar construction where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

- The height of the wall may be decreased
- The thickness of the construction may be increased
- The thickness of component materials may be increased
- The decrease of the linear dimensions of the boards, but not the thickness, is permitted
- The number of vertical joints, of the type tested, may be increased
- The use of installations such as electrical sockets, switches, etc. when tested as illustrated in Figures 9, 10 and 11 with the installations not more than 500 mm from the top edge is permitted
- Horizontal and /or vertical joint of the type tested, are permitted
- Extension of width is permitted
- Extension of height is permitted

A.2.2.7 Figures

Symbol	Description
1	Plastered wall - masonry: perforated clay block, nominal height 250 mm, nominal width 250 mm, nominal thickness 80 mm and approx. weight 3,10 kg
2	Plastered wall - masonry: straight joint of M5 standard cement mortar
3	Plastered wall - masonry protection: layer of standard cement-mortar plaster, nominal thickness 10 mm and nominal density 1450 kg/m³
4	Lining: PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm × 1200 mm, nominal thickness 12 mm and nominal mass per unit area 10,5 kg/m²
5	Lining - board fixing system: metal expansion anchor, nominal diameter 9 mm and nominal length 45 mm
6	Lining - sealing of the joints between boards: reinforcing tape and SINIAT P35 gypsum putty complying with standard UNI 13963:2014
7	Lining - sealing of board fixing-screw heads and lining perimeter edges: SINIAT P35 gypsum putty complying with standard UNI 13963:2014
8	Lining - repaired area: reinforcing tape and SINIAT P35 gypsum putty complying with standard UNI 13963:2014
9	Lining - deliberately-made surface tear, approx. length 350 mm and width about 20-30 mm
10	Chased electrical system: flush-mount plastic gang box, nominal size 110 mm × 72 mm and nominal depth 50 mm, complete with plastic three-module support/cover
11	Chased electrical system: electrical cables
12	Chased electrical system: plastic corrugated conduit, nominal diameter 25 mm
13	Chased electrical system: standard cement mortar
14	Chased electrical system: PROMASEAL-A acrylic firestop sealant, nominal dry density 1800 kg/m³
15	Test frame: warp-resistant reinforced-concrete outer frame, nominal density 2300 kg/m³

Figure A.2.2.7.1 Key

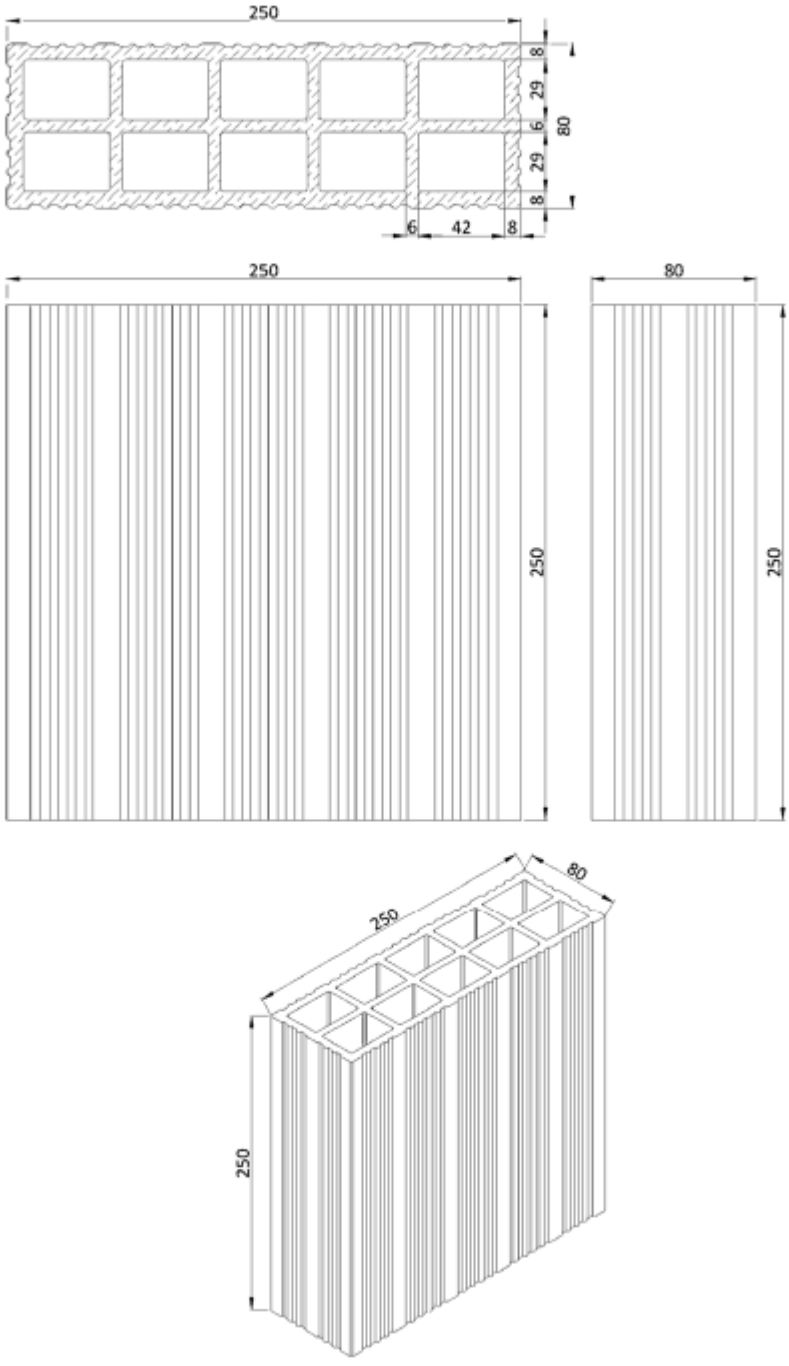

Figure A.2.2.7.2 Schematic drawing of perforated clay block

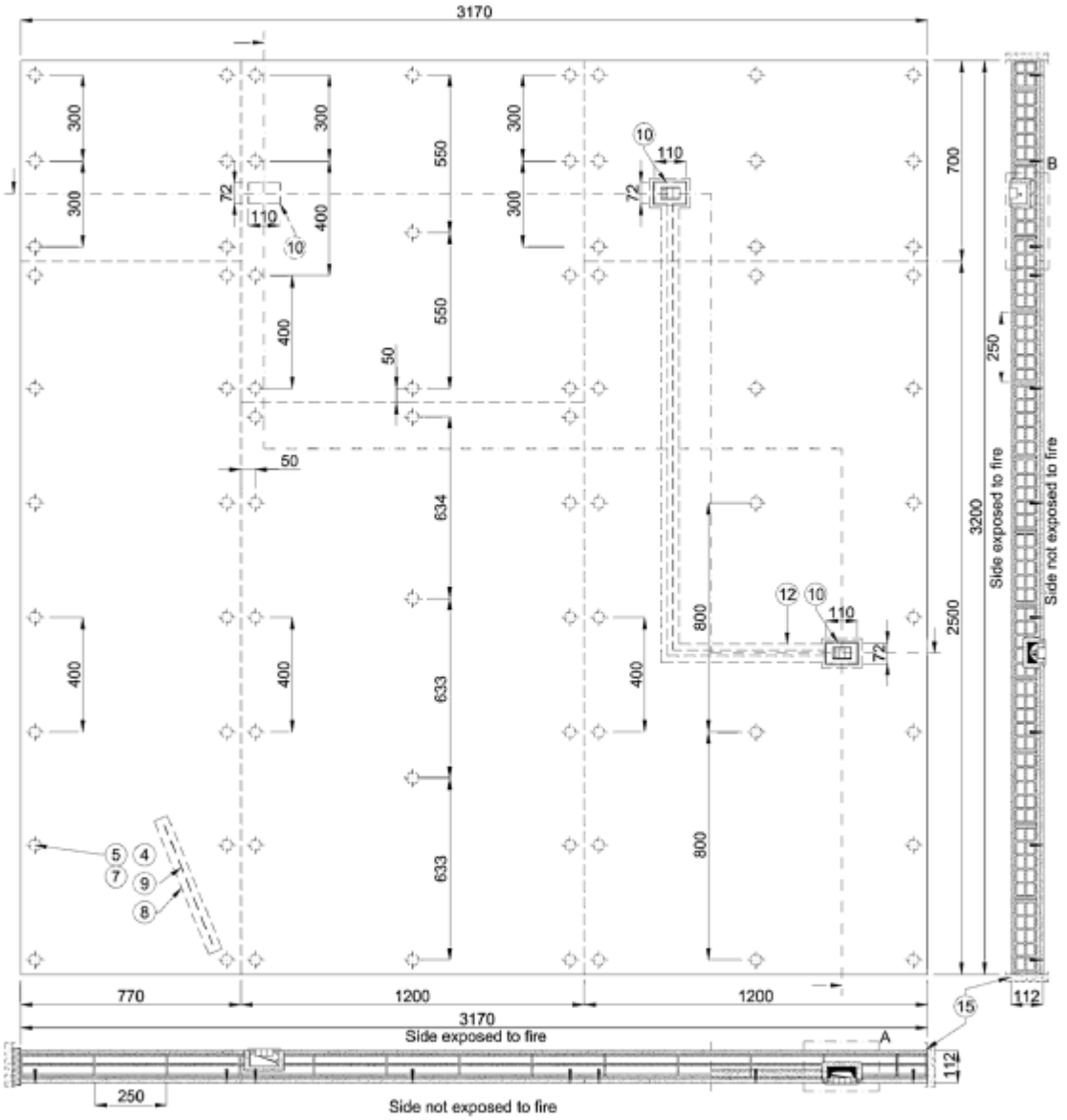

Figure A.2.2.7.3 Schematic presentation of assessed installation

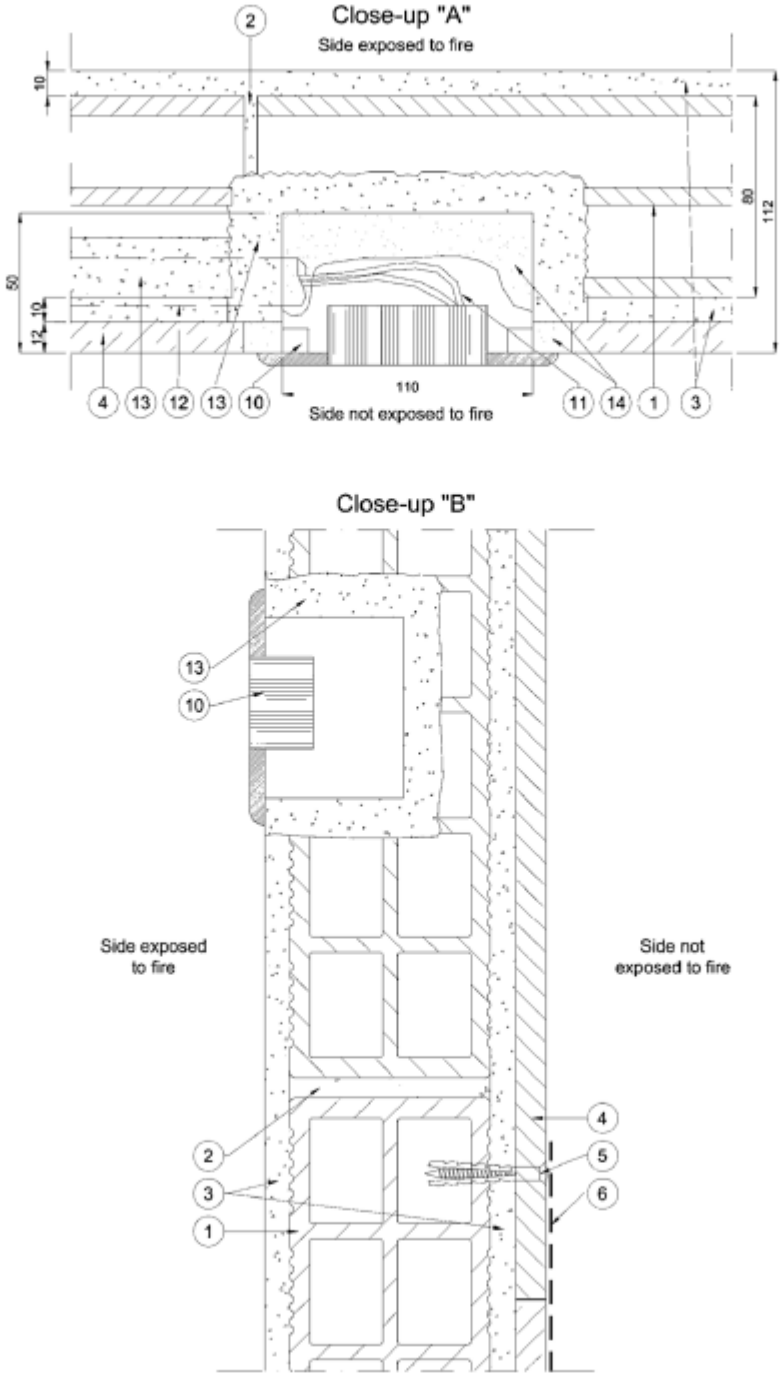

Figure A.2.2.7.4 Close ups op assessed installation sections

Annex 2.3 Specification of a horizontal protective membrane (intended use type 1), composed of PROMATECT® 100X fire protective board (thickness 2 x 20 mm), contributing to the fire resistance of a horizontal structural building member

A.2.3.1 Date of addition to this ETA

This annex was added to ETA 20/0932 on 18/12/2020. This assembly was not covered by this ETA prior to the addition of this annex. It concerns a suspended ceiling on metal frame with a membrane made of 2 layers of 20 mm PROMATECT® 100X, including a luminaire, inspection hatches and pipe penetration.

A 2.3.2 Classification

The assembly described in this annex has been tested according to EN 1363-1 and EN 1364-2 and classified **EI120 (a←b)** in accordance with EN 13501-2.

A.2.3.3 Installation requirements

Installation requirements in paragraph 2.2.2 of this ETA shall be taken into account.

A.2.3.4 Assessed installation

All installation details of the assessed installation are presented in paragraph A.2.3.7.

The dimensions of the assessed installation are 4000 mm by 3000 mm, with a ceiling thickness of 40 mm. The installations main components are :

- **A concealed metal grid comprising:**
  - main runners, nominal length 4000 mm, made from Profilo S4927 C-shaped galvanised sheet steel channel, nominal size 49 mm x 27 mm and nominal thickness 0,6 mm, positioned parallel to the steel beams at a nominal centre-to-centre distance of 750 mm, suspended by hangers placed at a nominal centre-to-centre distance of 800 mm and secured to the bottom flanges of the supporting construction beams using steel clips;
  - the hangers comprise a lower connector called "Spring-type hanger for S4927 channels", inserted in the channel, and an upper steel bar, nominal diameter 4 mm, inserted at the bottom into the holes of the lower connector spring and fastened at the top to the steel clip;
  - Profilo S4927 C-shaped galvanised-sheet-steel cross tees, nominal length 3000 mm, nominal size 49 mm x 27 mm and nominal thickness 0,6 mm, placed at a nominal centre-to-centre distance of 500 mm perpendicular to the main runners to which they are fastened using sheet-steel connectors, nominal thickness 0,7 mm, called "Connecting hanger for S4927 channels";
  - U-shaped galvanised-sheet-steel perimeter trim, nominal size 28 mm x 28 mm and nominal thickness 0,6 mm, secured to the test frame using steel expansion anchors, nominal diameter 9 mm and nominal length 45 mm, placed at a nominal centre-to-centre distance of 500 mm;

- **An infill, total thickness 40 mm,** placed 300 mm from the underside of the steel beams, leaving a gap of 260 mm between the suspended ceiling tiles and beam bottom flanges, and formed by 2 layers of PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm x 1200 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², arranged with staggered joints and secured to the cross-tee and perimeter-trim channels using steel self-tapping screws, nominal diameter 3,5 mm each and nominal length 35 mm the first layer, where they are placed at a nominal centre-to-centre distance of 300 mm, and 55 mm for the second layer, where they are placed at a nominal centre-to-centre distance of 150 mm;
  on the underside of the infill, the joints between boards are sealed with microperforated paper tape and gypsum putty, whilst screw heads and perimeter edges are sealed with the gypsum putty only;

7 fittings are installed in the suspended ceiling infill, as described hereafter.

- **Fittings "A", "B" and "C"**

  Fittings "A", "B" and "C" consist of a luminaire or more specifically a round downlight, effective diameter 60 mm, inserted in a special cut-out in the suspended ceiling tiles, in the centre of a section of the grid formed by the supporting metal framework, having a length of power supply cable and protected on top by luminaire cover comprising a box-type enclosure, nominal plan-view dimensions 450 mm x 380 mm, nominal height 130 mm and nominal thickness of walls 40 mm, formed by walls consisting of 2 layers of PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², previously joined together using a steel self-tapping screw, nominal diameter 3,5 mm and nominal length 35 mm, and assembled using steel clips, nominal width 10 mm, nominal length 50 mm and nominal thickness 1 mm, and Promat K84 high-temperature bonding agent.

  The downlight power supply cable exits the luminaire cover though a hole made in the middle of the top where it is sealed with PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³.

The luminaire cover is left resting on the suspended ceiling infill after inserting a layer of PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³, and secured using steel self-tapping screws, nominal diameter 3,5 mm and nominal length 55 mm, on two sides directly to the cross-tee channels and on the other two sides to lengths of Profilo S4927 C-shaped galvanised sheet-steel channel, nominal length 700 mm, nominal size 49 mm × 27 mm and nominal thickness 0,6 mm, positioned at right-angles to the cross tees and simply resting on them.

– **Fitting "D"**

Fitting "D" is an inspection hatch positioned in a rectangular opening cut in the suspended ceiling infill, nominal size 604 mm × 404 mm, and comprising:

- outer frame, nominal plan-view dimensions 650 mm × 450 mm, formed by two opposite sides made from steel angle bar, nominal size 20 mm × 20 mm and nominal thickness 0,8 mm, and two other sides made from ⌙-shaped section, nominal size 47 mm × 20 mm and nominal thickness 0,8 mm;

  the latter profiled sections are secured to the cross-tee channels using steel self-tapping screws, nominal diameter 4,2 mm and nominal length 13 mm, placed at a nominal centre-to-centre distance of 150 mm;

- door comprising:
  - perimeter frame formed by T-shaped sides that are assembled by spot welding a steel plate, nominal width 50 mm and nominal thickness 0,8 mm, to a steel angle bar, nominal size 30 mm × 20 mm and nominal thickness 0,8 mm;
  - upper protection of perimeter frame created with strip, nominal size 50 mm × 20 mm, cut from PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal mass per unit area 17 kg/m², secured to the perimeter frame using steel self-tapping screws, nominal diameter 3,5 mm each and nominal length 35 mm, placed at a nominal centre-to-centre distance of 150 mm;
  - infill, nominal thickness 40 mm, formed by 2 PROMATECT-100X silicate and sulphate-based boards with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m² each and nominal size 605 mm × 405 mm for the upper one and 600 mm × 400 mm for the lower one, fixed on the underside to the perimeter frame using steel self-tapping screws, nominal diameter 3,5 mm and nominal length 55 mm, placed at a nominal centre-to-centre distance of 150 mm;
    the perimeter edge of the lower board is fitted with a PROMASEAL-PL graphite intumescent seal, nominal size 20 mm × 1,8 mm and nominal mass per unit area 1,8 kg/m², secured by metal clips, nominal width 10 mm, nominal length 20 mm and nominal thickness 1 mm.

– **Fitting "E"**

Fitting "E" is an inspection hatch positioned in a square opening cut in the suspended ceiling infill, nominal size 404 mm x 404 mm, and comprising:

- outer frame, nominal plan-view dimensions 450 mm × 450 mm, formed by two opposite sides made from steel angle bar, nominal size 20 mm × 20 mm and nominal thickness 0,8 mm, and two other sides made from -shaped section, nominal size 47 mm × 20 mm and nominal thickness 0,8 mm;

  the latter profiled sections are secured to the cross-tee channels using steel self-tapping screws, nominal diameter 4,2 mm and nominal length 13 mm, placed at a nominal centre-to-centre distance of 150 mm;
- door comprising:
  - perimeter frame formed by T-shaped sides that are assembled by spot welding a steel plate, nominal width 50 mm and nominal thickness 0,8 mm, to a steel angle bar, nominal size 30 mm × 20 mm and nominal thickness 0,8 mm;
  - upper protection of perimeter frame created with strip, nominal size 50 mm × 20 mm, cut from PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal mass per unit area 17 kg/m², secured to the perimeter frame using steel self-tapping screws, nominal diameter 3,5 mm each and nominal length 35 mm, placed at a nominal centre-to-centre distance of 150 mm;
  - infill, nominal thickness 42 mm, formed by 2 PROMATECT-100X silicate and sulphate-based boards with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m² each and nominal size 405 mm × 405 mm for the upper one and 400 mm × 400 mm for the lower one, fixed on the underside to the perimeter frame using steel self-tapping screws, nominal diameter 3,5 mm and nominal length 55 mm, placed at a nominal centre-to-centre distance of 150 mm;
    the perimeter edge of the lower board is fitted with a PROMASEAL-PL graphite intumescent seal, nominal size 20 mm × 1,8 mm and nominal mass per unit area 1,8 kg/m², secured by metal clips, nominal width 10 mm, nominal length 20 mm and nominal thickness 1 mm.

– **Fitting "F"**

Fitting "F" is a polypropylene homopolymer (PPH) pipe, nominal length 1000 mm, nominal outside diameter 110 mm and nominal wall thickness 2,8 mm, placed inside a hole, nominal diameter 120 mm, made in both the suspended ceiling infill and an additional PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 300 mm × 300 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², placed on the underside of the infill, and protected on the fire-exposed face by a PROMASTOP FC6/110 firestop collar, nominal inside diameter 120 mm, nominal outside diameter 142 mm and nominal depth 60 mm, comprising a flexible powder-coated stainless-steel band, wrapped around the pipe, with a

graphite-based intumescent inlay, nominal density 1000 kg/m³, and having 4 fasteners for on-site installation; both the additional board and firestop collar are secured by 4 galvanised-steel anchors, nominal diameter 4 mm, inserted in holes, nominal diameter 14 mm, drilled in both the suspended ceiling infill and additional board and sealed with PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³.

The remaining gap in the hole between suspended ceiling infill and pipe was sealed on the underside of the suspended ceiling using said PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³.

- **Fitting "G"**

  Fitting "G" is a steel pipe, nominal length 800 mm, nominal outside diameter 42 mm and nominal wall thickness 5 mm, sealed off at the base by a steel plug and placed inside a hole, maximum nominal diameter 60 mm at the suspended ceiling infill and minimum nominal diameter 42 mm at an additional PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 300 mm x 300 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m², placed on the top side of the infill and secured to it using 4 galvanised-steel anchors, nominal diameter 4 mm, inserted in holes, nominal diameter 14 mm, drilled in both the suspended ceiling infill and additional board and sealed with PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³.

  The pipe is protected on the unexposed face by 2 stone-wool insulation wraps, nominal outside diameter 102 mm, nominal inside diameter 42 mm, nominal height 70 mm and nominal density 100 kg/m³ each, and covered at the hole in the suspended ceiling infill by a loop of PROMASTOP-W graphite intumescent firestop tape, nominal size 40 mm x 2,5 mm.

A.2.3.5 Direct field of application

The results of the fire resistance classification are directly applicable to constructions of the assessed construction, where only one or more of the modifications listed below are made.

- Constructions with fire exposure from below
- The classification may be applied to ceilings of any dimension, provided that the distribution per unit area of the hangers is not reduced, and the distance between hangers is not increased. The distance between grid members and the load on the hanger shall not be increased. Provisions for expansion in the ceiling system shall be increased pro rata with the extension in sizes, while the gap at the perimeter shall be the same as tested.
- Fittings which may be installed are those which have been included in the assessed installation. The distance between the fittings cannot be smaller than tested.
- The classifications are valid for cavities of any height.
- The classifications are applicable to ceilings suspended by hangers of any length.
- The classifications are only applicable to the inclusion of cables, pipes etc above the ceiling provided they are installed in such a manner that they give no additional mechanical load to the ceilings during the fire.

A.2.3.6 Details

All installation details shall be executed as presented in paragraph A.2.3.7.

A.2.3.7 Figures

Symbol	Description
1	Suspended ceiling - metal grid - main runners: Profilo S4927 [ ]-shaped galvanised-sheet-steel channel, nominal size 49 mm × 27 mm and nominal thickness 0,6 mm
2	Suspended ceiling - main runner suspension system: hanger comprising a lower connector called "Spring-type hanger for S4927 channels" and an upper steel bar, nominal diameter 4 mm
3	Suspended ceiling - suspended ceiling suspension system/beam fixing method: steel clip
4	Suspended ceiling - metal grid - cross tees: Profilo S4927 [ ]-shaped galvanised-sheet-steel channel, nominal size 49 mm × 27 mm and nominal thickness 0,6 mm
5	Suspended ceiling - cross tee/main runner fixing system: sheet-steel connectors, nominal thickness 0,7 mm, called "Connecting hanger for S4927 channels"
6	Suspended ceiling metal grid - perimeter trim: ‾ -shaped galvanised-sheet-steel channel, nominal size 28 mm × 28 mm and nominal thickness 0,6 mm
7	Suspended ceiling - perimeter trim/test frame fixing system: steel expansion anchor, nominal diameter 9 mm and nominal length 45 mm
8	Suspended ceiling - infill: PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, standard nominal size 2500 mm × 1200 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
9	Suspended ceiling - method of fixing infill top layer to cross tees and perimeter trim: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 35 mm
10	Suspended ceiling - method of fixing infill bottom layer to cross tees and perimeter trim: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 55 mm
11	Suspended ceiling - infill - sealing of joints between infill boards on the underside: microperforated paper tape and gypsum putty
12	Suspended ceiling - infill - sealing of board fixing screw heads and perimeter edges: gypsum putty
13	Fittings "A", "B" and "C" - luminaire: round downlight, effective diameter 60 mm
14	Fittings "A", "B" and "C" - luminaire: length of power supply cable
15	Fittings "A", "B" and "C" - luminaire cover: PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²

Figure A.2.3.7.1 Key (part 1)

Symbol	Description
16	Fittings "A", "B" and "C" - luminaire cover: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 35 mm, for pre-assembly
17	Fittings "A", "B" and "C" - luminaire cover: steel clip, nominal width 10 mm, nominal length 50 mm and nominal thickness 1 mm
18	Fittings "A", "B" and "C" - luminaire cover: Promat K84 high-temperature bonding agent
19	Fittings "A", "B" and "C" - luminaire cover: PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³
20	Fittings "A", "B" and "C" - luminaire cover/suspended ceiling fixing system: PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³
21	Fittings "A", "B" and "C" - luminaire cover/suspended ceiling fixing system: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 55 mm
22	Fittings "A", "B" and "C" - luminaire cover/suspended ceiling fixing system: length of Profilo S4927 ⌐¬-shaped galvanised-sheet-steel channel, nominal length 700 mm, nominal size 49 mm × 27 mm and nominal thickness 0,6 mm
23	Fitting "D" - inspection hatch - outer frame: steel angle bar, nominal size 20 mm × 20 mm and nominal thickness 0,8 mm
24	Fitting "D" - inspection hatch - outer frame: ⌙-shaped section, nominal size 47 mm × 20 mm and nominal thickness 0,8 mm
25	Fitting "D" - inspection hatch/suspended ceiling fixing system: steel self-tapping screw, nominal diameter 4,2 mm and nominal length 13 mm
26	Fitting "D" - inspection hatch - door: perimeter frame formed by ⌐¬-shaped sides assembled by spot welding a steel plate, nominal width 50 mm and nominal thickness 0,8 mm, to a steel angle bar, nominal size 30 mm × 20 mm and nominal thickness 0,8 mm
27	Fitting "D" - inspection hatch - door - upper protection of perimeter frame: strip, nominal size 50 mm × 20 mm, cut from PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal mass per unit area 17 kg/m²
28	Fitting "D" - inspection hatch - door - upper protection of perimeter frame: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 35 mm
29	Fitting "D" - inspection hatch - door - infill: upper PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 605 mm × 405 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²

Figure A.2.3.7.2 Key (Part 2)

Symbol	Description
30	Fitting "D" - inspection hatch - door - infill: lower PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 600 mm × 400 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
31	Fitting "D" - inspection hatch - door - infill: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 55 mm
32	Fitting "D" - inspection hatch - door - infill: PROMASEAL-PL graphite intumescent seal, nominal size 20 mm × 1,8 mm and nominal mass per unit area
33	Fitting "D" - inspection hatch - door - infill: steel clip, nominal width 10 mm, nominal length 20 mm and nominal thickness 1 mm
34	Fitting "E" - inspection hatch - outer frame: steel angle bar, nominal size 20 mm × 20 mm and nominal thickness 0,8 mm
35	Fitting "E" - inspection hatch - outer frame: ¯-shaped section, nominal size 47 mm × 20 mm and nominal thickness 0,8 mm
36	Fitting "E" - inspection hatch/suspended ceiling fixing system: steel self-tapping screw, nominal diameter 4,2 mm and nominal length 13 mm
37	Fitting "E" - inspection hatch - door: perimeter frame formed by ⊤-shaped sides assembled by spot welding a steel plate, nominal width 50 mm and nominal thickness 0,8 mm, to a steel angle bar, nominal size 30 mm × 20 mm and nominal thickness 0,8 mm
38	Fitting "E" - inspection hatch - door - upper protection of perimeter frame: strip, nominal size 50 mm × 20 mm, cut from PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal mass per unit area 17 kg/m²
39	Fitting "E" - inspection hatch - door - upper protection of perimeter frame: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 35 mm
40	Fitting "E" - inspection hatch - door - infill: upper PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 405 mm × 405 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
41	Fitting "E" - inspection hatch - door - infill: lower PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 400 mm × 400 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
42	Fitting "E" - inspection hatch - door - infill: steel self-tapping screw, nominal diameter 3,5 mm and nominal length 55 mm
43	Fitting "E" - inspection hatch - door - infill: PROMASEAL-PL graphite intumescent seal, nominal size 20 mm × 1,8 mm and nominal mass per unit area

Figure A.2.3.7.3 Key (Part 3)

Symbol	Description
44	Fitting "E" - inspection hatch - door - infill: steel clip, nominal width 10 mm, nominal length 20 mm and nominal thickness 1 mm
45	Fitting "F" - polypropylene homopolymer (PPH) pipe, nominal length 1000 mm, nominal outside diameter 110 mm and nominal wall thickness 2,8 mm
46	Fitting "F" - PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 300 mm × 300 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
47	Fitting "F" - PROMASTOP FC6/110 firestop collar, nominal inside diameter 120 mm, nominal outside diameter 142 mm and nominal depth 60 mm, comprising a flexible powder-coated stainless-steel band, wrapped around the pipe, with a graphite-based intumescent inlay, nominal density 1000 kg/m³, and having 4 fasteners for on-site installation
48	Fitting "F" - galvanised-steel anchor, nominal diameter 4 mm
49	Fitting "F" - PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³
50	Fitting "G" - steel pipe, nominal length 800 mm, nominal outside diameter 42 mm and nominal wall thickness 5 mm, sealed off at the base by a steel plug
51	Fitting "G" - PROMATECT-100X silicate and sulphate-based board with PROMAXON engineered mineral matrix having core thickened and fibre-reinforced by functional additives, nominal size 300 mm × 300 mm, nominal thickness 20 mm and nominal mass per unit area 17 kg/m²
52	Fitting "G" - galvanised-steel anchor, nominal diameter 4 mm
53	Fitting "G" - PROMASEAL A one-component acrylic firestop mastic, nominal dry density 1800 kg/m³
54	Fitting "G" - stone-wool insulation wrap, nominal outside diameter 102 mm, nominal inside diameter 42 mm, nominal height 70 mm and nominal density 100 kg/m³
55	Fitting "G" - loop of PROMASTOP-W graphite intumescent firestop tape, nominal size 40 mm × 2,5 mm
56	Supporting construction - test frame: warp-resistant reinforced-concrete outer frame, nominal size 400 mm × 255 mm and nominal density 2300 kg/m³
57	Supporting construction: HEB 200 S235 steel beam (standard UNI 5397:1978), nominal length 4500 mm

Figure A.2.3.7.4 Key (Part 4)

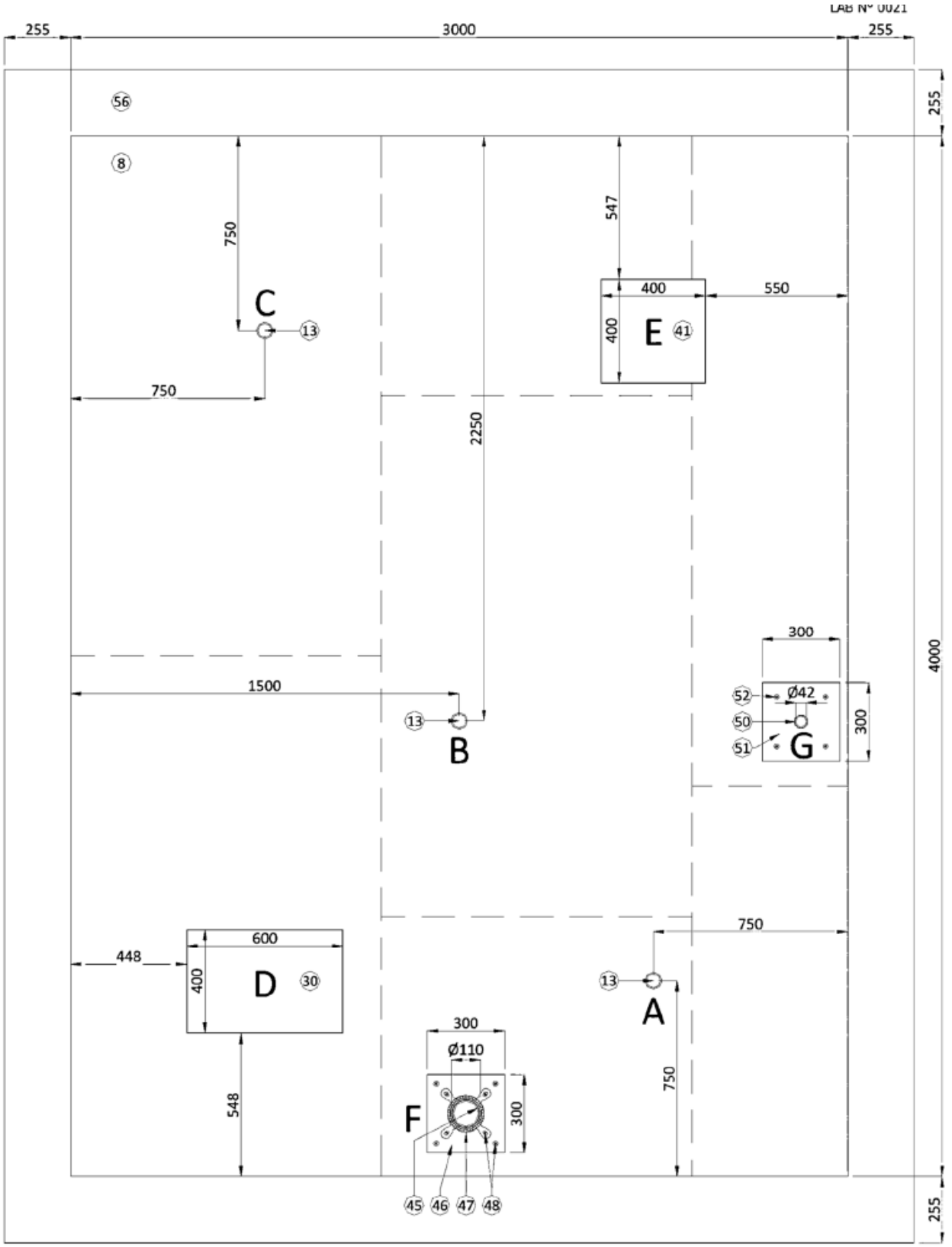

Figure A.2.3.7.5 : Underside pf assessed installation

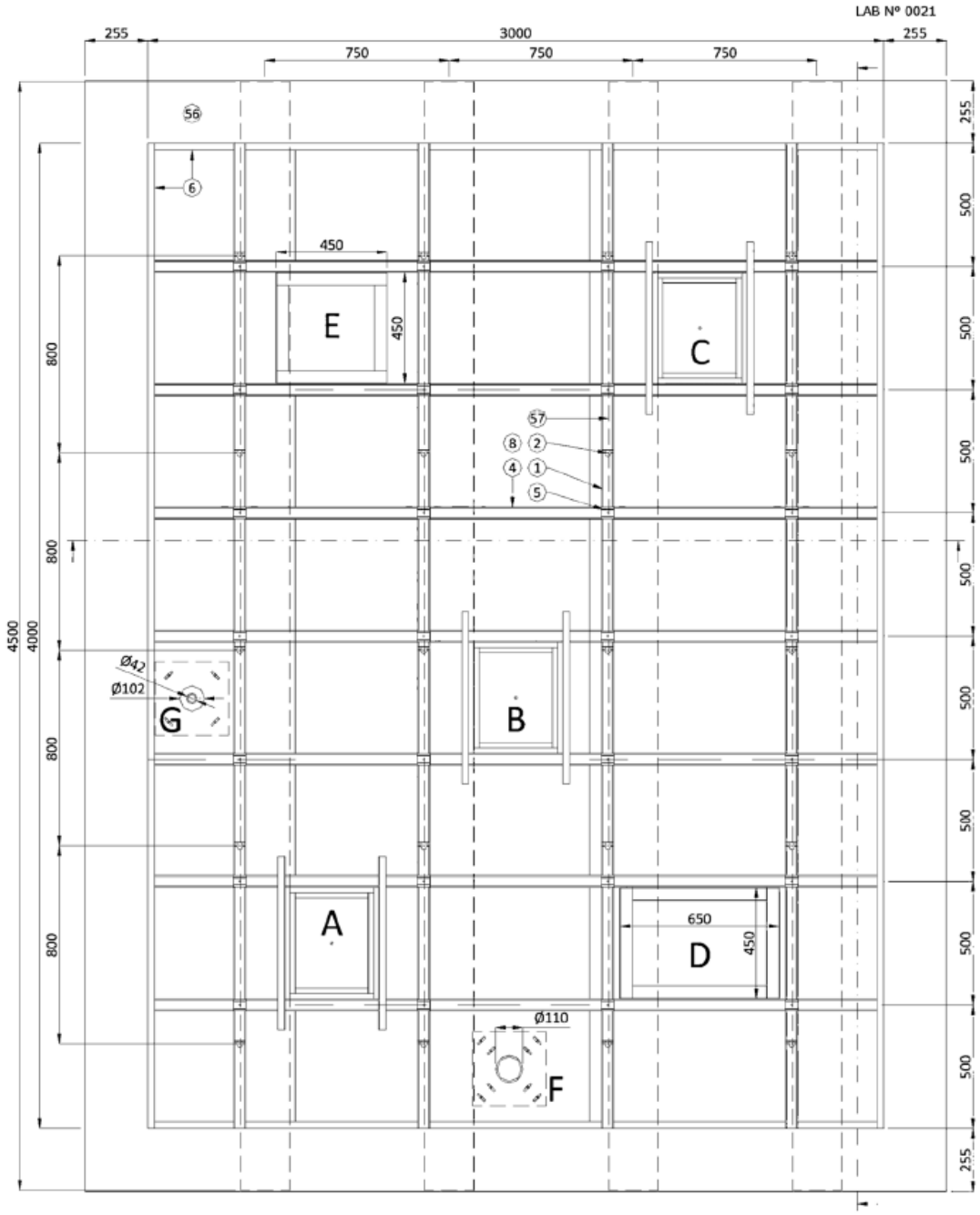

Figure A.2.3.7.6 Suspended ceiling top side

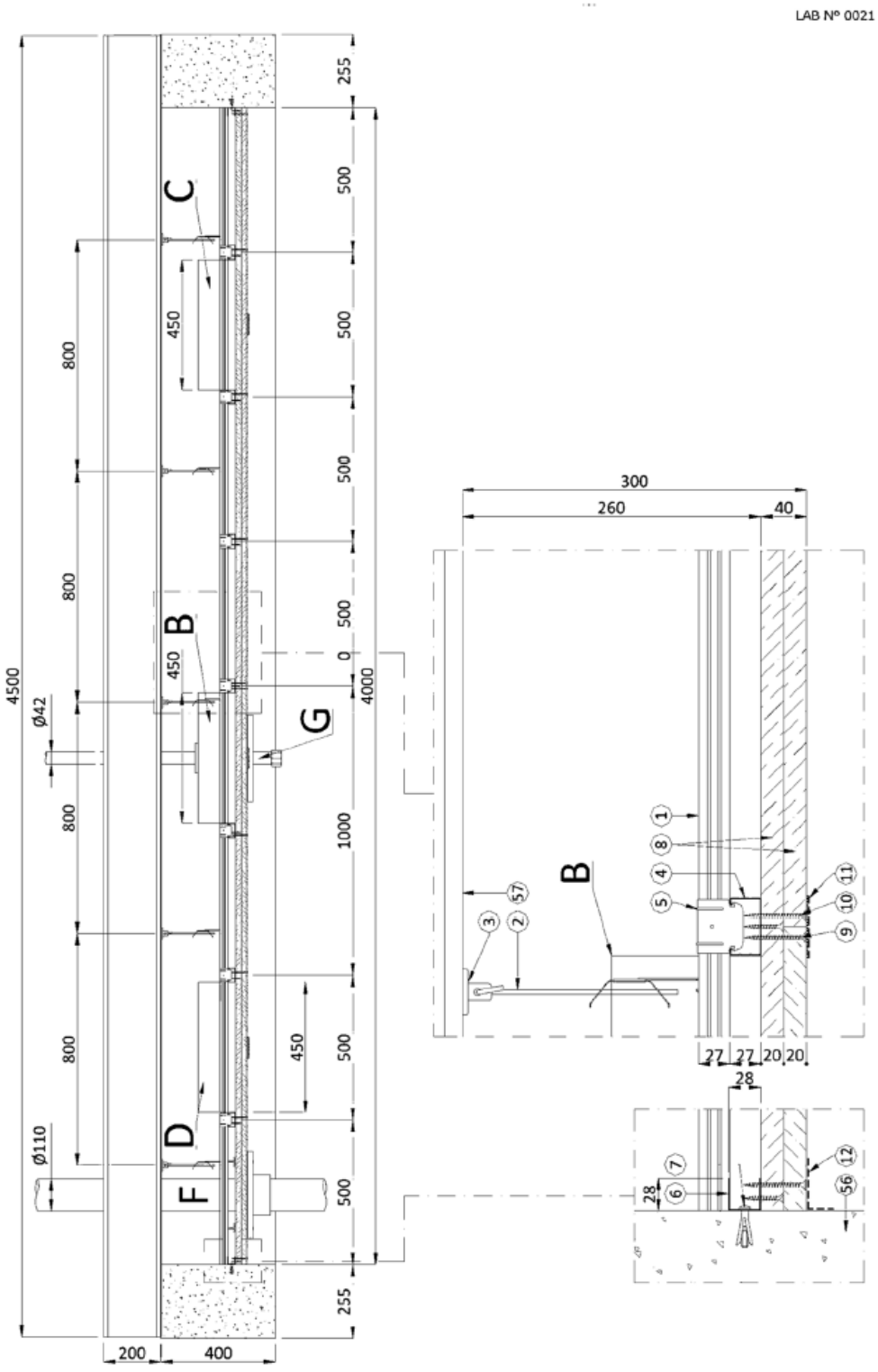

Figure A.2.3.7.7 Longitudinal section

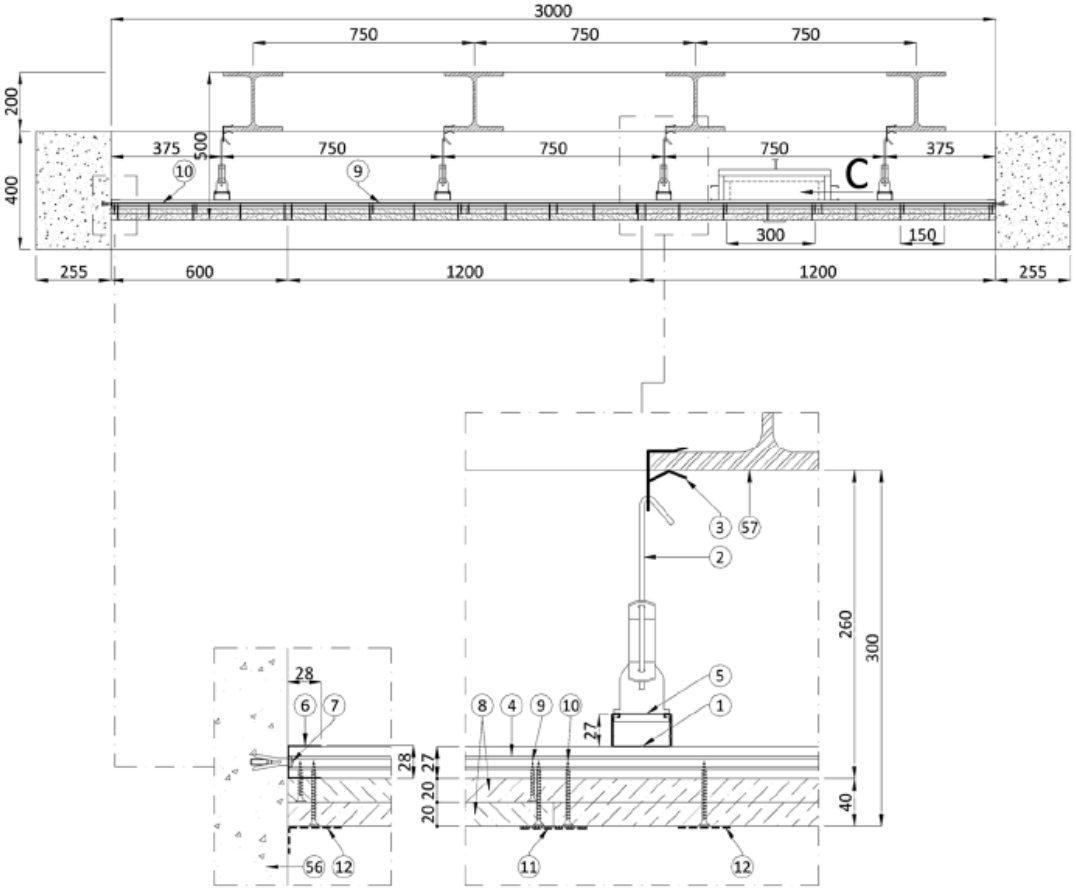

Figure A.2.3.7.8 Cross section

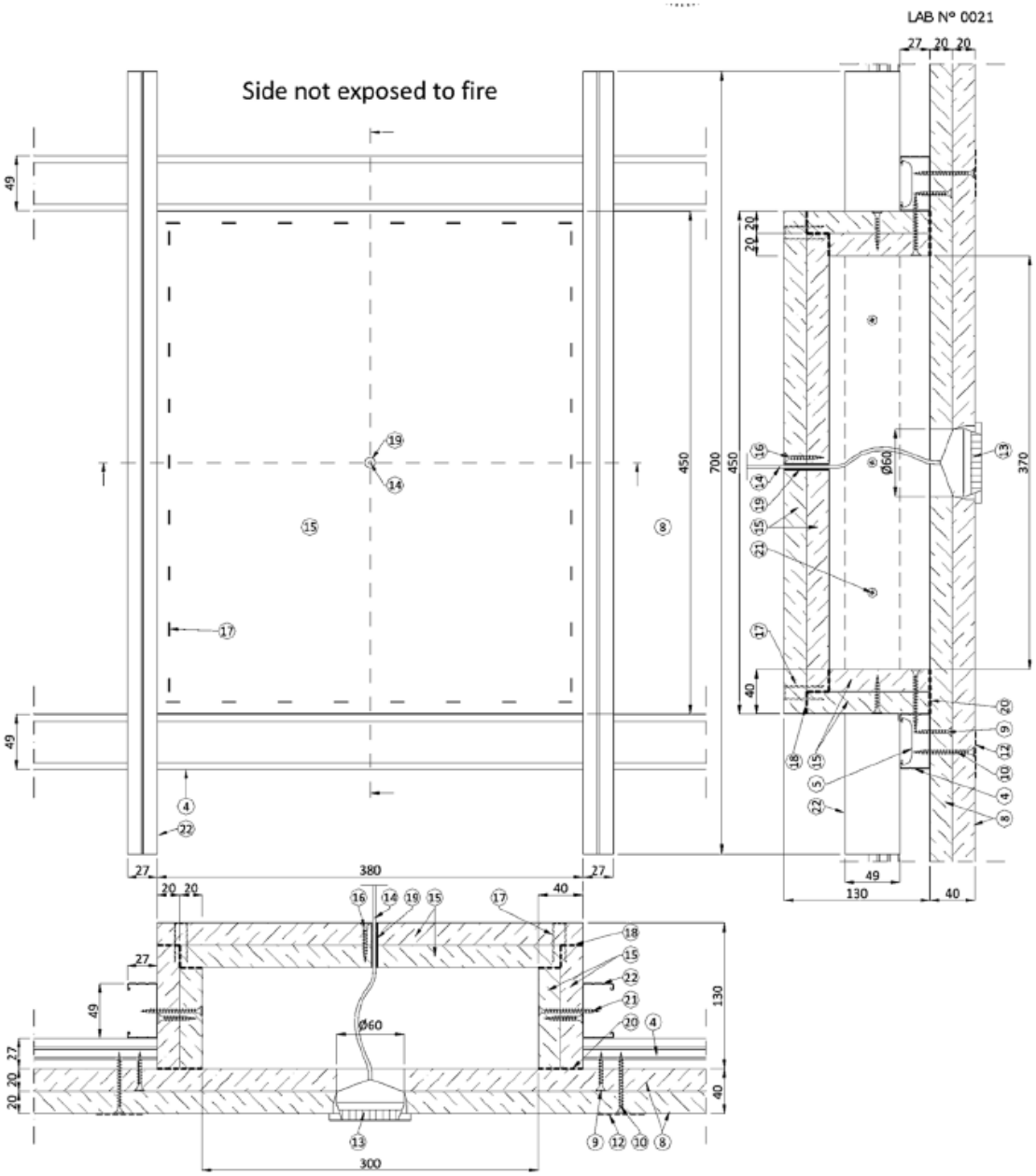

Figure A.2.3.7.9 Schematic drawing of fittings "A", "B" and "C"

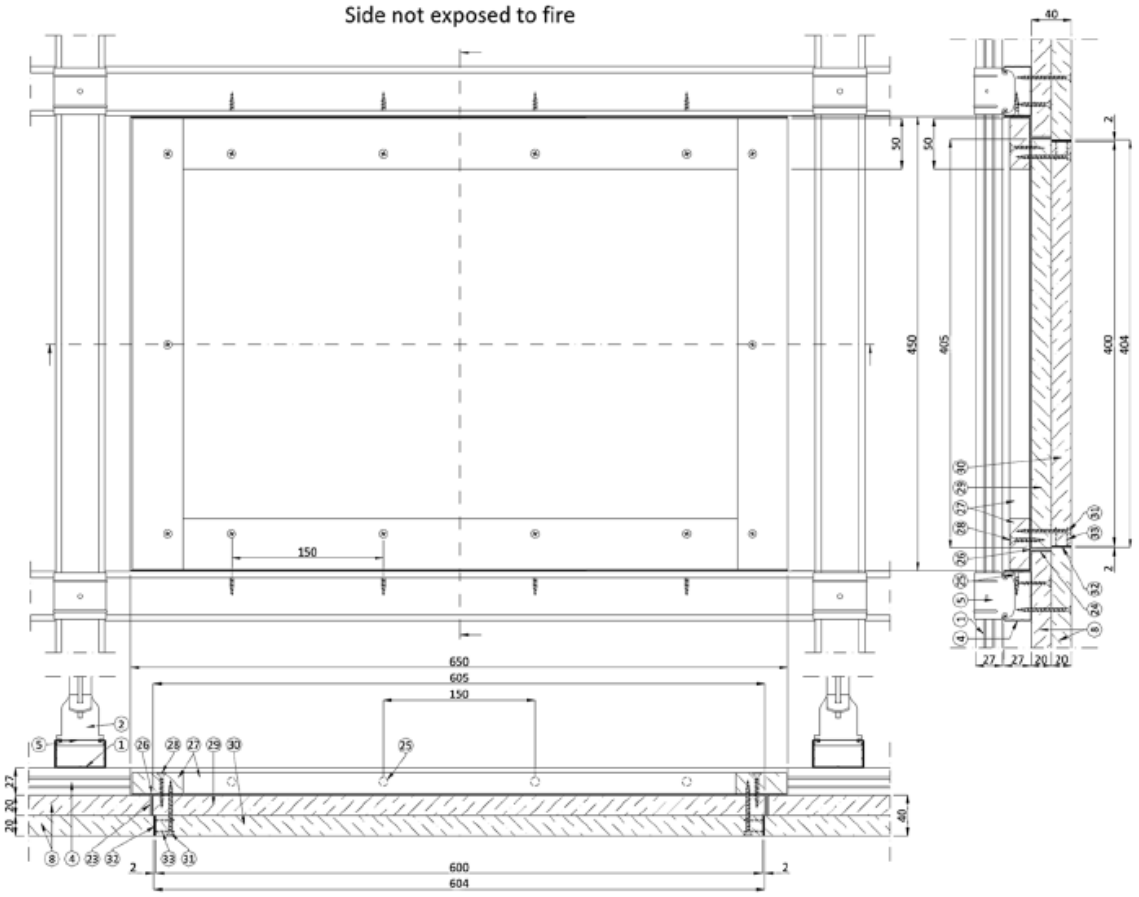

Figure A.2.3.7.10 Schematic drawing of fitting "D"

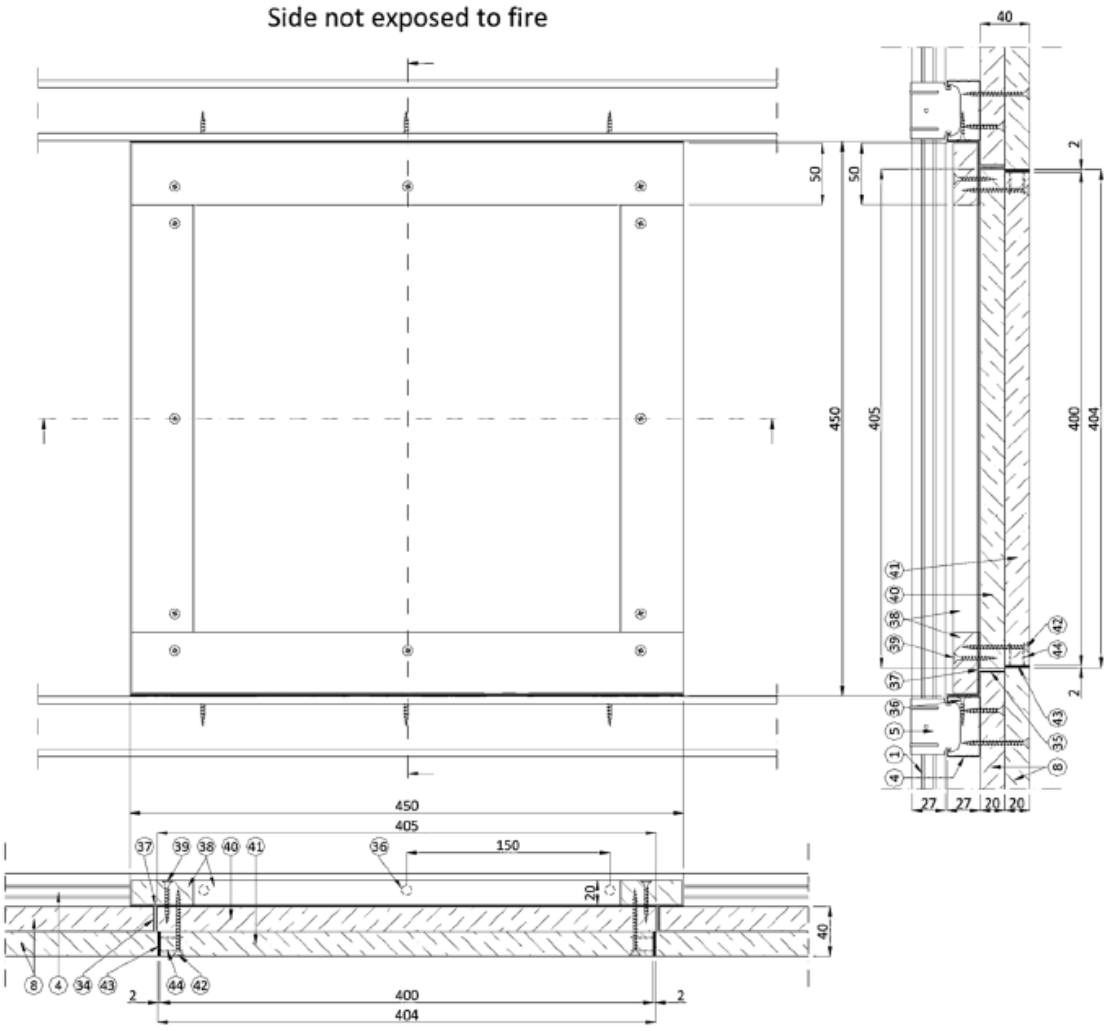

Figure A.2.3.7.11 Schematic drawing of fitting "E"

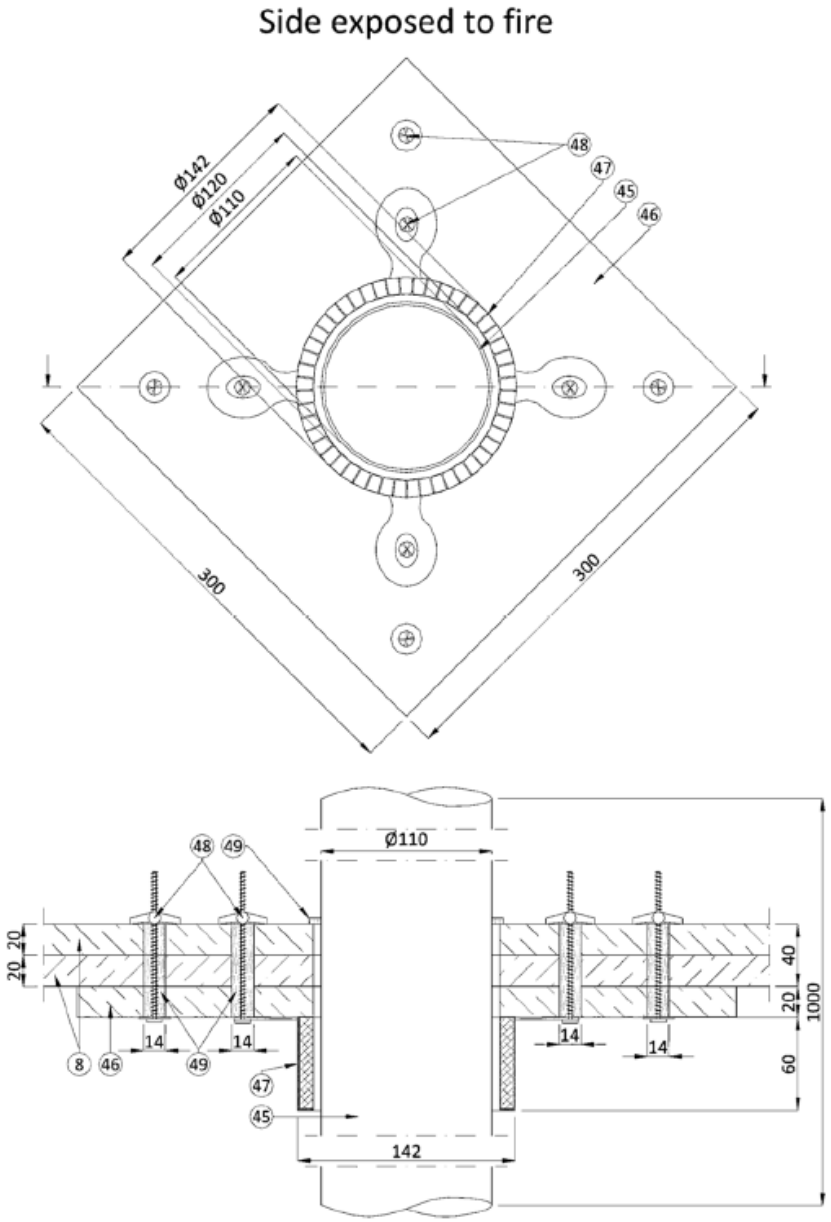

Figure A.2.3.7.12 Schematic drawing of fitting "F"

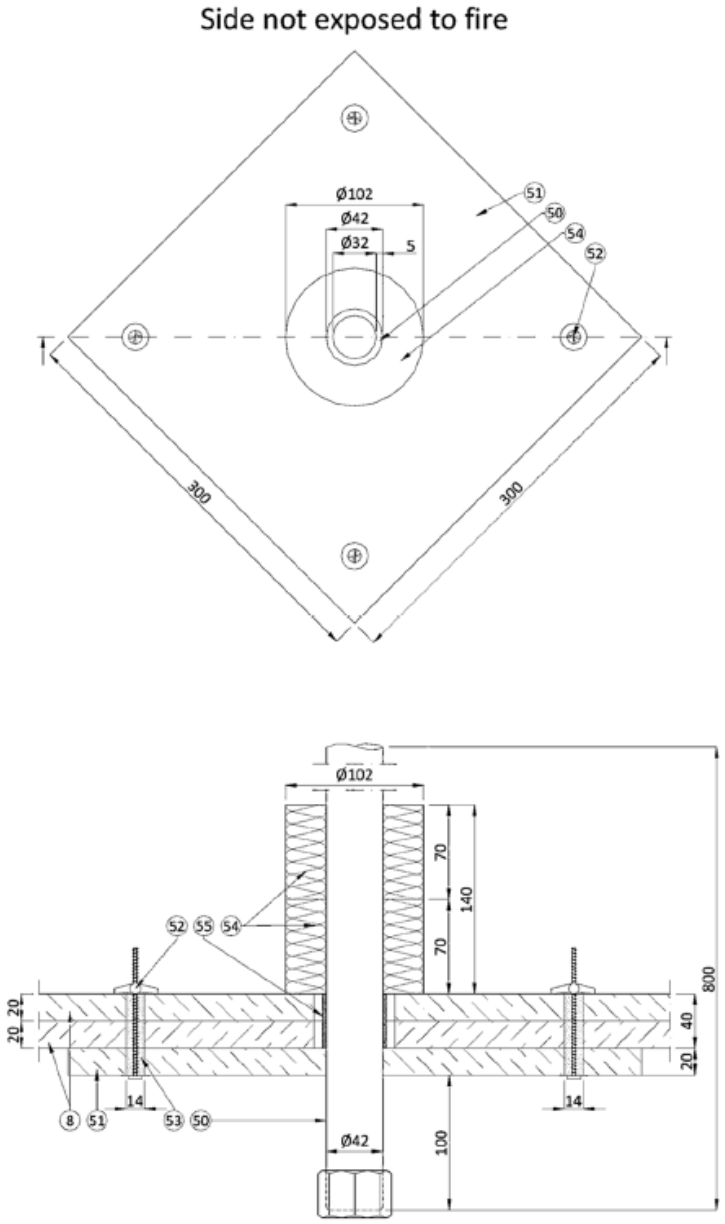

Figure A.2.3.7.13 Schematic drawing of fitting "G"