

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

ETA-18/0911  
of 13 June 2019

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Jusu Namas Haus

Product family  
to which the construction product belongs

Timber building kits

Manufacturer

Jusu Namas  
Vokes g. 20  
25124 LENTVARIS  
LITAUEN

Manufacturing plant

Jusu Namas  
Vokes g. 20  
25124 LENTVARIS  
LITAUEN

This European Technical Assessment  
contains

76 pages including 2 annexes which form an integral part  
of this assessment

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

ETAG 007, 27 June 2013,  
used as EAD according to Article 66 Paragraph 3 of  
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## 1 Technical description of the product

The company Jusu Namas produces under the trade name "Jusu Namas Haus" timber building kits for wooden buildings.

The main construction is timber elements with planking. The timber building kit consists of defined, prefabricated wall, roof and ceiling components, which are available in different numbers depending on the application (building project). The different components are prefabricated in the factory as complete elements. Depending on the construction project, the timber building kit is put together in the factory and mounted on site.

The prefabricated building components and the relevant components are shown in Annex A. Essential construction details are described in Annex B.

Windows and doors are not part of the kit although they are assembled at the factory.

The exterior wall cladding (plaster, etc.), the internal linings of interior components (e.g. tiles, wallpaper, plaster, waterproofing), roofing materials, floor coverings, stairs, service installations and other building components which are needed for a complete building are not part of the kit.

This also applies to additional load-bearing components (e.g. beams or steel girders for concentrated loads/point loads) which are required for each individual structure according to the construction works.

The components of the timber building kit do not contain flame retardants.

No used wood is used for the timber building kit.

The substructure of the building is not part of the timber building kit.

## 2 Specification of the intended use in accordance with the applicable European Assessment Document

The timber building kit is designed for the following building types:

- Residential construction (single-storey, multi-storey, terraced, semi-detached and multi-family),
- Commercial construction (hotel complexes, office buildings),
- Extensions and heightenings, public buildings (e.g. kindergartens, schools)

The intended use must be assessed in each individual case in relation to the climatic boundary conditions.

The kit can be used for separate building works or be placed as a heightening on an existing building. The tolerances of the surface of the substructure amount to  $\pm 10$  mm.

The performance given in section 3 is only valid if the timber building kit is used in compliance with the specifications and conditions given in Annex A and B. The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the timber building kit of at least 50 years and of at least 25 years for the exterior wall cladding. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

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

#### 3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Mechanical resistance and stability for each load-bearing building component (walls, floors and roof structures) and their connections	See Annex A All building components are described with regard to their components and their structure
Resistance against seismic actions	No performance assessed (NPA)

#### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	The classification for reaction to fire of the components is given in Annex A
Resistance to fire	No performance assessed (NPA)
External fire performance of roof covering	No performance assessed (NPA)

#### 3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Vapour permeability and moisture resistance	No performance assessed (NPA)
Water tightness of the external envelope	See Annex A
Water tightness of the internal surface finish	No performance assessed (NPA)
Content and/or release of dangerous substances	
Biocides	No performance assessed (NPA)
Content of active agents for root penetration in bitumen sheets	No performance assessed (NPA)
Biopersistent fibres	The half-life for tested WHO fibres is $\leq 40$ days.
Formaldehyde	Class E1 in accordance with EN 13986 <sup>1</sup> and EN 14080 <sup>2</sup> .
VOC, SVOC	No performance assessed (NPA)
Release scenarios regarding BWR 3	No performance assessed (NPA)

#### 3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Impact resistance	Wall construction with wood based- or gypsum panels $d \geq 10$ mm is sufficiently shock resistant
Slipperiness of floor	No performance assessed (NPA)

<sup>1</sup> EN 13986:2004 Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking

<sup>2</sup> EN 14080:2013 Timber structures - Glued laminated timber and glued solid timber - Requirements

**3.5 Protection against noise (BWR 5)**

Essential characteristic	Performance
Airborne sound insulation	No performance assessed (NPA)

**3.6 Energy economy and heat retention (BWR 6)**

Essential characteristic	Performance
Thermal transmittance coefficient	No performance assessed (NPA)
Air permeability	No performance assessed (NPA)
Thermal inertia	No performance assessed (NPA)

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

According to Decision 99/455/EC of the Commission<sup>3</sup>, the system to be applied is 1.

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 13 June 2019 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow  
Head of Department

*beglaubigt:*  
Baumann

<sup>3</sup> Official Journal of the European Communities L 178/56-57 of 14.07.1999

## Annex A Description of the building components

### A.1 Specification of the technical description

#### Technical description of building elements

The maximum dimensions of the elements are 12.00 m in width and 3.00 m in height.

The dimensioning of building elements and the selection of materials for wall-, floor- and roof-elements are carried out in accordance with the requirements of structural and building physics calculations.

The ceiling elements are manufactured according to the statics in a maximum width of 2.50 m. The ceiling beams are arranged in a grid of maximum 62.5 cm. The beam heights are a minimum of 14.5 cm and a maximum of 40 cm. The beam widths are at least 4.5 cm and not more than 24 cm and they consist of combinations of equal or different beam widths.

The roof components are manufactured up to a maximum width of 2.50 m according to the statics. The rafters are arranged in a grid of 1.25 m maximum. The rafter heights are a minimum of 20 cm and a maximum of 40 cm. The rafter widths are a minimum of 4.5 cm and a maximum of 24 cm.

If the production of roof elements is not possible, the roof structure is delivered individually and assembled on site.

A certain number of additional load-bearing components (e.g. beams or steel girders for concentrated loads/point loads), which are required for each individual structure according to the static calculation, are usually integrated in the elements.

Some of the component layers, such as the gypsum plasterboard of the ceiling and roof elements, are mounted on site. The load bearing connections between the building elements with each other in the factory, as well as the assembly of the elements on the building site, is carried out with structural designed fasteners.

Examples of connections between particular building components among each other are shown in Annex B.

Non-load-bearing internal walls may be arranged in any way.

For roof coverings usually concrete tiles according to EN 490<sup>1</sup>/491<sup>2</sup> or clay tiles according to EN 1304<sup>3</sup> are used. Other roofing which fulfils the applicable requirements may also be used. The roofing is not part of the kit.

The anchorage of the external wall building components to the substructure (basement or foundation slab made of concrete) is performed with structural designed fasteners. The anchorage of the external wall building components to the substructure is shown in Annex B, but it is not part of the kit.

The verification of the suction safety of the wall components with the substructure is provided.

Exterior walls either get external insulation systems according to European technical assessments (ETA-16/0400<sup>4</sup>) or have been designed in accordance with generally recognized rules of construction.

### A.2 Specification of essential characteristics

#### Mechanical Resistance and Stability:

Mechanical resistance and stability for each load-bearing building component and their connections between the components will be determined.

The necessary characteristics for structural design can be gathered from Annex (from Annex A3) or from standards referred to in there, or from European technical assessments, etc.

1 EN 490:2012 Concrete roofing tiles and fittings for roof covering and wall cladding – Product specifications  
2 EN 491:2011 Concrete roofing tiles and fittings for roof covering and wall cladding – Test methods  
3 EN 1304:2013 Clay roofing tiles and fittings – Product definitions and specifications  
4 Other ETIC-Systems, which are intended for use of timber frame buildings' walls, may as well be used. These ETIC-Systems shall be suitable for the present building kit. Further national regulations of standard of the Member States might have to be met.

As a basis for the manufacture and dimensioning of the timber building kit, a specification of the relevant requirements for structural design, reaction to fire and fire resistance, sound insulation, thermal insulation and energy saving is worked out. The verifications comply with the intended procedures and applicable requirements, including the verification of building stability. The structural design complies with the applicable building regulations.

The serviceability of the timber building kit is ensured by providing that cantilevered ceilings are sufficiently stiff to prevent unacceptable vibrations during normal use. The verification of this requirement is part of the calculation of mechanical strength and stability.

The provisions for health protection and occupational safety shall be observed.

The production of the components and the temporary storage of the components usually take place in dry and heated premises. The components of the kit are assembled in the manufacturing plant.

#### **Water tightness:**

Provided the kit is manufactured and assembled according to this ETA the building envelope is resistant to penetrating water (also driving rain-resistant) and snow. In case of ranges of application with extreme conditions of driving rain and snow the intended use shall be assessed in the individual case.

#### **Durability:**

Softwood that fulfils the need of natural durability of solid wood according to EN 350<sup>5</sup> is used as construction wood.

Only technically dried timber with a density up to 20 % is used.

Building components are usually not treated with chemical wood preservatives.

Termites only exist in some areas of Europe. In these areas the use of timber without any chemical wood preservatives is not allowed.

Further precaution like prevention of flooring, foundation and walls are not part of the timber building kit.

For exterior wall claddings, moisture and wood protection will be assessed in accordance with the applicable building regulations.

The fasteners used for this kit meet the requirements of service class 2 in accordance with EN 1995-1-1<sup>6</sup>, as far as no special corrosion conditions exist.

#### **Execution of construction works**

The manufacturer provides an assembly schedule containing the following aspects:

- erection techniques and necessary equipment
- temporary bracing and weather protection
- completion of joints between components of the timber building kit (fixing, sealing against climatic influences, etc.)
- fixing of wind anchorage to the substructure and between building parts
- additional building materials and building components applied on site and which are a precondition for the fitness of use of the timber building kit
- special boundary conditions (e.g. special crane requirements, hoisting strap positions, etc.)

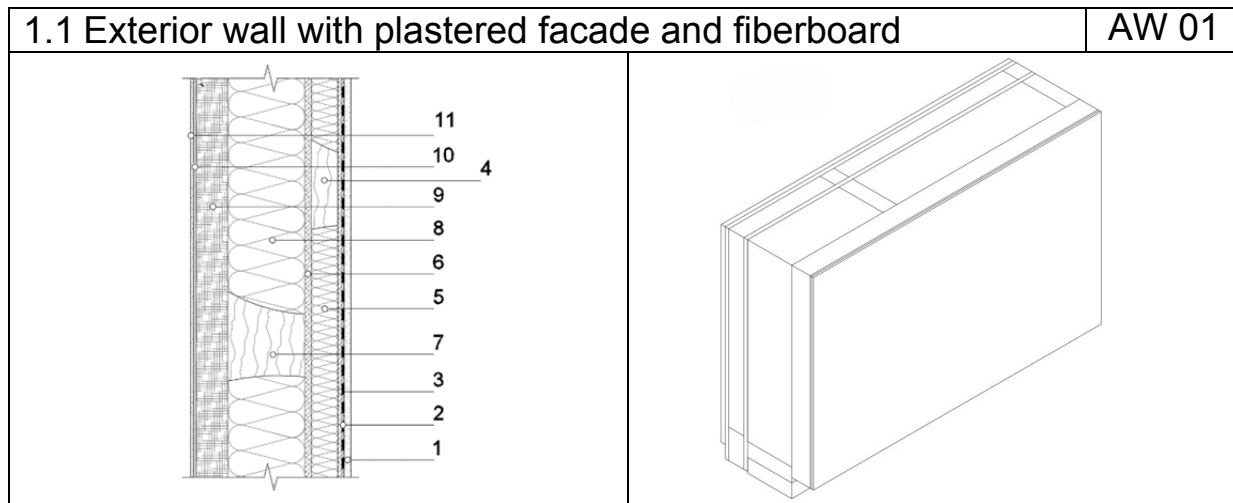
<sup>5</sup> EN 350:2016 Durability of wood-based products – Testing and classification of the durability to biological agents of wood and wood-based materials

<sup>6</sup> EN 1995-1-1:2004+AC:2006+A1:2001 Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings

### A.3 Components catalogue Jusu Namas

1. Walls		
1.1.	AW 01 Exterior wall with plastered facade and wood fiberboard	P. 09
1.2.	AW 02 Exterior wall with ventilated plaster facade	P. 11
1.3.	AW 03 Exterior wall with ventilated wooden facade	P. 13
1.4.	AW 04 Building partition wall	P. 15
1.5.	AW 05 Free standing building partition wall	P. 17
1.6.	AW 06 Open exterior wall	P. 19
1.7.	IW 01 Standard inside wall	P. 21
1.8.	IW 02 Open inside wall	P. 23
1.9.	IW 03 Party wall	P. 24
2. Ceiling		
2.1.	DE 01 Closed ceiling	P. 26
2.2.	DE 02 Ceiling with visible beams	P. 28
2.3.	DE 03 Closed ceiling against unheated	P. 29
2.4.	DE 04 Apartment separation ceiling / Ceiling with metal framing components for gypsum plasterboard systems	P. 30
3. Roof		
3.1.	DA 01 Standard roof	P. 32
3.2.	DA 02 Uninsulated roof	P. 34
3.3.	DA 03 Flat roof without ventilation	P. 35
3.4.	DA 04 Green flat roof	P. 37





Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>1</sup> (2006/673/EG) B-s1, d0 <sup>1</sup> (2006/673/EG)
2	Vapour control layer <sup>2</sup>	$\geq 0,2$	EN13984	E
3.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
3.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
3.3	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>3</sup>
4 <sup>4</sup>	Timber construction Installation level Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
5.1 <sup>4</sup>	Rock wool	$\geq 50$	EN 13162	A1
5.2 <sup>4</sup>	Mineral wool	$\geq 50$	EN 13162	A1
5.3 <sup>4</sup>	Wood fibre insulation	$\geq 50$	EN 13171	E
5.4 <sup>4</sup>	(Still) air gap	$\geq 50$		
6.1 <sup>4</sup>	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
6.2 <sup>4</sup>	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
7	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)

1 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

2 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

3 Proof through ETA.

4 The outer wall can alternatively also be designed without installation level, in which case layers 4 to 6.2 are omitted.

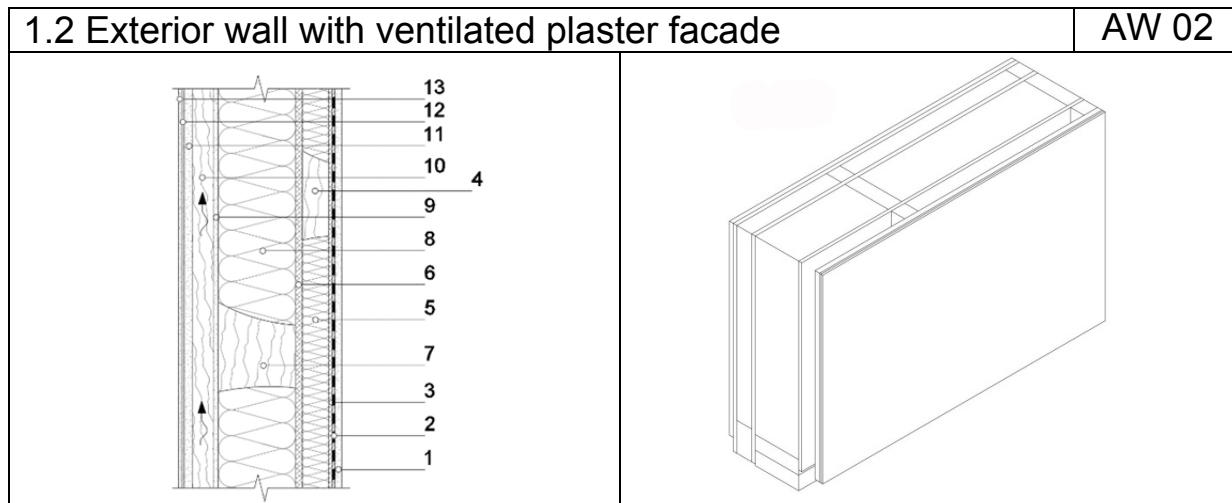
<b>1.1 Exterior wall with plastered facade and fiberboard</b>	<b>AW 01</b>
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No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
8.1	Rock wool	≥ 90	EN 13162	A1
8.2	Mineral wool	≥ 90	EN 13162	A1
8.3	Wood fibre insulation	≥ 90	EN 13171	E
8.4	Cellulose insulation	≥ 90	EN 15101-1	E
9	Wood fibre board	≥ 60	overall system ETA 16/0400 <sup>5</sup>	overall system B-s1, d0
10	Reinforced render <sup>*6</sup>	≥ 5		
11	External render <sup>*6</sup>	1,5 up to 6,0		

5 Other ETIC-Systems, which are intended for use of timber frame buildings' walls, may as well be used. These ETIC-Systems shall be suitable for the present building kit. Further national regulations of standard of the Member States might have to be met.

6 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1	Gypsum plasterboard	Drywall screw	EN 14566/A1	3,9 / 30	≤ 150
3.1 6.1	Particle board alternative OSB board	Staple	EN 14592/A1	1,53 / 50	ends ≤ 75 middle ≤ 150
3.2 6.2	Cement- bonded particle board	Staple	EN 14592/A1	1,53 / 50	ends ≤ 75 middle ≤ 150
3.3	Gypsum fibre board	Staple	EN 14592/A1	1,53 / 50	ends ≤ 75 middle ≤ 150
9	Wood fibre board	Staple	EN 14592/A1	2,0 / 100	≤ 100



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>7</sup> (2006/673/EG) B-s1, d0 <sup>7</sup> (2006/673/EG)
2	Vapour control layer <sup>8</sup>	$\geq 0,2$	EN13984	E
3.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
3.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
3.3	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>9</sup>
4 <sup>10</sup>	Timber construction Installation level Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
5.1 <sup>10</sup>	Rock wool	$\geq 50$	EN 13162	A1
5.2 <sup>10</sup>	Mineral wool	$\geq 50$	EN 13162	A1
5.3 <sup>10</sup>	Wood fibre insulation	$\geq 50$	EN 13171	E
5.4 <sup>10</sup>	(Still) air gap	$\geq 50$		
6.1 <sup>10</sup>	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
6.2 <sup>10</sup>	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
7	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)

7 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

8 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

9 Proof through ETA.

10 The outer wall can alternatively also be designed without installation level, in which case layers 4 to 6.2 are omitted.

<b>1.2 Exterior wall with ventilated plaster facade</b>	<b>AW 02</b>
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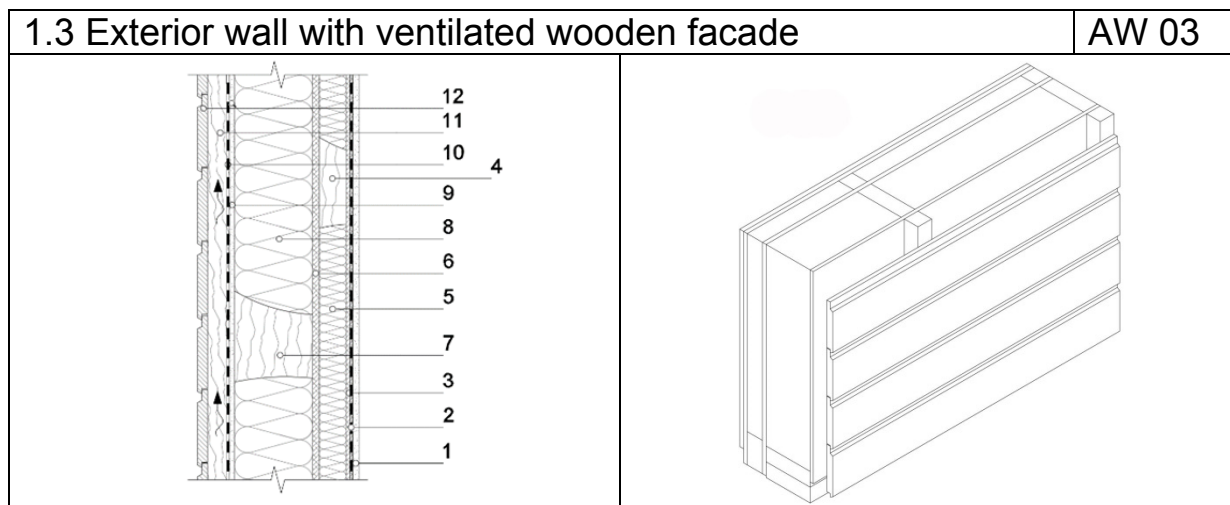
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
8.1	Rock wool	≥ 90	EN 13162	A1
8.2	Mineral wool	≥ 90	EN 13162	A1
8.3	Wood fibre insulation	≥ 90	EN 13171	E
8.4	Cellulose insulation	≥ 90	EN 15101-1	E
9	Gypsum plasterboard Density ≥ 600 kg/m <sup>3</sup>	≥ 9,5	EN 520	A2-s1, d0 (2006/673/EG) B-s1, d0 (2006/673/EG)
10	Wooden lathing Density ≥ 350 kg/m <sup>3</sup>	≥ 20 / ≥ 40	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
11.1	Cement-bonded fibre board Density ≥ 1000 kg/m <sup>3</sup>	12,5	ETA 07/0173	A1 <sup>11</sup>
11.2	Cement-bonded board Density ≥ 950 kg/m <sup>3</sup>	15	ETA 13/0609	A1 <sup>12</sup>
12	Reinforced render * <sup>13</sup>	≥ 5		
13	External render* <sup>13</sup>	1,5 up to 6,0		

11 Proof through ETA.

12 Proof through ETA.

13 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use). Other ETIC-Systems, which are intended for use of timber frame buildings' walls, may as well be used. These ETIC-Systems shall be suitable for the present building kit. Further national regulations of standard of the Member States might have to be met.

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1 9	Gypsum plasterboard	Drywall screw	EN 14566	3,9 / 30	≤ 150
3.1 6.1	Particle board alternative OSB board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
3.2 6.2 11.1	Cement- bonded particle board	Drywall screw	EN 14566	3,9 / 30	ends ≤ 75 middle ≤ 150
2.3	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
11.2	Cement- bonded board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>14</sup> (2006/673/EG) B-s1, d0 <sup>14</sup> (2006/673/EG)
2	Vapour control layer <sup>15</sup>	$\geq 0,2$	EN13984	E
3.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
3.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
3.3	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>16</sup>
4 <sup>17</sup>	Timber construction Installation level Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
5.1 <sup>17</sup>	Rock wool	$\geq 50$	EN 13162	A1
5.2 <sup>17</sup>	Mineral wool	$\geq 50$	EN 13162	A1
5.3 <sup>17</sup>	Wood fibre insulation	$\geq 50$	EN 13171	E
5.4 <sup>17</sup>	(Still) air gap	$\geq 50$		
6.1 <sup>17</sup>	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
6.2 <sup>17</sup>	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
7	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)

14 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

15 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

16 Proof through ETA.

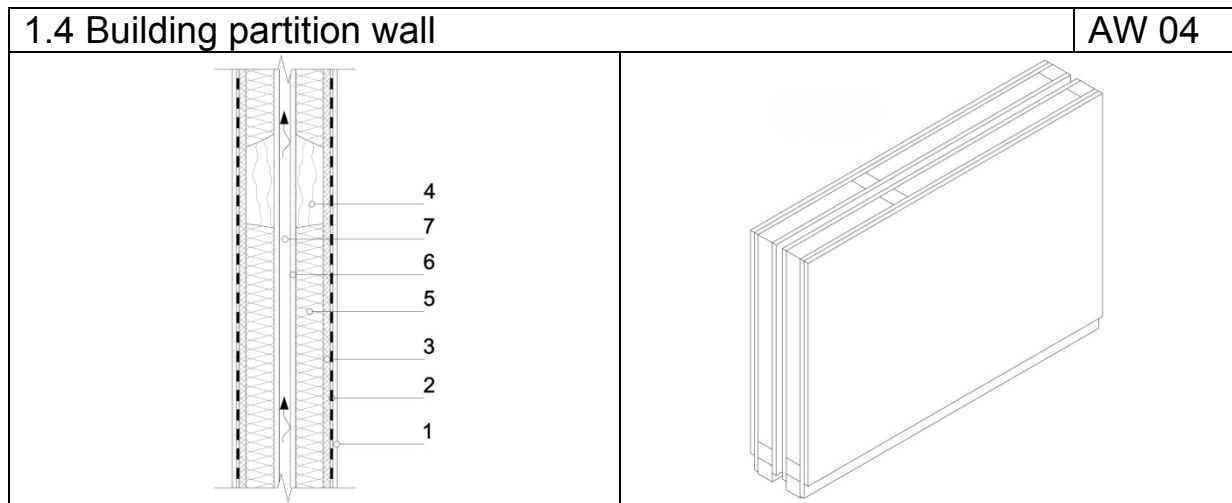
17 The outer wall can alternatively also be designed without installation level, in which case layers 4 to 6.2 are omitted.

<b>1.3 Exterior wall with ventilated wooden facade</b>	<b>AW 03</b>
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No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
8.1	Rock wool	≥ 90	EN 13162	A1
8.2	Mineral wool	≥ 90	EN 13162	A1
8.3	Wood fibre insulation	≥ 90	EN 13171	E
9.1	Wood fibre board	≥ 35	EN 13171	E
9.2	Gypsum plasterboard Density ≥ 600 kg/m <sup>3</sup>	≥ 9,5	EN 520	A2-s1, d0 (2006/673/EG) B-s1,d0 (2006/673/EG)
10	Diffusion-open underlay	≥ 0,5	EN 13859-2	E
11	Wooden lathing with ventilation level <sup>3</sup> Density ≥ 350 kg/m <sup>3</sup> with ventilation level <sup>3</sup>	≥ 20 / ≥ 40	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
12	Timber cladding Density ≥ 350 kg/m <sup>3</sup>	≥ 15	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1 9.2	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
3.1 6.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
3.2 6.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
3.3	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
9.1	Wood fibre board	Staple (or Drywall screw)	EN 14592	2,0 / 100	≤ 100
11	Wooden lathing	Nail	EN 14592	3,1 / 90 <sup>18</sup>	
12	Timber cladding	Nail	EN 14592	≥ 2,5 / ≥ 50	

<sup>18</sup> With sufficient penetration depth in the wood depending on the thickness of the intermediate layer (gypsum plasterboard or soft wood fibre board).



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Gypsum plasterboard <sup>19</sup> Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>20</sup> (2006/673/EG) B-s1,d0 <sup>20</sup> (2006/673/EG)
1.2	Gypsum fibre board <sup>19</sup>	$\geq 9,5$	ETA 03/0050	A2-s1, d0 <sup>21</sup>
1.3	Gypsum fire protection board <sup>19</sup>	$\geq 9,5$	EN 520	A2-s1, d0 (2006/673/EG)
2	Vapour control layer <sup>22</sup>	$\geq 0,2$	EN13984	E
3.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
3.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
4	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
5.1	Rock wool	$\geq 50$	EN 13162	A1
5.2	Mineral wool	$\geq 50$	EN 13162	A1
6.1	Gypsum fibre board <sup>19</sup>	$\geq 9,5$	ETA 03/0050	A2-s1, d0 <sup>21</sup>
6.2	Gypsum fire protection board <sup>19</sup>	$\geq 9,5$	EN 520	A2-s1, d0 (2006/673/EG)
7	Air gap	ca. 20		
	Further build-up mirror- inverted! Compare draft			

19 Depending on national requirements, double layered.

20 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

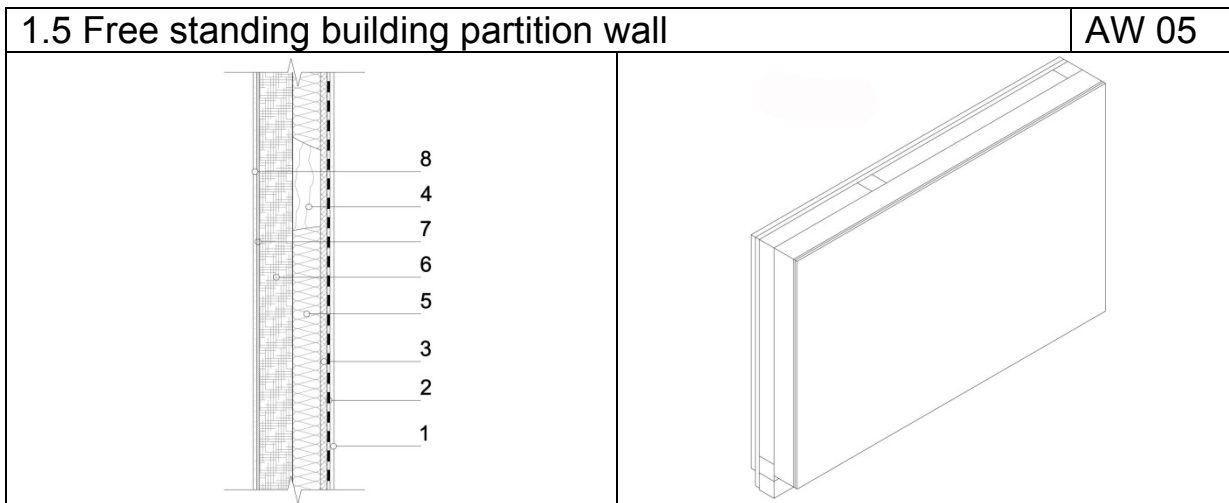
21 Proof through ETA.

22 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

<b>1.4 Building partition wall</b>	<b>AW 04</b>
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
1.2 6.1	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.3 6.2	Gypsum fire protection board	Drywall screw	EN 14566	3,9 / 41	ends ≤ 75 middle ≤ 150
3.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
3.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150





Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ <sup>23</sup>	$\geq 9,5$	EN 520	A2-s1, d0 <sup>24</sup> (2006/673/EG) B-s1,d0 <sup>24</sup> (2006/673/EG)
1.2	Gypsum fibre board <sup>23</sup>	$\geq 9,5$	ETA 03/0050	A2-s1, d0 <sup>25</sup>
1.3	Gypsum fire protection board <sup>23</sup>	$\geq 9,5$	EN 520	A2-s1, d0 (2006/673/EG)
2	Vapour control layer <sup>26</sup>	$\geq 0,2$	EN13984	E
3.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
3.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
4	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
5.1	Rock wool	$\geq 50$	EN 13162	A1
5.2	Mineral wool	$\geq 50$	EN 13162	A1
6.1	Cement-bonded fibre board Density $\geq 1000 \text{ kg/m}^3$	12,5	ETA 07/0173	A1 <sup>27</sup>
6.2	Cement-bonded board Density $\geq 950 \text{ kg/m}^3$	15	ETA 13/0609	A1 <sup>28</sup>
7	Reinforced render <sup>*29</sup>	$\geq 5$		
8	External render <sup>*29</sup>	1,5 bis 6,0		

23 Depending on national requirements, double layered.

24 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

25 Proof through ETA.

26 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

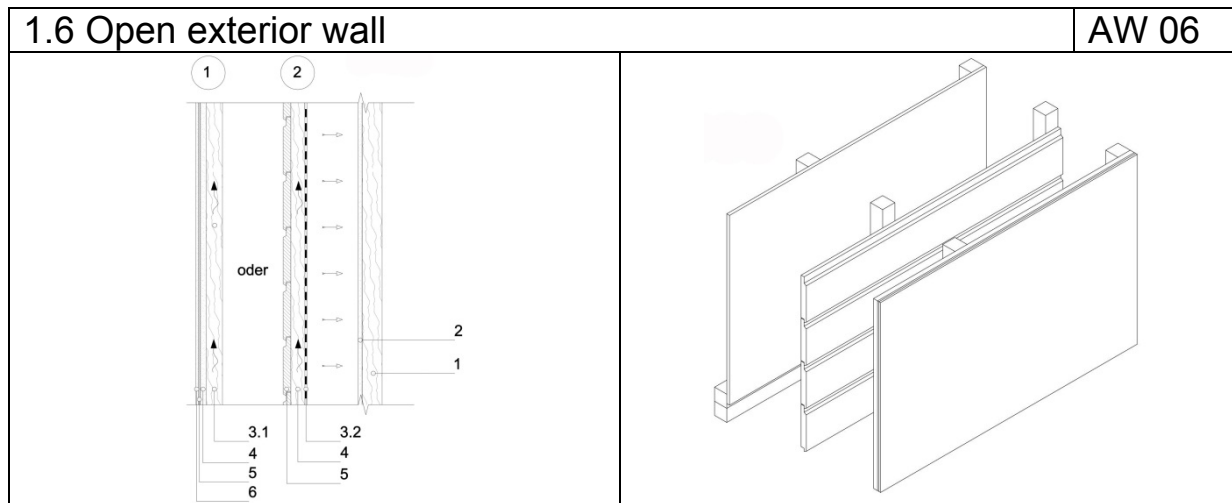
27 Proof through ETA.

28 Proof through ETA.

29 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

1.5 Free standing building partition wall	AW 05
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	$\leq 150$
1.2 6.1	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
1.3	Gypsum fire protection board	Drywall screw	EN 14566	3,9 / 41	ends $\leq 75$ middle $\leq 150$
3.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
3.2 6.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
2.1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>30</sup> (2006/673/EG) B-s1, d0 <sup>30</sup> (2006/673/EG)
2.2	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
2.3	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
3.1	Wooden lathing Density $\geq 350 \text{ kg/m}^3$	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
4.1	Cement-bonded fibre board Density $\geq 1000 \text{ kg/m}^3$	12,5	ETA 07/0173	A1 <sup>31</sup>
4.2	Cement-bonded board Density $\geq 950 \text{ kg/m}^3$	15	ETA 13/0609	A1 <sup>32</sup>
5	Reinforced render <sup>*33</sup>	$\geq 5$		
6	External render <sup>*33</sup>	1,5 bis 6,0		
3.2	Diffusion-open underlay	$\geq 0,5$	EN 13859-2	E
4	Wooden lathing Density $\geq 350 \text{ kg/m}^3$ mit Lüftungsebene	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
5	Timber cladding Density $\geq 350 \text{ kg/m}^3$	$\geq 15$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)

30 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

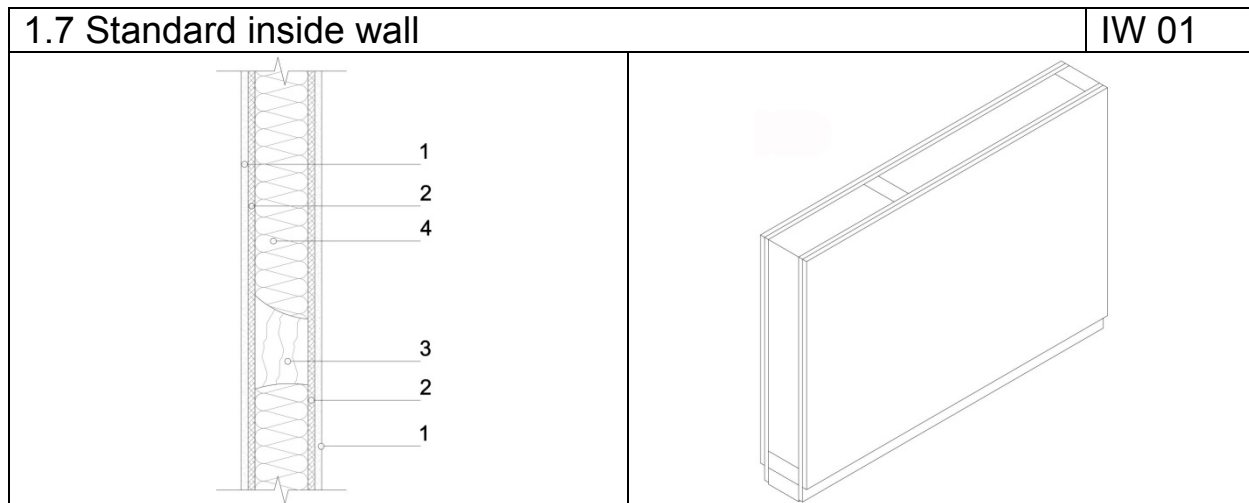
31 Proof through ETA.

32 Proof through ETA.

33 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

<b>1.6 Open exterior wall</b>	<b>AW 06</b>
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
2.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
2.2	Particle board alternative OSB board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
2.3	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
3.1	Wooden lathing	Nail	EN 14592	3,1 / 90	
4.1	Cement-bonded fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
4.2	Cement-bonded board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
5	Timber cladding	Nail	EN 14592	≥ 2,5 / ≥ 50	



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>34</sup> (2006/673/EG) B-s1, d0 <sup>34</sup> (2006/673/EG)
2.1 <sup>36</sup>	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
2.2 <sup>36</sup>	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
2.3 <sup>36</sup>	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>35</sup>
3	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
4.1	Rock wool	$\geq 50$	EN 13162	A1
4.2	Mineral wool	$\geq 50$	EN 13162	A1
4.3	Wood fibre insulation	$\geq 50$	EN 13171	E
2.1 <sup>36</sup>	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
2.2 <sup>36</sup>	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
2.3 <sup>36</sup>	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>35</sup>
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>34</sup> (2006/673/EG) B-s1, d0 <sup>34</sup> (2006/673/EG)

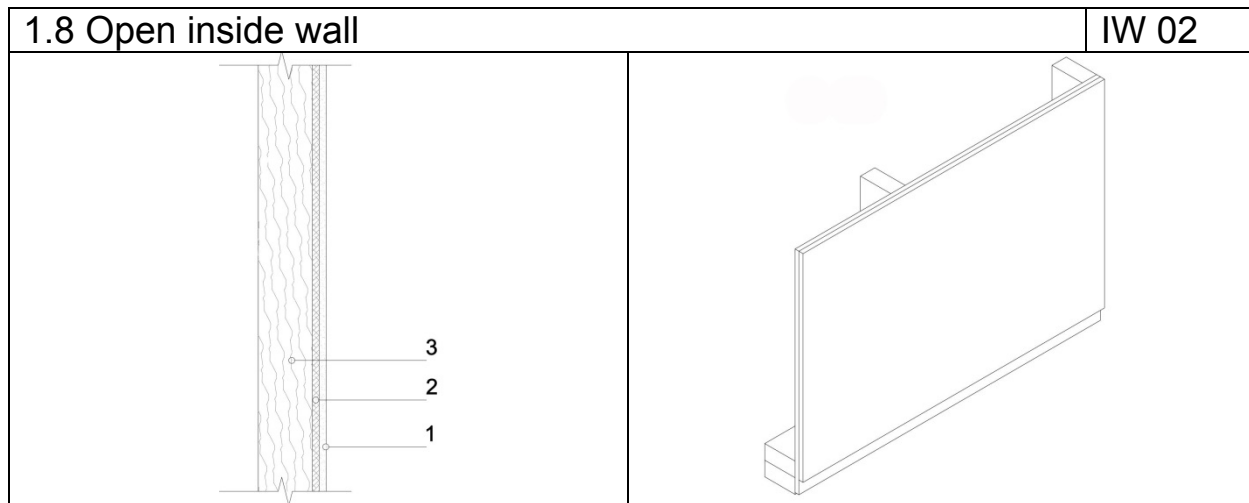
34 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

35 Proof through ETA.

36 Can optionally be designed as a single shell inner wall.

1.7 Standard inside wall	IW 01
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
2.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
2.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
2.3	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150

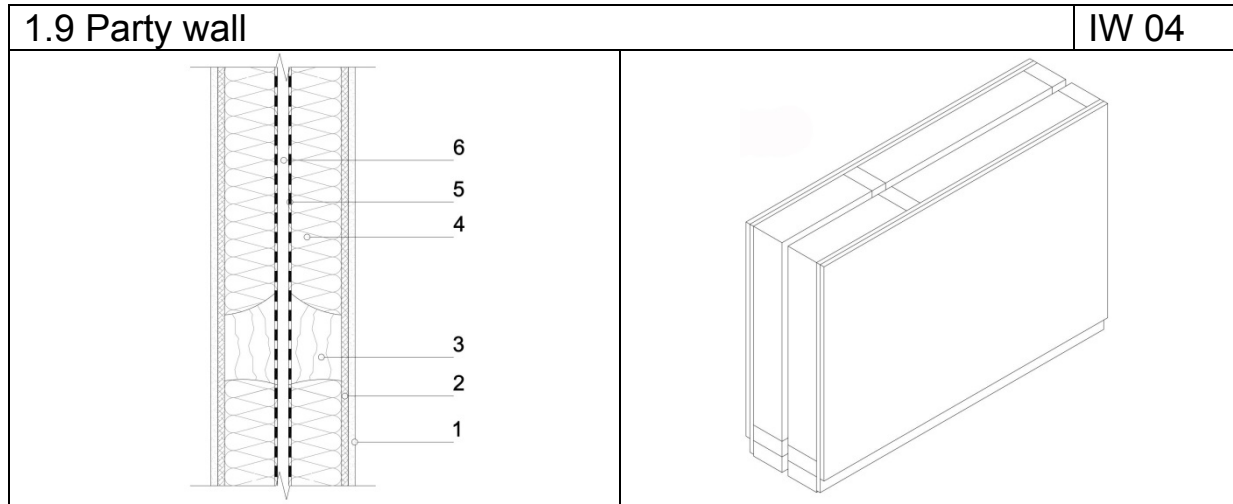


Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$	$\geq 9,5$	EN 520	A2-s1, d0 <sup>37</sup> (2006/673/EG) B-s1, d0 <sup>37</sup> (2006/673/EG)
2.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
2.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
2.3	Gypsum fibre board	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>38</sup>
3	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 70$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)

37 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

38 Proof through ETA.

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	$\leq 150$
2.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
2.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
2.3	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ <sup>39</sup>	$\geq 9,5$	EN 520	A2-s1, d0 <sup>40</sup> (2006/673/EG) B-s1,d0 <sup>40</sup> (2006/673/EG)
1.2	Gypsum fibre board <sup>39</sup>	$\geq 9,5$	ETA 03/0050	A2-s1, d0 <sup>41</sup>
1.3	Gypsum fire protection board <sup>39</sup>	$\geq 9,5$	EN 520	A2-s1, d0
2.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
2.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
3	Timber construction			
	Stud Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Top chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
	Bottom chord Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 90$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
4.1	Rock wool	$\geq 50$	EN 13162	A1
4.2	Mineral wool	$\geq 50$	EN 13162	A1
5	Diffusion-open underlay	$\geq 0,5$	EN 13859-2	E
6	Air gap	ca. 20		
	Further build-up mirror- inverted! Compare draft			

<sup>39</sup> Two-layers, if required by national building law.

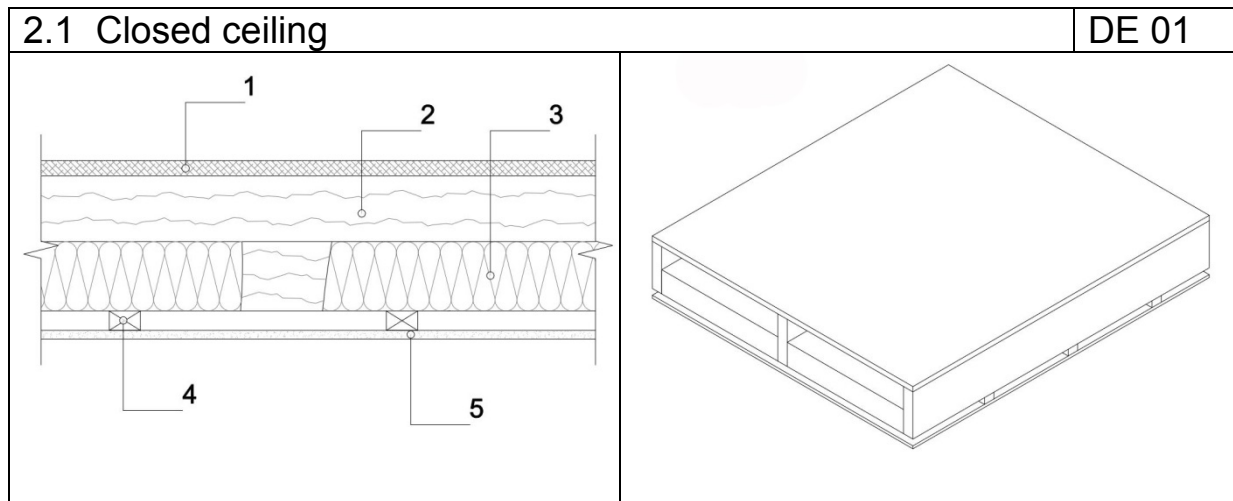
<sup>40</sup> The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

<sup>41</sup> Proof through ETA.



<b>1.9 Party wall</b>	<b>IW 04</b>
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
1.2	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.3	Gypsum fire protection board	Drywall screw	EN 14566	3,9 / 41	ends ≤ 75 middle ≤ 150
2.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
2.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
1.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
1.3	Plywood board Density $\geq 400 \text{ kg/m}^3$	$\geq 12$	EN 636-2	D-s2, d0 (2007/348/EG)
2	Timber construction beam Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1 EN 14080	D-s2, d0 (2003/593/EG)
3.1	Rock wool	$\geq 100$	EN 13162	A1
3.2	Mineral wool	$\geq 100$	EN 13162	A1
3.3	Wood fibre insulation	$\geq 100$	EN 13171	E
4	Wooden lathing Density $\geq 350 \text{ kg/m}^3$	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
5.1	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ * <sup>44</sup>	$\geq 9,5$	EN 520	A2-s1, d0 <sup>42</sup> (2006/673/EG) B-s1, d0 <sup>42</sup> (2006/673/EG)
5.2	Gypsum fibre board * <sup>44</sup>	$\geq 12$	ETA 03/0050	A2-s1, d0 <sup>43</sup>

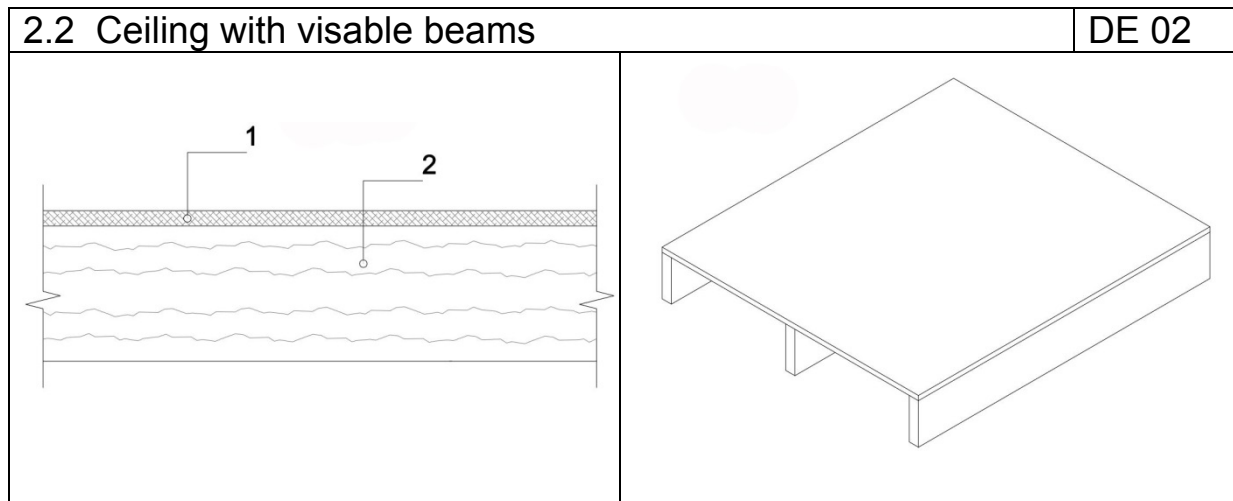
42 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

43 Proof through ETA.

44 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

<b>2.1 Closed ceiling</b>	<b>DE 01</b>
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.3	Plywood board	Nail	EN 14592	2,5 / ≥ 50	ends ≤ 75 middle ≤ 150
5.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
5.2	Gypsum fibre board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150

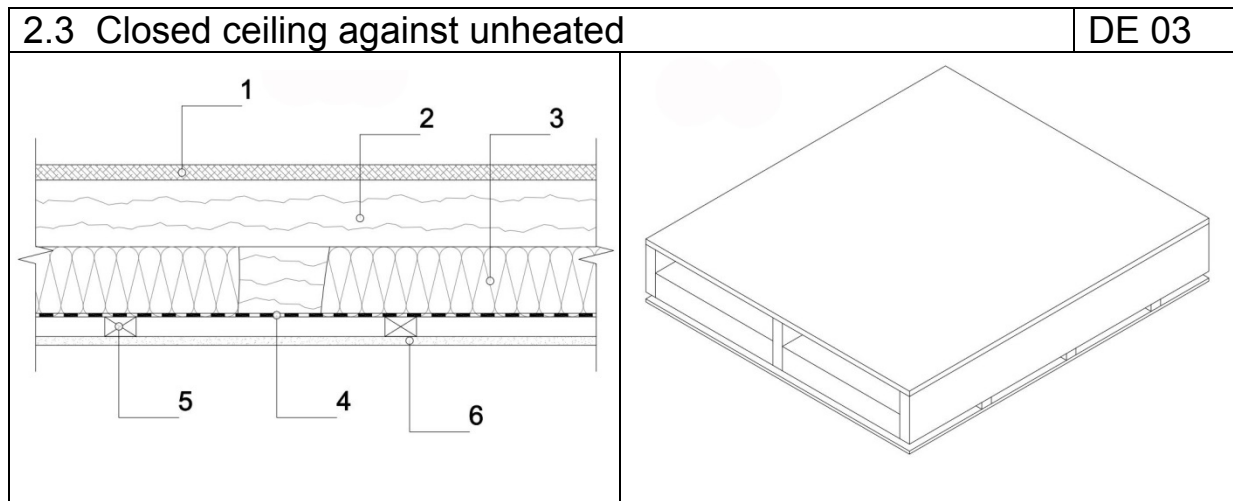


Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
1.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
1.3	Profile board <sup>45</sup> Density $\geq 350 \text{ kg/m}^3$	$\geq 15$	EN338 EN14081-1	D-s2, d0 (2003/593/EG)
1.4	Plywood board Density $\geq 400 \text{ kg/m}^3$	$\geq 12$	EN 636-2	D-s2, d0 (2007/348/EG)
2	Timber construction beam Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1 EN 14080	D-s2, d0 (2003/593/EG)

45 Additional stiffening may be required

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50 <sup>46</sup>	ends $\leq 75$ middle $\leq 150$
1.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
1.3	Profile board	Nail	EN 14592	2,5 / $\geq 50$	
1.4	Plywood board	Nail	EN 14592	2,5 / $\geq 50$	ends $\leq 75$ middle $\leq 150$

46 Depending on panel thickness it can also be 1.53 / 65



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
1.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
2	Timber construction beam Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1 EN 14080	D-s2, d0 (2003/593/EG)
3.1	Rock wool	$\geq 195$	EN 13162	A1
3.2	Mineral wool	$\geq 195$	EN 13162	A1
3.3	Wood fibre insulation	$\geq 195$	EN 13171	E
4	Vapour control layer	$\geq 0,2$	EN 13984	E
5	Wooden lathing Density $\geq 350 \text{ kg/m}^3$	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
6	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ *48	$\geq 9,5$	EN 520	A2-s1, d0 <sup>47</sup> (2006/673/EG) B-s1,d0 <sup>47</sup> (2006/673/EG)

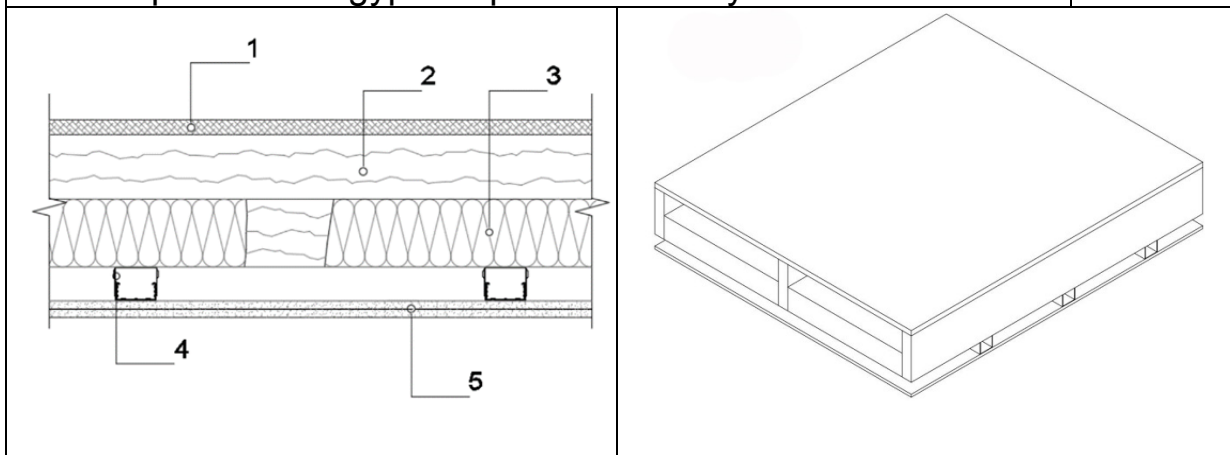
47 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

48 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
1.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends $\leq 75$ middle $\leq 150$
5	Wooden lathing	Nail	EN 14592	3,1 / 90	
6	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	$\leq 150$

## 2.4 Apartment separation ceiling / Ceiling with metal framing components for gypsum plasterboard systems

DE 04



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1.1	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
1.2	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
1.3	Plywood board Density $\geq 400 \text{ kg/m}^3$	$\geq 12$	EN 636-2	D-s2, d0 (2007/348/EG)
2	Timber construction beam Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1 EN 14080	D-s2, d0 (2003/593/EG)
3.1	Rock wool	$\geq 100$	EN 13162	A1
3.2	Mineral wool	$\geq 100$	EN 13162	A1
3.3	Wood fibre insulation	$\geq 100$	EN 13171	E
4	Spring-rails <sup>*51</sup>	27 (60/70)	EN 14195	
5.1	2 x Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ <sup>*51</sup>	$\geq 9,5$	EN 520	A2-s1, d0 <sup>49</sup> (2006/673/EG) B-s1,d0 <sup>49</sup> (2006/673/EG)
5.2	2 x Gypsum fibre board <sup>*51</sup>	$\geq 9,5$	ETA 03/0050	A2-s1, d0 <sup>50</sup>

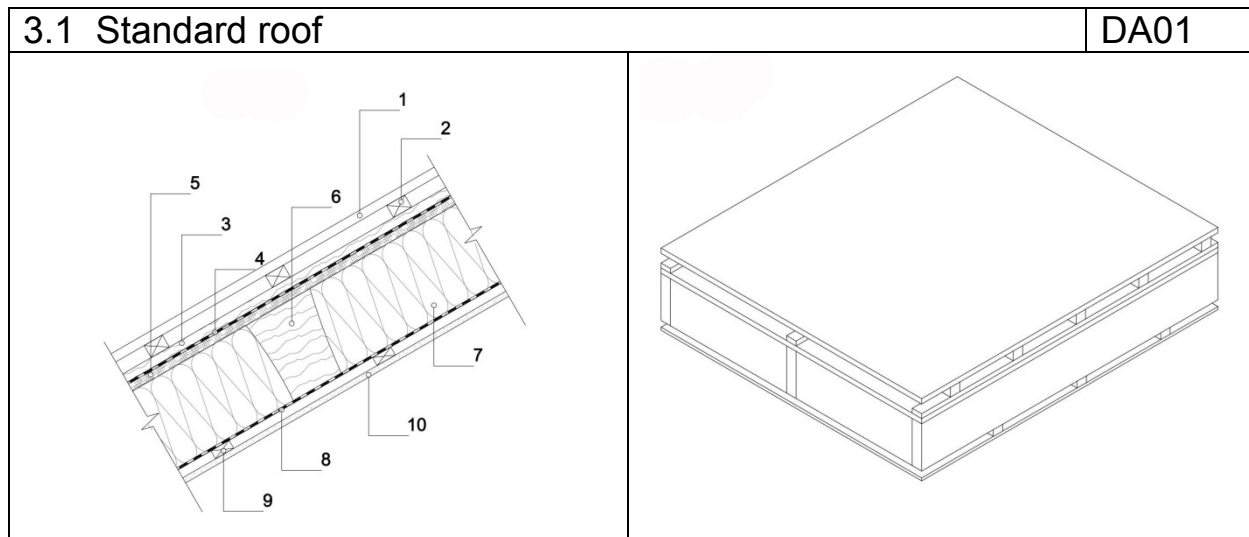
49 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

50 Proof through ETA

51 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

2.4 Apartment separation ceiling / Ceiling with metal framing components for gypsum plasterboard systems	DE 06
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
1.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.2	Cement-bonded particle board	Staple	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
1.3	Plywood board	Nail	EN 14592	2,5 / ≥ 50	ends ≤ 75 middle ≤ 150
4	Spring-rails	Screw	EN 14566	3,9 / 41	
5.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30 3,9 / 41	≤ 150
5.2	Gypsum fibre board	Screw	EN 14566	3,9 / 41	ends ≤ 75 middle ≤ 150



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Roofing* <sup>52</sup>	-	-	-
2	Load bearing lathing* <sup>52</sup> Density $\geq 350 \text{ kg/m}^3$	$\geq 30 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
3	Counter lathing Density $\geq 350 \text{ kg/m}^3$	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
4	Diffusion-open underlay	-	EN 13859	E
5	Wood fibre board optional, can be omitted at 4	$\geq 22$	EN 13171 EN 13986	E
6	Timber construction rafter Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
7.1	Rock wool	$\geq 195$	EN 13162	A1
7.2	Mineral wool	$\geq 195$	EN 13162	A1
7.3	Wood fibre insulation	$\geq 195$	EN 13171	E
7.4	Cellulose insulation	$\geq 195$	EN 15101-1	E
8.1	Vapour control layer <sup>53</sup>	$\geq 0,2$	EN 13984	E
8.2	Particle board alternative OSB board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
8.3	Cement-bonded particle board Density $\geq 600 \text{ kg/m}^3$	$\geq 12$	EN 634-2	B-S1, d0 (2007/348/EG)
9	Wooden lathing* <sup>52,55</sup> Density $\geq 350 \text{ kg/m}^3$ not applicable for 8.2 and 8.3	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
10	Gypsum plasterboard Density $\geq 600 \text{ kg/m}^3$ * <sup>52</sup>	$\geq 9,5$	EN 520	A2-s1, d0 <sup>54</sup> (2006/673/EG) B-s1, d0 <sup>54</sup> (2006/673/EG)

52 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

53 Additional vapour control layer according to EN 13984 required depending on the diffusion resistance of the plates.

54 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

55 Not applicable at 8.2 or 8.3, optionally selectable.

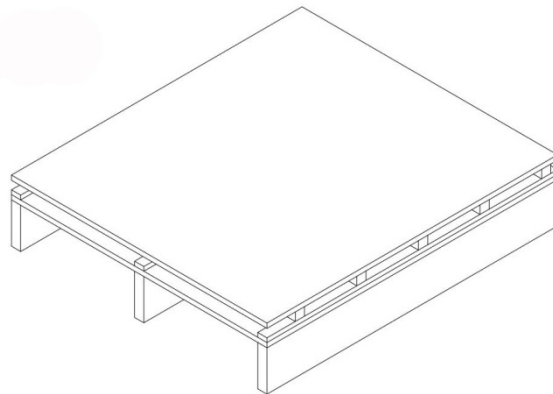
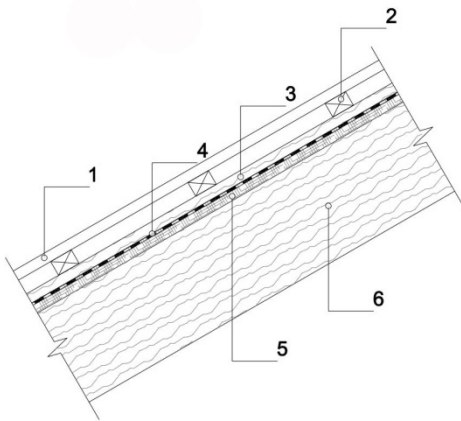


<b>3.1 Standard roof</b>	<b>DA 01</b>
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Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
2	Load bearing lathing	Nail	EN 14592	3,1 / 90	2 each support
3	Counter-lathing	Nail	EN 14592	3,1 / 90	≤ 200
5	Wood fibre board	Wide back staples	EN 14592	≤ 2,0 / ≥ 75	ends ≤ 75 middle ≤ 150
8.2	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
8.3	Cement-bonded particle board	Drywall screw	EN 14566	3,9 / 30	ends ≤ 75 middle ≤ 150
9	Wooden lathing	Nail	EN 14592	3,1 / 90	
10	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150

### 3.2 Uninsulated roof

DA 02



#### Construction build-up (from the inside outwards)

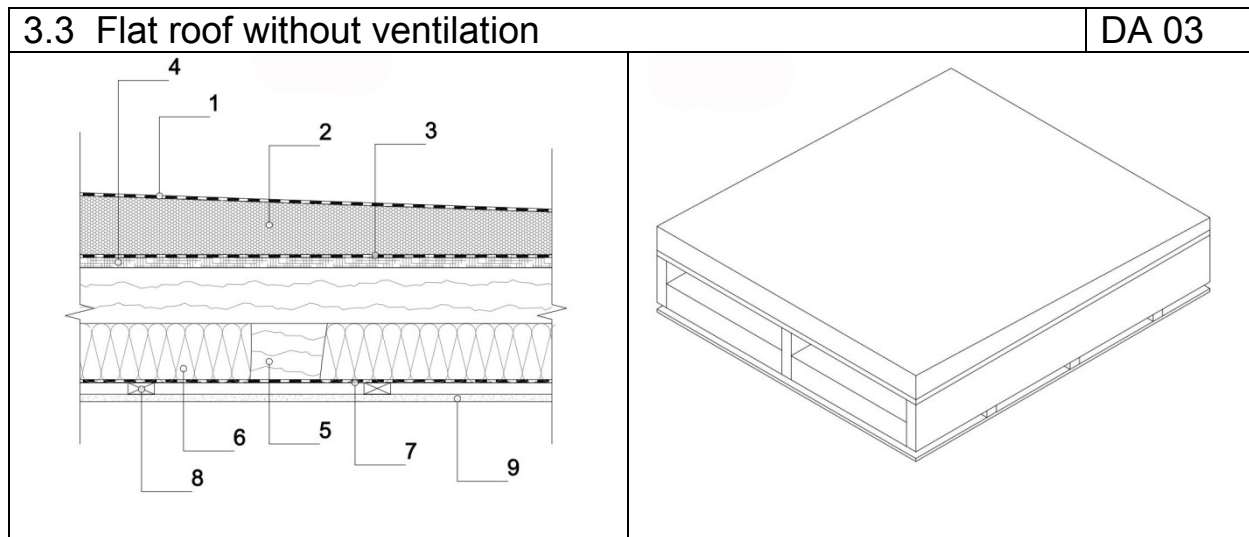
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Roofing <sup>*56</sup>	-	-	-
2	Load bearing lathing <sup>*56</sup> Density $\geq 350 \text{ kg/m}^3$	$\geq 30 / \geq 50$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
3	Counter lathing Density $\geq 350 \text{ kg/m}^3$	$\geq 20 / \geq 40$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
4	Underlay	-	EN 13859	E
5 <sup>57</sup>	Wood fibre board	$\geq 22$	EN 13171 EN 13986	E
6	Timber construction rafter Density $\geq 350 \text{ kg/m}^3$	$\geq 45 / \geq 195$	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)

56 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

57 Can be omitted optionally.

#### Fixing devices:

No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
2	Load bearing lathing	Nail	EN 14592	3,1 / 90	2 each support
3	Counter-lathing	Nail	EN 14592	3,1 / 90	$\leq 200$
5	Wood fibre board	Wide back staples	EN 14592	$\leq 2,0 / \geq 75$	ends $\leq 75$ middle $\leq 150$



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1	Roof waterproofing* <sup>58</sup>	1,5	EN 13956	E
2.1	Sloped insulation* <sup>58</sup>	40 - 200	EN 13163	B1
2.2	Insulation on top* <sup>58</sup> With a gradient of at least 3%	100-200	EN 13163	B1
3	Vapour control layer	≥ 0,2	EN 13984	E
4.1	Particle board alternative OSB board Density ≥ 600 kg/m <sup>3</sup>	≥ 12	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
4.2	Cement-bonded particle board Density ≥ 600 kg/m <sup>3</sup>	≥ 12	EN 634-2	B-S1, d0 (2007/348/EG)
4.3	Plywood board Density ≥ 400 kg/m <sup>3</sup>	≥ 12	EN 636-2	D-s2, d0 (2007/348/EG)
5	Timber construction Density ≥ 350 kg/m <sup>3</sup>	≥ 45 / ≥ 195	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
6.1	Rock wool	≥ 200	EN 13162	A1
6.2	Mineral wool	≥ 200	EN 13162	A1
6.3	Wood fibre insulation	≥ 200	EN 13171	E
7	Vapour control layer	≥ 0,2	EN 13984	E
8	Wooden lathing Density ≥ 350 kg/m <sup>3</sup>	≥ 20 / ≥ 40	EN 338 EN 14081-1	D-s2, d0 (2007/348/EG)
9.1	Gypsum plasterboard Density ≥ 600 kg/m <sup>3</sup> * <sup>58</sup>	≥ 9,5	EN 520	A2-s1, d0 <sup>59</sup> (2006/673/EG) B-s1,d0 <sup>59</sup> (2006/673/EG)
9.2	Gypsum fibre board * <sup>58</sup>	≥ 9,5	ETA 03/0050	A2-s1, d0 <sup>60</sup>

58 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

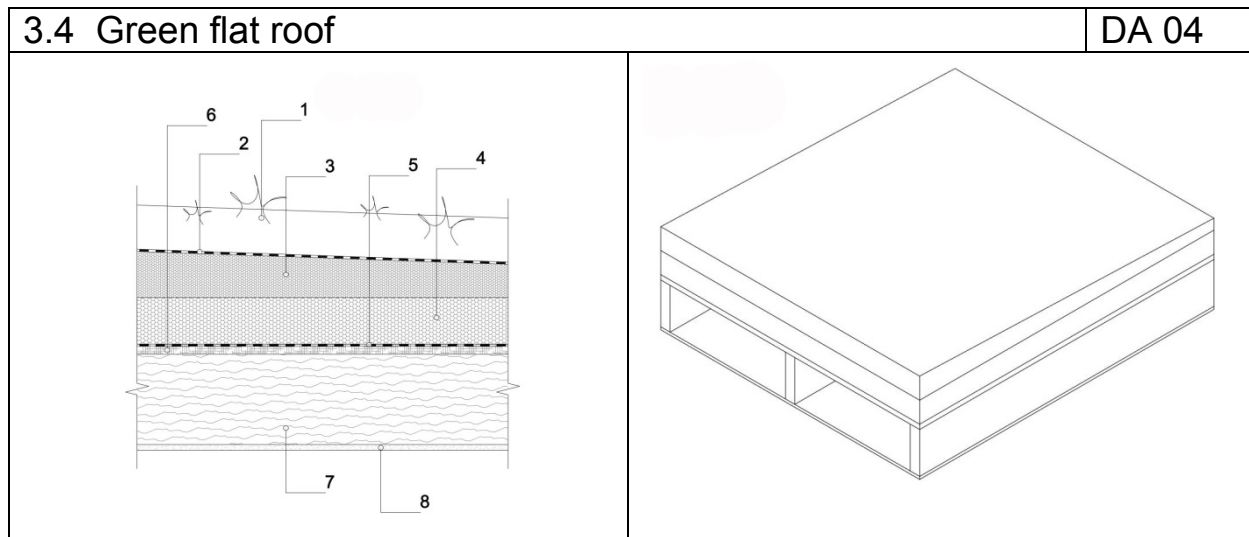
59 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

60 Proof through ETA.

3.3 Flat roof without ventilation

DA 03

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
4.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends $\leq$ 75 middle $\leq$ 150
4.2	Cement-bonded particle board	Drywall screw	EN 14566	3,9 / 30	ends $\leq$ 75 middle $\leq$ 150
4.3	Plywood board	Nail	EN 14592	2,5 / $\geq$ 50	ends $\leq$ 75 middle $\leq$ 150
8	Wooden lathing	Nail	EN 14592	3,1 / 90	
9.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566 bzw. ETA	3,9 / 30	$\leq$ 150
9.2	Gypsum fibre board	Screw	EN 14592	3,9 / 41	ends $\leq$ 75 middle $\leq$ 150



Construction build-up (from the inside outwards)				
No.	Construction product	Dimensions (mm)	EN standard	Reaction to fire
1 <sup>64</sup>	Composition of roof greening* <sup>61</sup> (Vegetation, vegetation base course, fleece, drainage, waterproofing)	Ca. 100		
2	Roof waterproofing* <sup>61</sup>	1,5	EN 13956	E
3	Sloped insulation* <sup>61</sup>	40 - 200	EN 13163	B1
4	Insulation on top* <sup>61</sup>	100-200	EN 13163	B1
5	Vapour control layer	≥ 0,2	EN 13984	E
6.1	Particle board alternative OSB board Density ≥ 600 kg/m <sup>3</sup>	≥ 12	EN13986 EN 312 EN 300	D-s2, d0 (2007/348/EG)
6.2	Cement-bonded particle board Density ≥ 600 kg/m <sup>3</sup>	≥ 12	EN 634-2	B-S1, d0 (2007/348/EG)
6.3	Plywood board Density ≥ 400 kg/m <sup>3</sup>	≥ 12	EN 636-2	D-s2, d0 (2007/348/EG)
7	Timber construction beam Density ≥ 350 kg/m <sup>3</sup>	≥ 45 / ≥ 195	EN 338 EN 14081-1	D-s2, d0 (2003/593/EG)
8.1	Gypsum plasterboard Density ≥ 600 kg/m <sup>3</sup> * <sup>61</sup>	≥ 9,5	EN 520	A2-s1, d0 <sup>62</sup> (2006/673/EG) B-s1, d0 <sup>62</sup> (2006/673/EG)
8.2	Gypsum fibre board * <sup>61</sup>	≥ 9,5	ETA 03/0050	A2-s1, d0 <sup>63</sup>

61 All components marked with an asterisk are not part of the kit, they are however necessary for the building components and will be installed on site (place of use).

62 The reaction to fire of the gypsum plasterboard depends on the paper weight. The reaction to fire of the gypsum core is Euro class A1.

63 Proof through ETA.

64 Roof greening is optional.

3.4 Green flat roof

DA 04

Fixing devices:					
No.	Construction product	Type	EN standard	Dimensions / length (mm)	Spacing (mm)
6.1	Particle board alternative OSB board	Staple (or Drywall screw)	EN 14592	1,53 / 50	ends ≤ 75 middle ≤ 150
6.2	Cement-bonded particle board	Drywall screw	EN 14566	3,9 / 30	ends ≤ 75 middle ≤ 150
6.3	Plywood board	Nail	EN 14592	2,5 / ≥ 50	ends ≤ 75 middle ≤ 150
8.1	Gypsum plasterboard	Staple (or Drywall screw)	EN 14566	3,9 / 30	≤ 150
8.2	Gypsum fibre board	Screw	EN 14592	3,9 / 41	ends ≤ 75 middle ≤ 150

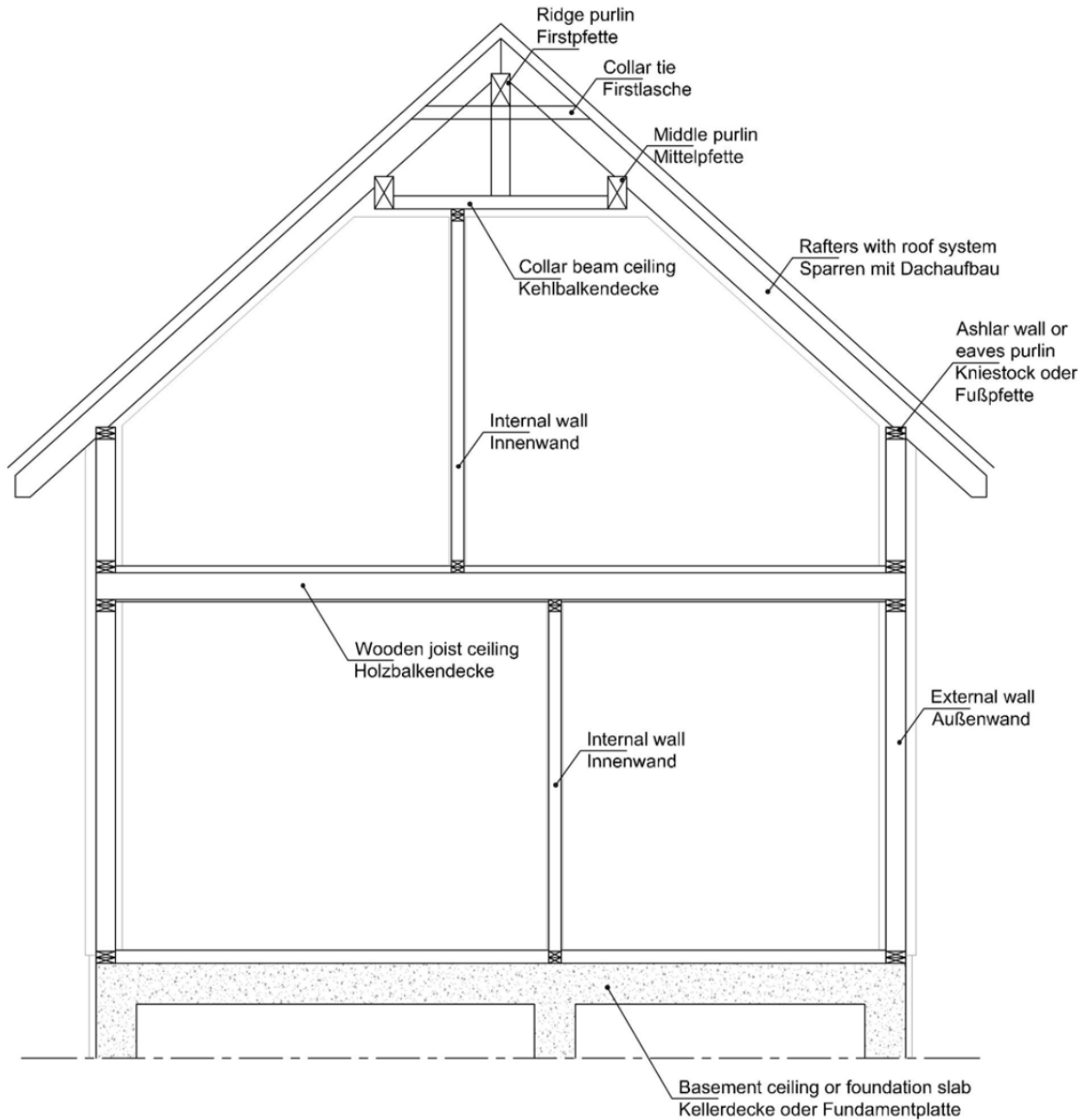
## Anhang B Konstruktionsdetails / Annex B Construction details

- B.1 Gebäudequerschnitt / Building cross section
- B.2 Vertikaler Schnitt Außenwand/ Vertical section external wall
- B.3 Standard Außenwandelement AW01 Variante A /  
Standard external wall element AW01 variant A
- B.4 Standard Außenwandelement AW01 Variante B /  
Standard external wall element AW01 variant B
- B.5 Ansicht Außenwand / View of external wall element
- B.6 Horizontaler Schnitt - Eckanschluss Außenwand Außenecke /  
Horizontal section - Wall corner joint - external wall outside corner
- B.7 Horizontaler Schnitt - Eckanschluss Außenwand Innenecke /  
Horizontal section - Wall corner joint – external wall inside corner
- B.8 Horizontaler Schnitt - Wandanschluss Außenwand an Innenwand /  
Horizontal section - Wall joint - external wall with internal wall
- B.9 Horizontaler Schnitt - Wandanschluss Außenwand an Außenwand /  
Horizontal section – Wall joint – external wall joint with external wall
- B.10 Vertikaler Schnitt - Sockelanschluss an Bodenplatte / Kellerdecke /  
Vertical section – Joint – Foundation with external wall
- B.11 Vertikaler Schnitt – Anschluss Fensterbank /  
Vertical section – Window sill joint
- B.12 Vertikaler Schnitt – Anschluss Terrassentür /  
Vertical section – Joint patio door
- B.13 Horizontaler Schnitt – Seitlicher Fensteranschluss Außenwand /  
Horizontal section – Side joint – window with external wall
- B.14 Vertikaler Schnitt – Oberer Fensteranschluss an Außenwand /  
Vertical section – Top joint – window with external wall
- B.15 Vertikaler Schnitt – Oberer Fensteranschluss an Außenwand /  
Vertical section – Top joint – window with external wall
- B.16 Standard Innenwandelement Variante A /  
Standard internal wall element variant A
- B.17 Standard Innenwandelement Variante B /  
Standard internal wall element variant B
- B.18 Ansicht Innenwandelement / View of internal wall element
- B.19 Horizontaler Schnitt – Wandanschluss Innenwand an Innenwand /  
Horizontal section – Wall joint – internal wall with internal wall
- B.20 Horizontaler Schnitt – Eckanschluss Innenwand an Innenwand /  
Horizontal section – Wall corner joint – internal wall with internal wall
- B.21 Horizontaler Schnitt – Wandanschluss Innenwand an Innenwand /  
Horizontal section – Wall joint – internal wall with internal wall
- B.22 Vertikaler Schnitt - Sockelanschluss Innenwand an Bodenplatte / Kellerdecke /  
Vertical section – Joint – Foundation with external wall
- B.23 Standard Deckenelement Variante A / Standard ceiling element variant A
- B.24 Standard Deckenelement Variante B / Standard ceiling element variant B
- B.25 Vertikaler Schnitt – Anschluss Außenwand an Geschossdecke /  
Vertical section – Joint – external Wall with ceiling
- B.26 Vertikaler Schnitt – Anschluss Geschossdecke an Geschossdecke /  
Vertical section – Joint – ceiling with ceiling
- B.27 Vertikaler Schnitt – Anschluss Geschossdecke an Geschossdecke /  
Vertical section – Joint – ceiling with ceiling
- B.28 Standard Dachelement Variante A / Standard roof element variant A
- B.29 Standard Dachelement Variante B / Standard roof element variant B
- B.30 Ansicht Standard Dachelement Variante A / View of standard roof element variant A
- B.31 Ansicht Standard Dachelement Variante B/ View of standard roof element variant B
- B.32 Vertikaler Schnitt – Anschluss Dachelement / Vertical section – Joint - roof element
- B.33 Vertikaler Schnitt – Anschluss Dachelement an Außenwand /  
Vertical section – Joint - roof element with external wall

*English translation prepared by DIBt*

- B.34 Vertikaler Schnitt – Anschluss Dachelement an Kehl balkendecke /  
Vertical section – Joint - roof element with additional ceiling
- B.35 Vertikaler Schnitt – Anschluss Dachelement /  
Vertical section – Joint - roof element
- B.36 Vertikaler Schnitt – Anschluss Dachelement an Außenwand /  
Vertical section – Joint - roof element with external wall





Die tragenden Anschlüsse sind nur prinzipiell dargestellt. Sie sind gemäß den technischen Regeln zu bemessen und gemäß der statischen Berechnung auszuführen.

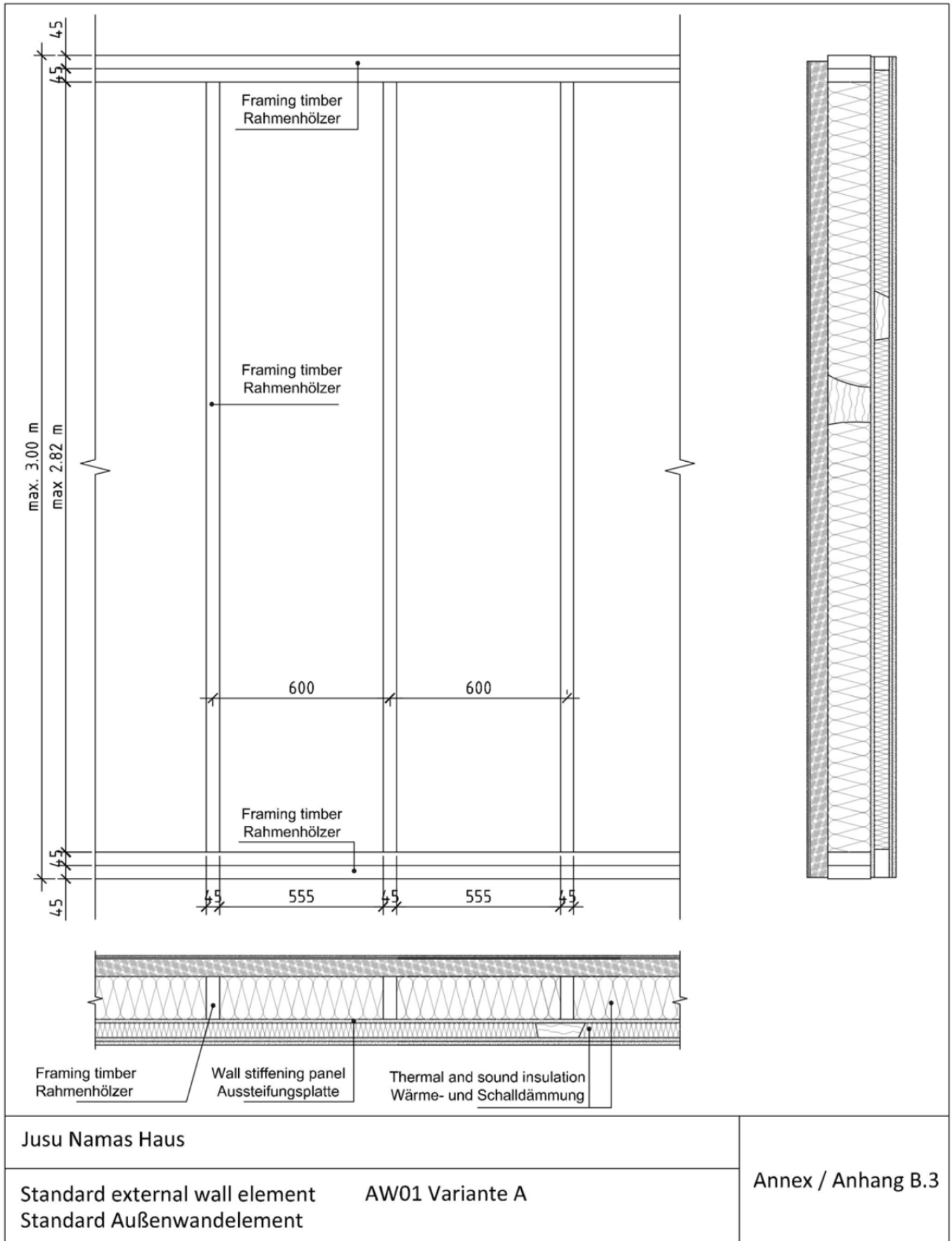
The load-bearing connections are only shown in principle. They are to be dimensioned according to the technical rules and executed according to the static calculation.

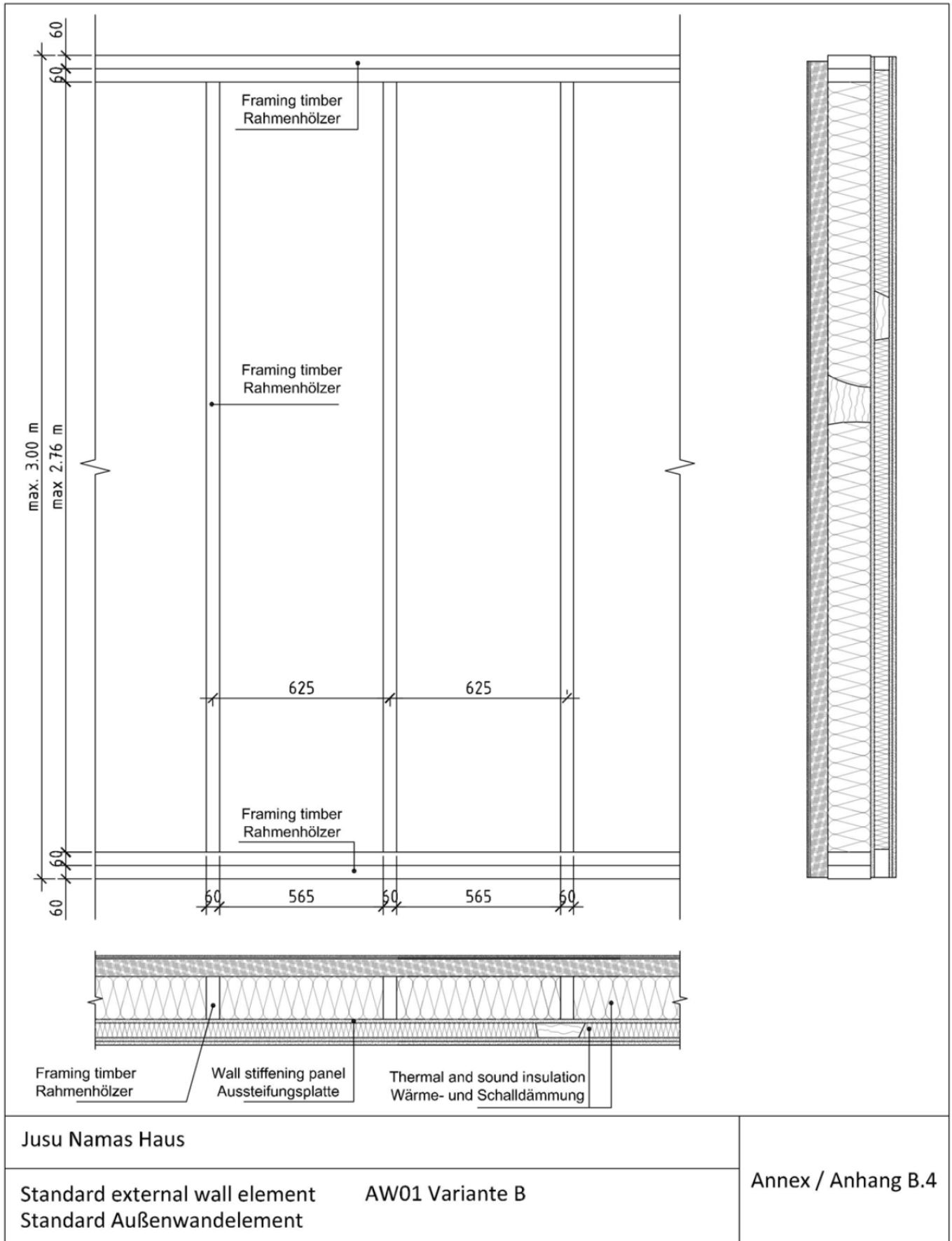
Jusu Namas Haus

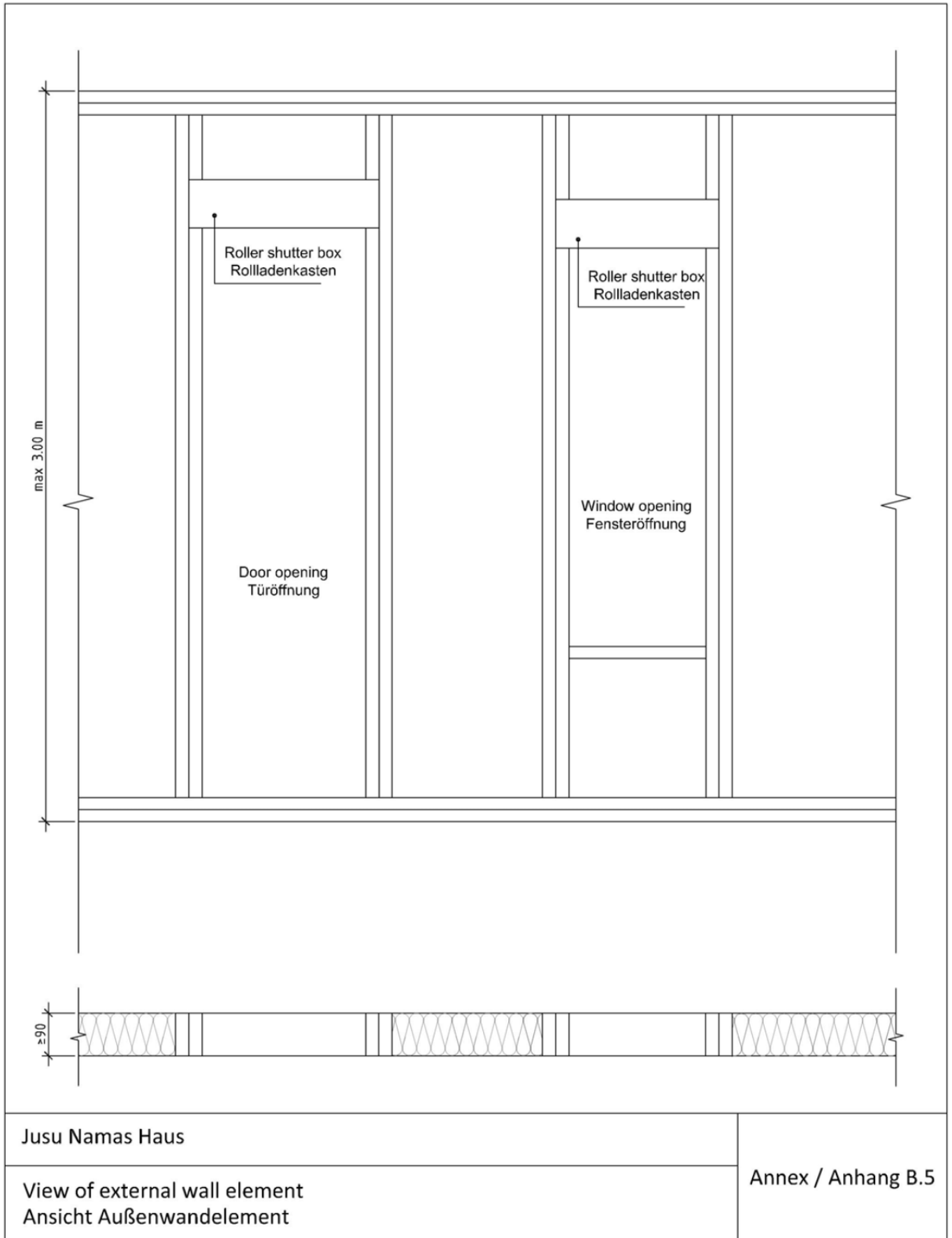
Building cross-section / Gebäudequerschnitt

Annex / Anhang B.1

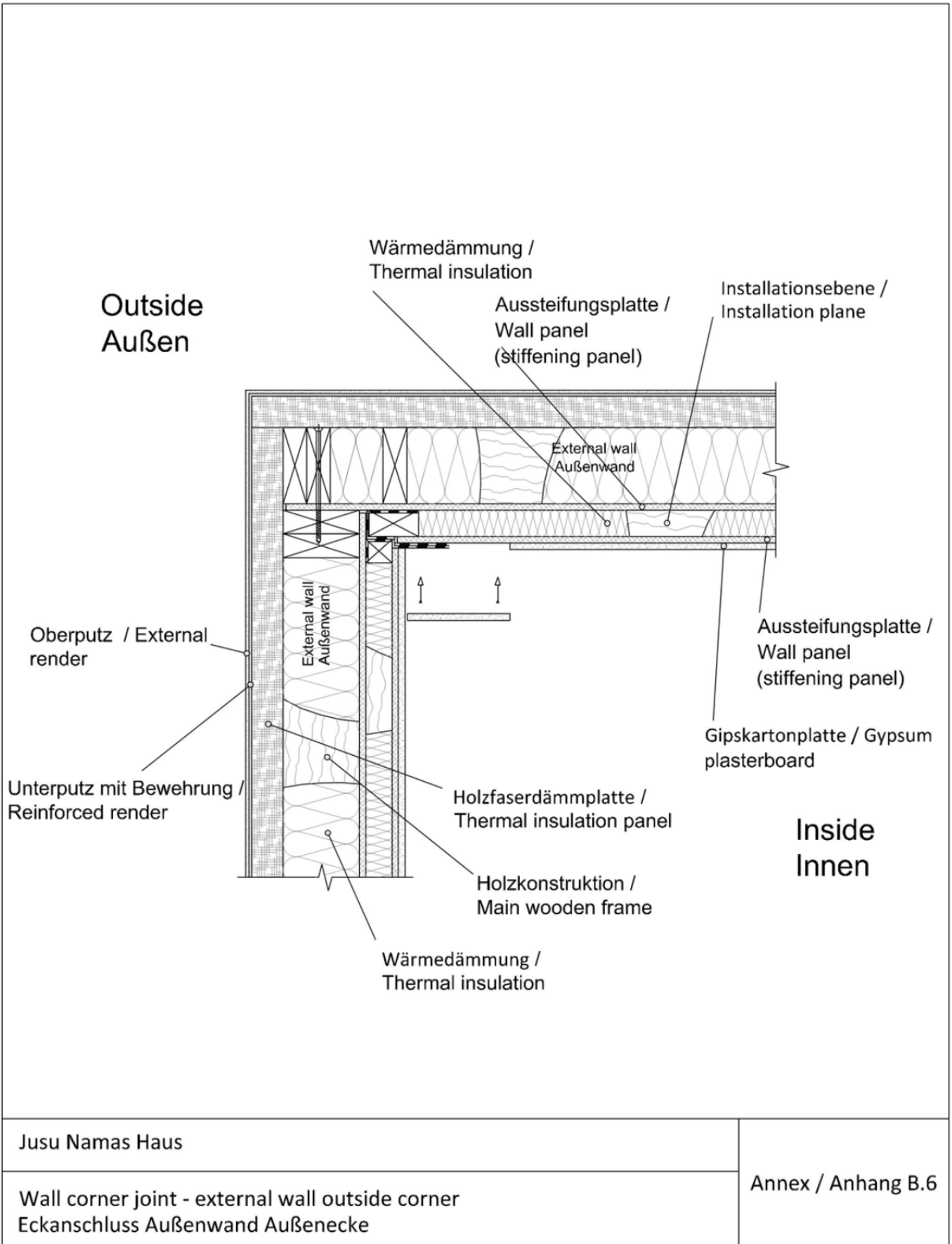
AW01	AW02	AW03
<ol style="list-style-type: none"> <li>1. Gipskartonplatte</li> <li>2. Dampfsperre</li> <li>3. Holzwerkstoffplatte / Gipsfaserplatte</li> <li>4. Senkrechtes Rahmenholz</li> <li>5. Dämmung</li> <li>6. Holzwerkstoffplatte</li> <li>7. Senkrechtes Rahmenholz</li> <li>8. Dämmung</li> <li>AW01</li> <li>9. Holzweichfaserplatte</li> <li>10. Unterputz</li> <li>11. Oberputz</li> <li>AW02</li> <li>9. Gipskartonplatte</li> <li>10. Holzlattung</li> <li>11. Zementgebunden Faserplatte</li> <li>12. Unterputz</li> <li>13. Oberputz</li> <li>AW03</li> <li>9. Gipskartonplatte / Holzweichfaserplatte</li> <li>10. Diffusionsoffen Fasadennbahn</li> <li>11. Holzlattung</li> <li>12. Holzschalung</li> </ol>	<ol style="list-style-type: none"> <li>1. Gypsum plasterboard</li> <li>2. Vapour barrier</li> <li>3. Wood-based-panel / Gypsum fiberboard</li> <li>4. Vertical framing timber</li> <li>5. Insulation</li> <li>6. Wood-based-panel</li> <li>7. Vertical framing timber</li> <li>8. Insulation</li> <li>AW01</li> <li>9. Wood-fiberboard</li> <li>10. Reinforced render</li> <li>11. External render</li> <li>AW02</li> <li>9. Gypsum plasterboard</li> <li>10. Wooden battening</li> <li>11. Cement banded plate</li> <li>12. Reinforced render</li> <li>13. External render</li> <li>AW03</li> <li>9. Gypsum plasterboard / Wood fiberboard</li> <li>10. Diffusion open facade membrane</li> <li>11. Wooden battening</li> <li>12. Timber paneling</li> </ol>	
Jusu Namas Haus		
Vertikaler Schnitt - Außenwand / Vertical section - external wall		Annex / Anhang B.2

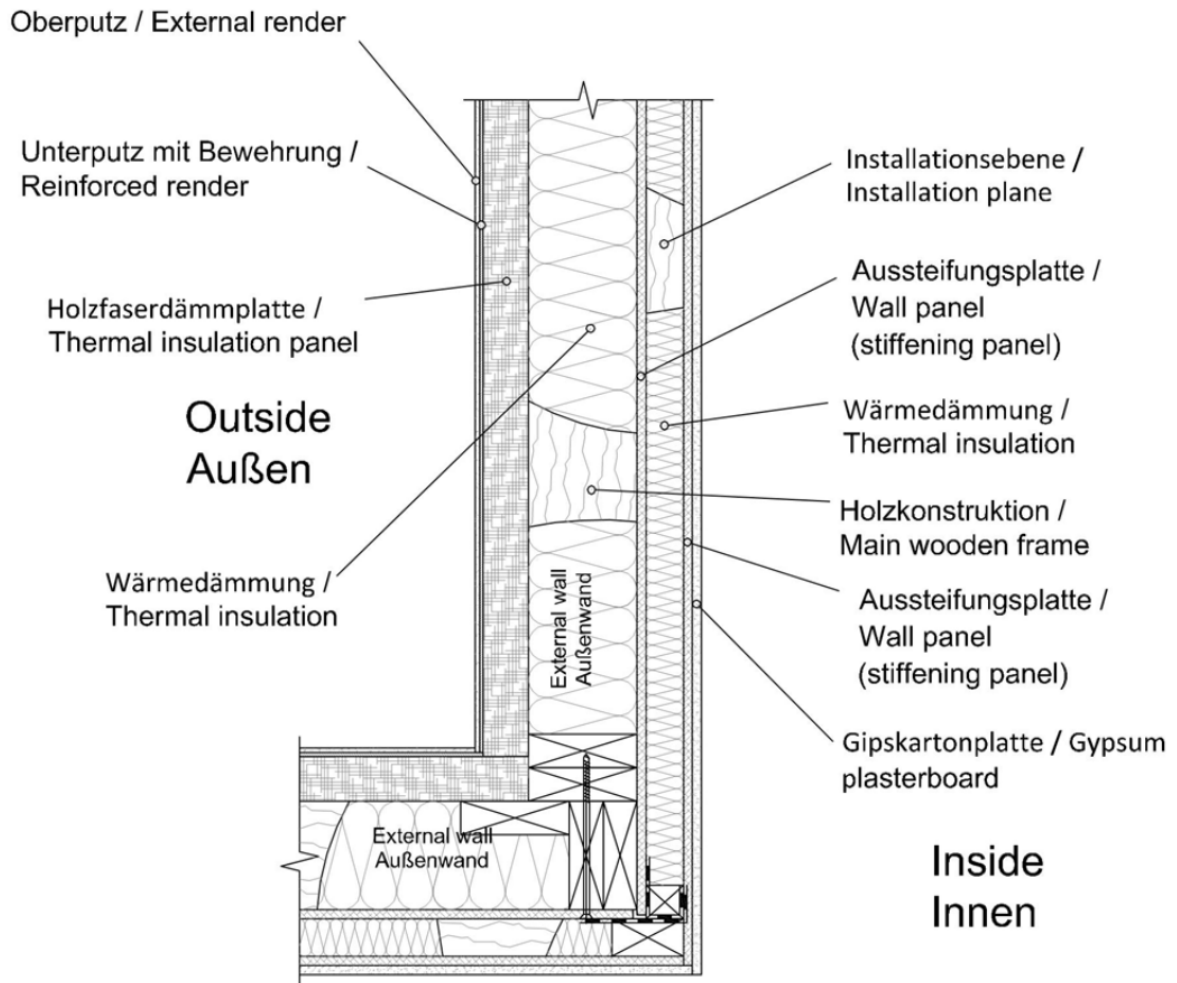






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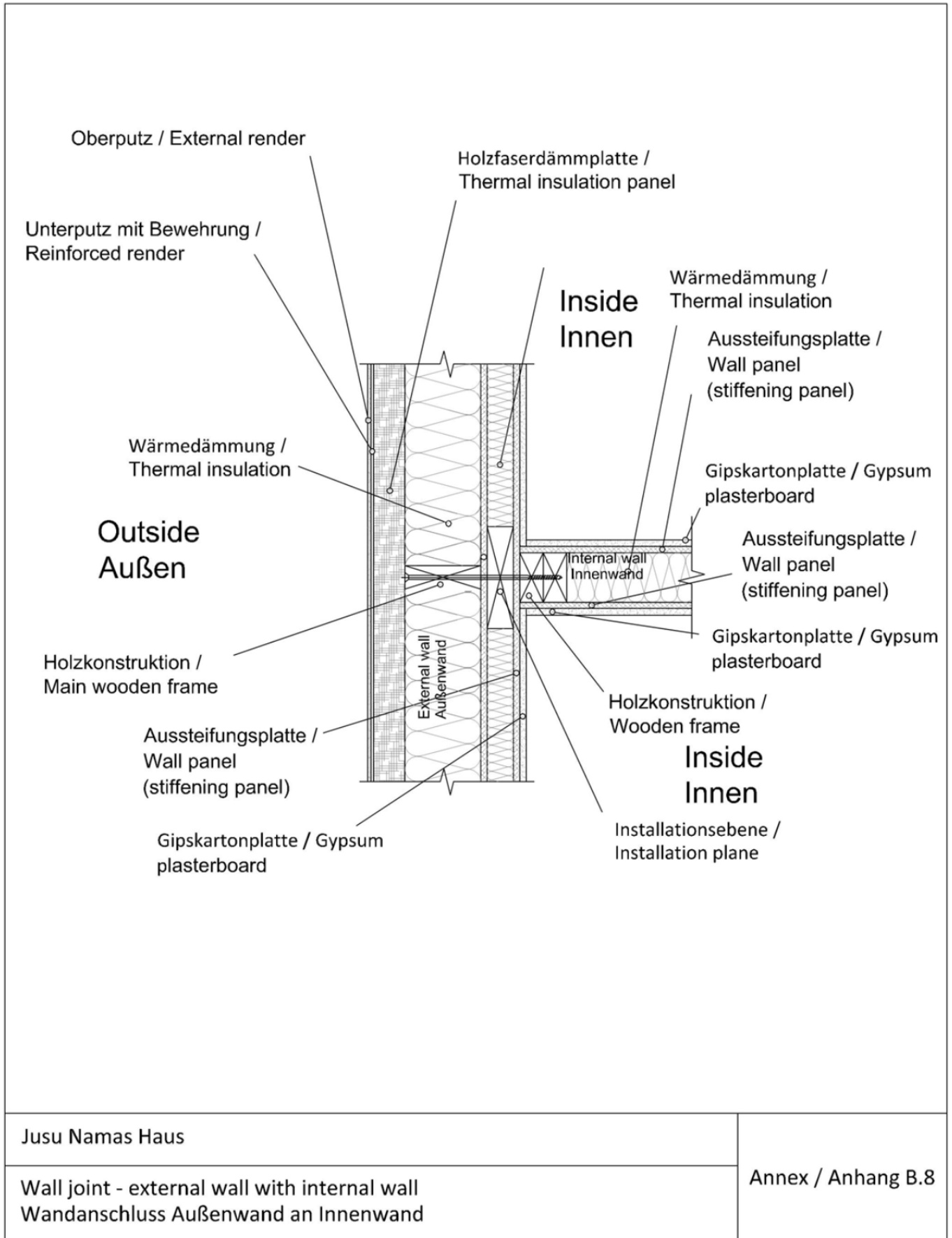


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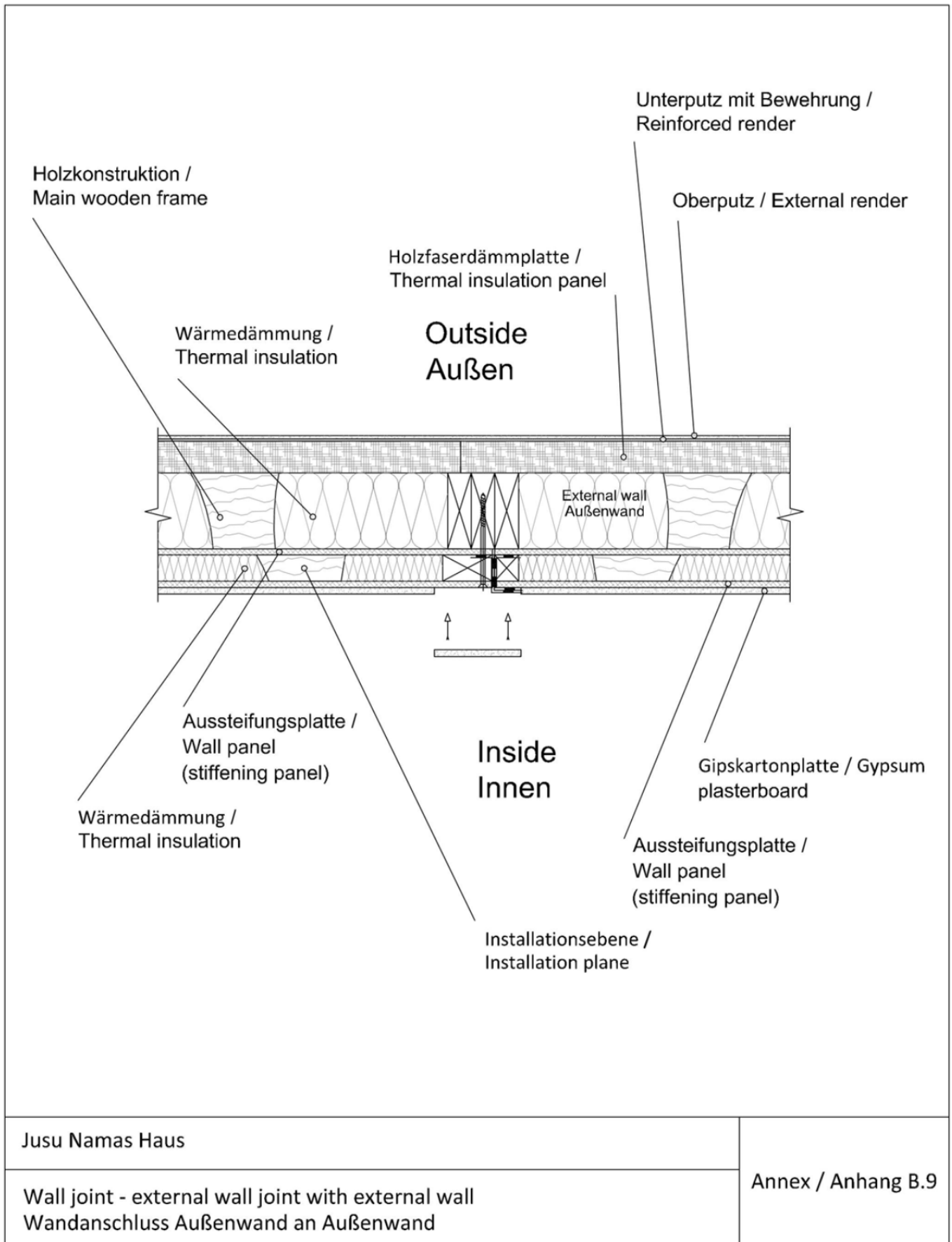
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Wall corner joint - external wall inside corner  
Eckanschluss Außenwand Innenecke

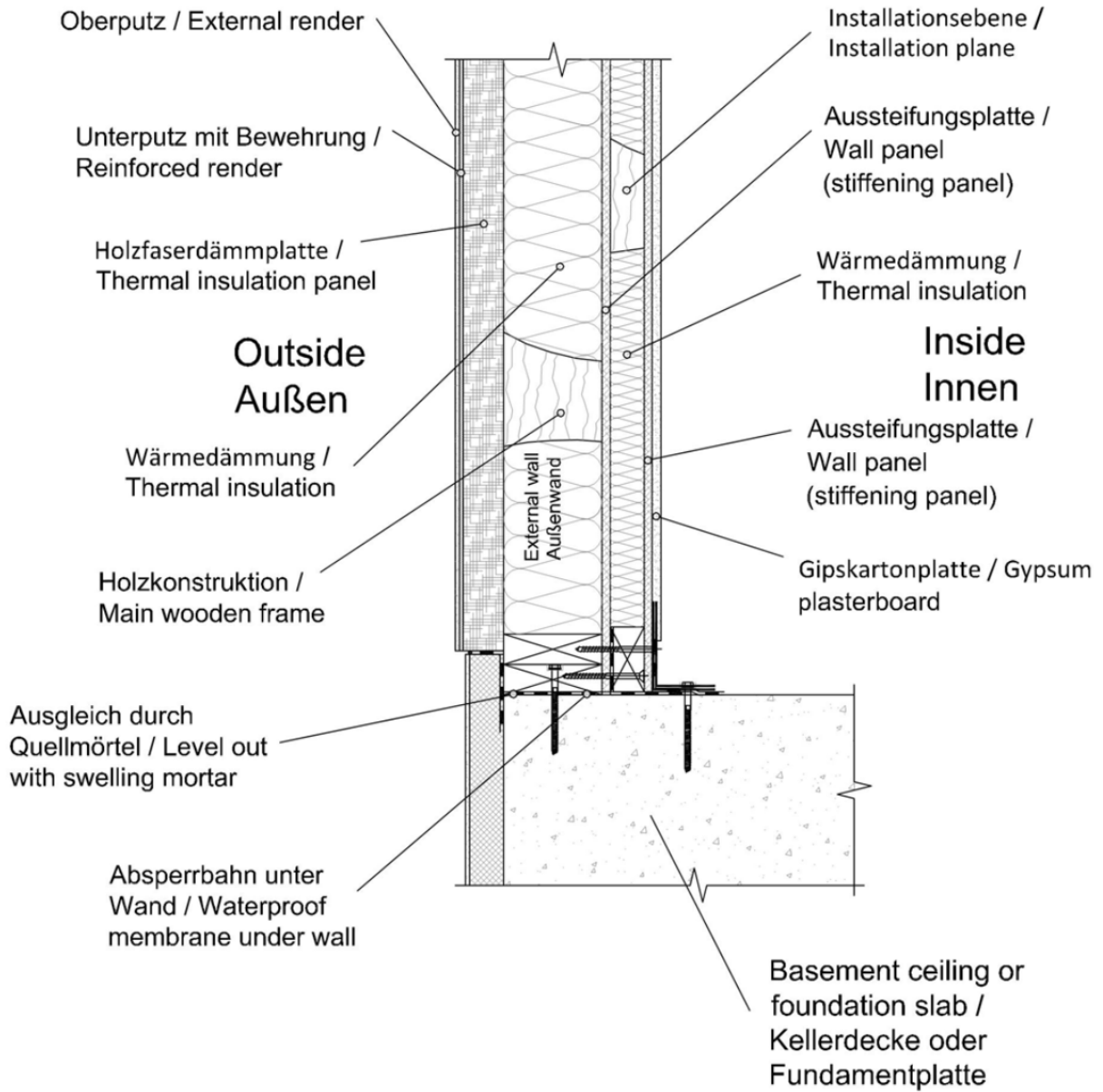
Annex / Anhang B.7







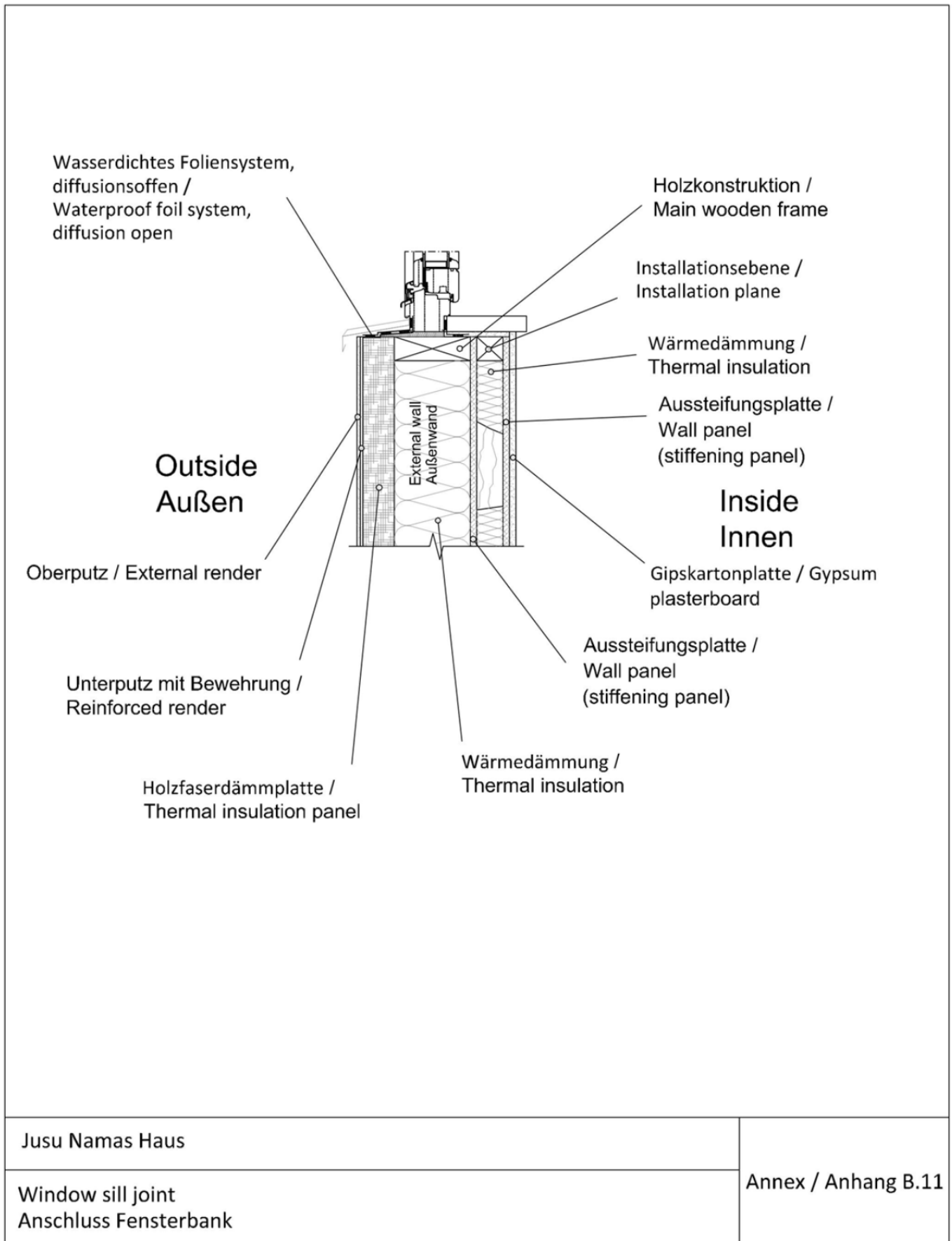
electronic copy of the eta by dibt: eta-18/0911

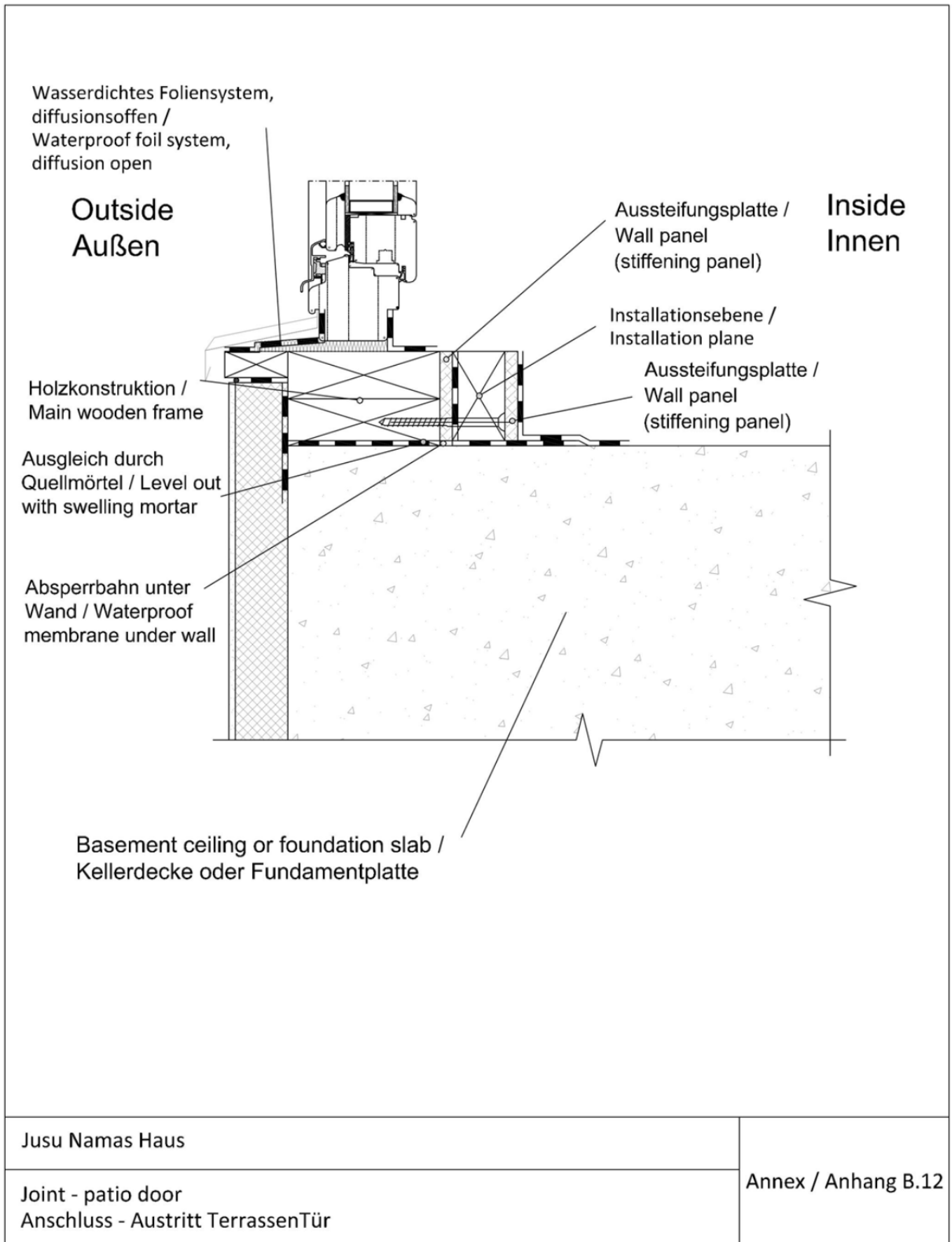


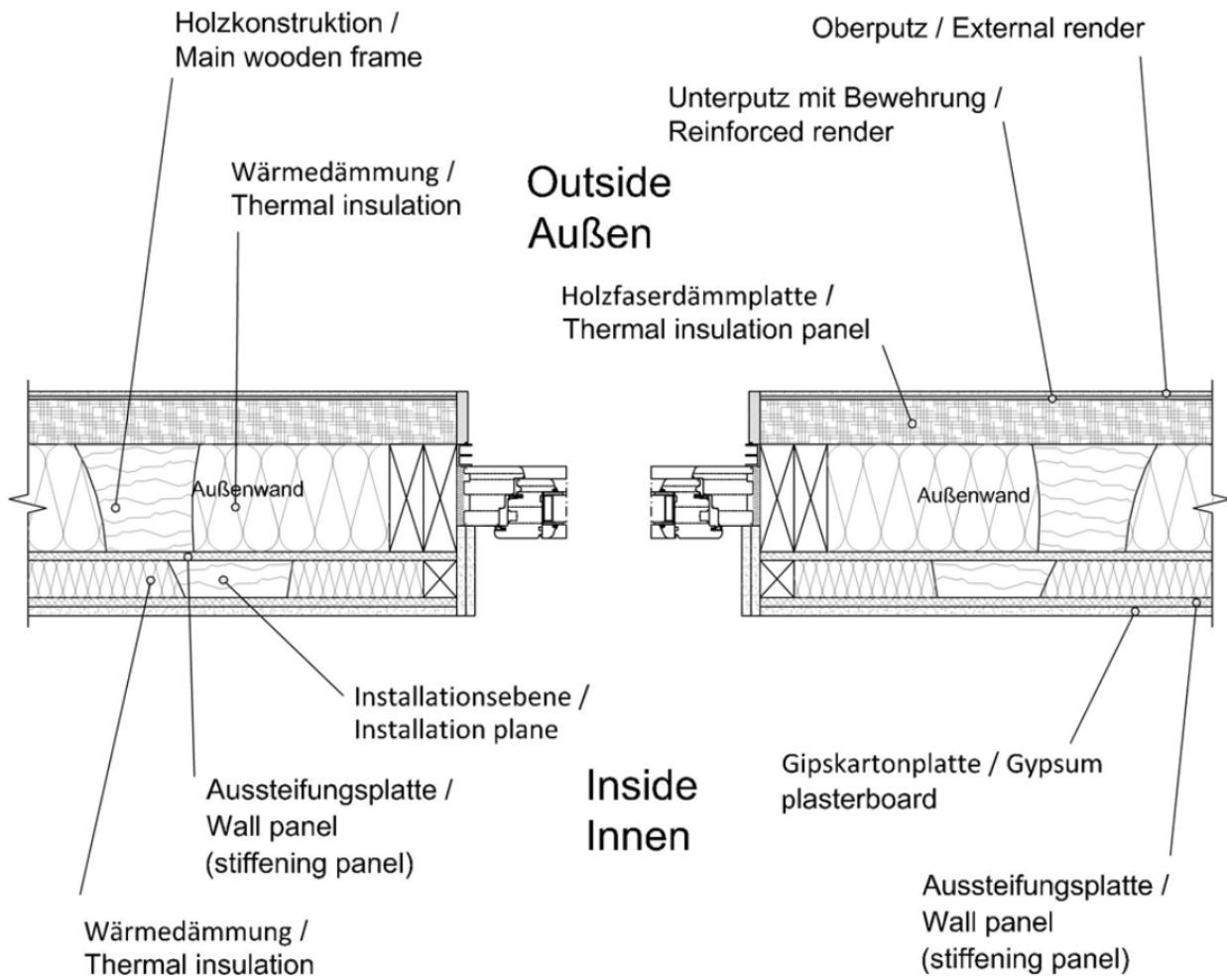
Jusu Namas Haus

Joint - foundation with external wall - vertical section  
Sockelanschluss Außenwand an Bodenplatte / Kellerdecke - Vertikalschnitt

Annex / Anhang B.10



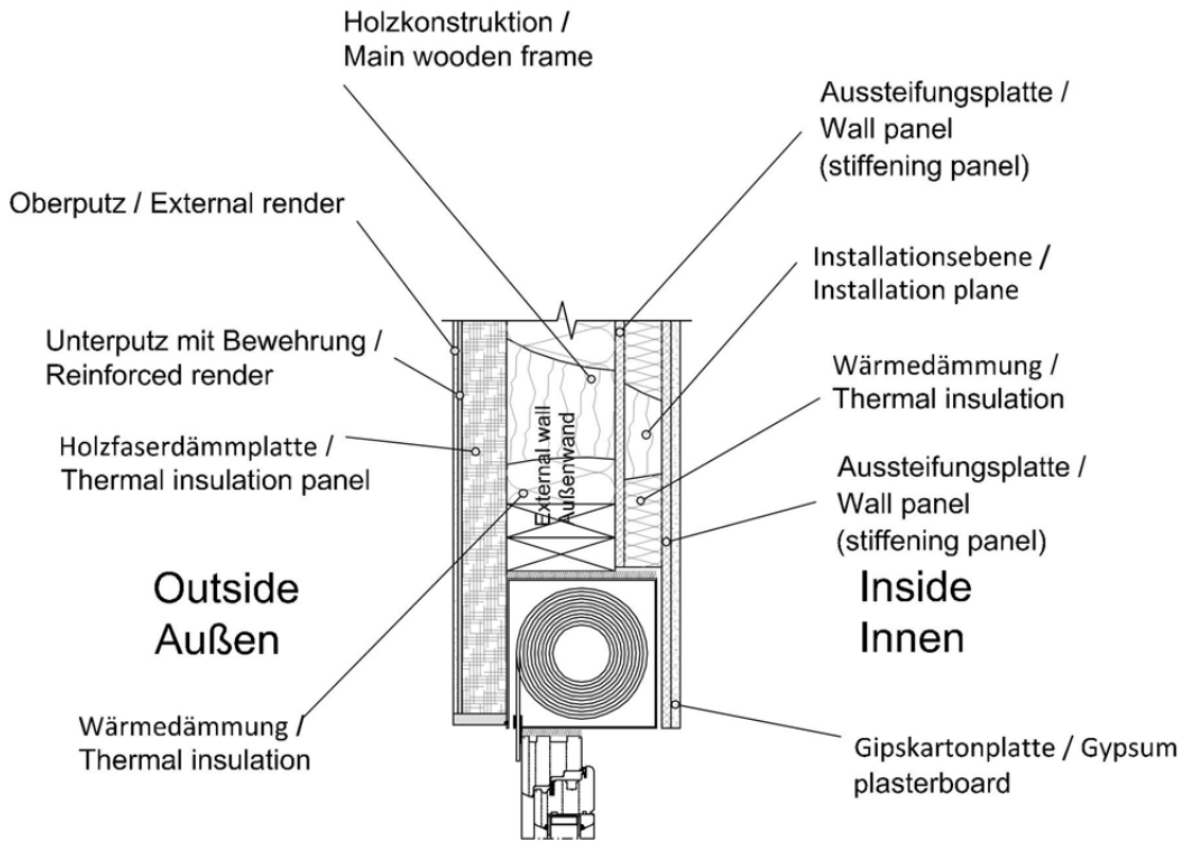




Jusu Namas Haus

Side joint - window with external wall  
Seitlicher Fensteranschluss Außenwand

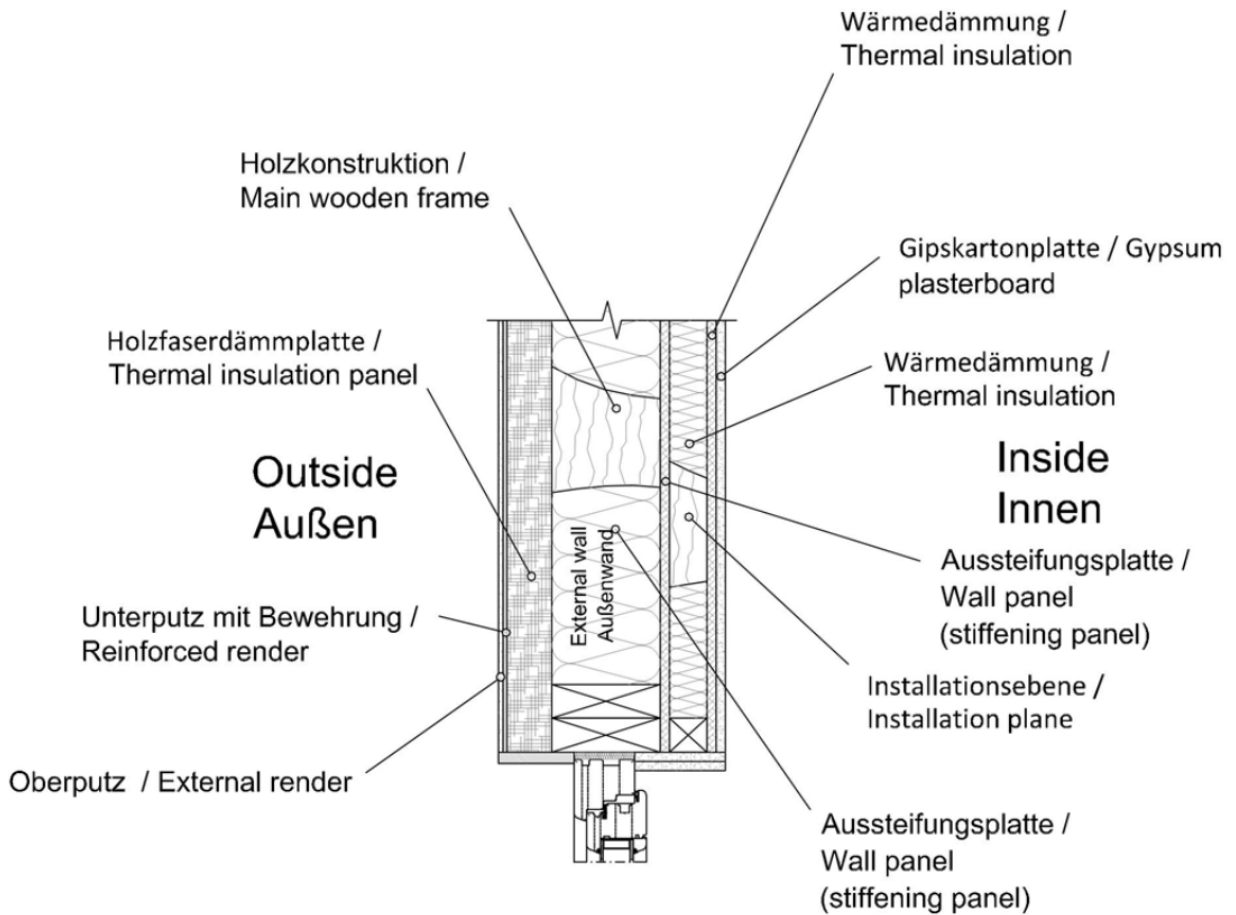
Annex / Anhang B.13



Jusu Namas Haus

Top joint - window with external wall  
Oberer Fensteranschluss an Außenwand

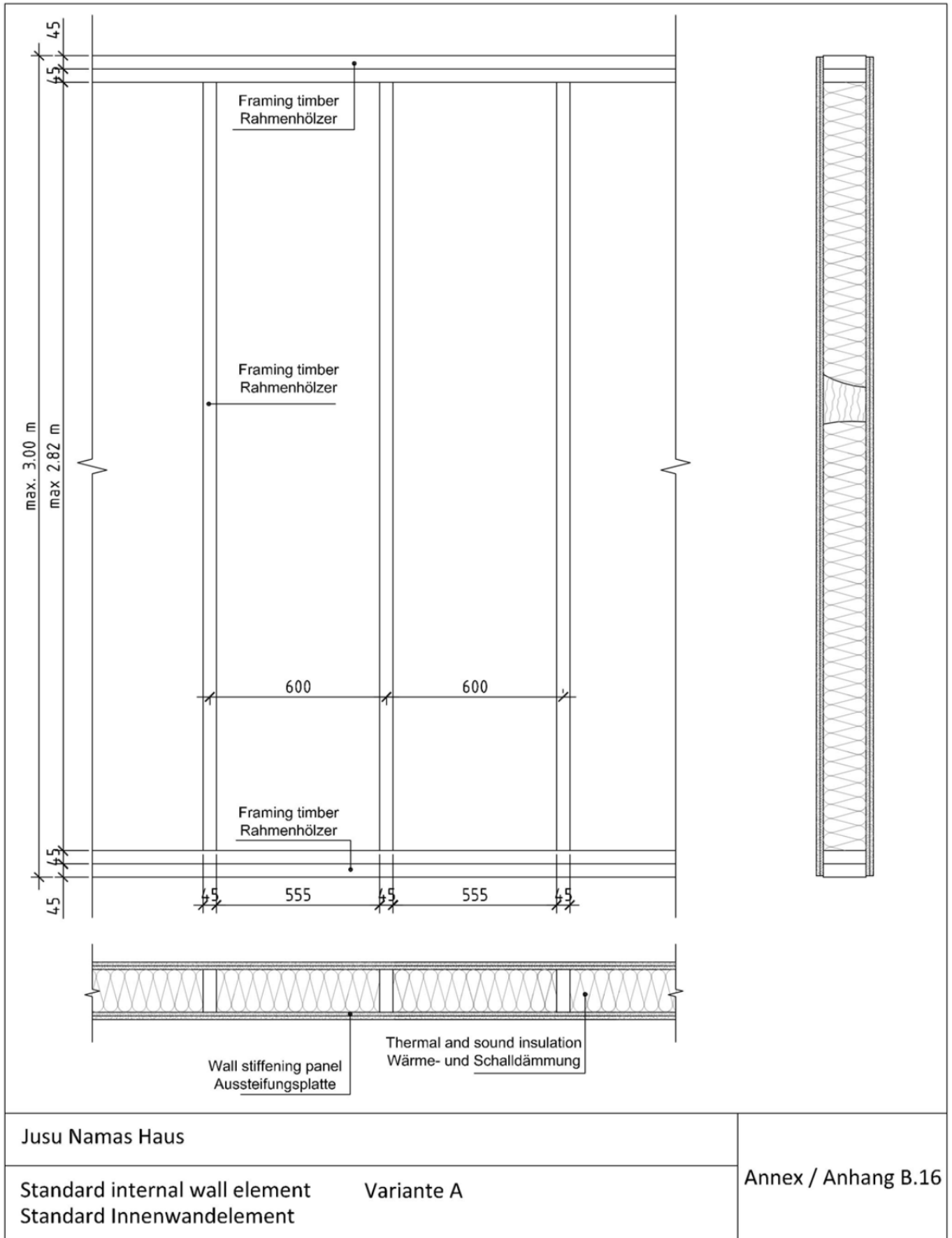
Annex / Anhang B.14



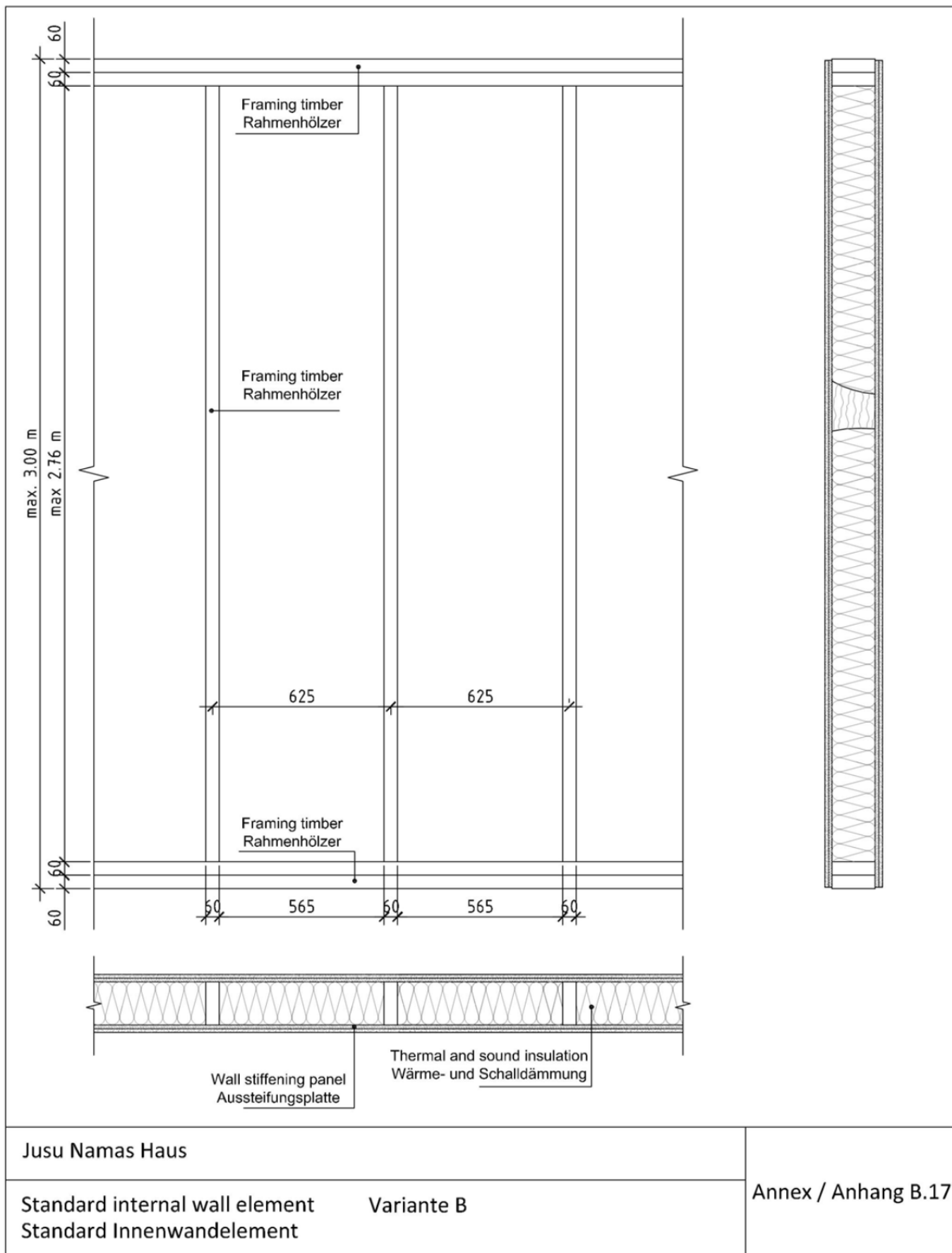
Jusu Namas Haus

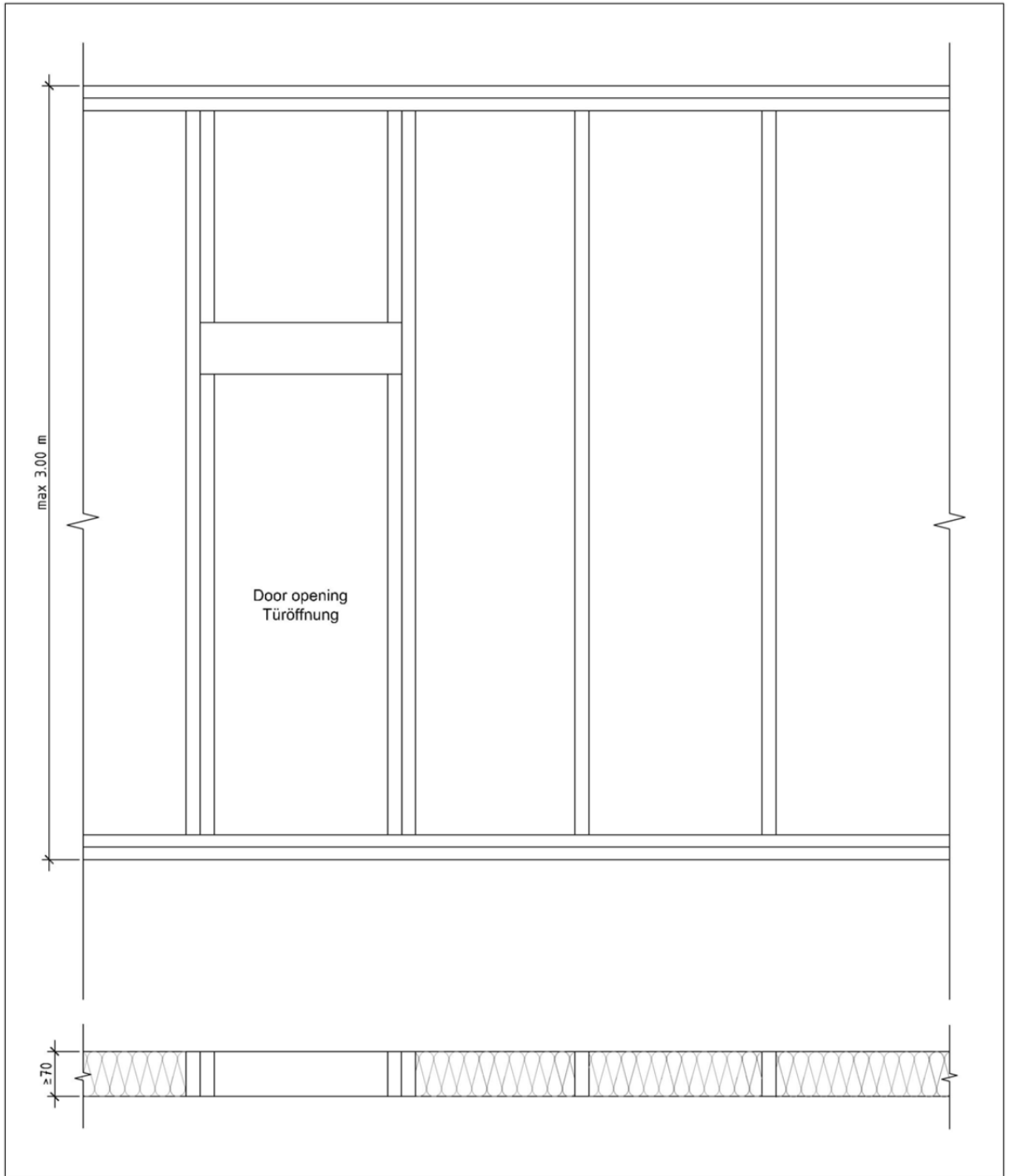
Top joint - window with external wall  
Oberer Fensteranschluss an Außenwand

Annex / Anhang B.15









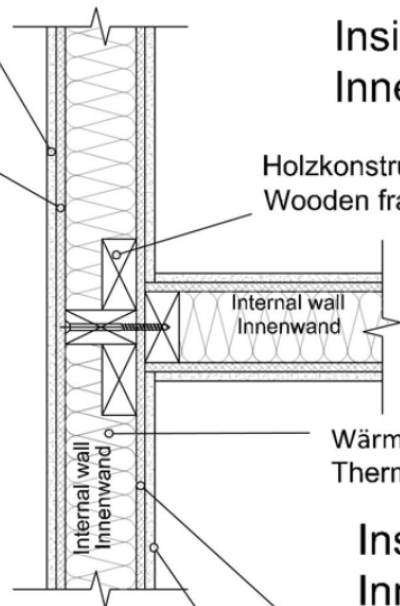
electronic copy of the eta by dibt: eta-18/0911

Jusu Namas Haus	Annex / Anhang B.18
View of internal wall element Ansicht Innenwandelement	

Gipskartonplatte / Gypsum  
plasterboard

Aussteifungsplatte /  
Wall panel  
(stiffening panel)

Inside  
Innen



Holzkonstruktion /  
Wooden frame

Internal wall  
Innenwand

Wärmedämmung /  
Thermal insulation

Inside  
Innen

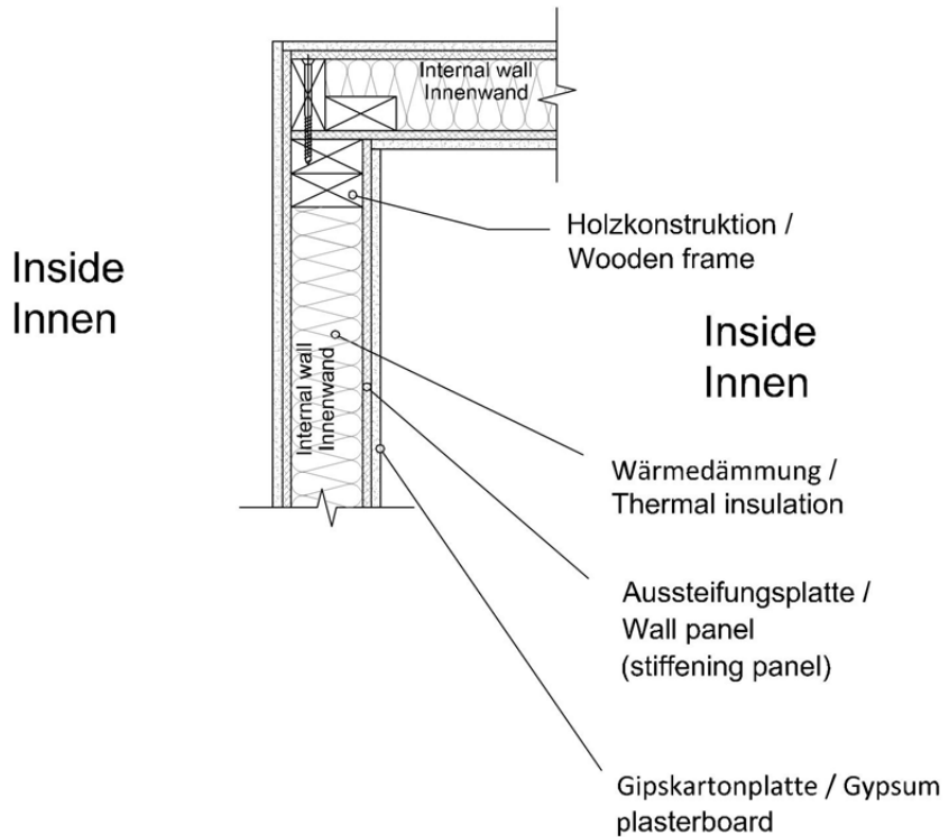
Aussteifungsplatte /  
Wall panel  
(stiffening panel)

Gipskartonplatte / Gypsum  
plasterboard

Jusu Namas Haus

Wall joint - internal wall with internal wall  
Wandanschluss Innenwand an Innenwand

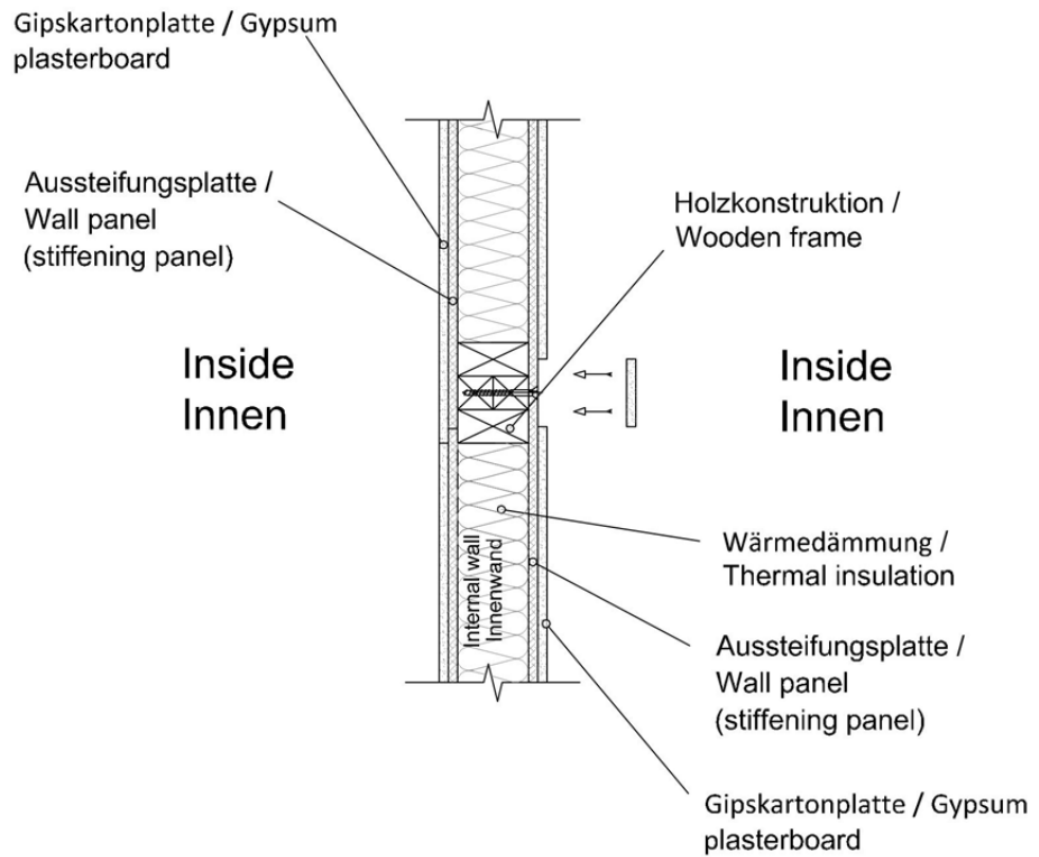
Annex / Anhang B.19



Jusu Namas Haus

Wall corner joint - internal wall with internal wall  
Eckanschluss Innenwand an Innenwand

Annex / Anhang B.20

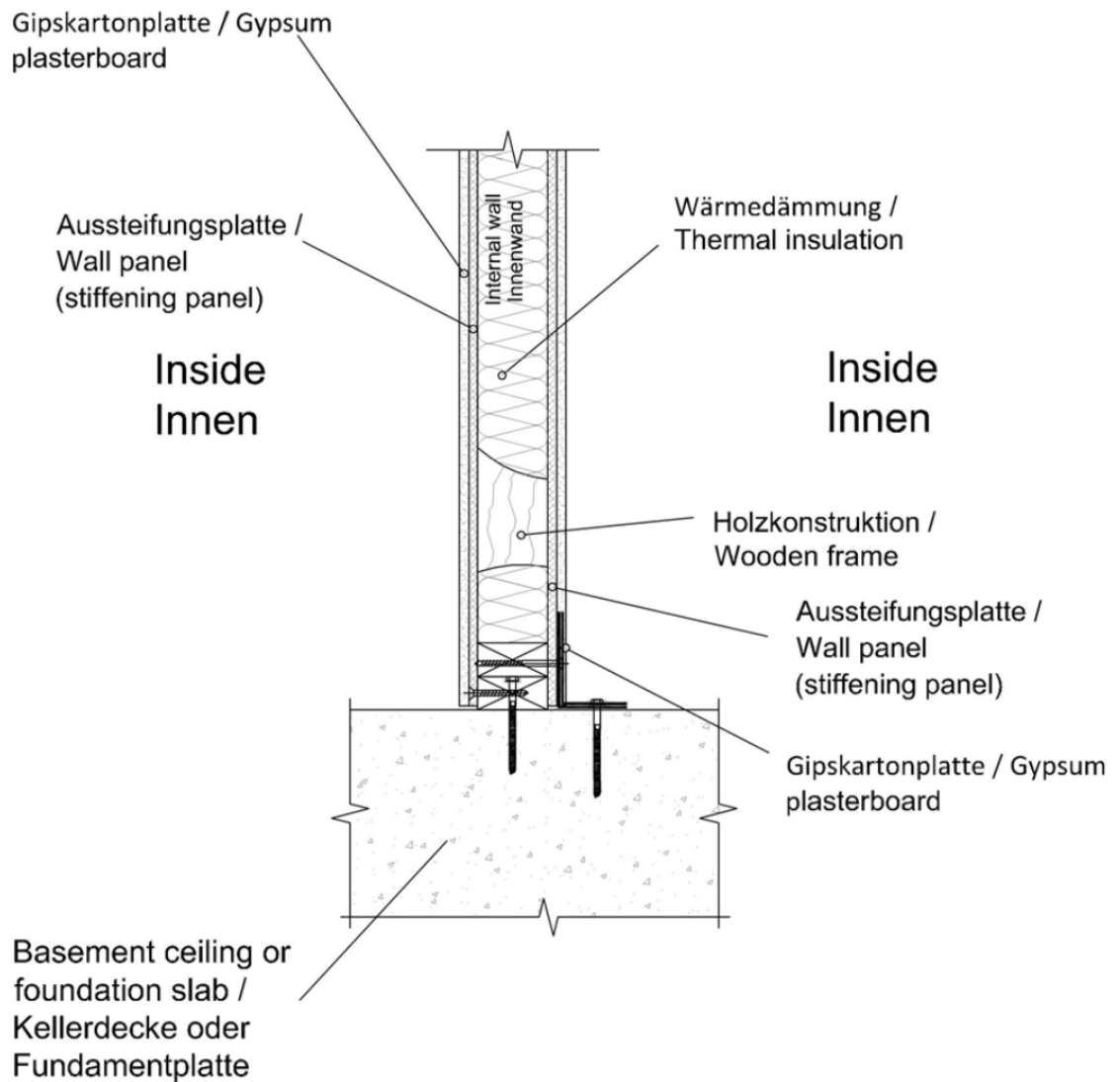


electronic copy of the eta by dibt: eta-18/0911

Jusu Namas Haus

Wall joint - internal wall with internal wall  
Wandanschluss Innenwand an Innenwand

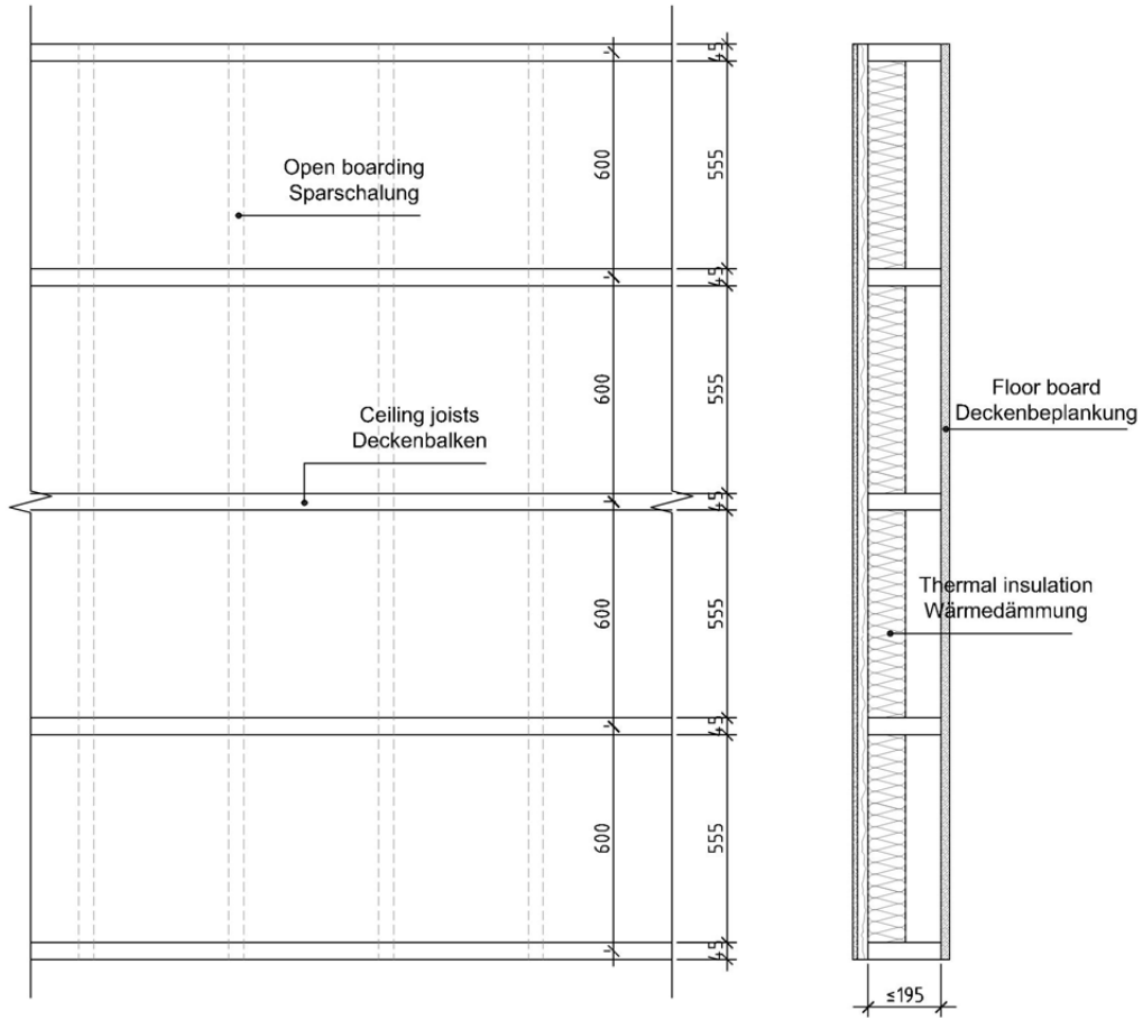
Annex / Anhang B.21



Jusu Namas Haus

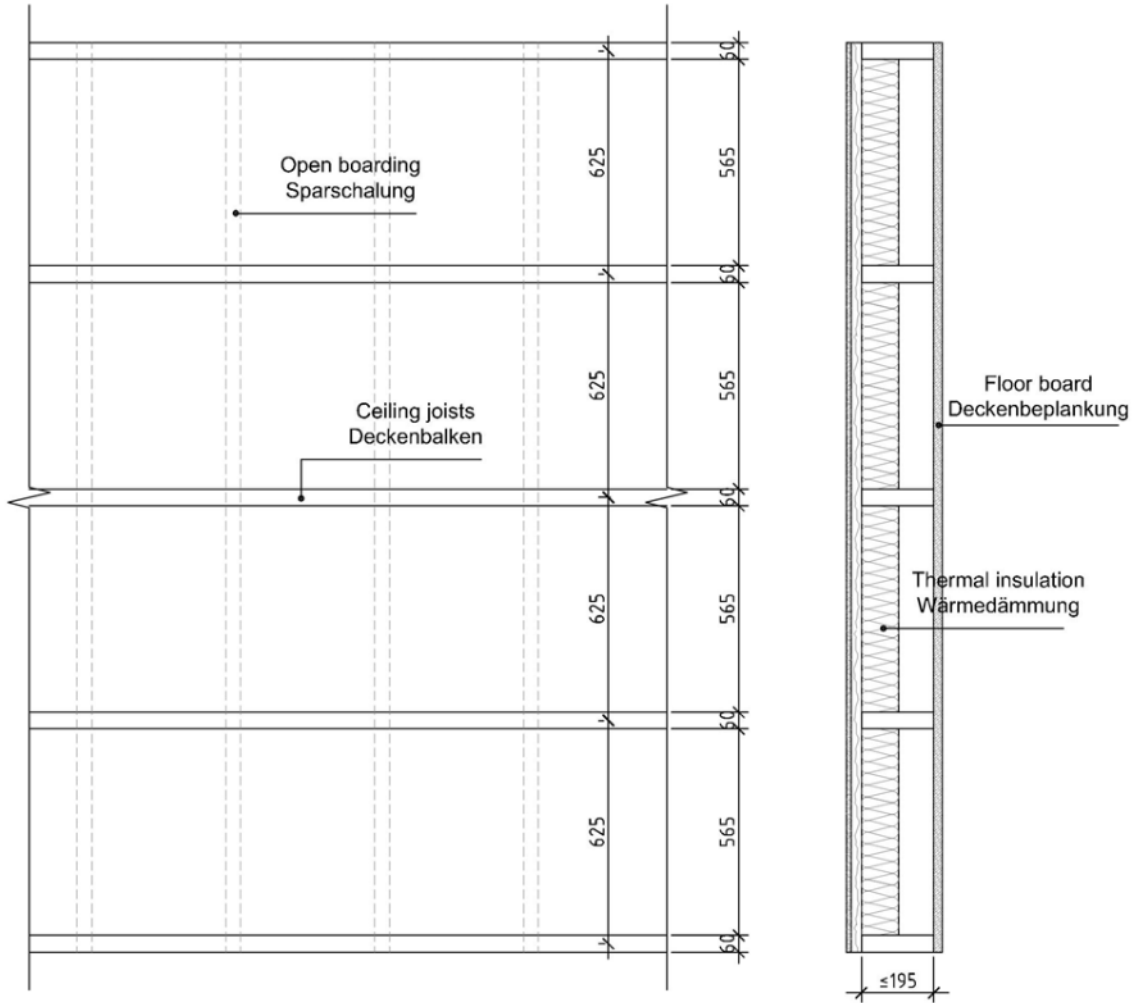
Joint - foundation with internal wall  
Sochelanschluss Innenwand an Bodenplatte / Kellerdecke

Annex / Anhang B.22



electronic copy of the eta by dibt: eta-18/0911

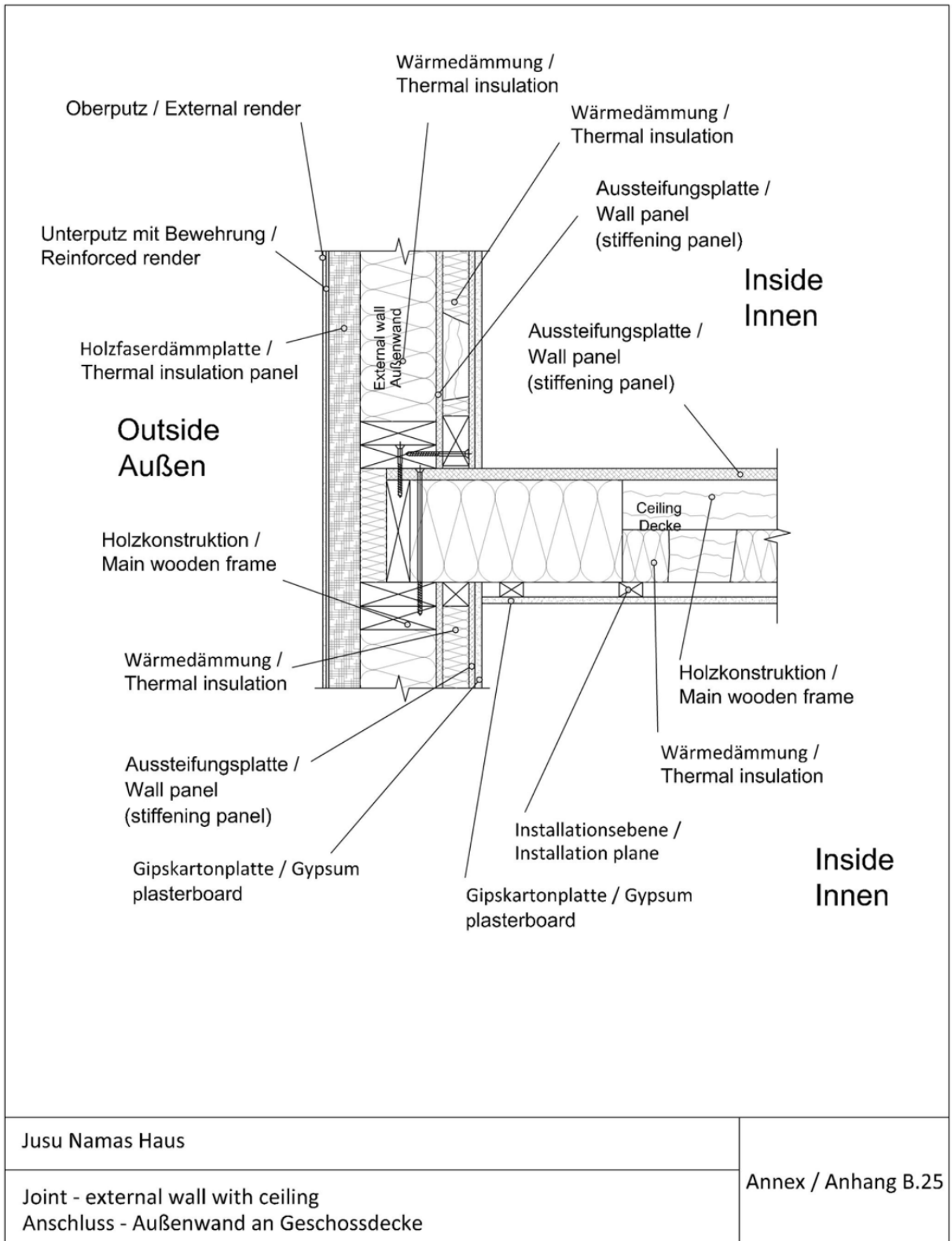
Jusu Namas Haus		Annex / Anhang B.23
Standard ceiling element Standard Deckenelement	Variante A	

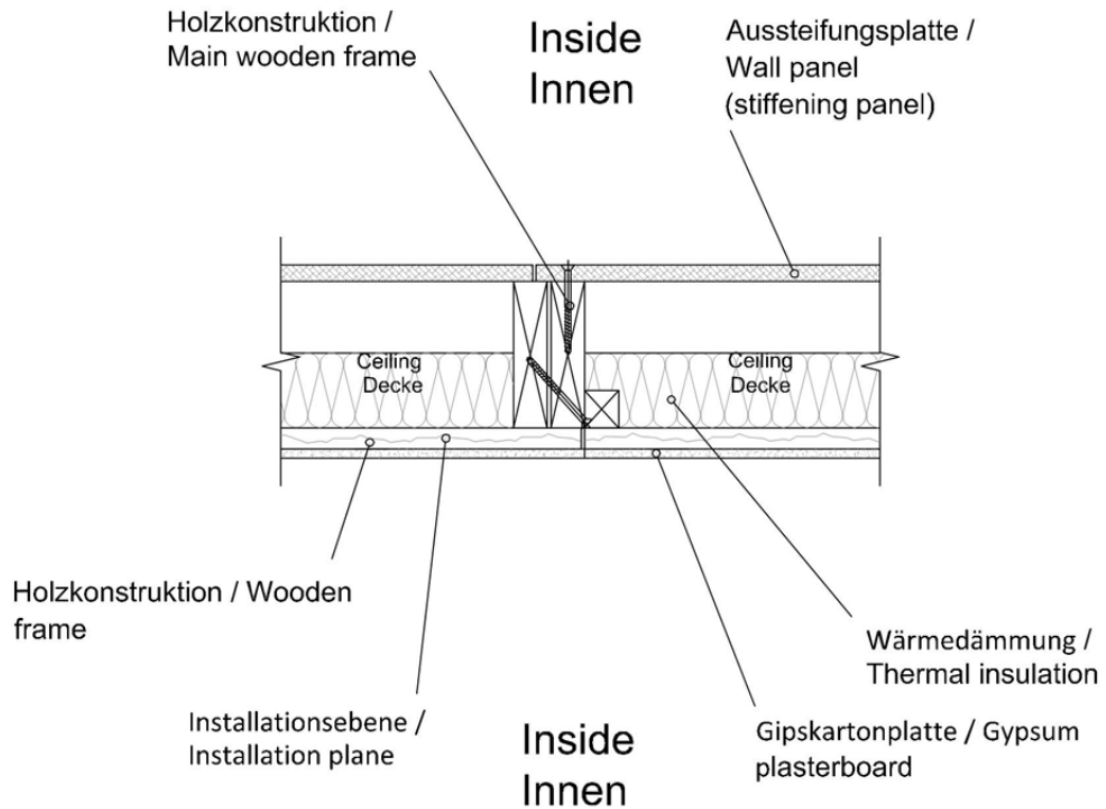


electronic copy of the eta by dibt: eta-18/0911

Jusu Namas Haus		Annex / Anhang B.24
Standard ceiling element Standard Deckenelement	Variante B	



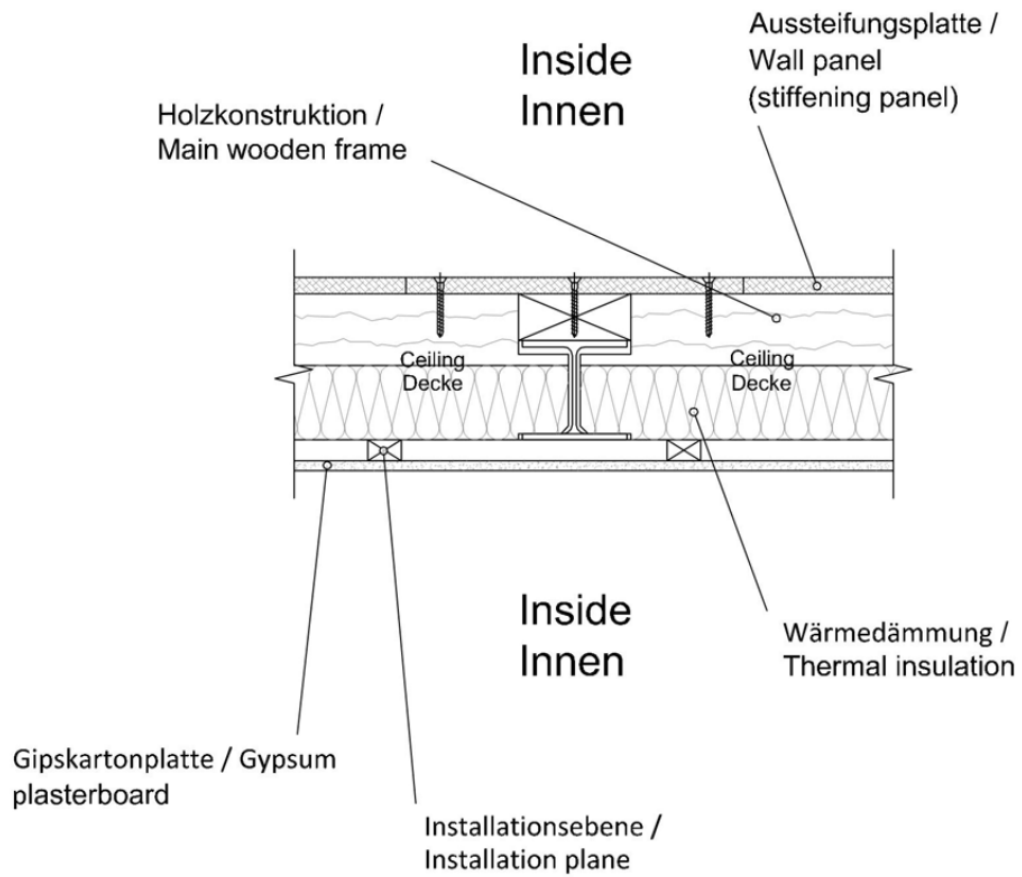




Jusu Namas Haus

Joint - ceiling with ceiling  
Anschluss - Geschossdecke an Geschossdecke

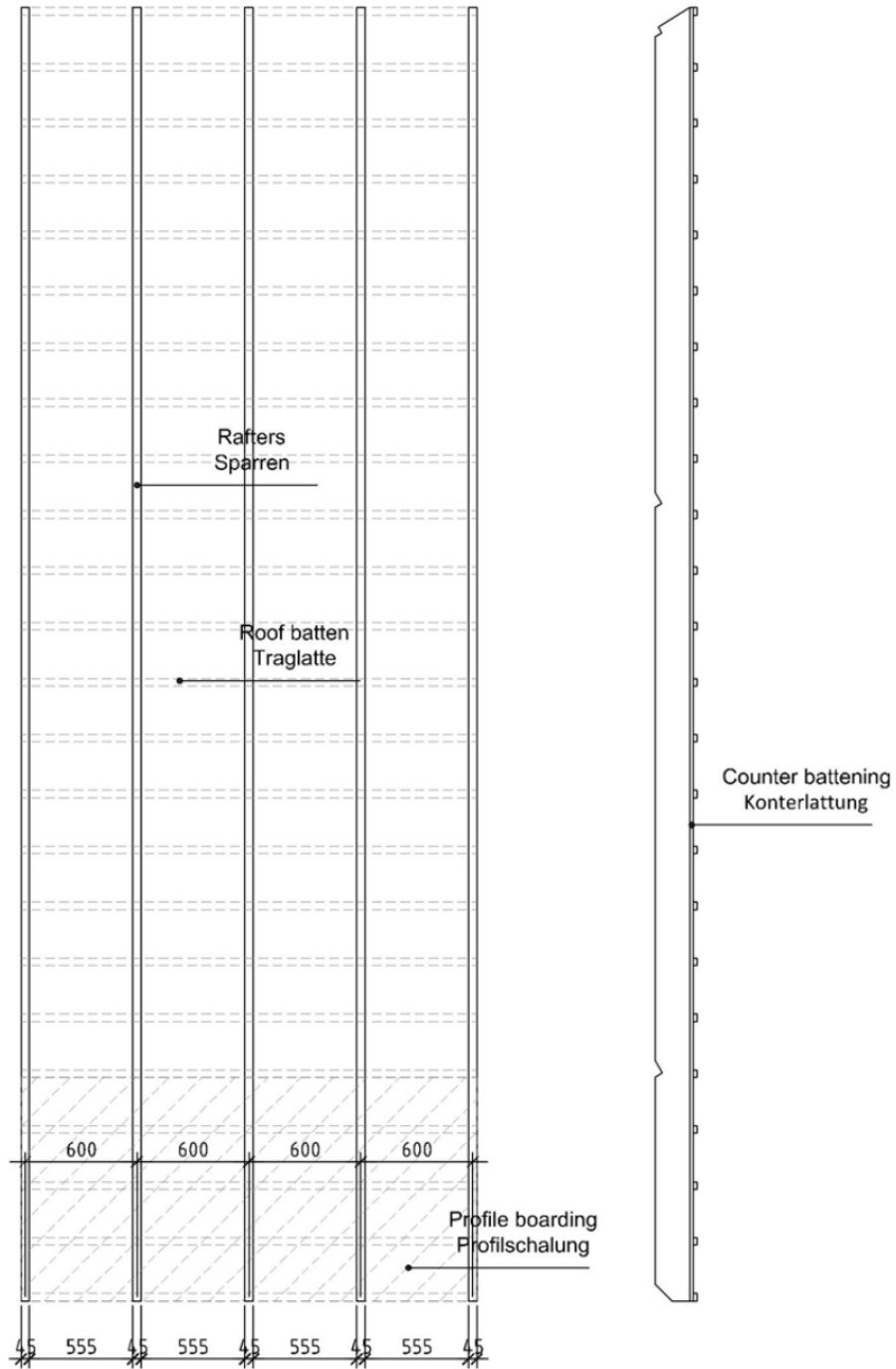
Annex / Anhang B.26



Jusu Namas Haus

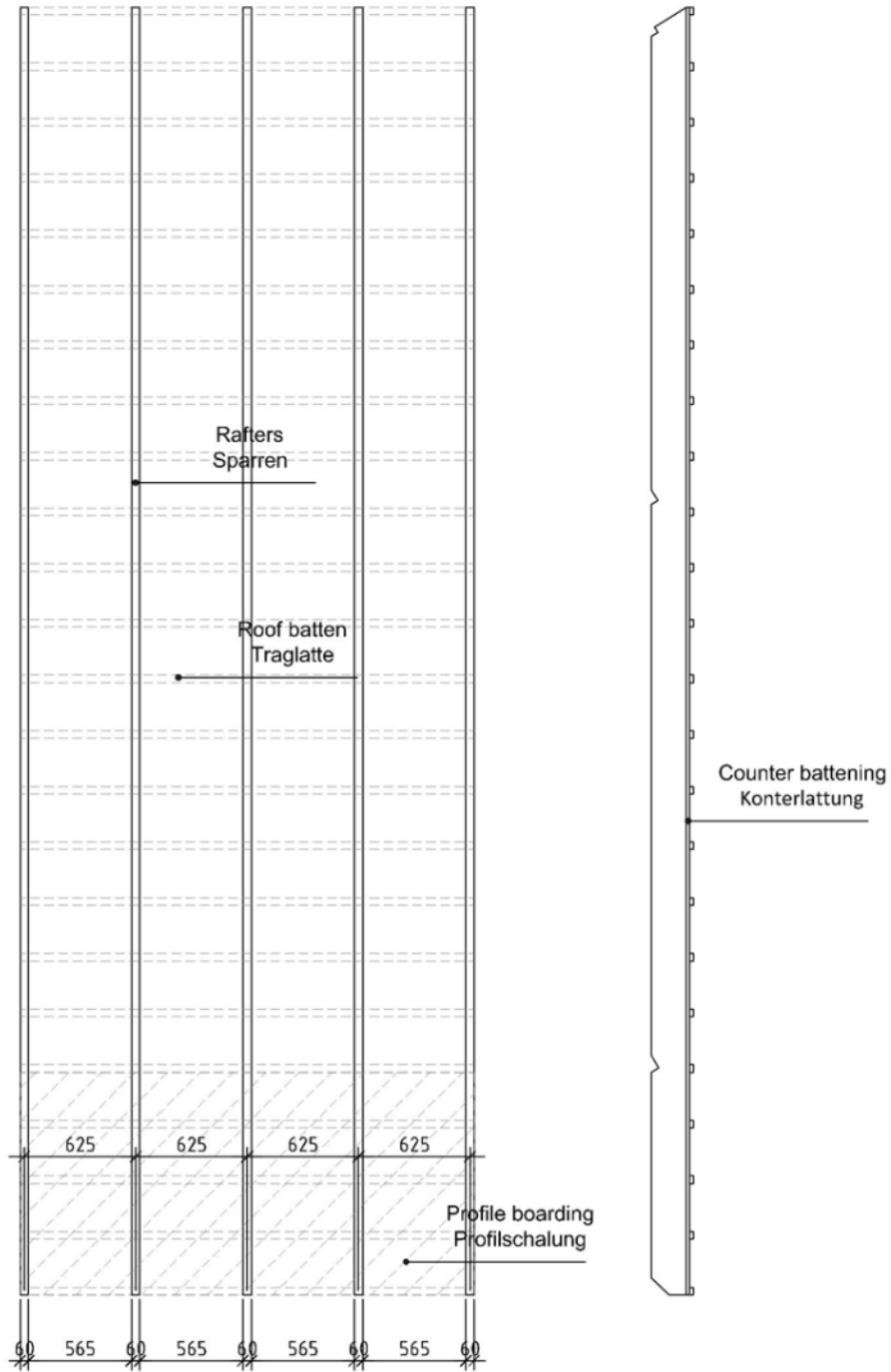
Joint - ceiling with ceiling  
Anschluss - Geschossdecke an Geschossdecke

Annex / Anhang B.27



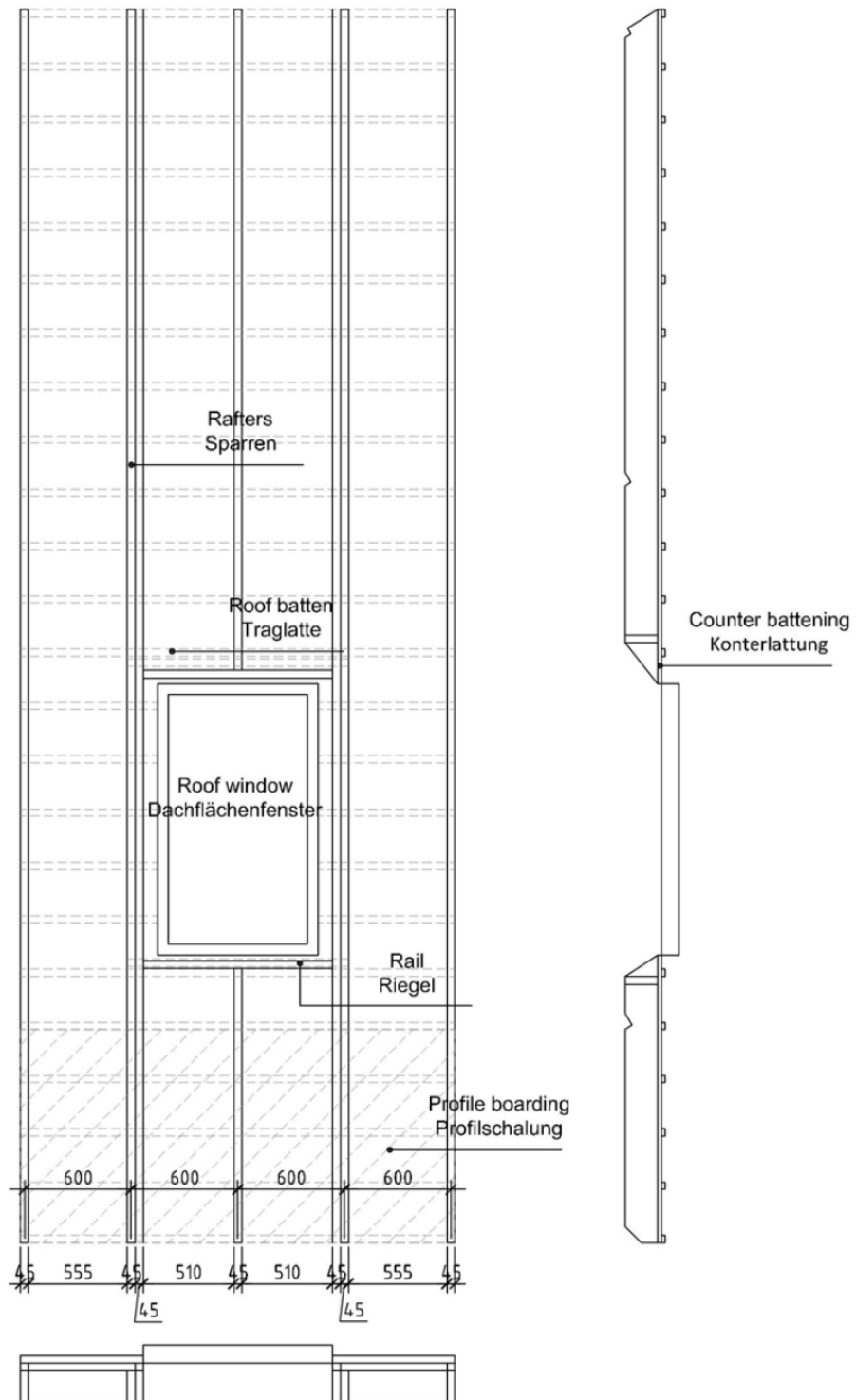
electronic copy of the eta by dibt: eta-18/0911

Jusu Namas Haus		Annex / Anhang B.28
Standard Roof element Standard Dachelement	Variante A	



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Jusu Namas Haus		Annex / Anhang B.29
Standard Roof element Standard Dachelement	Variante B	

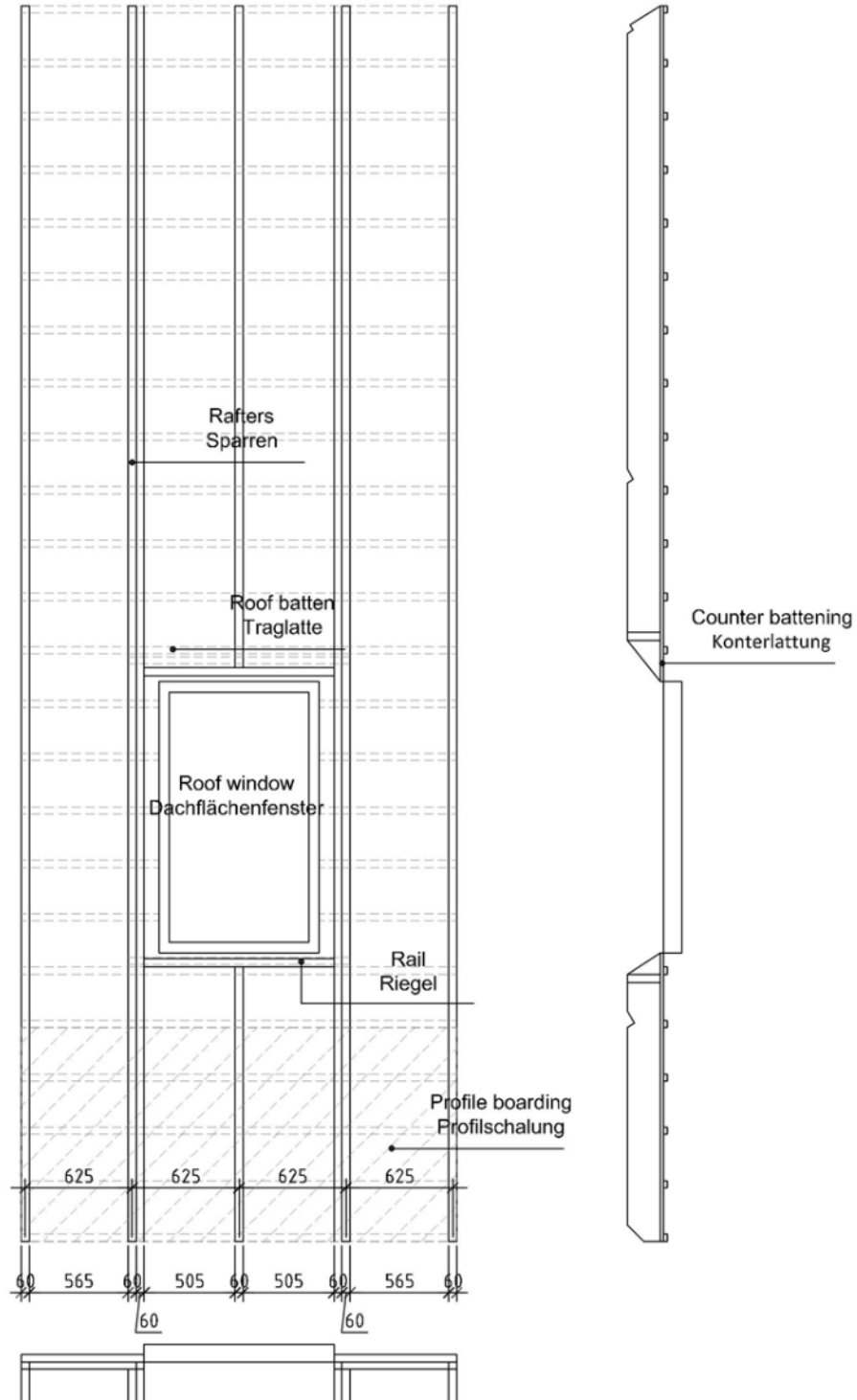


Jusu Namas Haus

View of standard roof element  
Ansicht Standard Dachelement

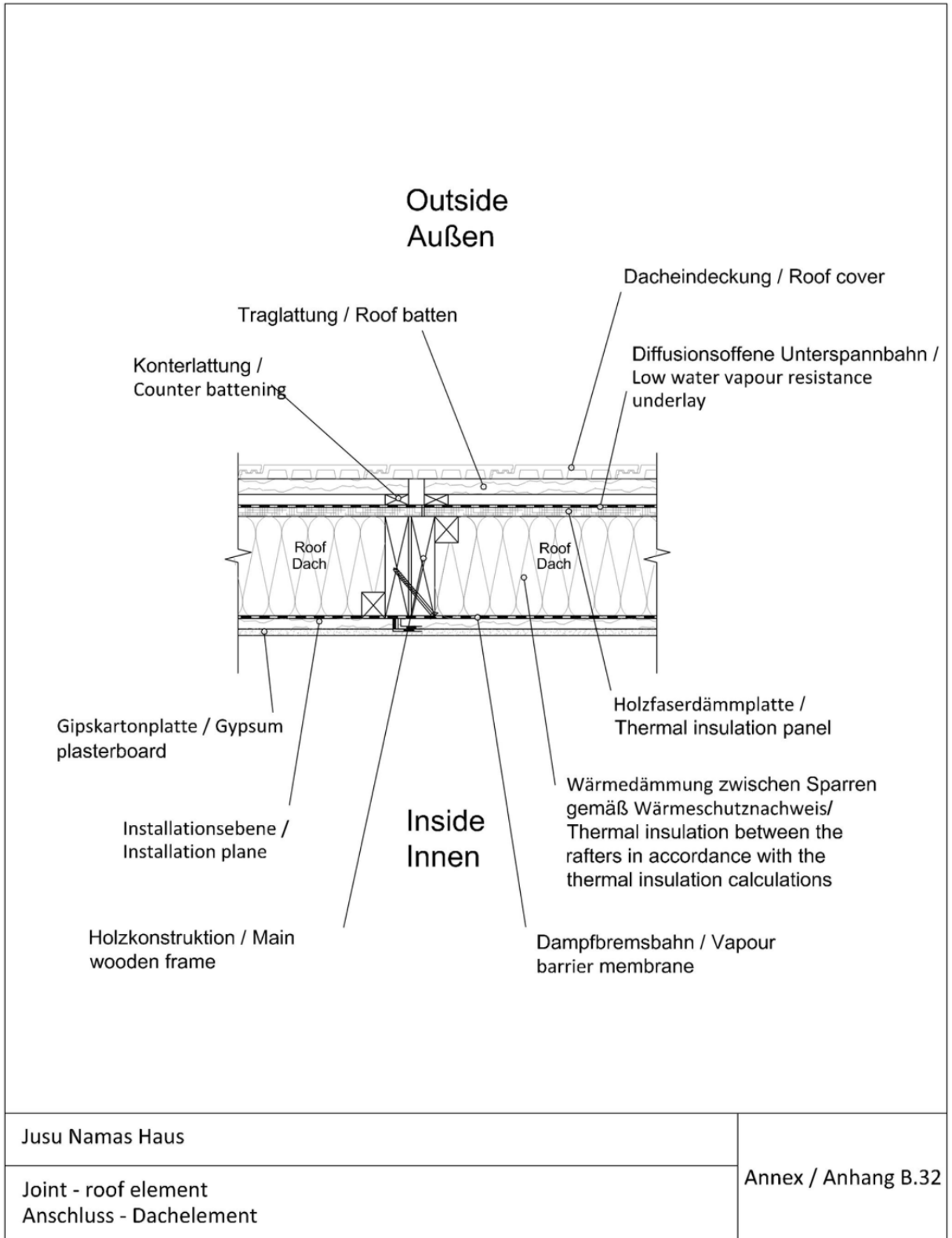
Variante A

Annex / Anhang B.30

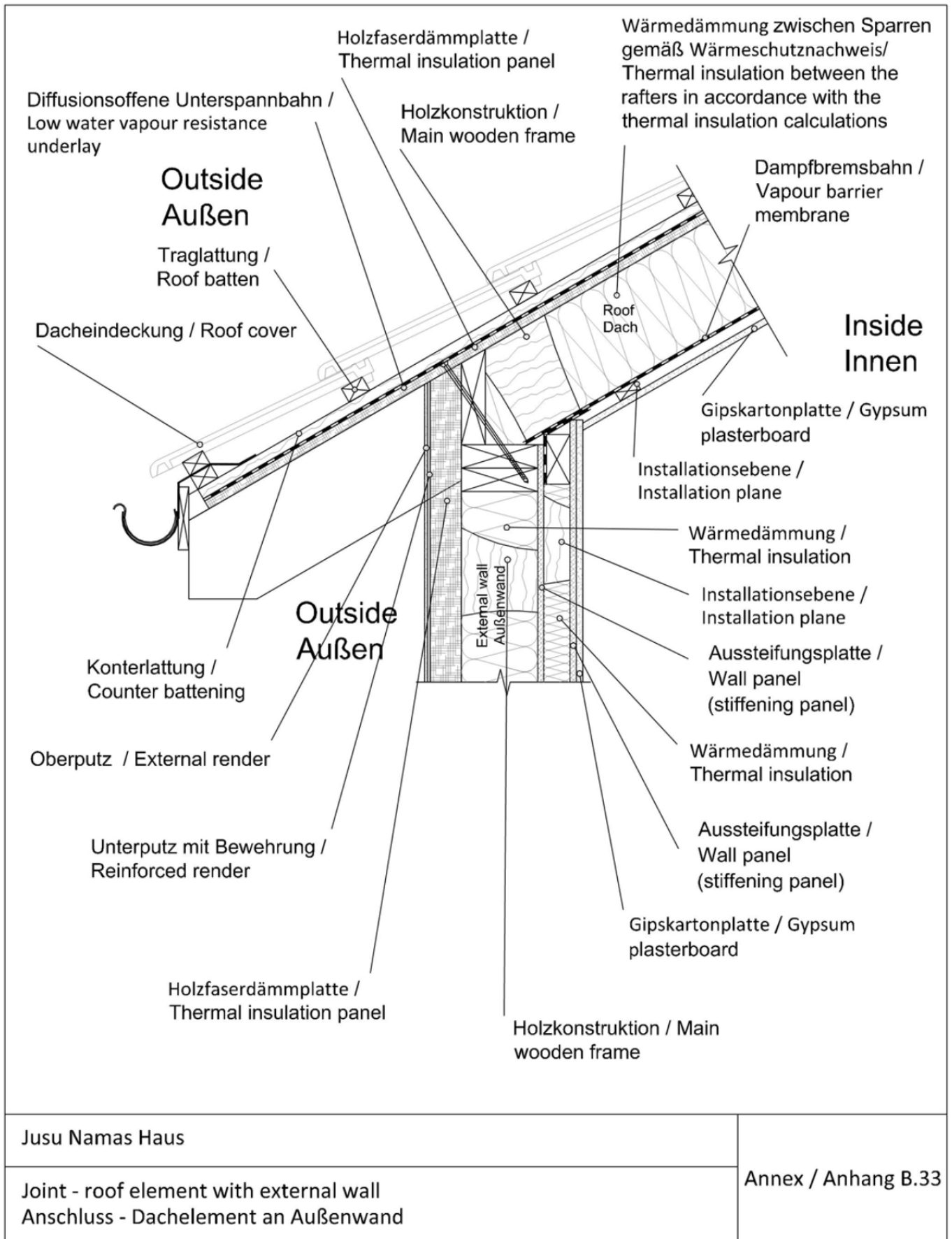


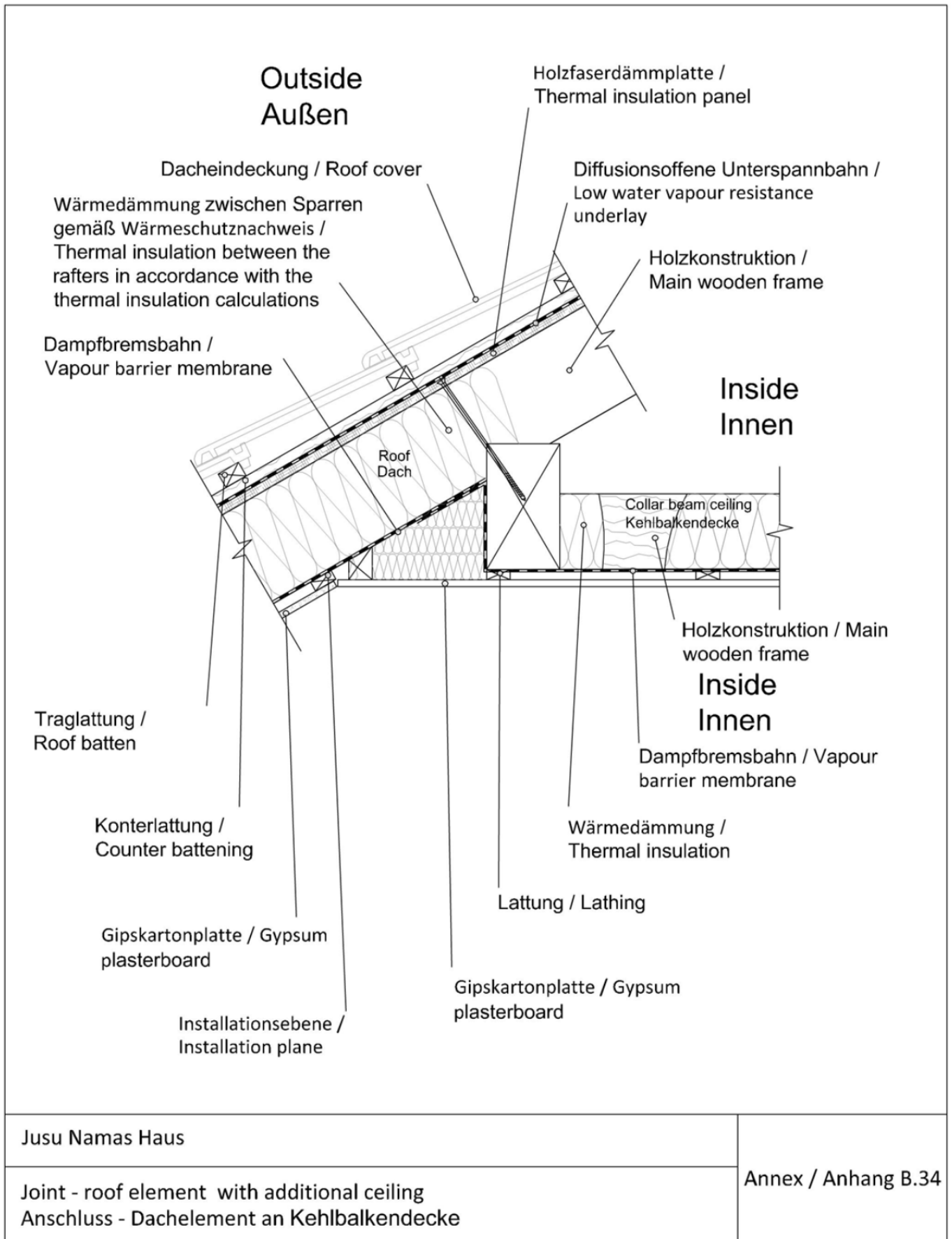
electronic copy of the eta by dibt: eta-18/0911

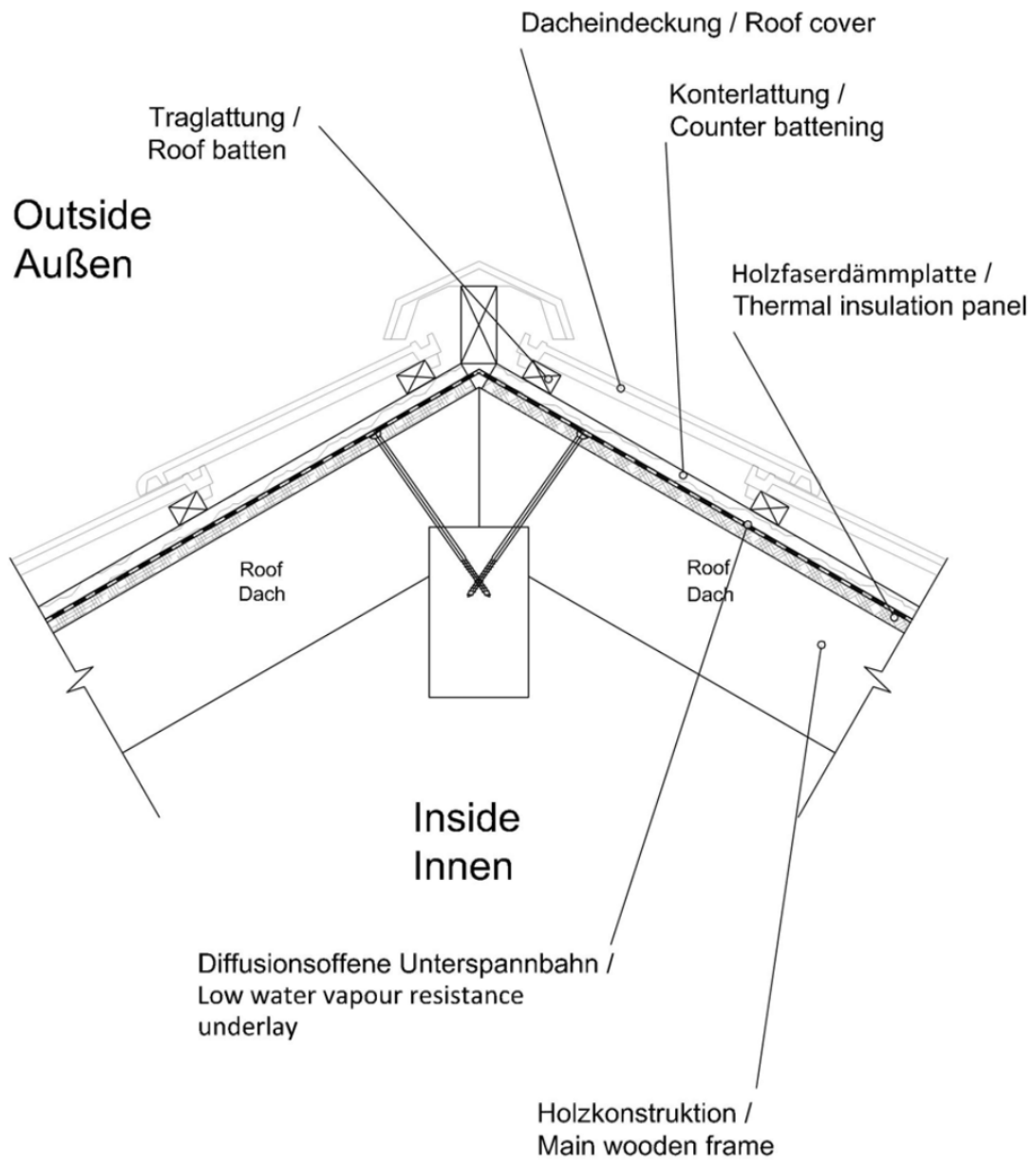
Jusu Namas Haus		Annex / Anhang B.31
View of standard roof element Ansicht Standard Dachelement	Variante B	











Jusu Namas Haus

Joint - roof element  
Anschluss - Dachelement

Annex / Anhang B.35

