

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0254
of 18 September 2020

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

Personal Fall-Protection System Primo 2 AH, Primo 7 HS,
Primo 7 OSB, Primo 20 HU

Product family
to which the construction product belongs

Anchor Devices for Fastening Personal Fall Protection
Systems to Timber Substructures

Manufacturer

Sicherheitskonzepte Breuer GmbH
Broekhuysener Straße 40
47638 Straelen
DEUTSCHLAND

Manufacturing plant

Sicherheitskonzepte Breuer GmbH
Broekhuysener Straße 40
47638 Straelen
Germany

This European Technical Assessment
contains

16 pages including 12 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

EAD 331846-00-0603, Edition 02/2020

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Specific part

1 Technical description of the product

The fall protection systems Primo are made of stainless steel. They are fastened to timber substructure according to EN 338:2010-02, DIN EN 14080:2013-09, DIN EN 14081-1:2011-05, DIN EN 636:2015-05. The fall protection systems are fastened to the timber substructure with the different fasteners which can be seen in the annexes.

This ETA includes the products listed in the following Table 1:

Table 1: Products of this ETA

| Annex No. | Trade Name (Product of this ETA) | Fastener |
|-----------|-------------------------------------|---|
| 2.1 | Primo 2 AH | pan washer head timber screw SP-HBS A2 8,0X100/80 TX40 |
| 3.1 | Primo 7 OSB | round head timber screw SP-HBS A2 6,0X100 TX25 |
| 4.1 | Primo 7 HS | round head timber screw SP-HBS A2 6,0X100 TX25 |
| 5.1 | Primo 20 HU | pan washer head timber screw TKS TX VG DRIBO 6,0x40 |

The components and the system setup of the product are given in Annex (1-5).

2 Specification of the intended use in accordance with the applicable EAD 331846-00-0603 – Anchor Devices for Fastening Personal Fall Protection Systems to Timber Substructures

The fall protection system is used to protect operators working at height (max. 3 persons at once), by arresting them in a fall. The operators attach themselves to the eye using e.g. ropes and karabiners. In the case of a fall the fall protection system prevents the fall and resulting physical damage assuming the correct usage by the operator. The fall protection system Primo is designed for use in all areas of industry, construction and maintenance.

The fall protection system is intended to be used, fastened or inserted on flat roofs or other flat planes made of timber only. The direction of force therefore shall be perpendicular (90° ±5 %) to the fastening element. Thus use at a (timber-) wall is intended only when the direction of force still applies at a 90 ° angle to the fastening axis.

The performances given in Section 3 are only valid if the products listed in the Table 1 is used in compliance with the specifications and conditions given in Annexes (1-5).

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fall protection system of at least 25 years. 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.

English translation prepared by DIBt

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

3.1 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|--------------------------|-------------------------|
| Reaction to fire | No Performance assessed |

3.2 Safety and accessibility in use (BWR 4)

| Essential characteristic | Performance |
|--|---|
| Static loading | Level (kN); see respective product in Annex 1 |
| Dynamic loading | Level (No. of users); see respective product in Annex 1 |
| Check of deformation capacity in case of constraining forces | Description (≤ 10 mm at 0.7 kN) |
| Durability | No performance assessed |

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

In accordance with EAD No. 331846-00-0603, the applicable European legal act is: Decision (EU) 2018/771

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 18 September 2020 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Hahn

This ETA includes the product variants listed in Table 1:

Table 1: Product variants included in this ETA

| Annex | Tradename (Product in this ETA) | Fastener | Substructure |
|-------|------------------------------------|---|---|
| 2 | Primo 2 AH | pan washer head timber screw ^e SP-HBS A2 8,0x100/80 TX40 | Timber / Glued laminated timber ≥ C24/GL24 ^{a,b,c} |
| 3 | Primo 7 OSB | round head timber screw ^e SP-HBS A2 6,0x100 TX25 | OSB 3 or plywood ^d on timber / Glued laminated timber ≥ C24/GL24 ^{a,b,c} |
| 4 | Primo 7 HS | round head timber screw ^e SP-HBS A2 6,0x100 TX25 | Timber ≥ C24 ^{a,b} on timber / Glued laminated timber ≥ C24/GL24 ^{a,b,c} |
| 5 | Primo 20 HU | pan washer head timber screw ^e TKS TX VG DRIBO 6,0x40 | Timber / Glued laminated timber ≥ C24/GL24 ^{a,b,c} or OSB 3 or plywood ^d on timber / Glued laminated timber ≥ C24/GL24 ^{a,b,c} |

Annexes 2 to 5 show the components and the system structure of the products.

Design values of actions

$$F_{Ed} = F_{Ek} \cdot \gamma_F$$

The recommended partial factor γ_F is 1,5.

The recommended partial factor is used in order to determine the corresponding design actions, provided no partial factor is given in national regulations or national Annexes to Eurocode 0. That leads to the following values:

Example:

For one User: $F_{Ed} = F_{Ek} \cdot \gamma_F = 6 \text{ kN} \cdot 1,5 = 9 \text{ kN}$

For two Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6 + 1) \text{ kN} \cdot 1,5 = 10,5 \text{ kN}$

For three Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6 + 2) \text{ kN} \cdot 1,5 = 12 \text{ kN}$

- | | | |
|---|--------------------|---|
| a | EN 338:2010-02 | Structural timber - Strength classes |
| b | EN 14080:2013-09 | Timber structures - Glued laminated timber and glued solid timber - Requirements |
| c | EN 14081-1:2011-05 | Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements |
| d | EN 636:2015-05 | Plywood - Specifications |
| e | ETA-11/0283 | S+P screws for use in timber construction |
| f | ETA-11/0027 | fischer Power-Fast screws and fischer construction screws |

Fallprotection Primo

Design Values

Annex 1

Table 2: Substructure timber and glued laminated timber

| Anchor Device | Bar height [mm] | Fastener | Edge distance C_{min} [mm] | Minimum substructure thickness b_{min} / h_{min} [mm] |
|---------------|-----------------|------------------------------|------------------------------|---|
| Primo 2 AH | 200-1000 | SP-HBS A2 8,0x100/80 TX40 | centred | 120 / 120 |

The scope of application of the Primo 2 AH on timber is limited to service classes 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and timber screws as well as the timber beams) must not be weathered freely. All other components can be used in weathered outdoor areas.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} \cdot k_{mod} = \frac{13,0}{1,3} \cdot 1,1 = 11,0 \text{ kN}$$

The recommended partial factor γ_M is 1,3, provided no partial factor is given in national regulations or national Annexes to Eurocode 5. The recommended modification factor k_{mod} is 1,1 for service classes 1 and 2, provided no modification factor is given in national regulations or national Annexes to Eurocode 5.

Dynamic loading / design resistance

Three users

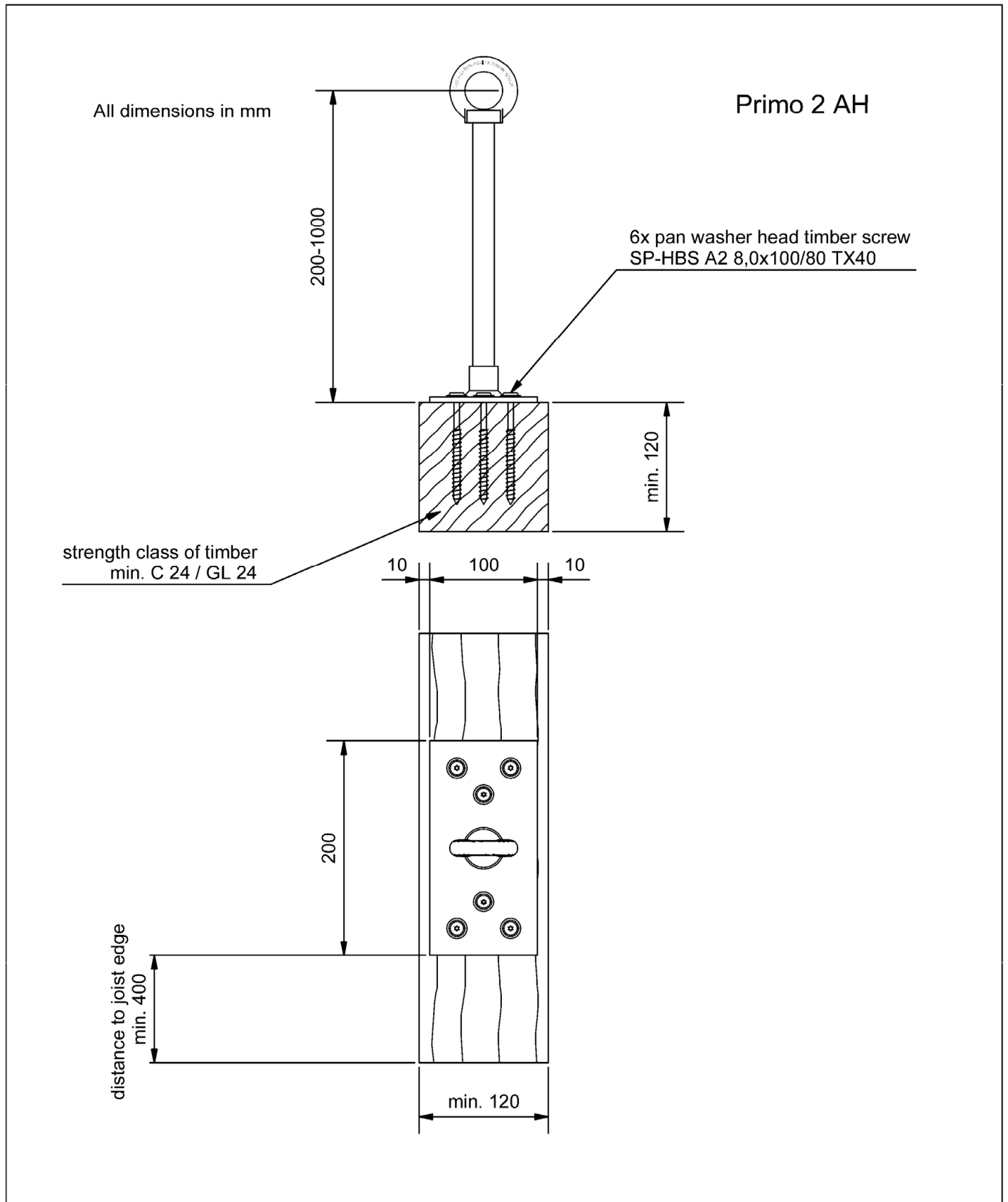
Deformation capacity

9 mm

Fallprotection Primo

Primo 2 AH to be installed on timber beams

Annex 2.1



Electronic copy of the ETA by DIBt: ETA-20/0254

Fallprotection Primo

Primo 2 AH to be installed on timber beams

Annex 2.2

Table 3: Substructure OSB 3 and plywood^{*)}

| Anchor Device | Bar height [mm] | Fastener | Edge distance C_{min} [mm] | Minimum substructure thickness b_{min} / h_{min} [mm] |
|---------------|-----------------|---------------------------|------------------------------|---|
| Primo 7 OSB | 200 - 1000 | SP-HBS A2 6,0x100 TX25 | 500 | 22 OSB |
| Primo 7 OSB | 200 - 1000 | SP-HBS A2 6,0x100 TX25 | 500 | 21 plywood ^{*)} |

^{*)} plywood with apparent density min. 600kg/m³

The scope of application of the Primo 7 OSB on OSB 3 and plywood is limited to service classes 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and timber screws as well as the timber beams) must not be weathered freely. All other components can be used in weathered outdoor areas.

Regulations for Primo 7 OSB on 22 mm OSB 3 and on 21 mm plywood

Prior to mounting the Primo 7 OSB anchor device, the OSB boards and the plywood boards and their substructures shall be checked for their condition and for parameters influencing the load capacity.

The installation of the anchor device Primo 7 OSB can be mounted on pressure-resistant separating layers (roof waterproofing membranes) up to a thickness of 3 mm, provided it is ensured that the substructure can be checked for its condition and for parameters influencing the load capacity.

The wooden composite boards must span at least three wooden beams (supports). The anchor device must be mounted on the middle beam of the three support beams. The installation may not be made on a cross joint of the wooden composite boards. The distance from the cross joint must be at least 600 mm. The width of the OSB panels must be at least 675 mm, the panel length must be 2500 mm, the connection in the joint must be made via tongue and groove. The width of the plywood panels must be at least 675 mm, the panel length must be 2500 mm. The connection in the joint must be made via tongue and groove.

The support beams must have a minimum cross-section of $B = 80 \times H = 100$ mm.

The transmission of forces into the substructure (wooden beams) must be proven according to technical building regulations. The fixing of the OSB panels to the substructure must be reinforced with stainless steel screws with $d_{screw} = 4$ mm and a design value of the tensile strength of at least $F_{1,Rd} = 2,60$ kN per screw. The number of screws for fixing the OSB panels is determined by the width of the panel, there must be one screw per 100 mm panel width.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{15,2}{1,38} = 11,0 \text{ kN}$$

The recommended partial factor γ_M is 1,25/0,9=1,38, provided no partial factor is given in national regulations or national Annexes to Eurocode 3.

Fallprotection Primo

Primo 7 OSB to be installed on OSB board or plywood

Annex 3.1

Dynamic loading / design resistance

Three users

Deformation capacity

9 mm

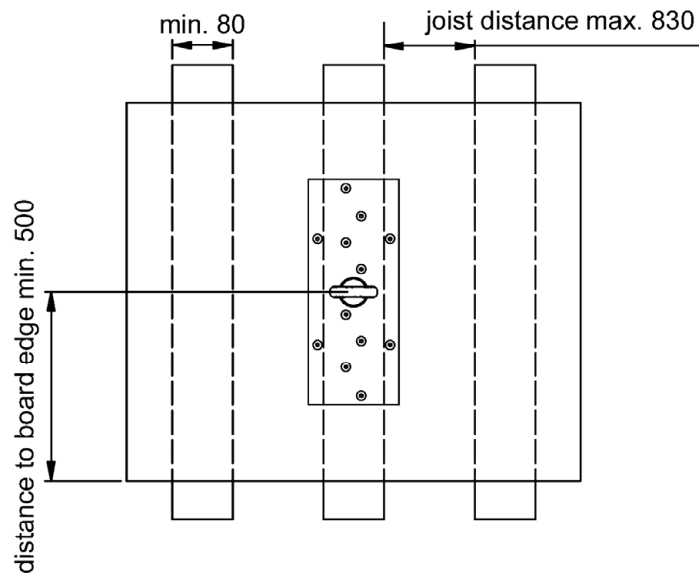
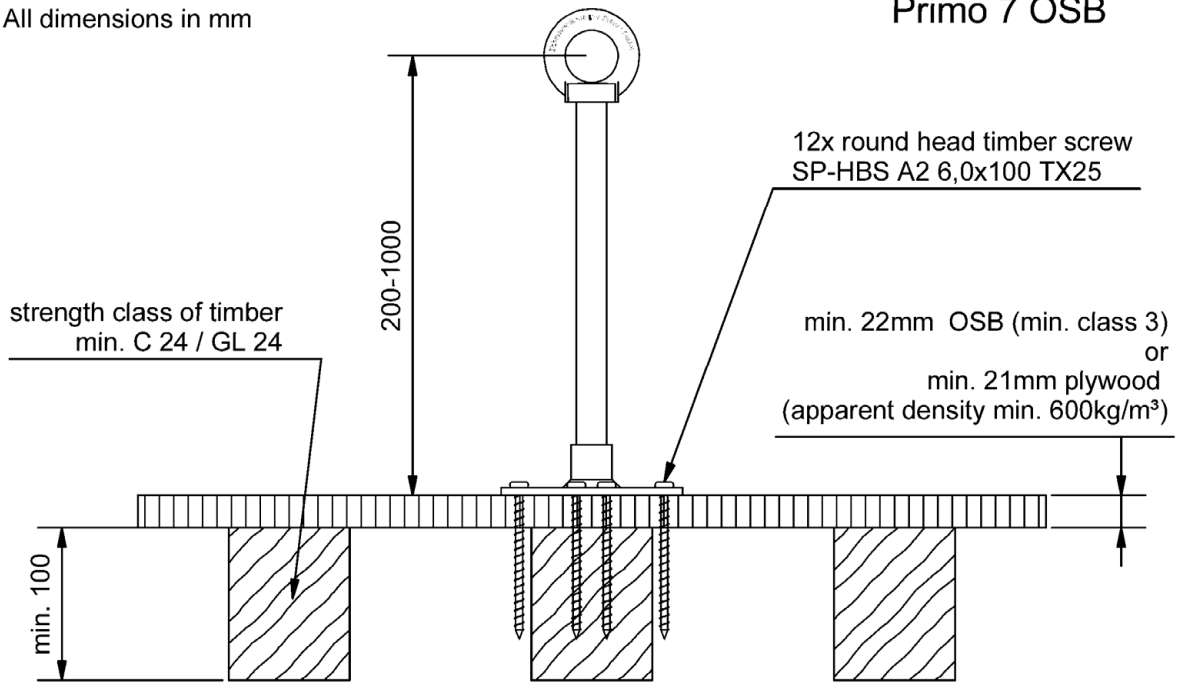
Fallprotection Primo

Primo 7 OSB to be installed on OSB board or plywood

Annex 3.2

All dimensions in mm

Primo 7 OSB



Fallprotection Primo

Primo 7 OSB to be installed on OSB board or plywood

Annex 3.3

Table 4: Substructure timber framework

| Anchor Device | Bar height [mm] | Fastener | Edge distance C_{min} [mm] | Minimum substructure thickness b_{min} / h_{min} [mm] |
|---------------|-----------------|---------------------------|------------------------------|---|
| Primo 7 HS | 200 - 1000 | SP-HBS A2 6,0x100 TX25 | 500 | 24 timber framework ≥ C24/GL24 |

The scope of application of the Primo 7 HS on timber framework is limited to service classes 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and timber screws as well as the timber beams) must not be weathered freely. All other components can be used in weathered outdoor areas.

Regulations for Primo 7 HS on 24 mm timber framework

Prior to mounting the Primo 7 HS anchor device, the timber framework and its substructures shall be checked for their condition and their load capacity incl. checking for knottiness and for other parameters influencing the load capacity.

The installation of the anchor device Primo 7 HS can be mounted on pressure-resistant separating layers (roof waterproofing membranes) up to a thickness of 3 mm, provided it is ensured that the substructure can be checked for its condition and for parameters influencing the load capacity.

The timber framework must span at least three wooden beams (supports). The anchor device must be mounted on the middle beam of the three support beams. The width of the timber framework must be at least 100 mm and max. 300mm.

The support beams must have a minimum cross-section of $B = 60 \times H = 100$ mm.

The transmission of forces into the substructure (wooden beams) must be proven according to technical building regulations. The fixing of the timber framework to the substructure must be reinforced at each support with stainless steel screws with $d_{screw} = 4$ mm and a design value of the tensile strength of at least $F_{1,Rd} = 1,64$ kN per screw. The number of screws for fastening the timber framework depends on the width of the framework:

- $n = 2$ if $100 \text{ mm} \leq b \leq 130 \text{ mm}$
- $n = 3$ if $130 \text{ mm} \leq b \leq 170 \text{ mm}$
- $n = 4$ if $170 \text{ mm} \leq b \leq 300 \text{ mm}$

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} \cdot k_{mod} = \frac{13,0}{1,3} \cdot 1,1 = 11,0 \text{ kN}$$

The recommended partial factor γ_M is 1,3, provided no partial factor is given in national regulations or national Annexes to Eurocode 5. The recommended modification factor k_{mod} is 1,1 for service classes 1 and 2, provided no modification factor is given in national regulations or national Annexes to Eurocode 5.

| | |
|--|-----------|
| Fallprotection Primo | Annex 4.1 |
| Primo 7 HS to be installed on timber framework | |

Dynamic loading / design resistance

Three users

Deformation capacity

9 mm

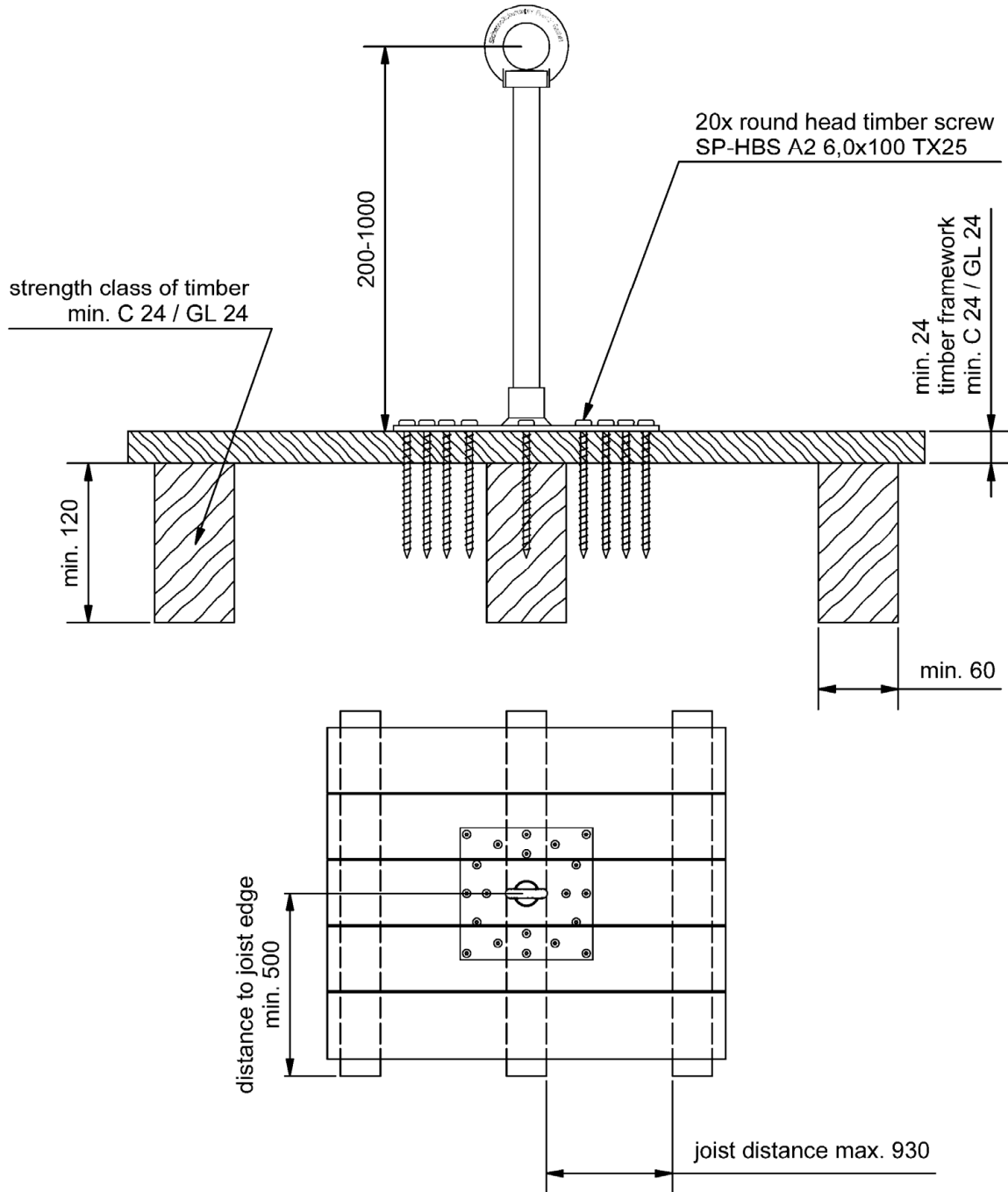
Fallprotection Primo

Primo 7 HS to be installed on timber framework

Annex 4.2

All dimensions in mm

Primo 7 HS



Fallprotection Primo

Primo 7 HS to be installed on timber framework

Annex 4.3

Table 5: Substructure OSB 3 and plywood^{*)}

| Anchor Device | Bar height [mm] | Fastener | Edge distance C_{min} [mm] | Minimum substructure thickness b_{min} / h_{min} [mm] |
|---------------|-----------------|---------------------------------|------------------------------|---|
| Primo 20 HU | 300 - 700 | TKS TX VG DRIBO 6,0x40 A2 | 500 | 22 OSB |
| Primo 20 HU | 300 - 700 | TKS TX VG DRIBO 6,0x40 A2 | 500 | 21 plywood ^{*)} |
| Primo 20 HU | 300 - 700 | TKS TX VG DRIBO 6,0x40 A2 | 500 | 24 timber framework ≥ C24/GL24 |

^{*)} plywood with apparent density min. 600kg/m³

The scope of application of the Primo 20 HU on OSB 3 and plywood is limited to service class 1 and 2 according to EN 1995-1-1. The scope of application of the Primo 20 HU on timber framework is limited to service classes 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and timber screws as well as the timber beams) must not be weathered freely. All other components can be used in weathered outdoor areas.

Regulations for Primo 20 HU on 22 mm OSB 3 and on 21 mm plywood

Prior to mounting the Primo 20 HU anchor device, the OSB boards and the plywood boards and their substructures shall be checked for their condition and for parameters influencing the load capacity.

The installation of the anchor device Primo 20 HU can be mounted on pressure-resistant separating layers (roof waterproofing membranes) up to a thickness of 3 mm, provided it is ensured that the substructure can be checked for its condition and for parameters influencing the load capacity.

The wooden composite boards must span at least three wooden beams (supports). The anchor device may not be mounted on the edge beam of the support beams. The width of the composite boards must be at least 650 mm, the panel length must be 2500 mm, the connection in the joint is not necessary to be made via tongue and groove.

The support beams must have a minimum cross-section of $B = 60 \times H = 120$ mm.

The transmission of forces into the substructure (wooden beams) must be proven according to technical building regulations. The fixing wooden composite boards to the substructure must be reinforced with Fischer Power-Fast 4,5 x 80^f. The number of screws for fixing the OSB panels is determined by the width of the panel, there must be four screws per panel per substructure (wooden beams), but at least one screw per 250mm panel width.

Fallprotection Primo

Primo 20 HU to be installed on OSB board, plywood or timber framework

Annex 5.1

Regulations for Primo 20 HU on 24 mm timber framework

Prior to mounting the Primo 20 HU anchor device, the timber framework and its substructures shall be checked for their condition and their load capacity incl. checking for knottiness and for other parameters influencing the load capacity.

The installation of the anchor device Primo 20 HU can be mounted on pressure-resistant separating layers (roof waterproofing membranes) up to a thickness of 3 mm, provided it is ensured that the substructure can be checked for its condition and for parameters influencing the load capacity.

The timber framework must span at least three wooden beams (supports). The anchor device may not be mounted on the edge beam of the support beams. The width of the timber framework must be at least 100 mm and max. 300mm.

The support beams must have a minimum cross-section of $B = 60 \times H = 120$ mm.

The usage of substructures with a greater stiffness (e.g. solid wood or glulam ceilings) is possible. The transmission of forces into the substructure (wooden beams) must be proven according to technical building regulations. The fixing of the timber framework to the substructure must be reinforced with Fischer Power-Fast 4,5 x 80^f around the anchor device (± 750 mm) at each support beam. The number of screws for fixing the OSB panels is determined by the width of the panel, there must be four screws per panel per substructure (wooden beams), but at least one screw per 250mm panel width.

The number of screws for fastening the timber framework depends on the width of the framework:

$$n = 2 \text{ if } 100 \text{ mm} \leq b \leq 140 \text{ mm}$$

$$n = 3 \text{ if } 140 \text{ mm} \leq b \leq 300 \text{ mm}$$

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} \cdot k_{mod} = \frac{27,9}{1,3} \cdot 1,0 = 21,5 \text{ kN}$$

The recommended partial factor γ_M is 1,3, provided no partial factor is given in national regulations or national Annexes to Eurocode 5. The recommended modification factor k_{mod} is 1,0 for service classes 1 and 2, provided no modification factor is given in national regulations or national Annexes to Eurocode 5.

Dynamic loading / design resistance

Three users

Deformation capacity

9 mm

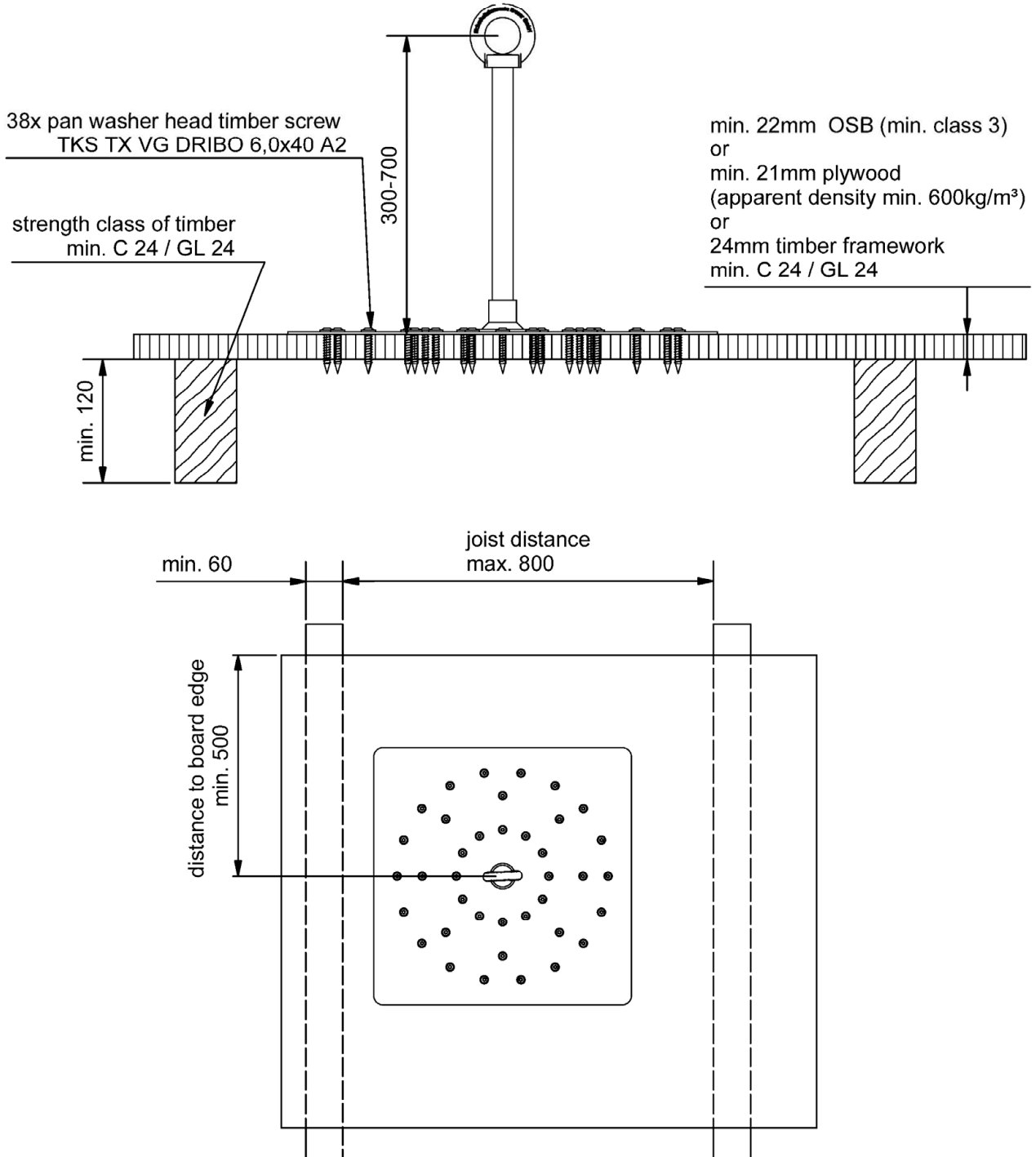
Fallprotection Primo

Primo 20 HU to be installed on OSB board, plywood or timber framework

Annex 5.2

Primo 20 HU

All dimensions in mm



Fallprotection Primo

Primo 20 HU to be installed on OSB board, plywood or timber framework

Annex 5.3