

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-20/0256**  
**of 5 January 2022**

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

Fall Protection System LUX-top® AP for timber  
substructures

Product family  
to which the construction product belongs

Anchor devices for fastening personal fall protection  
systems to timber substructures

Manufacturer

ST QUADRAT Fall Protection S.A.  
45, rue Fuert  
L-5410 BEYREN  
LUXEMBURG

Manufacturing plant

ST QUADRAT Fall Protection S.A.  
45, rue Fuert  
L-5410 BEYREN  
LUXEMBURG

This European Technical Assessment  
contains

9 pages including 4 annexes with 5 pages 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

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**Specific part**

**1 Technical description of the product**

The fall protection systems are made of stainless steel. They are fastened to timber substructure according to EN 300:2006, EN 636:2012+A1:2015, EN 14080:2013, EN 14081-1:2016+A1:2019.

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	Material
2	LUX-top® AP7-18	SP-HBS TK 8x120/80 A2	1.4301 / 1.4307
3	LUX-top® AP7-26	SP-HBS TK 8x120/80 A2	1.4301 / 1.4307
4	LUX-top® AP7 II-18	SP-HBS TK 8x40 A2	1.4301 / 1.4307

The components and the system setup of the product are given in Annex (1-4).

**2 Specification of the intended use in accordance with the applicable EAD 331846-00-0603**

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 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. Another load direction is possible if this is specified in the annexes to this ETA.

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 (1-4).

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.

**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	Class A1

**3.2 Safety and accessibility in use (BWR 4)**

Essential characteristic	Performance
Static loading	Annexes 2-4
Dynamic loading	Annexes 2-4
Check of deformation capacity in case of constraining forces	Annexes 2-4
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 given in EAD Nr. 331846-00-0603 "Table 3.1 Control plan for the manufacturer; cornerstones".

Issued in Berlin on 5 January 2022 Deutsches Institut für Bautechnik

Dr.-Ing. Ronald Schwuchow  
Head of Section

*beglaubigt:*  
Norbert Hahn

This ETA includes the products listed in Table 1:

**Table 1: Products included in this ETA**

Annex	Tradename (Product in this ETA)	Fastener	Substructure
2	LUX-top® AP7-18	SP-HBS TK 8x120/80 A2 <sup>1</sup>	Timber planks <sup>2</sup> ≥ C24 or OSB/3, OSB/4 <sup>3</sup> or plywood type EN 636-2 <sup>4</sup> (density min. 350 kg/m <sup>3</sup> ) on timber <sup>2</sup> /glued laminated timber <sup>5</sup> ≥ C24/GL24
3	LUX-top® AP7-26	SP-HBS TK 8x120/80 A2 <sup>1</sup>	Timber planks <sup>2</sup> ≥ C24 or OSB/3, OSB/4 <sup>3</sup> or plywood type EN 636-2 <sup>4</sup> (density min. 350 kg/m <sup>3</sup> ) on timber <sup>2</sup> /glued laminated timber <sup>5</sup> ≥ C24/GL24
4	LUX-top® AP7 II-18	SP-HBS TK 8x40 A2 <sup>1</sup>	Timber planks <sup>2</sup> ≥ C24 or OSB/3, OSB/4 <sup>3</sup> or plywood type EN 636-2 <sup>4</sup> (density min. 350 kg/m <sup>3</sup> ) on timber <sup>2</sup> /glued laminated timber <sup>5</sup> ≥ C24/GL24

Annexes 2 to 4 show the components and the system setup of the products.

The scope of application 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.

#### Design values of actions

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

The recommended partial factor  $\gamma_F$  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. That leads to the following values:

Example:

For one user:  $F_{Ed} = F_{Ek} * \gamma_F = 6 \text{ kN} * 1,5 = 9 \text{ kN}$   
 For two users:  $F_{Ed} = F_{Ek} * \gamma_F = (6 + 1) \text{ kN} * 1,5 = 10,5 \text{ kN}$   
 For three users:  $F_{Ed} = F_{Ek} * \gamma_F = (6 + 2) \text{ kN} * 1,5 = 12 \text{ kN}$

<sup>1</sup> ETA-11/0283 S+P screws for use in timber construction  
<sup>2</sup> EN 14081-1.2019 Timber structures - Strength graded structural timber with rectangular cross section - Part 1. General requirements  
<sup>3</sup> DIN EN 300:2006 Oriented Strand Boards (OSB) - Definitions, classification and specifications  
<sup>4</sup> EN 636:2015 Plywood - Specifications  
<sup>5</sup> EN 14080:2013 Timber structures - Glued laminated timber and glued solid timber - Requirements

Fall Protection System LUX-top® AP for timber substructures	Annex 1.1
Overview and design values	

### Static loading / design resistance

$$F_{Rd} = F_{Rk} / \gamma_M \cdot K_{mod}$$

The recommended partial factor  $\gamma_M$  is 1,3, provided no partial factor is given in national regulations.  
The recommended modification factor  $K_{mod}$  is 1,1 (0,9 for OSB/3, OSB/4 or plywood type EN 636-2), provided no modification factor is given for service class 2 in national regulations.

### Dynamic loading / design resistance

See max. number of users on following annexes.

### Deformation capacity

See deformation at 0,70 kN on following annexes.

### Regulations for LUX-top® AP on timber substructures

Before installing the anchor devices LUX-top® AP7-18, LUX-top® AP7-26 and LUX-top® AP7 II-18, the roof boarding or wood-based panels and their substructure are to be checked with regard to their condition and other parameters influencing the load bearing capacity (e.g. knottiness).

The OSB panels must not be connected by tongue and groove. The anchor devices can be fitted on pressure-resistant partitions (roof sealing sheets) up to a thickness of 3 mm if it is ensured that the substructure can be checked with regard to its condition and the parameters influencing the load bearing capacity.

It is possible to use substructures with a higher rigidity (e.g. solid timber or laminated timber ceilings). The transfer of the forces into the substructure (wooden beams) is to be verified according to technical building regulations.

**Table 2: Information about boarding and fastening**

Type of boarding	Minimum structural element thickness $h_{min}$ [mm]	Minimum width [mm]	Fastening materials and minimum quantity per 1000 mm of boarding width
Timber planks	20	70 per board 1500 in total	Steel wire nails 2,8x65 20 pcs *)
OSB/3, OSB/4	22	625 per board 1250 in total	Steel wire nails 2,8x65 14 pcs *)
Plywood	21	1250 per board and in total	Steel wire nails 2,8x65 13 pcs *)

\*) The number of nails for fastening the boards depends on the width of the boards:

n=2 für  $70 \text{ mm} \leq b \leq 100 \text{ mm}$   
n=3 für  $100 \text{ mm} \leq b \leq 160 \text{ mm}$   
n=4 für  $160 \text{ mm} \leq b \leq 240 \text{ mm}$

Fall Protection System LUX-top® AP for timber substructures

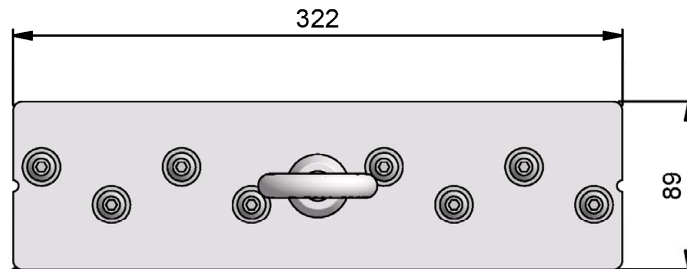
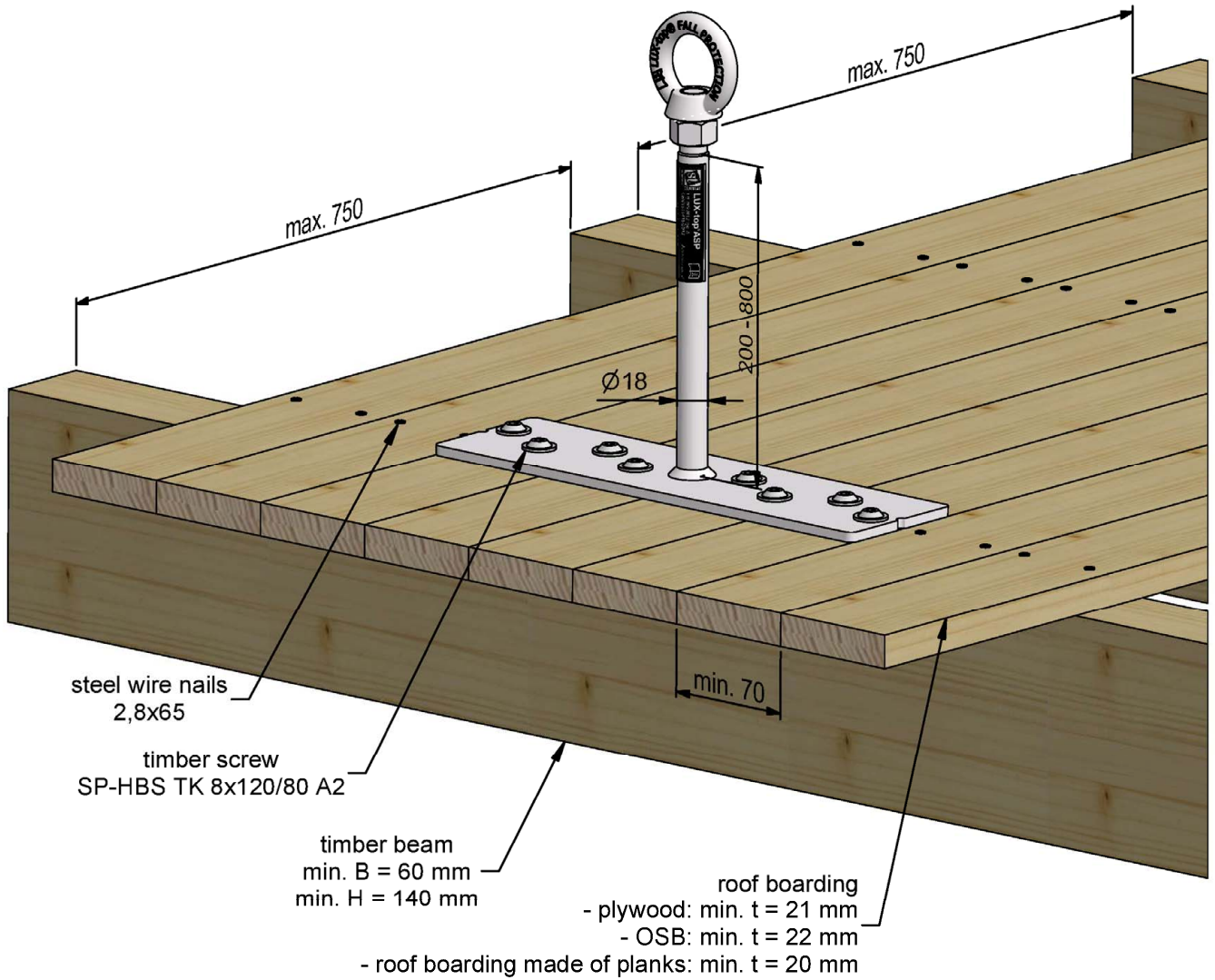
Overview and design values

Annex 1.2

**Design values of the load capacity**

Anchor device	Support structure	$F_{R,d}$ [kN]	Max. number of users
LUX-top® AP7-18	plank $\geq$ C24	10,50	3
LUX-top® AP7-18	OSB/3 OSB/4	10,50	3
LUX-top® AP7-18	plywood Typ EN 636-2	10,50	3

Deformation at 0,70 kN: 10,2 mm for construction height 800 mm



All dimensions in [mm]

Fall Protection System LUX-top® AP for timber substructures

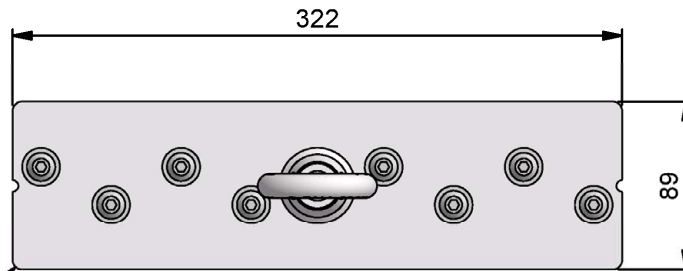
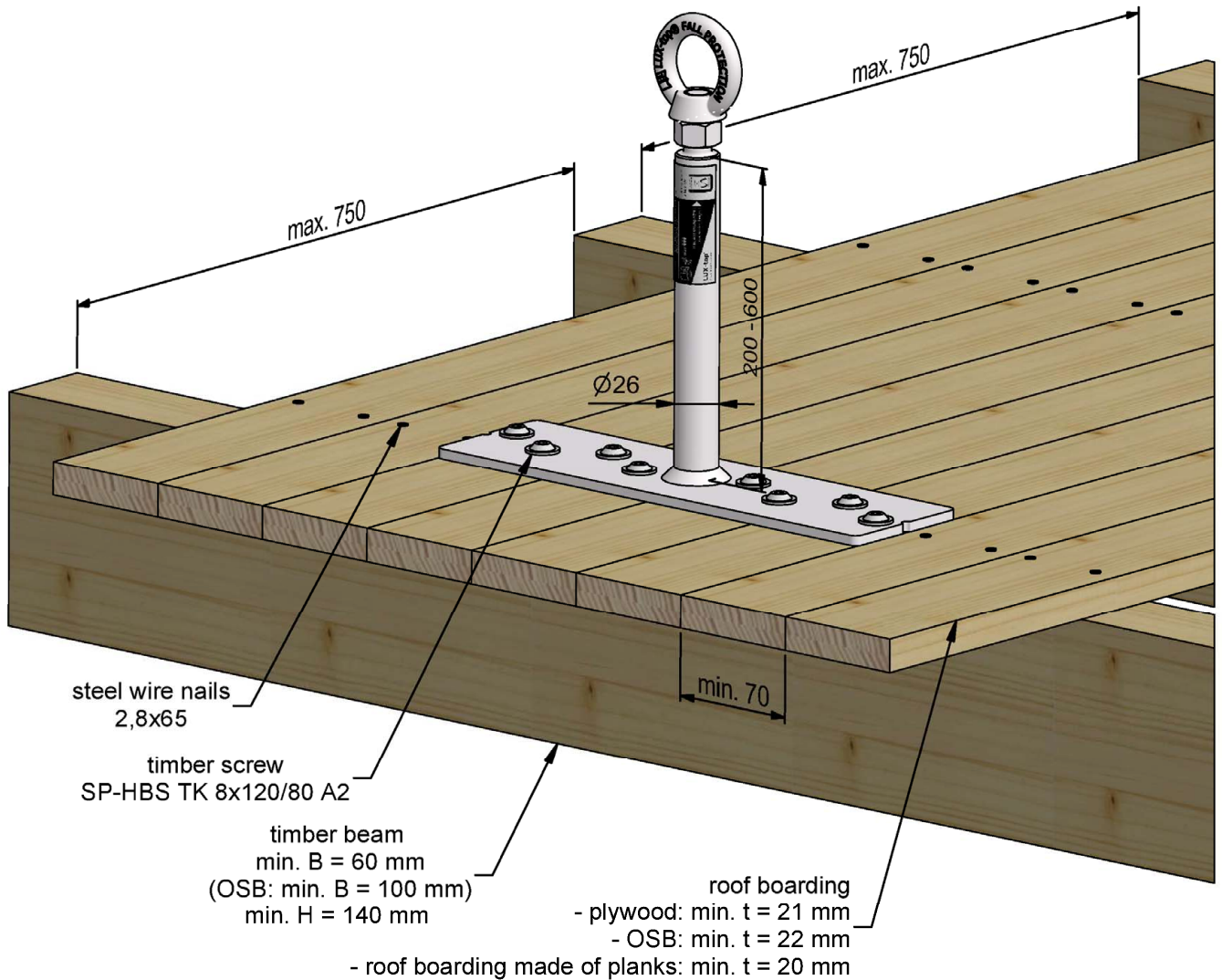
LUX-top® AP7-18

Annex 2

**Design values of the load capacity**

Anchor device	Support structure	$F_{R,d}$ [kN]	Max. number of users
LUX-top® AP7-26	plank $\geq$ C24	10,50	3
LUX-top® AP7-26	OSB/3 OSB/4	10,50	3
LUX-top® AP7-26	plywood Typ EN 636-2	10,50	3

Deformation at 0,70 kN: 3,2 mm for construction height 600 mm



All dimensions in [mm]

Fall Protection System LUX-top® AP for timber substructures

LUX-top® AP7-26

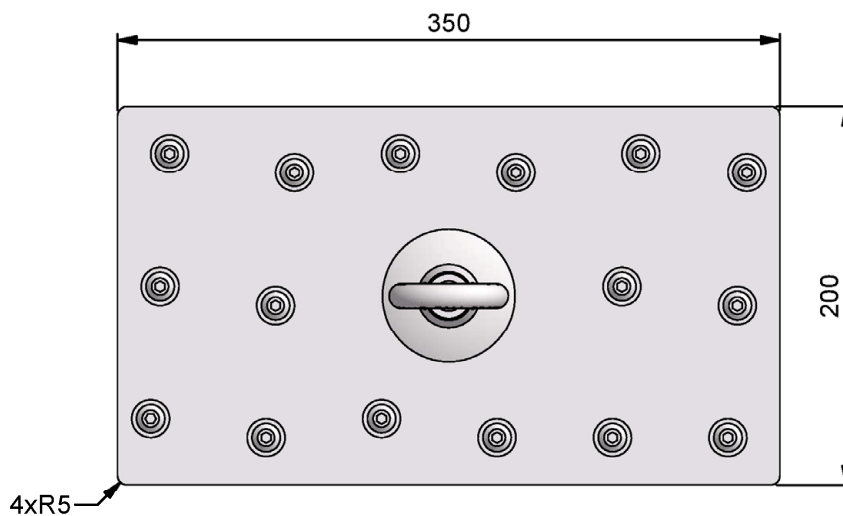
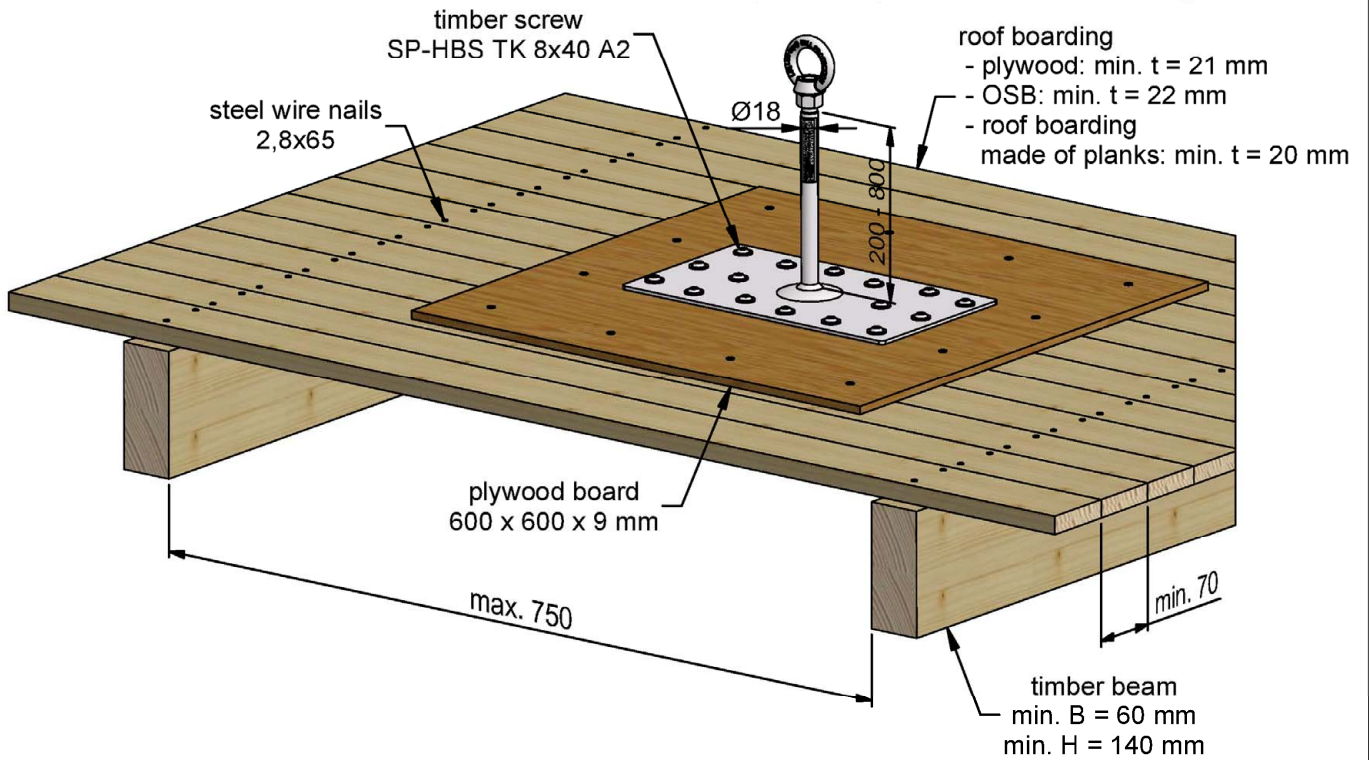
Annex 3



**Design values of the load capacity**

Anchor device	Support structure	$F_{R,d}$ [kN]	Max. number of users
LUX-top® AP7 II-18	plank $\geq$ C24	13,00	3
LUX-top® AP7 II-18	OSB/3 OSB/4	13,00	3
LUX-top® AP7 II-18	plywood Typ EN 636-2	13,00	3

Deformation at 0,70 kN: 10,2 mm for construction height 800 mm



All dimensions in [mm]

Fall Protection System LUX-top® AP for timber substructures

LUX-top® AP7 II-18

Annex 4