Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

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European Technical Assessment ETA-24/0548 of 16 January 2025

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	SAFEX WOOD, VARIANT WOOD
Product family to which the construction product belongs	Anchor devices for fastening personal fall protection systems to timber substructures
Manufacturer	GRÜN GmbH Spezialmaschinenfabrik Siegener Straße 81-83 57234 Wilnsdorf - Niederdielfen GERMANY
Manufacturing plant	GRÜN GmbH Spezialmaschinenfabrik Siegener Straße 81-83 57234 Wilnsdorf - Niederdielfen
This European Technical Assessment contains	12 pages including 8 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

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Specific part

1 Technical description of the product

The fall protection systems are made of stainless steel 1.4301 / 1.4307. They are fastened to timber substructure according to EN 300:2006, EN 338:2016, 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
2	SAFEX WOOD	EJOT JT3-ST-2-6,0x35 EJOT JT3-X-2-6,0x35 HECO-TOPIX-plus A2 6,0x40 EJOT JW4-LT-6,0x36
3	VARIANT WOOD	

The components and the system setup of the product are given in Annex (1-3).

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. 4 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 (1-3).

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 2-3
Dynamic loading	Annexes 2-3
Check of deformation capacity in case of constraining forces	Annexes 2-3
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 16 January 2025 by Deutsches Institut für Bautechnik

Dr.-Ing. Ronald Schwuchow
Head of Section

beglaubigt:
Hahn

This ETA includes the product variants listed in Table 1:

Table 1: Product variants of the ETA

Annex	Trade name (Product in this ETA)	Fastener	Substructure
2	SAFEX WOOD	EJOT JT3-ST-2-6,0x35 [e] EJOT JT3-X-2-6,0x35 HECO-TOPIX-plus A2 6,0x40 [g] EJOT JW4-LT-6,0x36 [k]	planks [a] or OSB 3 panels [c] or plywood BFU 100 [d]
3	VARIANT WOOD	EJOT JT3-ST-2-6,0x35 [e] EJOT JT3-X-2-6,0x35 [f] HECO-TOPIX-plus A2 6,0x40 [g] EJOT JW4-LT-6,0x36 [k]	

Annexes 2 to 3 show the components and the system structure of the products.

Design values of actions

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

The recommended partial safety factor γ_F is 1,5

The recommended partial safety factor is used to determine the corresponding design actions, provided that no partial safety factor is given in national regulations or national annexes to EN 1990.
That leads to the following values:

Example:

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

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

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

For four users $F_{Ed} = F_{Ek} \cdot \gamma_F = (6+3)\ kN \cdot 1{,}5 = 13{,}5\ kN$

[a]	EN 338:2016-07	Structural timber - Strength classes
[b]	EN 14080:2013-09	Timber structures - Glued laminated timber and glued solid timber - Requirements
[c]	EN 300:2006-09	Oriented Strand Boards (OSB) - Definitions, classification and specifications
[d]	EN 636:2015-05	Plywood – Specifications
[e]	ETA-22/0126	EJOT® EJOT Fastening Screws JT, JF and JZ
[g]	ETA-19/0553	HECO-TOPIX-plus A2 6,0, Screws and threaded rods for use in timber constructions
[h]	ETA-18/0812	EJOT® T-FAST® JW2 woodscrews
[i]	ETA-11/0283	S+P® screws for use in timber constructions
[j]	ETA-11/0027	fischer Power-Fast screws and fischer construction screws
[k]	ETA-24/0816	EJOT® T-FAST® Plus JW4 woodscrews

Fall Protection SAFEX und VARIANT	Annex 1
Overview and Desing Values	

Table 2: Anchor device SAFEX WOOD (Pin height 200mm - 1000mm)

Substructure on beam [a, b]	Substructure width	Substructure thickness	Fastener Timber screws
Planks [a]	≥ 100mm	≥ 24mm	EJOT T-FAST JW2-STS-6,0x80/48 [h] or Fischer FPF-WT A2P 6,0x80/50 [j] or equal [i]
OSB 3 [c]	≥ 625mm	≥ 22mm	
BFU 100 [d]	≥ 800mm	≥ 21mm	

The scope of application of the fall protection systems SAFEX WOOD on timber is limited to service class 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and the timber screws) must not be weathered freely. All other components can be used in weathered outdoor areas.

Regulations for SAFEX WOOD on roof boarding

The anchor device can be freely mounted up to the required edge distances and the dimensions given in the annexes 2.2 to 2.3.

The use of substructures with higher rigidity (e.g. glued laminated timber or OSB 4) are possible.

Separating- and Sealing layers with a total thickness up to ≤ 5 mm may be located between the roof sheathing and the anchor device.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma M} \cdot k_{mod} = \frac{19{,}9\ kN}{1{,}3} \cdot 1{,}1 = 16{,}8\ kN$$

The recommended partial safety factor γ_F is 1,3, provided that no partial safety factor is specified in national regulations or national annexes to EN 1995. The recommended modification factor k_{mod} is 1,1 for service class 1and 2, provided no modification factor is given in national regulations or national annexes to EN 1995.

Dynamic loading / design resistance

Max. four User

Deformation capacity

≤ 10mm at 0,70kN for a free length ≤ 300mm over roof surface.

Fall Protection SAFEX und VARIANT	Annex 2.1
GRÜN SAFEX WOOD on roof boarding	

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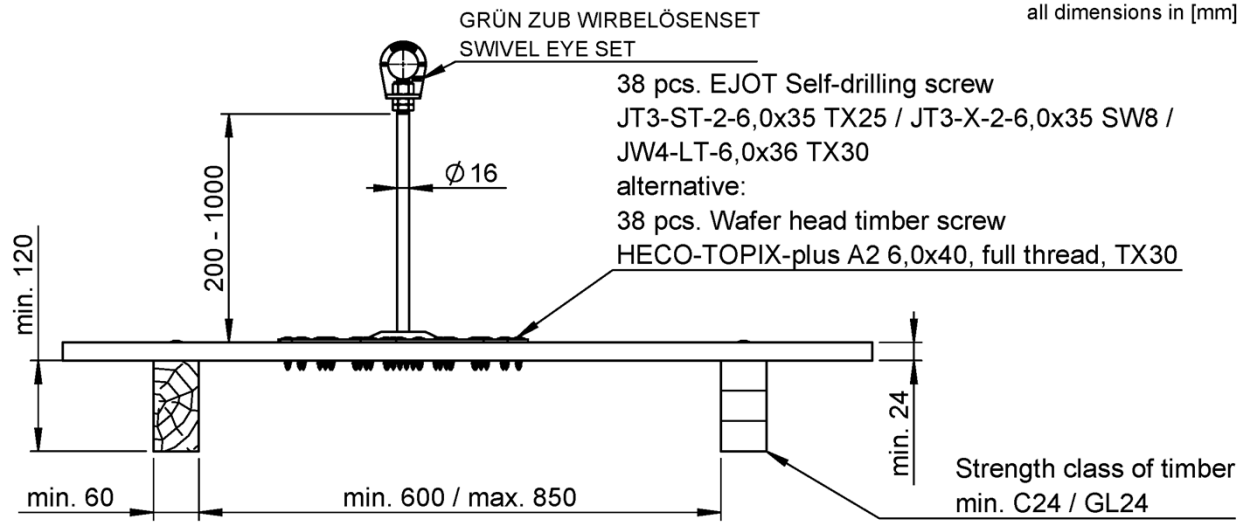
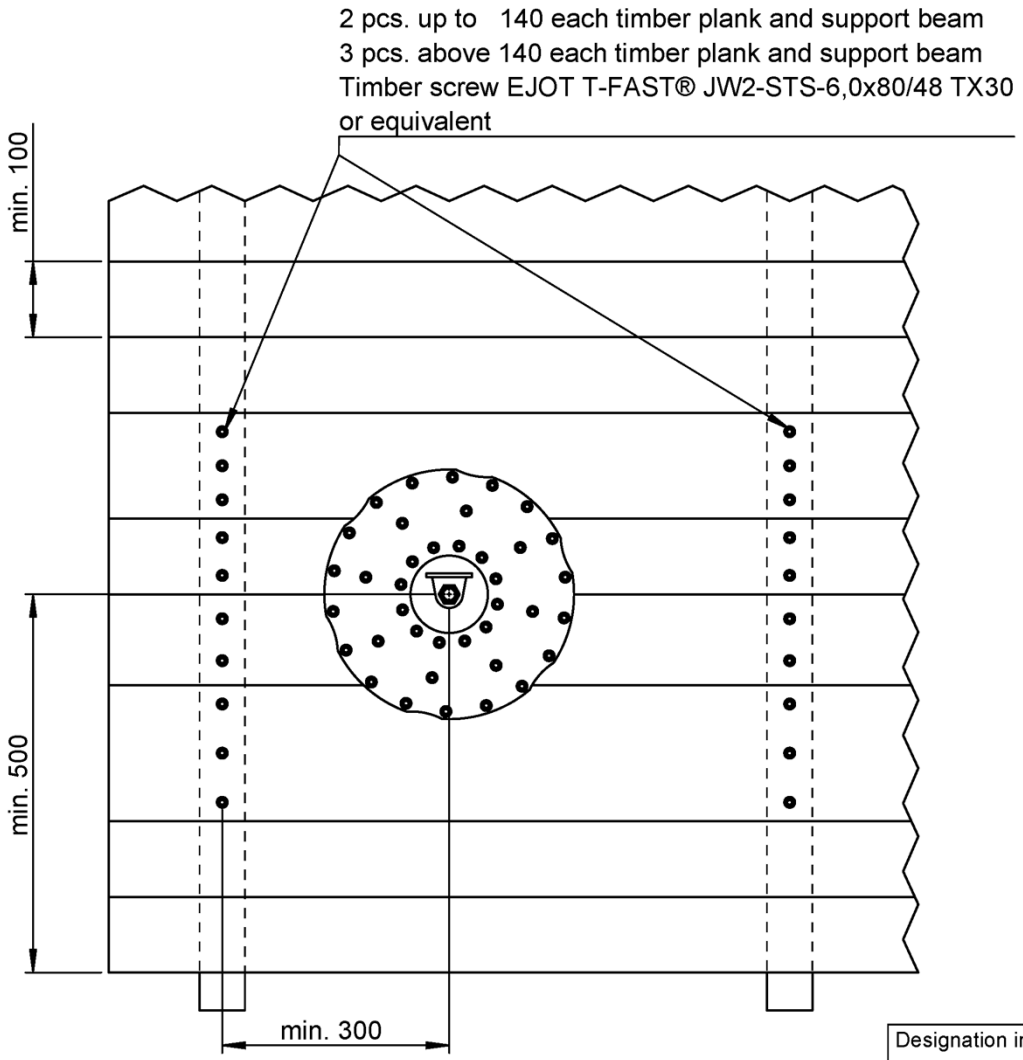
all dimensions in [mm]





Designation in GREENLINE lifeline system
GRÜN SYS SAFEX WOOD Z

Fall Protection SAFEX and VARIANT	Annex 2.2
GRÜN SAFEX WOOD on roof boarding made of planks or solid wood	

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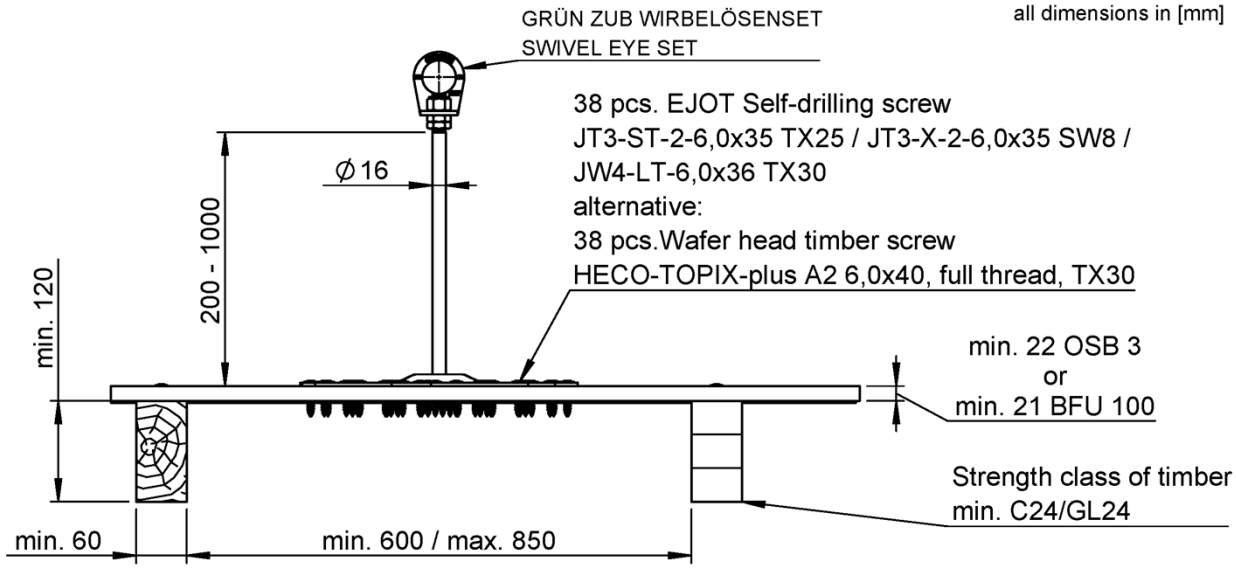
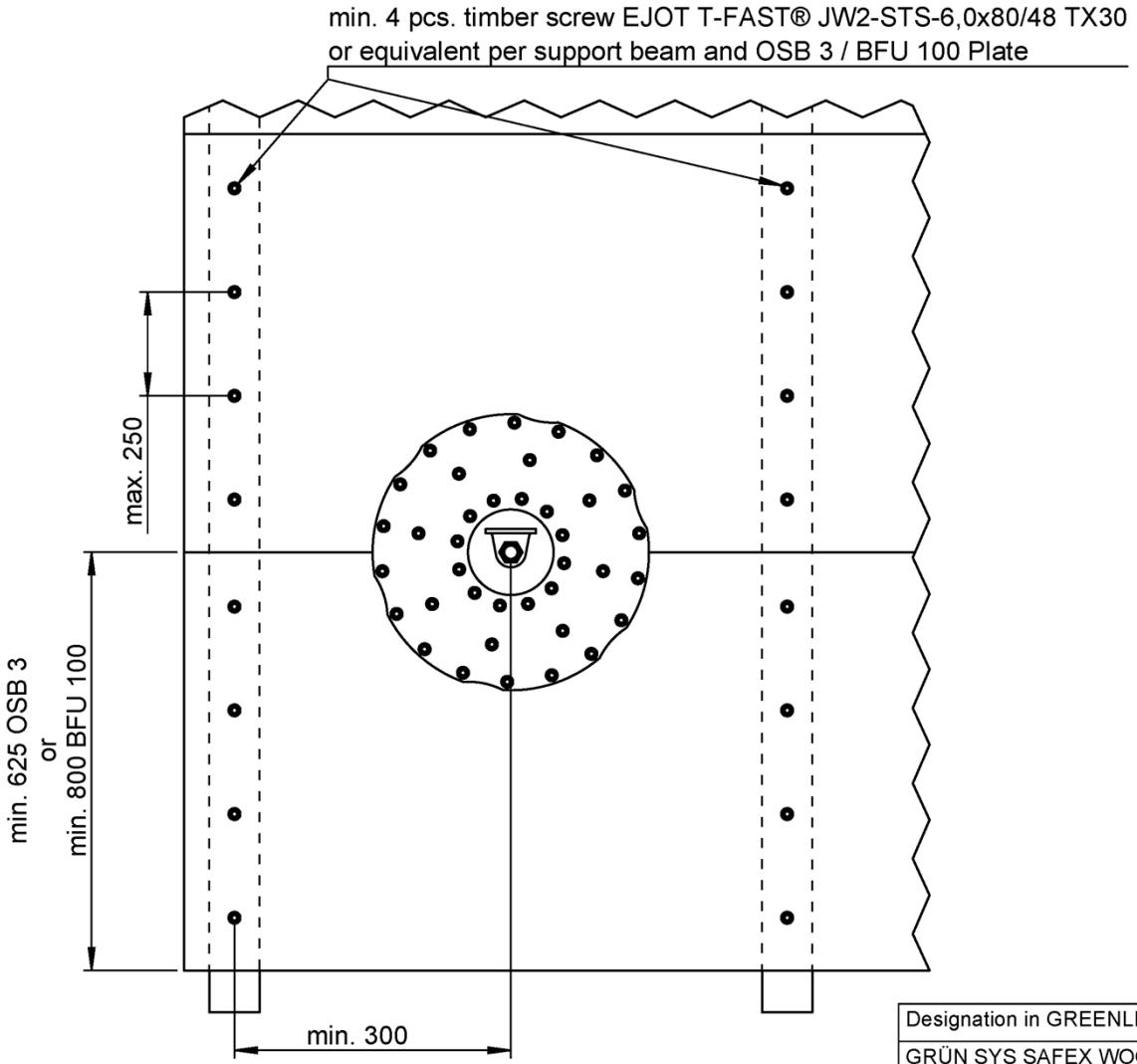
all dimensions in [mm]





Designation in GREENLINE lifeline system
GRÜN SYS SAFEX WOOD Z

Fall Protection SAFEX and VARIANT	Annex 2.3
GRÜN SAFEX WOOD on roof boarding made of OSB 3 panel or plywood BFU 100	

Table 3: Anchor device SAFEX VARIANT (Pin height 300mm - 1000mm)

Substructure on beam [a, b]	Substructure width	Substructure thickness	Fastener Timber screws
Planks [a]	≥ 100mm	≥ 24mm	EJOT T-FAST JW2-STS-6,0x80/48 [h] or Fischer FPF-WT A2P 6,0x80/50 [j] or equal [i]
OSB 3 [c]	≥ 625mm	≥ 22mm	
BFU 100 [d]	≥ 800mm	≥ 21mm	

The scope of application of the fall protection systems VARIANT WOOD on timber is limited to service class 1 and 2 according to EN 1995-1-1. The fixture of the anchor device (base plate and the timber screws) must not be weathered freely. All other components can be used in weathered outdoor areas.

Regulations for VARIANT WOOD on roof boarding

The anchor device can be freely mounted up to the required edge distances and the dimensions given in the annexes 3.2 to 3.3.

The use of substructures with higher rigidity (e.g. glued laminated timber or OSB 4) are possible.

Separating- and Sealing layers with a total thickness up to ≤ 5 mm may be located between the roof sheathing and the anchor device.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma M} \cdot k_{mod} = \frac{19{,}9\ kN}{1{,}3} \cdot 1{,}1 = 16{,}8\ kN$$

The recommended partial safety factor γ_F is 1,3, provided that no partial safety factor is specified in national regulations or national annexes to EN 1995. The recommended modification factor k_{mod} is 1,1 for service class 1and 2, provided no modification factor is given in national regulations or national annexes to EN 1995.

Dynamic loading / design resistance

Max. four User

Deformation capacity

≤ 10mm at 0,70kN for a free length ≤ 300mm over roof surface.

Fall Protection SAFEX und VARIANT	Annex 3.1
GRÜN VARIANT WOOD on roof boarding	

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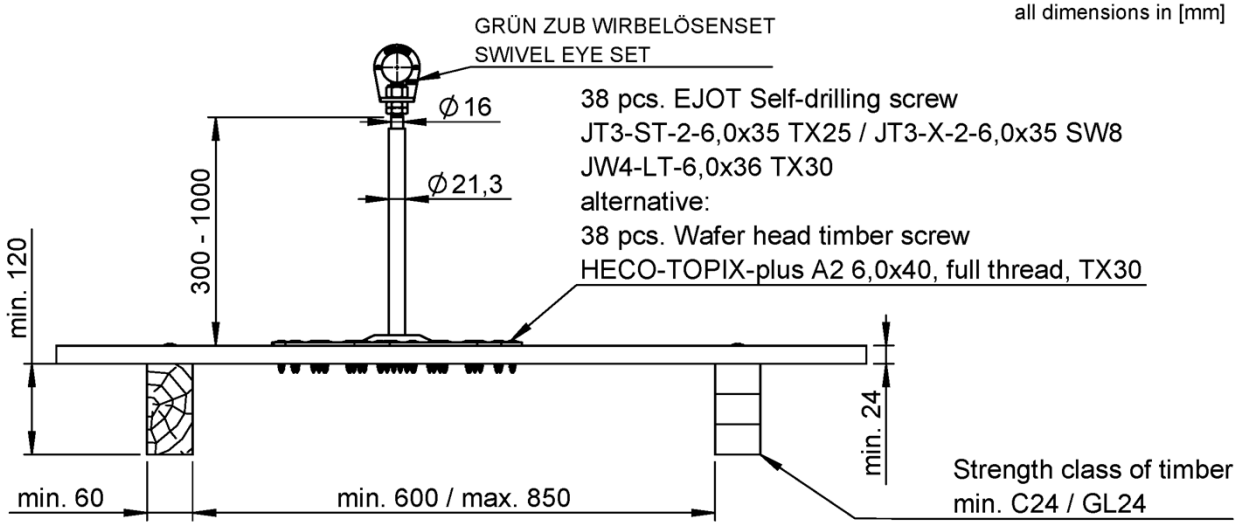
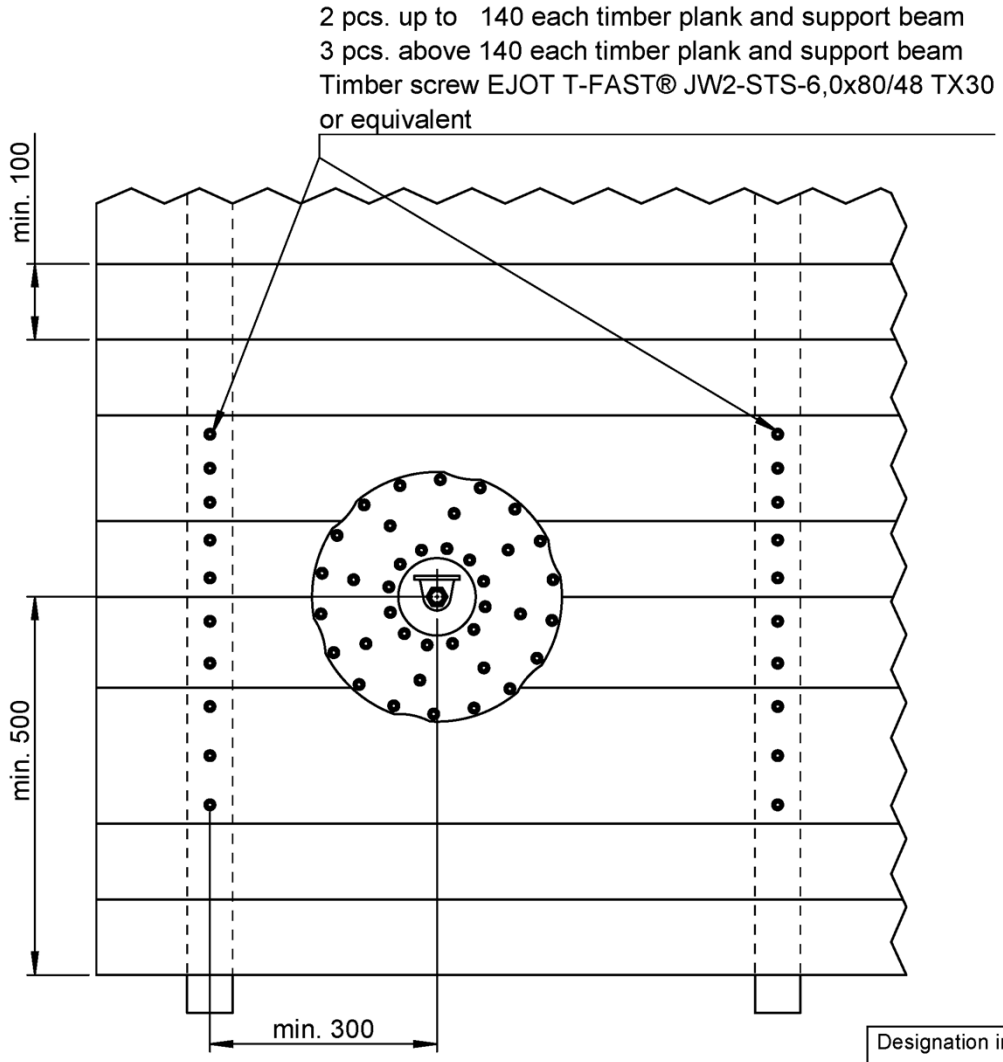
all dimensions in [mm]





Designation in GREENLINE lifeline system
GRÜN SYS VARIANT WOOD

Fall Protection SAFEX and VARIANT	Annex 3.2
GRÜN VARIANT WOOD on roof boarding made of planks or solid wood	

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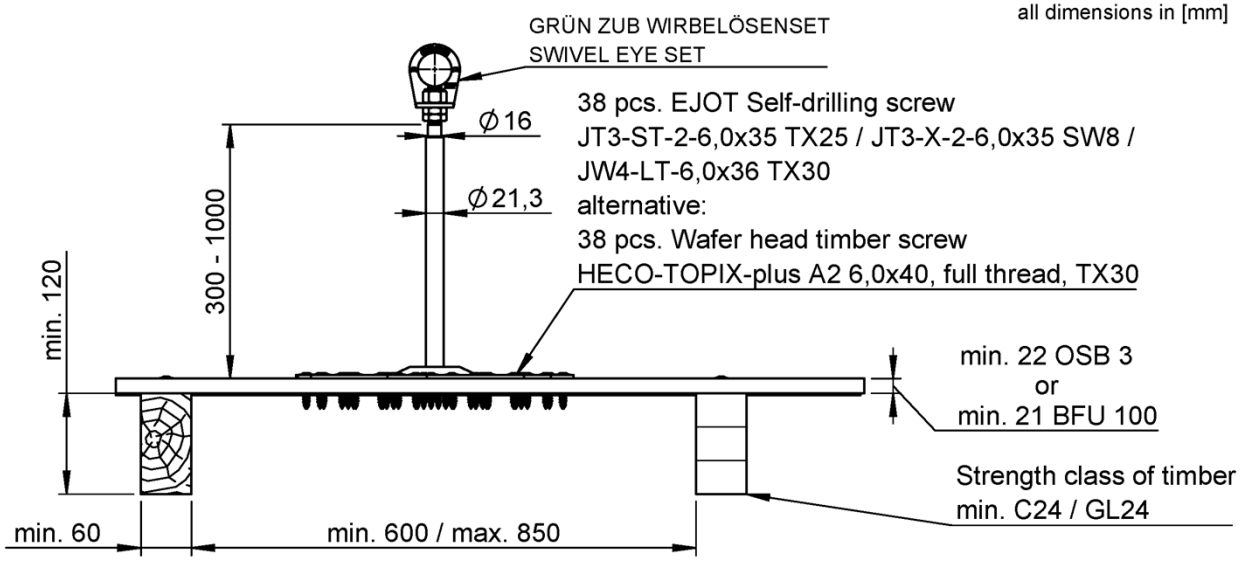
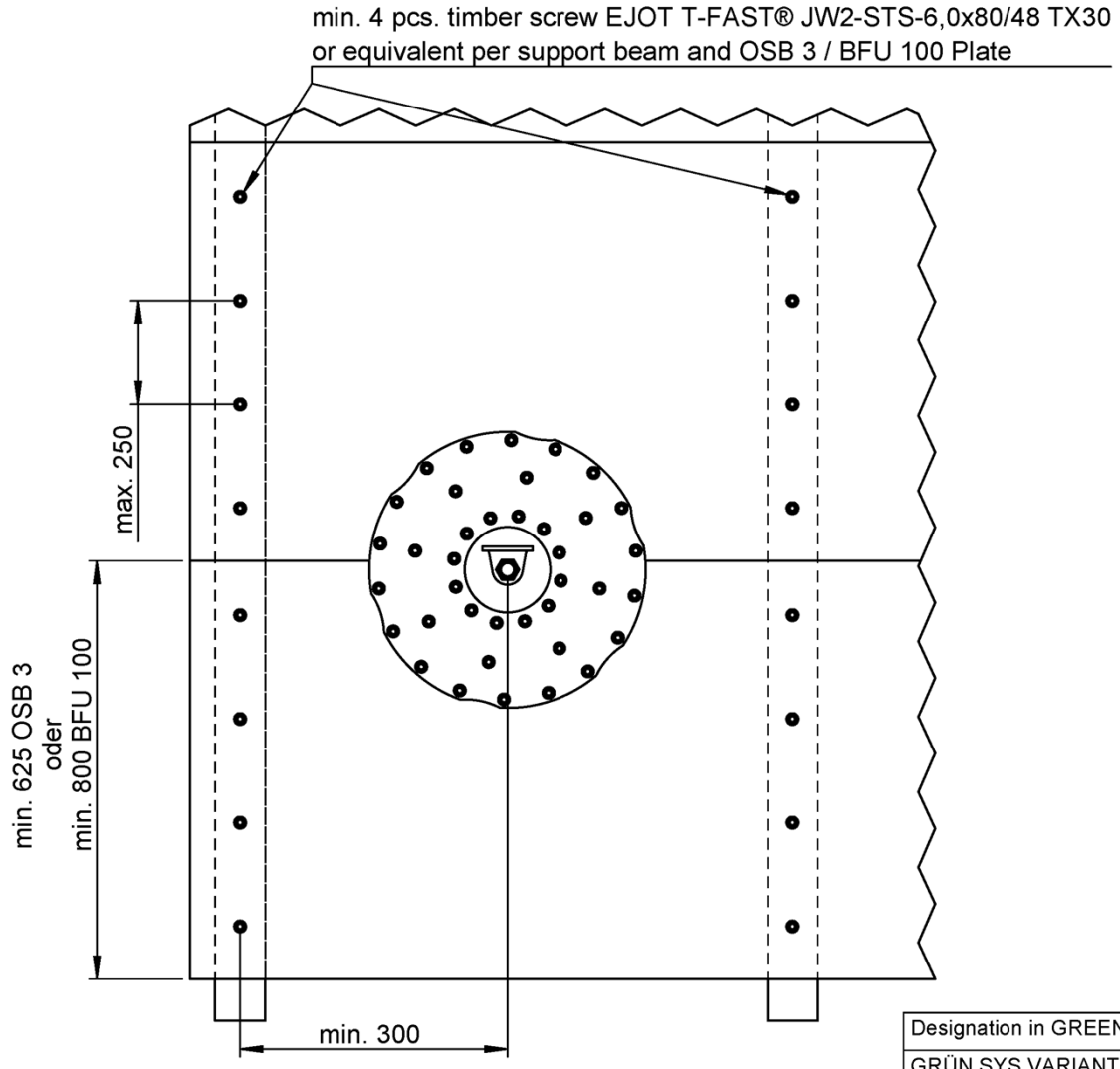
all dimensions in [mm]





Designation in GREENLINE lifeline system
GRÜN SYS VARIANT WOOD

Fall Protection SAFEX and VARIANT	Annex 3.3
GRÜN VARIANT WOOD on roof boarding made of OSB 3 panel or plywood BFU 100	

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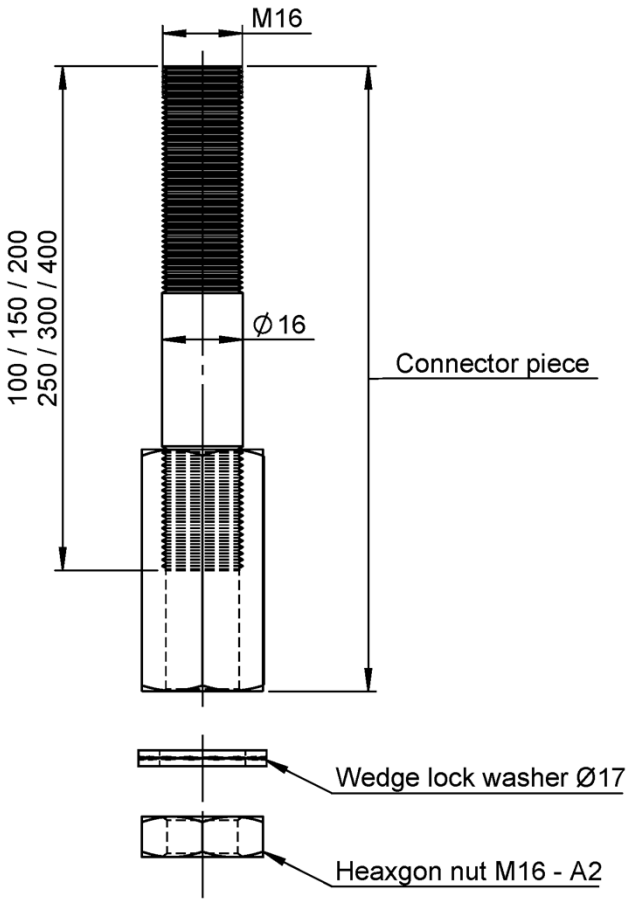
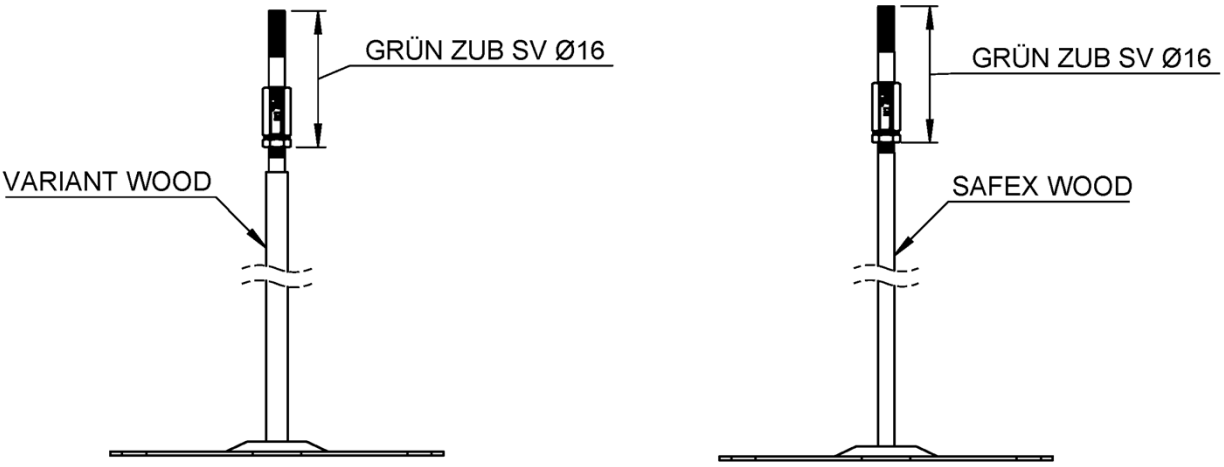
all dimensions in [mm]



Installation example



Designation in GREENLINE lifeline system
GRÜN ZUB SV Ø16

Fall Protection SAFEX and VARIANT	Annex 3.4
GRÜN ZUB SV Ø16 - Construction product pin extension	