MATEO

Timber peg connector made of solid hardwood

KNAPP®
connectors.com

Timber construction nail, connecting up to 11,4 kN

Metal-free connection

Connecting Your Ideas ...

MATEO Timber Peg | Connecting solution for ecological house construction

System advantages

- Wood-to-wood connection, sustainable and durable
- Manual or machine prefabrication
- Pre-drilling in the factory or on site
- Planned and calculable assembly
- Self-tensioning plug connection
- Traditional and visually appealing
- Metal-free connection
- Predictable fire protection
- Self-centring
- Short installation path, can be extended to the nail head
- Static load capacity

Application

- Rustic design made of solid hardwood step nails for nailing wooden components.
- Beam layers, main beams and secondary beams.
- Supports, frames and CLT walls for corner and T-connections..
- Monument protection / facades / panelling

Properties

The MATEO wooden peg is available made of ash (Art.-No. K304) and beech (Art.-No. K303).

Ash: tough and ductile (deformable) load-bearing up to 0.8 tonnes (transverse to grain direction F_2).
Beech: even higher load-bearing capacity up to 1 ton (see load table on the previous pages)

After installation, the peg expands and holds the components firmly together.
Glued with waterproof glue, higher pull-out values can be achieved and the connection can be secured additionally.

Installation

Manual drilling using a stepped drill bit or industrial drilling on a CNC machine.

Insert the peg up to the nail head.

Drive in until it stops.

Cut and sand the excess part.

MATEO wooden peg made of beech
L 320 (Ø 40, Ø 30, Ø 25, Ø 20)
(Art.-No. K303)

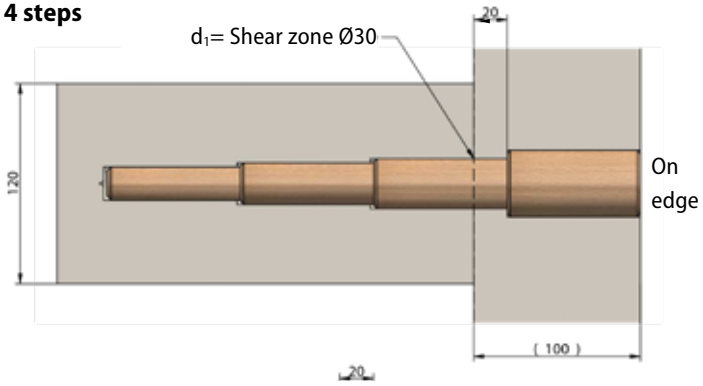
MATEO wooden peg made of ash
L 320 (Ø 40, Ø 30, Ø 25, Ø 20)
(Art.-No. K304)

HS stepped drill
with 16 mm shank
(Art.-No. Z093)

Step drills: single or two-piece designs and other shank sizes available on request.
Individual wood types and quantities available on request.

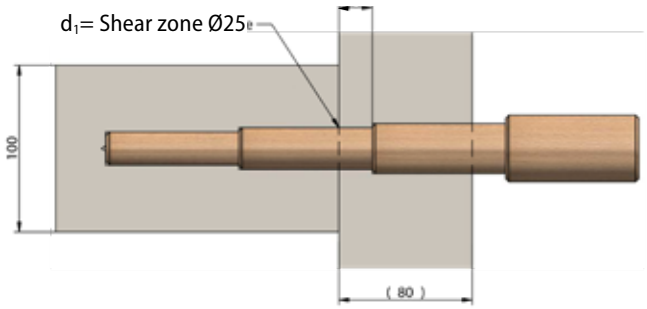
Installation layouts

4 steps



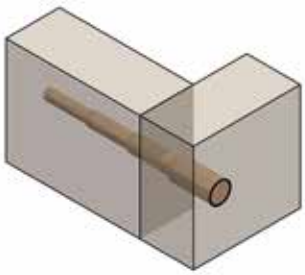
On edge

3 steps

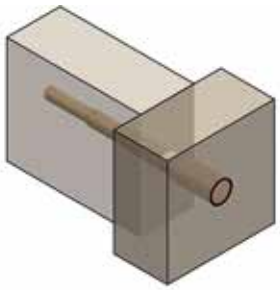


Cut the protruding part to th edge

Application examples



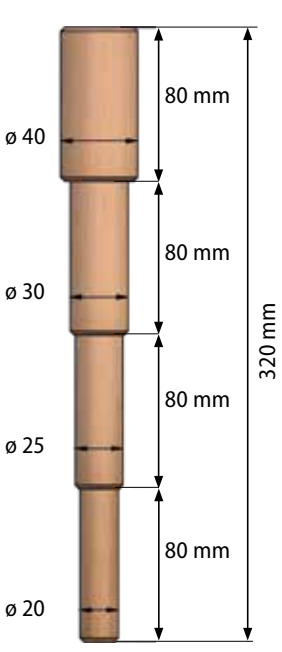
Corner connection



Double tie joints

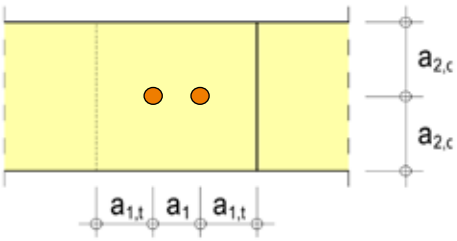
Butt joints

Measurements



HS stepped drill

Minimum distances



Intervals: $a_{1,t} = a_1 = a_{2,c} = 2 \times d_1$

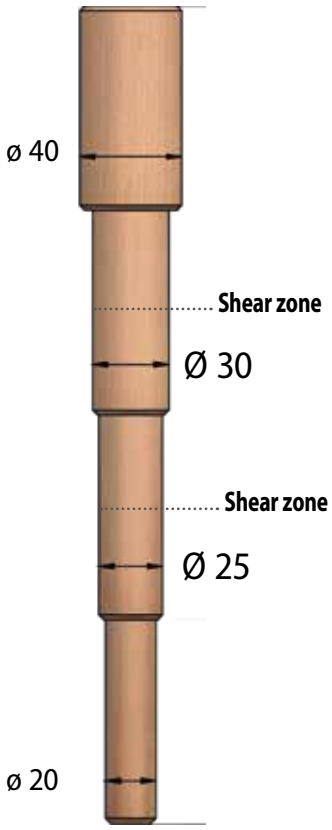
d_1 = Mateo shear zone diameter.

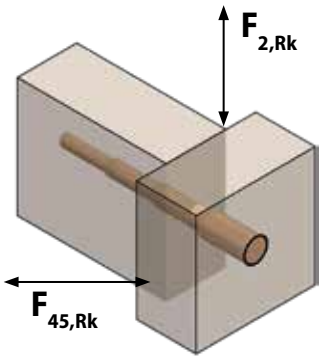
Our preliminary dimensioning tool for MATEO

DOWNLOAD

The preliminary dimensioning tool for the MATEO timber construction nail can be used to calculate the dimensioning values for the shear load capacity of the timber construction nail in various wood sorting classes (softwood and hardwood solid wood, glued laminated timber and cross-laminated timber). The load-bearing capacity value for MATEO step nail depends on the nail diameter of 30 mm and 25 mm. MATEO step nail can be selected in ash and beech.

Tested shear zones at Ø 25 and 30 mm





Loadbearing capacities on shear force of side wood/end grain

Timber grade	Wood species	Ø d_1 Shear zone [mm]	$F_{2,Rk}$ [kN]	Min. wood thickness [mm]
C24	Ash Beech	30	9,8 10,5	80 100
GL24 h	Ash Beech	30	10,3 11,0	80 100
BSPH	Ash Beech	30	11,4 12,2	70 80

Timber grade	Wood species	Ø d_1 Shear zone [mm]	$F_{2,Rk}$ [kN]	Min. wood thickness [mm]
C24	Ash Beech	25	7,0 7,6	70 70
GL24 h	Ash Beech	25	7,4 7,9	70 70
BSPH	Ash Beech	25	8,2 8,8	60 60

The $F_{45,Rk}$ depends on the width of the secondary beam, for smaller width its value will be smaller.

Source of the calculation formulas: Blaß, H.J.; Ernst, H.; Werner, H. "Connections with wooden pins - Investigations on load-bearing capacity" p. 630-631.

MATEO

Knapp GmbH | Wassergasse 31 | A-3324 Euratsfeld | Tel.: +43 (0)7474 / 799 10 | Fax: +43 (0)7474 / 799 10 99
Knapp GmbH | Vertrieb Deutschland | Föhrenweg 1 | D-85591 Vaterstetten
Tel.: +49 (0)8106 / 99 55 99 0 | E-Mail: info@knapp-verbinder.com | www.knapp-verbinder.com

KNAPP® connectors.com

YouTube online-store