

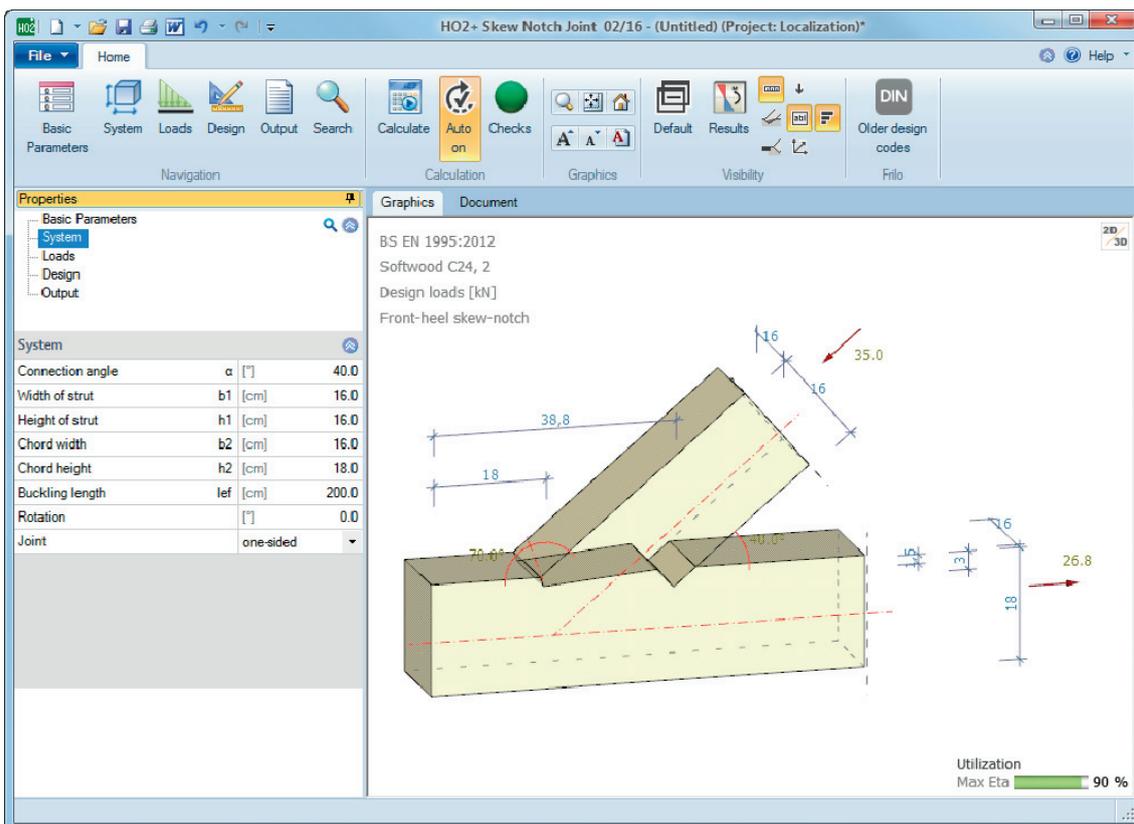
# Skew notch joint HO2+

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Further information and descriptions are available in the relevant documentations:

<a href="#">Basic operating instructions-PLUS</a>	General operating instructions for the user interface of Frilo applications
<a href="#">FCC</a>	Frilo.Control.Center - the easy-to-use administration module for projects and items
<a href="#">FDD</a>	Frilo.Document.Designer - document management based on PDF
<a href="#">Frilo.System.Next</a>	Installation, configuration, network, database
<a href="#">Menu items.pdf</a>	
<a href="#">Output and printing</a>	
<a href="#">Import and export.pdf</a>	

## Application options

The HO2 application allows the design of compression-loaded timber connections as skew notch joints. With simple notch joints, the user can select among notched front joints and notched heel joints. For double notch joints, he/she can select among the combinations front-front, heel-heel, or front-heel.

The software calculates automatically the minimum and maximum depths of cut and the required forepart lengths. It also verifies the stress resistance in the connected member weakened through the skew notch. The depths of cut are adjustable within the permitted range. If the system dimensions do not comply with the conditions of the selected skew notch design, the defined values must be adjusted accordingly.

If the effective length is specified by the user, the resistance of the compression member against stresses that apply at the member ends due to an eccentric load introduction are verified.

The pre-defined loading on the skew notch joint must be entered as design load cases and the associated load action periods LDC must be assigned.

### Available standards

- EN 1995
- DIN EN 1995
- ÖNORM EN 1995
- UNI EN 1995
- NTC EN 1995
- BS EN 1995

## Data entry

### Basic parameters

Select the desired standard and the material.

Define the timber species “Softwood” “Glulam” or “Hardwood” as well as the service class and the strength class.

### Structural system

- $\alpha$**  angle limited by the compression strut and the connected member.
- b1, h1** width and height of the compression strut.
- b2, h2** width and height of the connected member.
- lef** effective length of the compression strut: If  $l_{ef} > 0$ , the stress resistance and stability verifications are performed for the compressive member.
- Rotation** allows the rotation of the graphical representation.
- Connection** select between a connection on one side and on both sides.

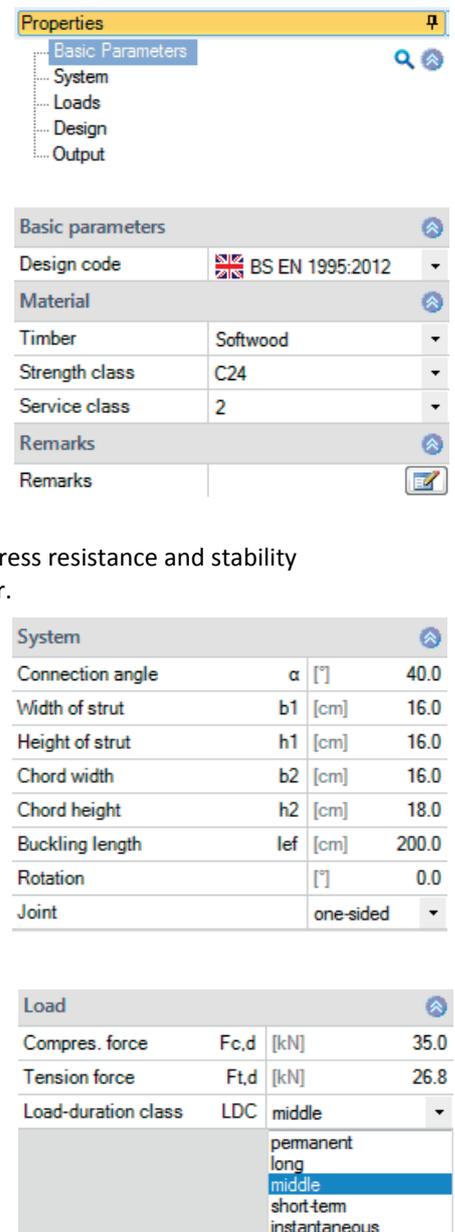
### Loading

- Fc,d** compressive force in the strut, compression is positive (+) [kN].
- Ft,d** tension force in the connected member, tension is positive (+) [kN].
- LDC** duration of load. the loading on the compression member and the connected member shall be defined as design load cases and a load duration class (LDC) shall be assigned.

### Design

Select the type of skew notch:

- Notched front joint
- Notched heel joint
- Double-notch front joint
- Double-notch heel joint
- Notched front and heel joint

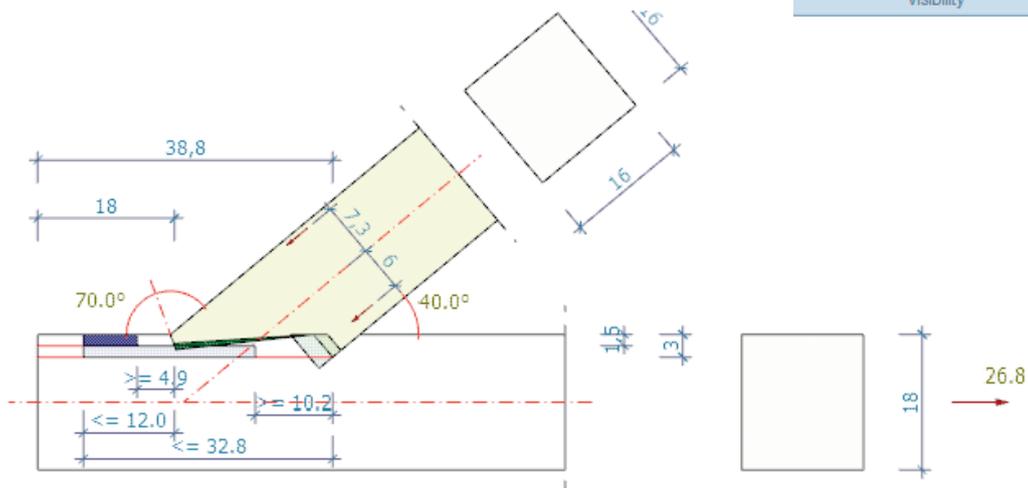


Properties			
Basic Parameters			
Design code		BS EN 1995:2012	
Material			
Timber		Softwood	
Strength class		C24	
Service class		2	
Remarks			
Remarks			
System			
Connection angle	$\alpha$	[°]	40.0
Width of strut	b1	[cm]	16.0
Height of strut	h1	[cm]	16.0
Chord width	b2	[cm]	16.0
Chord height	h2	[cm]	18.0
Buckling length	lef	[cm]	200.0
Rotation		[°]	0.0
Joint			one-sided
Load			
Compres. force	Fc,d	[kN]	35.0
Tension force	Ft,d	[kN]	26.8
Load-duration class	LDC		middle
			permanent
			long
			middle
			short-term
			instantaneous

## Skew notch

You can select the notch depths and required forepart lengths in this dialog. The notch depth and required forepart lengths calculated by the software are displayed.

The visibility buttons allow you to display the possible areas for the notch depth and the forepart length in the graphical representation.



If these areas are not complied with they are displayed in red.

The notices below are included in the structural document and displayed in addition above the system graph.

⚠ req tv.1 > max tv.1 (The required skew-depth depth is less than the minimum permissible!)

⚠ tv.2 < req tv.2 (The selected skew-depth depth is less than the required depth!)

❗ Fstrut.d > Rstrut.d (The existing strut force is greater than the maximum allowable.)

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Graphics Document

BS EN 1995:2012  
 Softwood C24, 2  
 Design loads [kN]  
 Front-heel skew-notch

Utilization  
 Max Eta 137 %

## Output

The "Document" tab displays the data to be put out.

See also

[Output and printing](#)

Optionally, you can generate a detailed output that includes intermediate values to check the calculation in addition to the defined values and the most important results.

Results:

The maximum utilization is displayed on bottom right of the system graph.

## Reference literature

- /1/ Holzbau-Statistische Berechnungen Teil 1, Holzwirtschaftlicher Verlag der Arbeitsgemeinschaft Holz e.V., Düsseldorf 1988
- /2/ Andresen, K., Scheer, C.: Beispiele INGENIEUR-HOLZBAU, Berechnung und Konstruktion. Holzwirtschaftlicher Verlag Düsseldorf 1985.
- /3/ Blass, H.J., Ehlbeck, J., Kreuzinger, H., Steck, G.: Erläuterungen zu DIN 1052:2004-08. Bruderverlag Karlsruhe, 2004
- /4/ Holzbau-Taschenbuch: Bemessungsbeispiele nach DIN 1052 Ausgabe 2004. Ernst & Sohn Verlag, Berlin 2004
- /5/ DIN EN 1995-1-1:2010, DIN EN 01/01/1995:2010
- /6/ Holzbau-Taschenbuch: /5/ Holzbau-Taschenbuch: Bemessungsbeispiele nach Eurocode 5, 11th Edition. Ernst & Sohn, Berlin 2014.