Fastener Designer (v 2.1) Quick Start Guide

Quick Start Guide.

General overview and app configuration

Getting started:

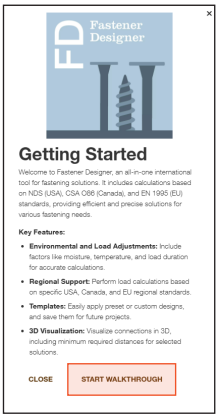
Go to the Fastener Designer app, link: https://app.strongtie.com/fd/

In order to use Fastener Designer you need to accept our Application License Agreement.

No additional login is needed.

If it is your first time using Fastener Designer, the **Getting Started tutorial (1)** will guide you through the main features of the tool:

- **Regional Settings** - Select a country and language for your design.
- **Templates** - Choose from standard inputs or save custom settings for reuse.
- **Output** - The outputs are displayed here, including the output table and relevant footnotes.
- **Calculation Result** - Select a model to view its calculation results. View detailed calculations for each selected model.
- **3D Viewer -** Use the 3D Viewer to explore the spatial layout. You can verify that the design is structurally feasible.

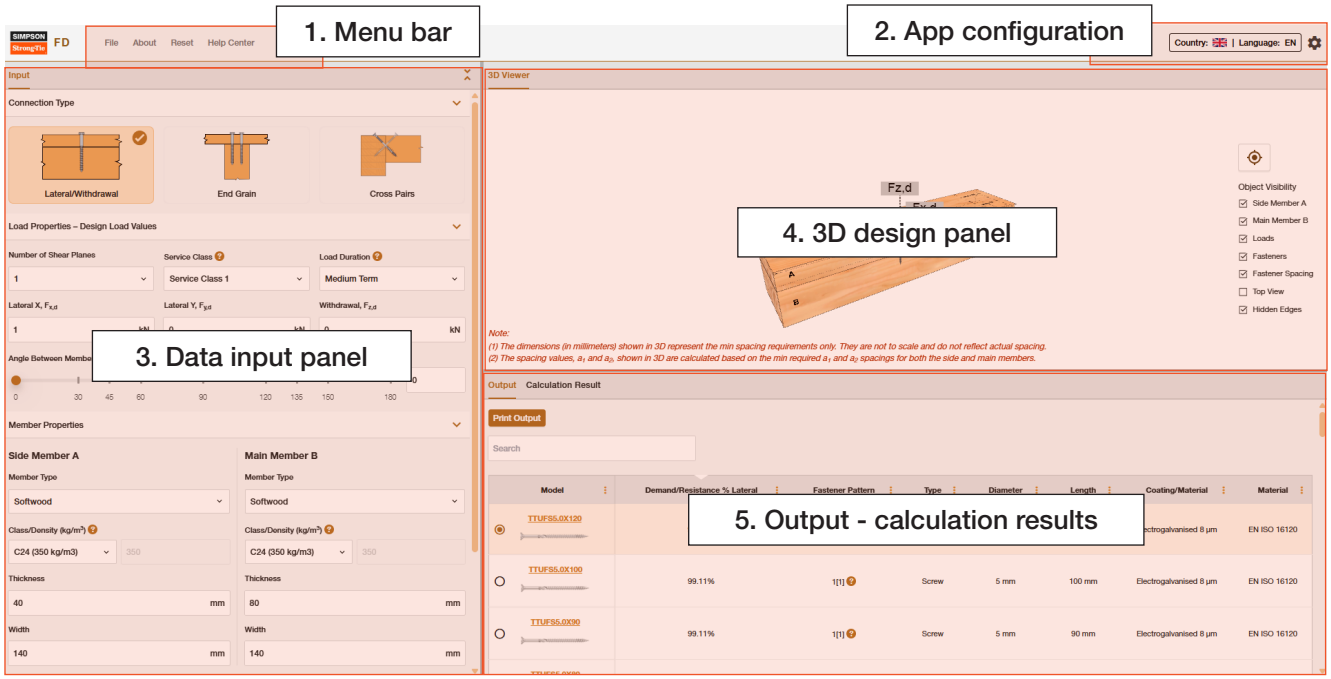


(1) Getting Started tutorial

General layout (2):

The Fastener Designer interface consists of 5 areas:

1. **Menu bar**
2. **App configuration**
3. **Data input panel**
4. **3D design model**
5. **Output – calculation results**



(2) General layout

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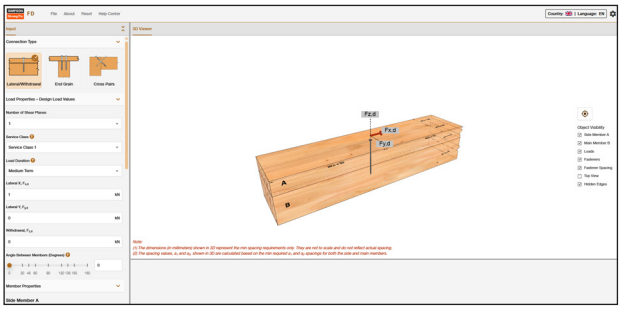
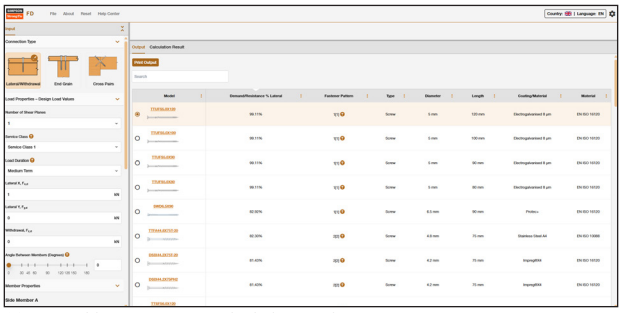


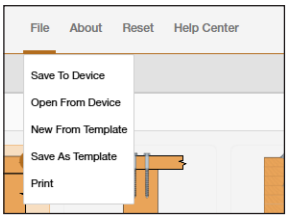
(2) General layout - 3D Design Panel



(2) General layout - Output calculation results

1. Menu bar (3):

In the Menu bar you will find the following functionalities:

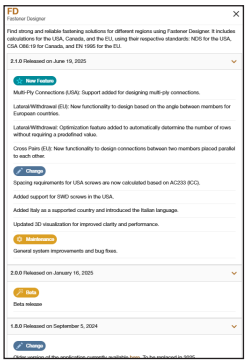


(3) Menu bar

File:

Fastener Designer does not require that you login in order to use the tool. Nevertheless, you still have several options to save and archive your work:

- **Save to Device** allows to save as file and download to PC.
- **Open from device** allows to open a calculation file from the privously saved file.
- When a particular connection configuration is used often, the following options are very useful: **Save as Template** allows to name and save the connection type. Next time to make the similar calculation faster, the **New from Template** option might be used.
- **Print**



(4) About

About (4):

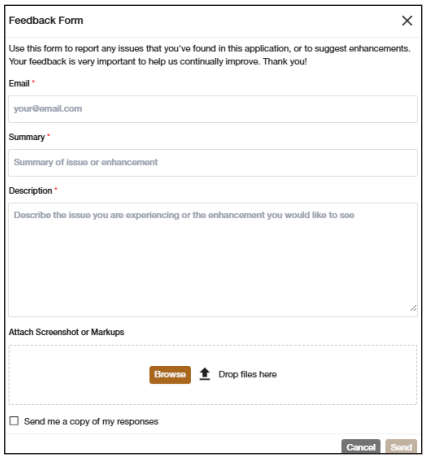
Here you will find a description of the current software version and revision history.

Reset

By clicking on the reset button you can easily clear all input data and get back to the default page and start over with a new calculation.

Help Center

- **Tutorials** – allow you to open the “welcome page” or start the walkthrough (as per first launch of the FD).
- **Feedback Form (5)** – If you experience any issues with Fastener Designer or if you have ideas to improve the tool, this is the place where you can easily send us your feedback.



(5) Feedback Form

2. App configuration (6):

Click on the **Country and Language** box to open up a menu to select the location and your preferred language.

Notice that when you choose a location the Design standard and method can change.
It is therefore important that the location you select, is the location in which the construction is going to be built. As an engineer you might be located in another country so keep that in mind when selecting the location.

Choosing location will automatically set Design Standard as “EN 1995-1-1” (Eurocode) and Units as metric. The location should be preselected based on the user’s IP address.

(6) App configuration

Settings

Click on the **Settings** symbol to open up a menu to change interface view.

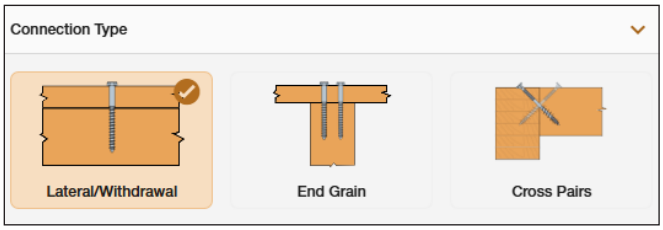
3. Data input panel (7)

The Input panel consits of a number of menues which can be open or collapsed as you please:

(7) Data input panel

Connection Type (7.1) – Chooses the right type of the connection to be designed.

- **Lateral/Withdrawal** – typical connections where two timber members are part of the two parallel planes. This type also allows to design steel-timber and board-timber connections.
- **End grain** – Connection with two timber members with perpendicular axes.

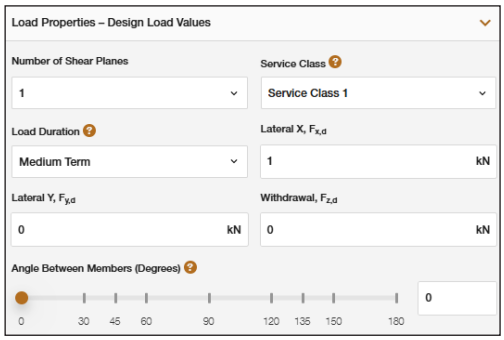


(7.1) Connection type

- **Cross Pairs** – Special application using the glulam cross pair method.

Additional Information – Some connection types require additional information to define the connection. In the example, the Cross Pairs type allows you to choose between parallel and perpendicular member orientation.

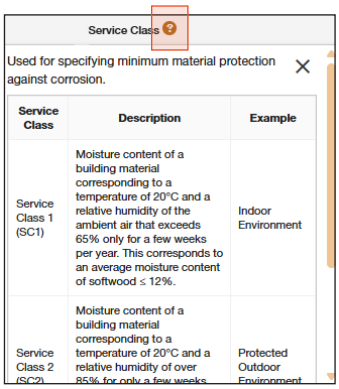
Load Properties – Design Load Values (7.2) – In this section you type in the specific load data of the design you are calculating.

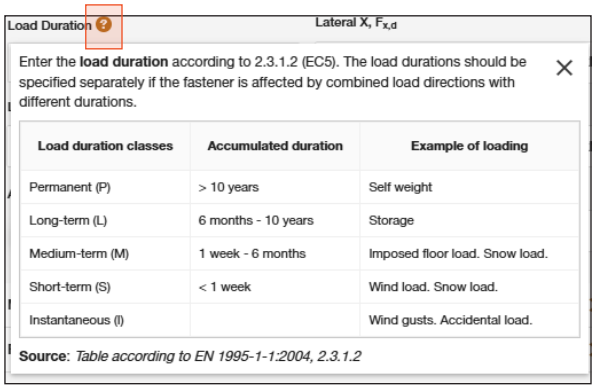


(7.2) Load Properties - Design Load Values

- **Number of shear planes** allows to choose between 1 or 2 shear planes.
- **Service class and load duration** can be chosen from the drop down menu.

Please click on the **?** symbol next to service class and load duration to show the helpful hints.

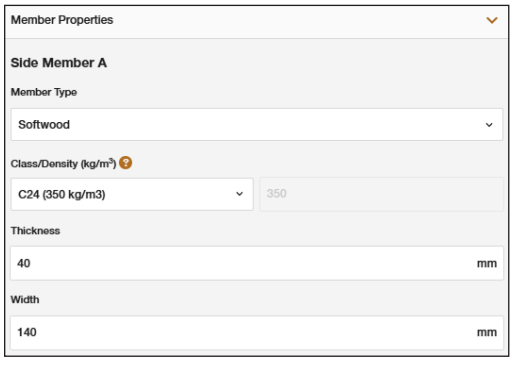




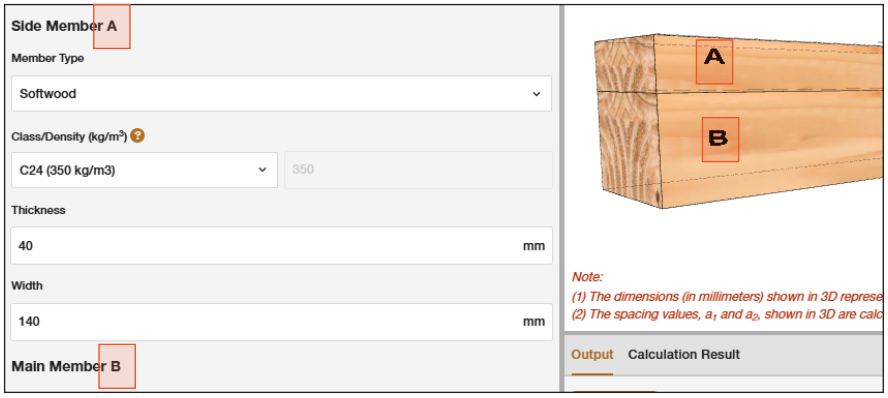
- Loads input is done in three different axes – two for shear load and one for withdrawal. Values are in kN and should be **load design values**.
- Angle between members allows to rotate members against each other. It can be set by input the value, moving the slider or clicking on preset values.

Member properties (7.3) – this section allows to define geometry and material properties of the members:

- Softwood, hardwood, glulam, LVL, CLT
- OSB, plywood, chipboard
- Steel plate
- Predefined classes can be selected OR by choosing “custom” specific member density might be specified.
- Members are described as A and B this corresponds to the 3D model description

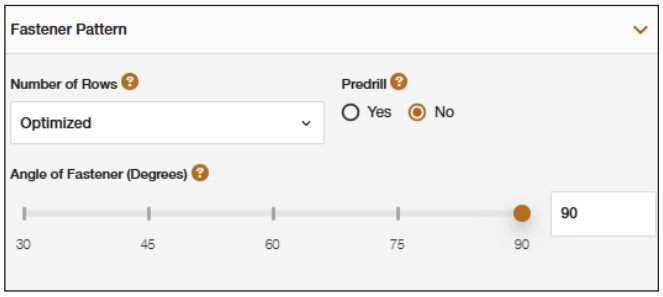


(7.3) Member Properties



Fastener Pattern (7.4) – last section of the data input panel allows to define additional installation parameters like:

- **Predrilling**
- **Angle of fasteners** (inclined screws application) It can be set by putting in the value, moving the slider or clicking on the preset values that can also be chosen
- **Number of rows** – this is parameter allowing choosing between automatic rows selection (Optimized) and manual method by choosing number of rows from drop down menu.



(7.4) Fastener Pattern

4. 3D design panel

Basic navigation in 3D model:

- The 3D model can be moved by clicking and holding down the left mouse button while moving around the mouse.
- To move the model from left to right, up and down hold down the right mouse button and move the mouse.
- Zoom in and out using the scroll function on your mouse

Filters on the right can be used to modify the 3D model

- Top view is very useful to see dimensions and edge distances.

Note: It is important to remember that dimensions are not scaled and only show required minimum spacing and edge/end distances. A note under the model explains this:

(8) Object visibility

Note:
(1) The dimensions (in millimeters) shown in 3D represent the min spacing requirements only. They are not to scale and do not reflect actual spacing.
(2) The spacing values, a_1 and a_2, shown in 3D are calculated based on the min required a_1 and a_2 spacings for both the side and main members.

(9) Note

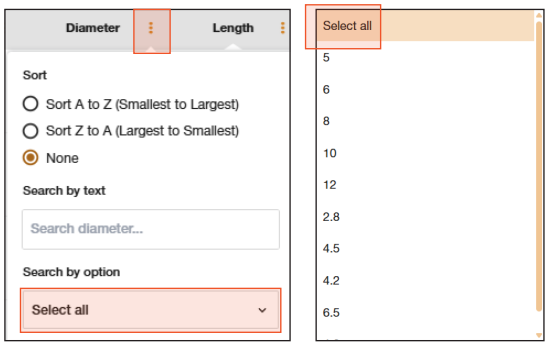
5. Output - calculation results (9)

The list offers all fasteners options based on the data input. They are sorted by the Load/Performance % ratio.

Fastener Designer produces multiple results for all fasteners that can be used in the specified application.

Sometimes the list might be long, so to avoid confusion filtering/sorting and search options are given.

- Clicking column header will sort the results by this parameter
- Using “search box” allows to find the particular names of the fasteners.
- Clicking on the three dots next to column header allows to filter the result be the drop down menu. Use diameter as an example to filter only eg. “6 mm” diameter results.
- To clear the filters the ‘reset filters‘ (10) option can be used.

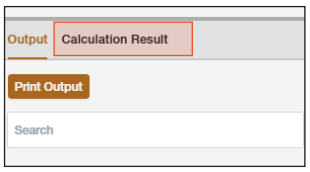


(9) Output section

(10) Reset filters

Print output – this option allows to create pdf with the list of the suitable fastener options. This is not the calculation report yet. This document might be used to discuss with the rest of the team the best option to choose or check product availability at local distributor. This way designer is able to select the most suitable option from a list of fasteners without a need to redesign the connection in the future.

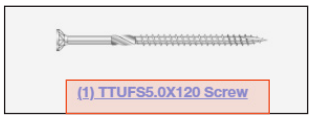
When the final fastening solution is chosen by selecting a particular solution from the list. The user might go to the **‚Calculation result‘ (10)** tab. Click on it to present the calculation result.



(10) Calculation results

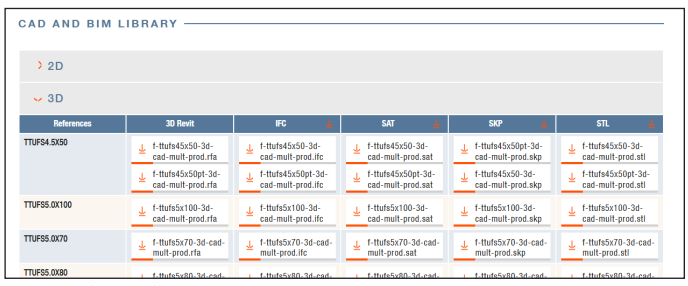
The intermediate calculation result is presented to allow checking the calculation process by the user.

The **link (11)** under the fastener picture will lead to the local website. This allows the user to check additional information about the fastener. This also gives quick access to:

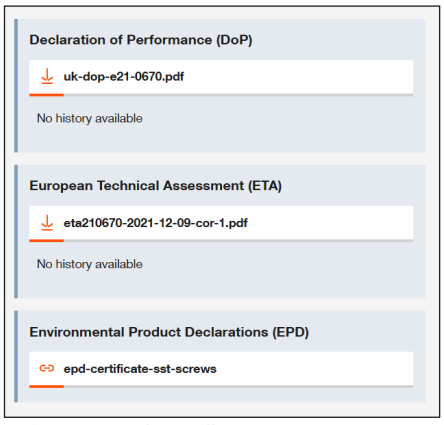


(11) Link

- ETA European Technical Assesssment (if applicable)
- DoP - Declaration of Performance
- EPD - Environmental Product Declaration
- BIM / CAD library (12)



(12) BIM / CAD Library



(13) DoP, ETA and EPD Library

The print result option allows to generate the pdf calculation result document.