USER MANUAL

EUROPEAN CONNECTOR SELECTOR (WEB APP)

UK
Simpson Strong-Tie
Winchester Road
Cardinal Point
Tamworth
Staffordshire
B78 3HG

Germany
Simpson Strong-Tie
Hubert-Vergolst-Str 6-14
D-61231 Bad Nauheim

Denmark
Simpson Strong-Tie
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DK-8300 Odder

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Simpson Strong-Tie
ZAC des Quatre Chemins
85400
Sainte-Gemme-la-Plaine

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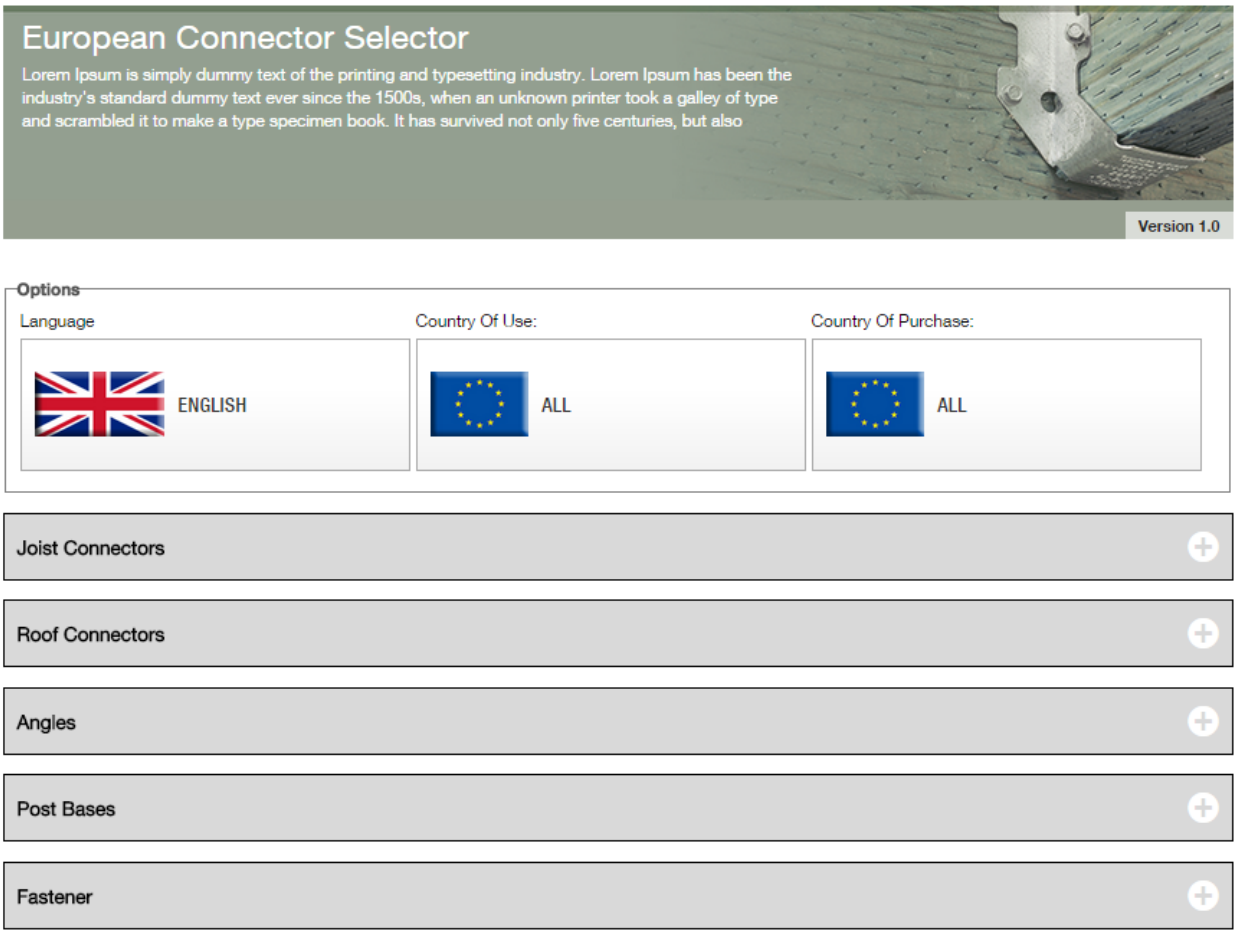
1. QUICK START GUIDE

- Select the language you wish the selector to use by clicking on the appropriate flag.
- Select the country where the connectors are to be used by clicking on the appropriate flag.
- Select the country you wish to purchase the connectors from by clicking on the appropriate flag. Please note this may differ from country of use.
- Select the type of connector you wish to search for, by clicking on the relevant header section
- Enter the search criteria in active white cells (grey inactive cells can't be changed), as displayed and click the "Search" button
- Review the list of possible connectors at the bottom of the screen
- Select the connector you wish to use (please note more details appear to the right of the list when the various connectors are selected)
- To review the Installation Details click the "Installation Details". A PDF file will open, which shows the connector and any specific installation details
- To review the design output files select a single connector and the click the "Design Output" button

OPENING SCREENS



- Language – Select which language you wish the software to display by selecting the appropriate flag. If you change the current setting the software will update to the selected language.

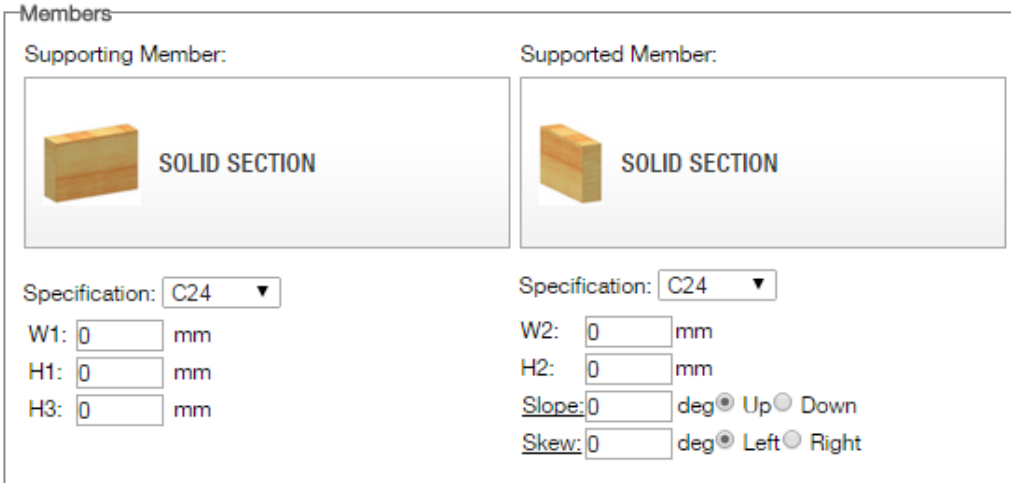
- Country of Use – Select which country the connectors will be used in. This will effect the design calculations as each country may have different design values from the general EC5 document in their National Annex. Not all countries have issued specific values; in these cases the software will use the general EC5 values. If "All" is selected the general values EC5 values will be used for the calculations. A table showing the various countries and their corresponding design values can be found in Annex A.

- Country of Purchase – Select where you wish to purchase your connector s from as some connectors are only available in certain countries. If you have no specific purchasing requirements then please select "All".

2. JOIST CONNECTORS

Members

In this section the specification of the various members and connector type are entered as described below. A value must be entered in these fields even if zero:



Supporting Member – select type from the drop down menu

Specification of the member, e.g. C16 timber

W1 is the width of the supporting member

H1 is the height of the supporting member

H3 is the height from the bottom of the supporting member to the bottom of the supported member. If the bottom of the supported member is below the bottom of the supporting member then input a negative value.

Supported Member – select from the drop down menu

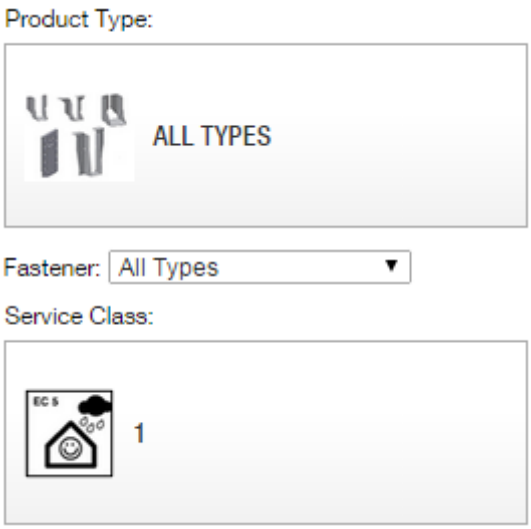
Specification of the member, e.g. C16 timber

W2 is the width of the supported member.

H2 is the height of the supported member.

Slope is the angle at which the supported member is sloped from the supporting member. Also select the direction of the slope, either up or down. An information image will appear if the cursor is held above the word "Slope"

Skew is the angle at which the supported member is skewed from the perpendicular of the supporting member. Also select the direction of slope either left or right. An information image will appear if the cursor is held above the word "Skew"



Product Type - Enter required product type from drop down list e.g. face fix, top fix etc. If you are not sure which type or wish to see all options select "All Types"

Fasteners – Enter your preferred fastener type e.g. nails, screws etc. If you do not know which nail type use "All Nails" etc. If you do not know which fastener type use "All Types"

Connections using bolts or bolts groups need to be checked separately

Service Class – This defines the environment in which the connector will be used.

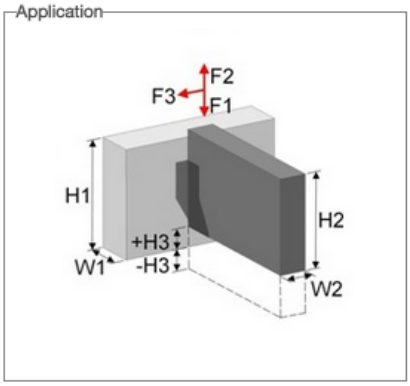
Service Class 1 = Characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 65% for a few weeks per year, e.g. warm roofs, timber frame walls, internal/party walls.

Service Class 2 = Characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85% for a few weeks per year, e.g. ground floors, cold roofs, timber frame walls and external walls

Service Class 3 = Characterised by climatic conditions leading to higher moisture contents than in service class 2, e.g. external uses, fully exposed.

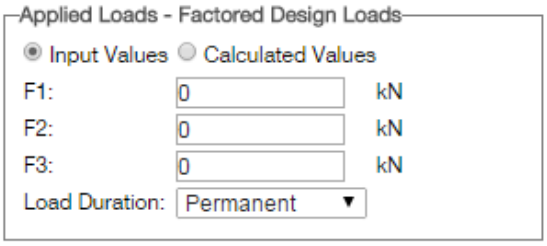
Refer to Eurocode 5 for more detailed information.

Application - This generic hanger image is used to define the dimensions and load directions.



Applied Loads (Input Values)

In this section the details of the loads applied to the connector are entered as described below:



These input loads should be factored design loads e.g. $\gamma_G G_K + \gamma_Q Q_K$ where γ are load factors

F1 – Is the load applied to the connector in a downward direction acting in the middle of the connector

F2 – Is the load applied to the connector in an upward direction acting in the middle of the connector

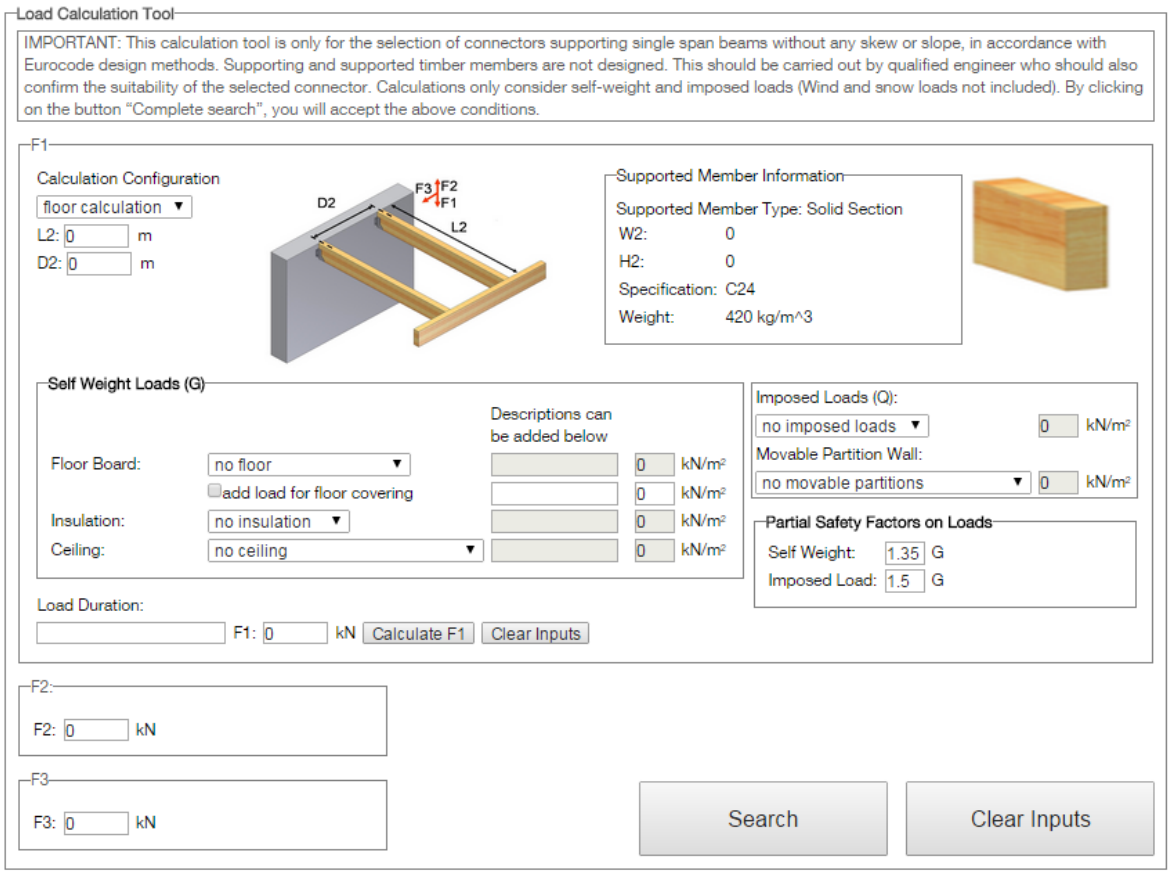
F3 – Is the load applied to the connector in a lateral direction or perpendicular to the supported member.

Load Duration – Is the classification of how long the load will be applied to the connector, depending on the application. Refer to table 2.2 from Eurocode 5 as shown below:

Load-duration class	Examples of loading
Permanent	Self Weight
Long-term	Storage
Medium-term	Imposed Floor Load, Snow
Short-term	Snow, Wind
Instantaneous	Wind, Accidental Load

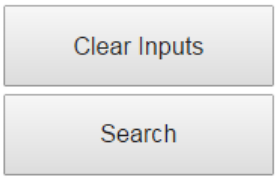
Applied Loads (Calculated Values)

The applied loads for F1, can be calculated using the load calculation tool shown below



Select standard values from drop down menus or enter specific values as required then select the "Calculate F1" button to determine the applied F1 load

The software does not currently check combinations of loads, it only checks individual loads in each direction against the corresponding capacity in that direction.

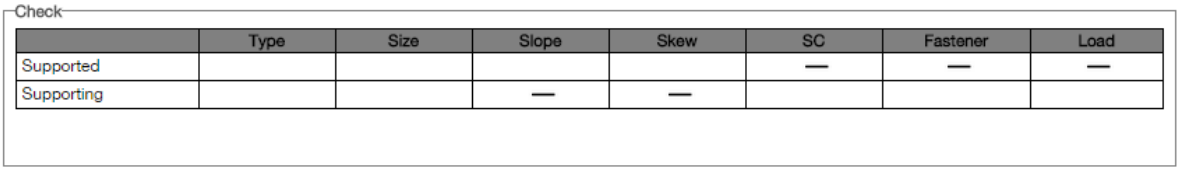


"Clear Inputs" Button:

Use this button to clear all of the current search criteria from the cells

"Search" Button:

Once all search criteria have been entered and there are no blank cells click this button to perform the search of the product database.



Check Grid - displays the areas of the selection criteria and helps the user determine the changes required to obtain a successful search. "OK" indicate a successful match; crosses indicate a match could not be found for the criteria.

If a cross appears in any of the boxes please try the following tips in order to successfully select a connector:

Supported / Type:

Some connectors are designed specifically for certain types of supported members such as 'I' Joists, which mainly require support of both top and bottom flanges. Try a different supported member type or specification.

Supported / Size:

The width of the supported member may be too narrow to suit a connector (maximum of 3mm difference). Try changing the W2 dimension.

The height of the supported member may be too big / small to suit a connector. Try changing the H2 dimension.

Supported / Slope:

The specified slope angle may be outside the range of for a particular connector. Try changing the slope angle or direction

Supported / Skew:

The specified slope angle may be outside the range of for a particular connector. Try changing the skew angle or direction

Supporting / Type:

Some hanger types are specifically designed for certain supporting member types such as metal web floor joists. Try a different supporting member type or specification.

Supporting / Size:

The width of the supporting member may be too narrow to suit the length of the specified face nails. Try increasing the W1 dimension.

The width of the supporting member may be too narrow to suit the length of the top flange of the connector. Try increasing the W1 dimension.

The height of the supporting member may be too small to suit the length of the specified top nails. Try increasing the H1 dimension.

The height of the supporting member may be too big / small to suit a connector. Try changing the H2 dimension.

Supporting / SC:

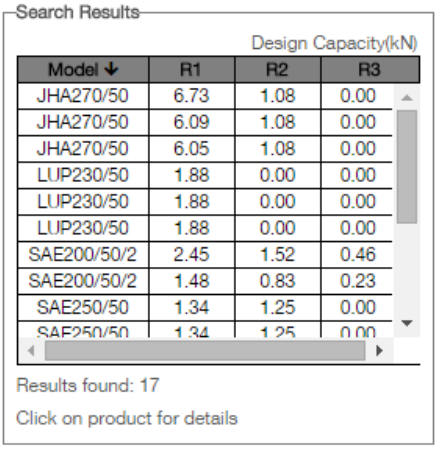
A connector cannot be matched to the specified Service Class. Try changing the Service Class

Supporting / Fastener:

A connector cannot be matched to the specified fastener type. Try changing the fastener type. Note if fastener type is not important then select "All Types"

Supporting / Load:

A connector is not available with sufficient capacity for the required design loads. Try changing the design loads or load duration


Search Results

Design Capacity(kN)

Model	R1	R2	R3
JHA270/50	6.73	1.08	0.00
JHA270/50	6.09	1.08	0.00
JHA270/50	6.05	1.08	0.00
LUP230/50	1.88	0.00	0.00
LUP230/50	1.88	0.00	0.00
LUP230/50	1.88	0.00	0.00
SAE200/50/2	2.45	1.52	0.46
SAE200/50/2	1.48	0.83	0.23
SAE250/50	1.34	1.25	0.00
SAE250/50	1.34	1.25	0.00

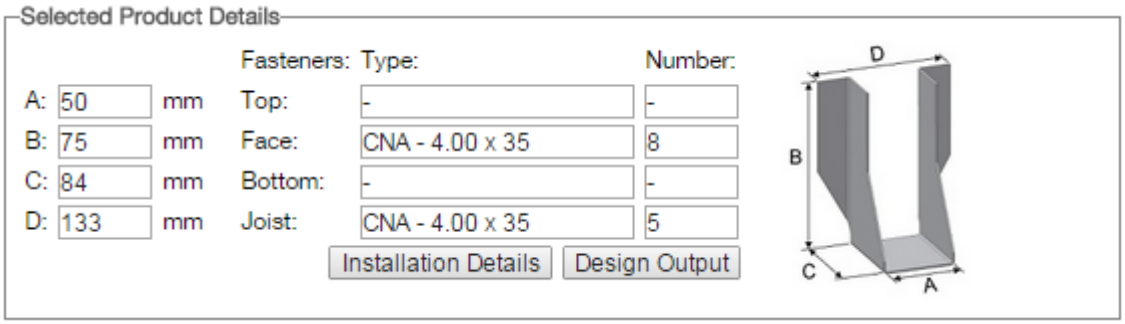
Results found: 17

Click on product for details

Search Results

In this section, the connectors that match all of the search criteria have been listed along with the corresponding load values. They have been listed in numerical order in the model field. The order of the display can be changed by clicking on the title box at the top of the column.

The "Results found" shows how many connectors match the search criteria and sometimes the same connector is listed several times. This is due to the different fixing options



Selected Product Details

To select a particular connector click on the model in the search results list, the details of the selected connector are displayed in the selected product details as described below:

A is the width of the seat from the inside of the left to the inside of the right

B is the overall height of the connector

C is the dimension from front to back of the connector

D is the overall width of the connector

Fasteners displays the type, qty & position of the fasteners required for the selected connector

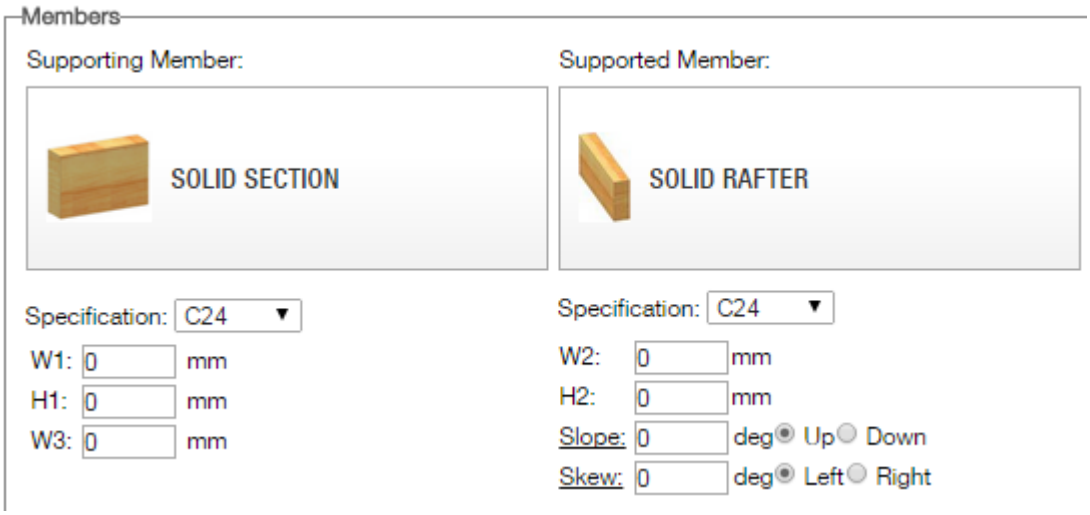
Installation Details – If this button is clicked, a PDF document will open showing how to install the connector including any variation in fastener positions etc.

Design Output – If this button is clicked, a PDF document will open showing the design details and checks for the selected connector

3. ROOF CONNECTORS

Members

In this section the specification of the various members and connector type are entered as described below. A value must be entered in these fields even if zero:



Supporting Member – select type from the drop down menu

Specification of the member, e.g. C16 timber

W1 is the width of the supporting member

H1 is the height of the supporting member

W3 is the height from the bottom of the supporting member to the bottom of the supported member. If the bottom of the supported member is below the bottom of the supporting member then input a negative value.

Supported Member – select from the drop down menu

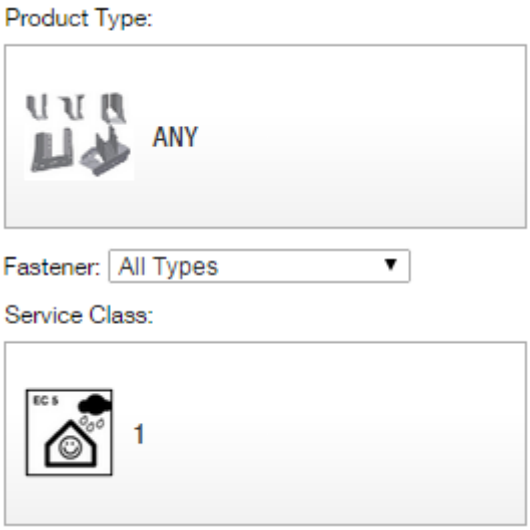
Specification of the member, e.g. C16 timber

W2 is the width of the supported member.

H2 is the height of the supported member.

Slope is the angle at which the supported member is sloped from the supporting member. Also select the direction of the slope, either up or down. An information image will appear if the cursor is held above the word "Slope"

Skew is the angle at which the supported member is skewed from the perpendicular of the supporting member. Also select the direction of slope either left or right. An information image will appear if the cursor is held above the word "Skew"



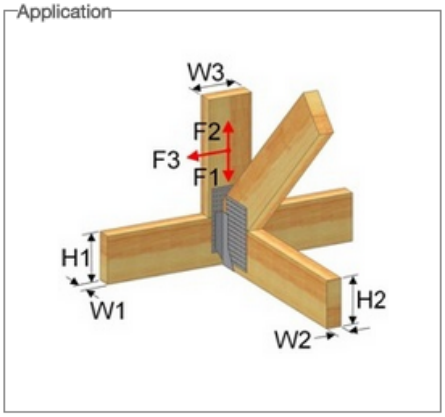
Product Type - Enter required product type from drop down list e.g. truss clip, rafter clip etc. If you are not sure which type or wish to see all options select "Any"

Fasteners – Enter your preferred fastener type e.g. nails, screws etc. If you do not know which nail type use "All Nails" etc. If you do not know which fastener type use "All Types"

Connections using bolts or bolts groups need to be checked separately

Service Class – This defines the environment in which the connector will be used.
Service Class 1 = e.g. Floors (except ground floors)
Service Class 2 = e.g. Roof spaces (including ground floors)
Service Class 3 = e.g. External uses

Refer to Eurocode 5 for more detailed information.



Application - This generic image is used to define the dimensions and load directions, which will change depending on the type of product and timber members that have been selected

Applied Loads

In this section the details of the loads applied to the connector are entered as described below:

These input loads should be factored design loads e.g. $\gamma_G G_K + \gamma_Q Q_K$ where γ are load factors

F1 – Is generally the load applied to the connector in a downward direction, but maybe different depending on the connection type. Refer to generic image for clarification

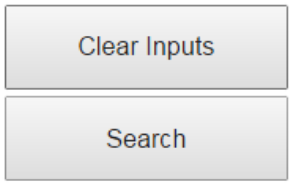
F2 – Is the load applied to the connector in an upward direction, but maybe different depending on the connection type. Refer to generic image for clarification

F3 – Is the load applied to the connector in a lateral direction or perpendicular to the supported member, but maybe different depending on the connection type. Refer to generic image for clarification

The software does not currently check combinations of loads, it only checks individual loads in each direction against the corresponding capacity in that direction.

Load Duration – Is the classification of how long the load will be applied to the connector, depending on the application. Refer to table 2.2 from Eurocode 5 as shown below:

Load-duration class	Examples of loading
Permanent	Self Weight
Long-term	Storage
Medium-term	Imposed Floor Load, Snow
Short-term	Snow, Wind
Instantaneous	Wind, Accidental Load

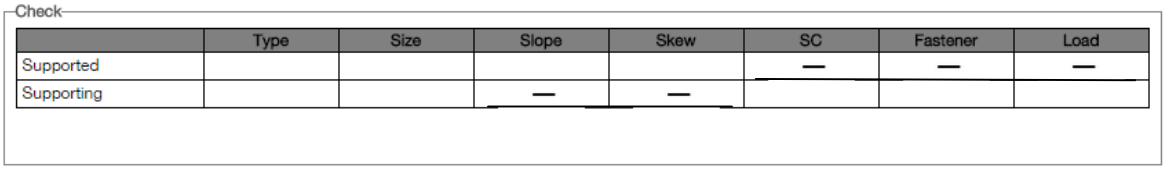


"Search" Button:

Once all search criteria have been entered and there are no blank cells click this button to perform the search of the product database.

"Clear Inputs" Button:

Use this button to clear all of the current search criteria from the cells



Check Grid - displays the areas of the selection criteria and helps the user determine the changes required to obtain a successful search. Ticks indicate a successful match; crosses indicate a match could not be found for the criteria.

If a cross appears in any of the boxes please try the following tips in order to successfully select a connector:

Supported / Type:

Some connectors are designed specifically for certain types of supported members such as I Joists, which mainly require support of both top and bottom flanges. Try a different supported member type or specification.

Supported / Size:

The width of the supported member may be too narrow to suit a connector (maximum of 3mm difference). Try changing the W2 dimension.

The height of the supported member may be too big / small to suit a connector. Try changing the H2 dimension.

Supported / Slope:

The specified slope angle may be outside the range of for a particular connector. Try changing the slope angle or direction

Supported / Skew:

The specified slope angle may be outside the range of for a particular connector. Try changing the skew angle or direction

Supporting / Type:

Some hanger types are specifically designed for certain supporting member types such as wall plates. Try a different supporting member type or specification.

Supporting / Size:

The width of the supporting member may be too narrow to suit the length of the specified face nails. Try increasing the W1 dimension.

The width of the supporting member may be too narrow to suit the length of the stop flange of the connector. Try increasing the W1 dimension.

The height of the supporting member may be too small to suit the length of the specified top nails. Try increasing the H1 dimension.

The height of the supporting member may be too big / small to suit a connector. Try changing the H2 dimension.

Supporting / SC:

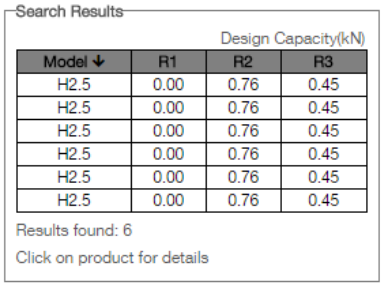
A connector cannot be matched to the specified Service Class. Try changing the Service Class

Supporting / Fastener:

A connector cannot be matched to the specified fastener type. Try changing the fastener type. Note if fastener type is not important then select "All Types"

Supporting / Load:

A connector is not available with sufficient capacity for the required design loads. Try changing the design loads or load duration


Search Results

Design Capacity(kN)

Model ↓	R1	R2	R3
H2.5	0.00	0.76	0.45
H2.5	0.00	0.76	0.45
H2.5	0.00	0.76	0.45
H2.5	0.00	0.76	0.45
H2.5	0.00	0.76	0.45
H2.5	0.00	0.76	0.45

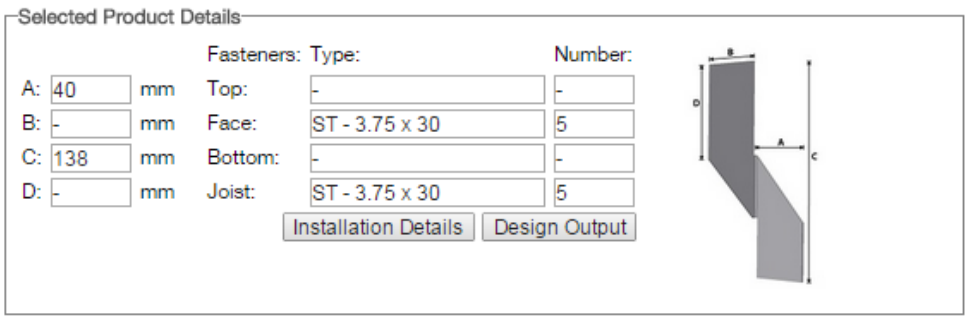
Results found: 6

Click on product for details

Search Results

In this section, the connectors that match all of the search criteria have been listed along with the corresponding load values. They have been listed in numerical order in the model field. The order of the display can be changed by clicking on the title box at the top of the column.

The "Results found" shows how many connectors match the search criteria and sometimes the same connector is listed several times. This is due to the different fixing options



Selected Product Details

To select a particular connector click on the model in the search results list, the details of the selected connector are displayed in the selected product details as described below. Please note that different connectors have different features, so please refer to the product image for clarification of the features and corresponding dimensions:

A is the width of the seat from the inside of the left to the inside of the right

B is the overall height of the connector

C is the dimension from front to back of the connector

D is the overall width of the connector

Fasteners displays the type, qty & position of the fasteners required for the selected connector

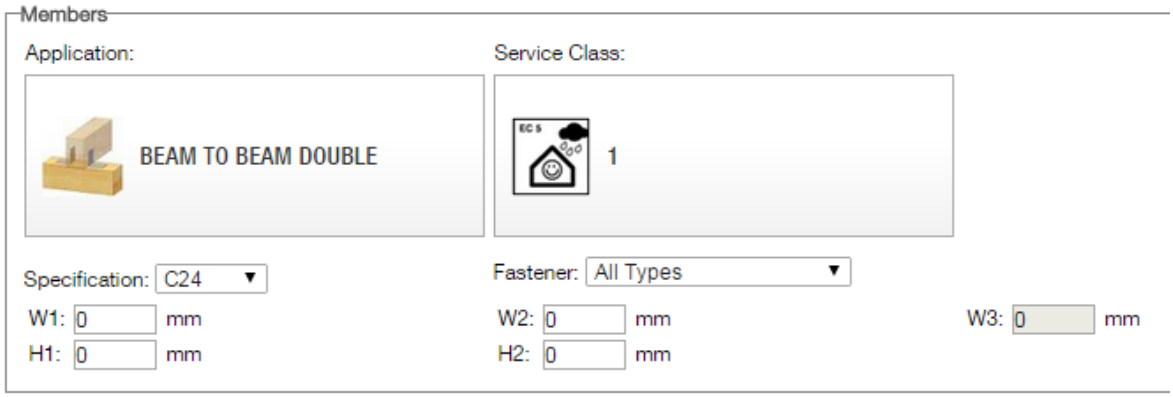
Installation Details – If this button is clicked, a PDF document will open showing how to install the connector including any variation in fastener positions etc.

Design Output – If this button is clicked, a PDF document will open showing the design details and checks for the selected connector.

4. ANGLES

Members

In this section the specification of the various members and connector type are entered as described below. A value must be entered in these fields even if zero:



Application – select application type from the drop down menu

Specification of the members, e.g. C24 timber

W1 is generally the width of the supported member

H1 is generally the height of the supported member

W2 is generally the width of the supporting member

H2 is generally the height of the supporting member

W3 may also be the width of the supported member in certain applications.

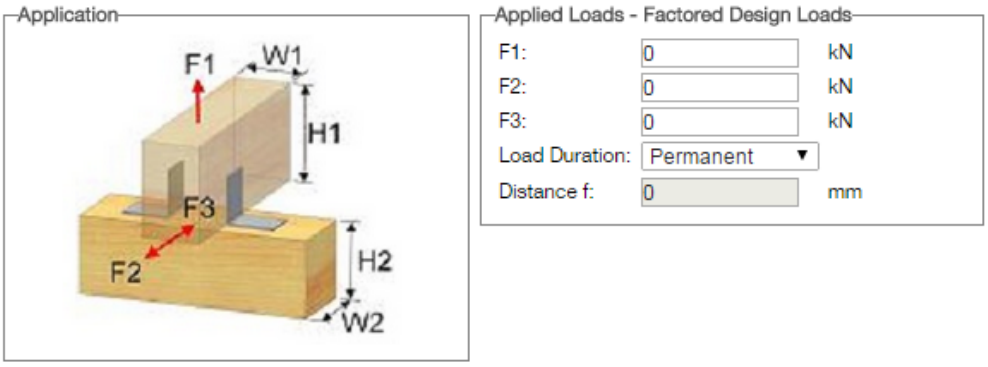
Please refer to generic images (shown in the software) for each application type for specific positions.

Service Class – This defines the environment in which the connector will be used.
Service Class 1 = e.g. Floors (excluding ground floors)
Service Class 2 = e.g. Roof spaces (including ground floors)
Service Class 3 = e.g. External uses

Refer to Eurocode 5 for more detailed information.

Fasteners – Enter your preferred fastener type e.g. nails, screws etc. If you do not know which nail type use "All Nails" etc. If you do not know which fastener type use "All Types"

Connections using bolts or bolts groups need to be checked separately



Application - This generic image is used to define the dimensions and load directions. This image is specific to each application type

Applied Loads

In this section the details of the loads applied to the connector are entered as described below:

These input loads should be factored design loads e.g. $\gamma_G G_K + \gamma_Q Q_K$ where γ are load factors

F1 – Lifting force acting along the central axis of the joint and either centrally between the two connectors or at a distance f from the vertical leg when only one connector is used.

F2 & F3 – Lateral force acting in the joint between the purlin and beam in the purlin direction

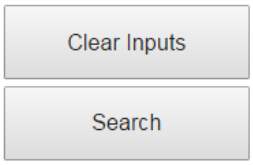
A value must be entered in each field even if zero.

The software does not currently check combinations of loads, it only checks individual loads in each direction against the corresponding capacity in that direction.

Distance f – This dimension is used if the corresponding load has an eccentricity (in connections with only one connector)

Load Duration – Is the classification of how long the load will be applied to the connector, depending on the application. Refer to table 2.2 from Eurocode 5 as shown below:

Load-duration class	Examples of loading
Permanent	Self Weight
Long-term	Storage
Medium-term	Imposed Floor Load, Snow
Short-term	Snow, Wind
Instantaneous	Wind, Accidental Load

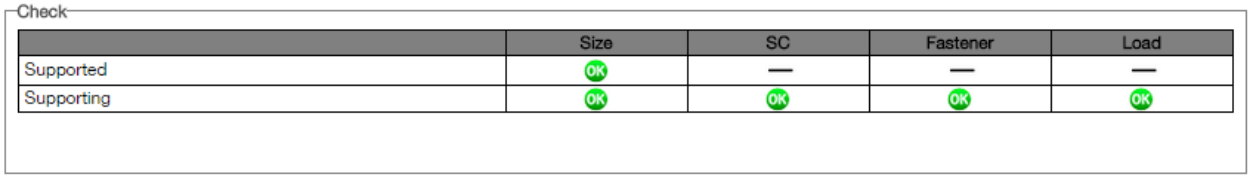


"Search" Button:

Once all search criteria have been entered and there are no blank cells click this button to perform the search of the product database.

"Clear Inputs" Button:

Use this button to clear all of the current search criteria from the cells



Check Grid - displays the areas of the selection criteria and helps the user determine the changes required to obtain a successful search. Ticks indicate a successful match; crosses indicate a match could not be found for the criteria.

If a cross appears in any of the boxes please try the following tips in order to successfully select a connector:

Supported / Size:

The width of the supported member may be too narrow to suit the length of the specified fasteners. Try changing the width of the supported member or the fastener type.

Supporting / Size:

The width of the supporting member may be too narrow to suit the connector. Try changing the width of the supporting member.

Supporting / SC:

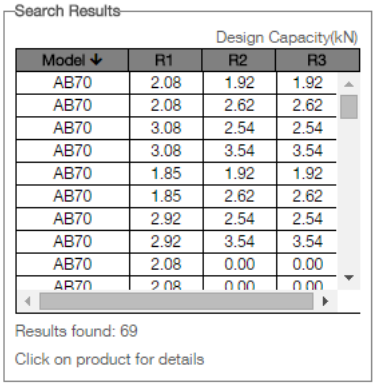
A connector cannot be matched to the specified Service Class. Try changing the Service Class

Supporting / Fastener:

A connector cannot be matched to the specified fastener type. Try changing the fastener type. Note if fastener type is not important then select "All Types"

Supporting / Load:

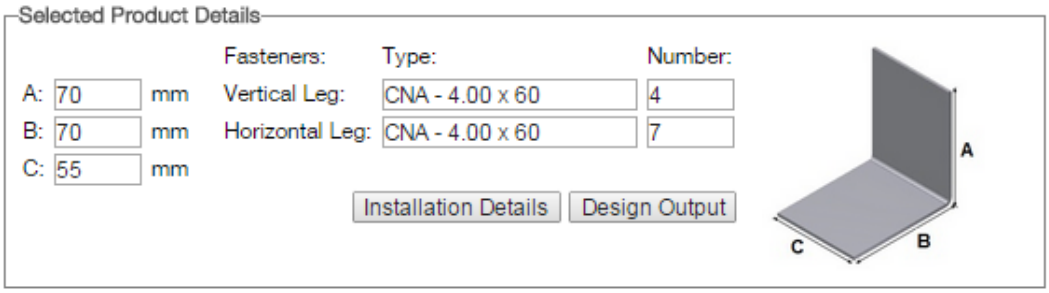
A connector is not available with sufficient capacity for the required design loads. Try changing the design loads or load duration



Search Results

In this section, the connectors that match all of the search criteria have been listed along with the corresponding load values. They have been listed in numerical order in the model field. The order of the display can be changed by clicking on the title box at the top of the column.

The "Results found" shows how many connectors match the search criteria and sometimes the same connector is listed several times. This is due to the different fixing options



Selected Product Details

To select a particular connector click on the model in the search results list, the details of the selected connector are displayed in the selected product details as described below:

A is the length of the vertical leg of the connector

B is the length of the horizontal leg of the connector

C is the overall width of the connector

Fasteners displays the type and qty & position of the fasteners required for the selected connector

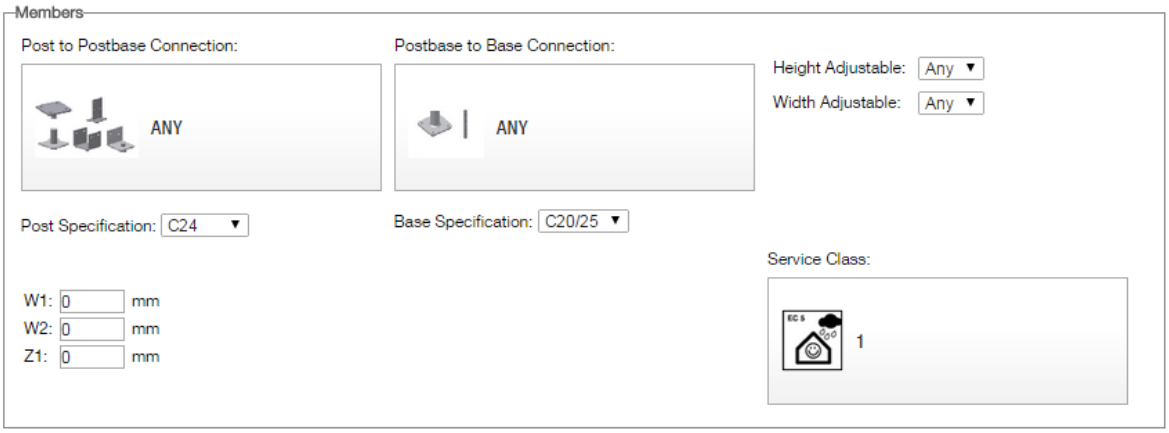
Installation Details – If this button is clicked, a PDF document will open showing how to install the connector including any variation in fastener positions etc.

Design Output – If this button is clicked, a PDF document will open showing the design details and checks for the selected connector

5. POST BASES

Members

In this section the specification of the various members and connector type are entered as described below. A value must be entered in these fields even if zero:



Post to Post base Connection – select type from the drop down menu

Post Specification of the post timber, e.g. C24

W1 is the width of the Post

W2 is the depth of the Post

Z1 is the distance from the bottom of the post to the top of the surface of the support base

Post base to Base Connection – select from the drop down menu

Base Specification of the base, e.g. C20/25 concrete

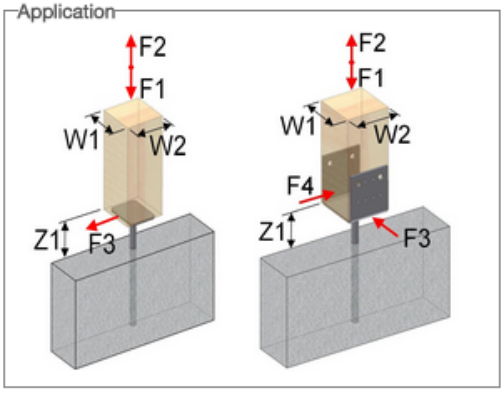
Height Adjustable – is it possible to adjust the height of the post base? (Yes / No)

Width Adjustable – is it possible to adjust the width of the post base? (Yes / No)

Service Class – This defines the environment in which the connector will be used.
Service Class 1 = e.g. Floors (except ground floors)
Service Class 2 = e.g. Roof spaces (including ground floors)
Service Class 3 = e.g. External uses

Refer to Eurocode 5 for more detailed information.

Connections using bolts or bolts groups need to be checked separately



Applied Loads - Factored Design Loads

F1:	0	kN
F2:	0	kN
F3:	0	kN
F4:	0	kN
Load Duration:	Permanent	

Application - This generic image is used to define the dimensions and load directions.

Applied Loads

In this section the details of the loads applied to the connector are entered as described below:

These input loads should be factored design loads e.g. $\gamma_G G_K + \gamma_Q Q_K$ where γ are load factors

F1 – Is the load applied to the connector in a downward direction acting in the middle of the post

F2 – Is the load applied to the connector in an upward direction acting in the middle of the post

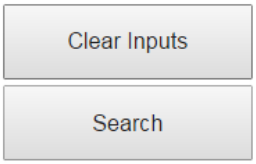
F3 – Is the load applied to the connector in a lateral direction acting at the bottom of the post

F4 – Is the load applied to the connector in a lateral direction acting in line of the lower row of holes

The software does not currently check combinations of loads, it only checks individual loads in each direction against the corresponding capacity in that direction.

Load Duration – Is the classification of how long the load will be applied to the connector, depending on the application. Refer to table 2.2 from Eurocode 5 as shown below:

Load-duration class	Examples of loading
Permanent	Self Weight
Long-term	Storage
Medium-term	Imposed Floor Load, Snow
Short-term	Snow, Wind
Instantaneous	Wind, Accidental Load

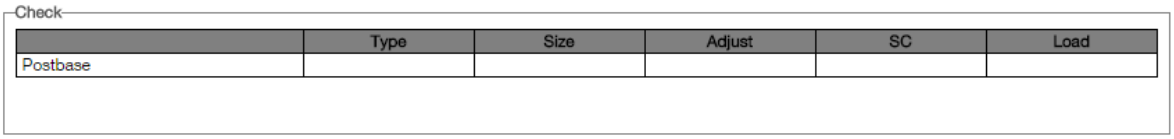


"Search" Button:

Once all search criteria have been entered and there are no blank cells click this button to perform the search of the product database.

"Clear Inputs" Button:

Use this button to clear all of the current search criteria from the cells



Check Grid - displays the areas of the selection criteria and helps the user determine the changes required to obtain a successful search. Ticks indicate a successful match; crosses indicate a match could not be found for the criteria.

If a cross appears in any of the boxes please try the following tips in order to successfully select a connector:

Post base / Type:

Some connectors are designed specifically for certain types of application. Try a different Post to Post Base type or post specification. Or try a different Post base to Base type or base specification

Post base / Size:

A connector cannot be matched to the post dimensions. Try changing the W1 and W2 dimensions.

Post base / Adjust:

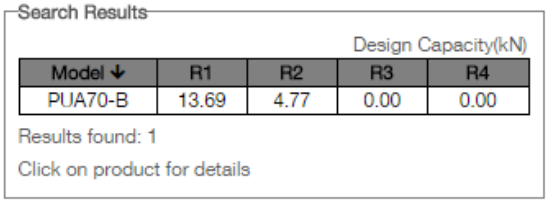
Some connectors cannot be adjusted, a match could not be found with an adjustable post base. Try changing Height and Width adjustable to "No"

Post Base / SC:

A connector cannot be matched to the specified Service Class. Try changing the Service Class

Post base / Load:

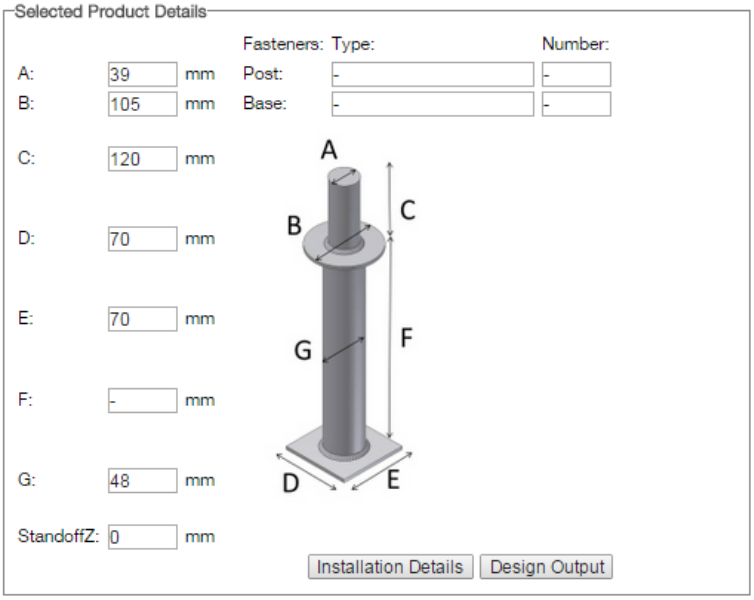
A connector is not available with sufficient capacity for the required design loads. Try changing the design loads or load duration



Search Results

In this section, the connectors that match all of the search criteria have been listed along with the corresponding load values. They have been listed in numerical order in the model field. The order of the display can be changed by clicking on the title box at the top of the column.

The "Results found" shows how many connectors match the search criteria and sometimes the same connector is listed several times. This is due to the different fixing options



Selected Product Details

To select a particular connector click on the model in the search results list, the details of the selected connector are displayed in the selected product details.

As there are many different types of post bases, each type has different dimension references, which are shown on the corresponding drawing

Fasteners displays the type and qty of the fasteners required for the selected connector

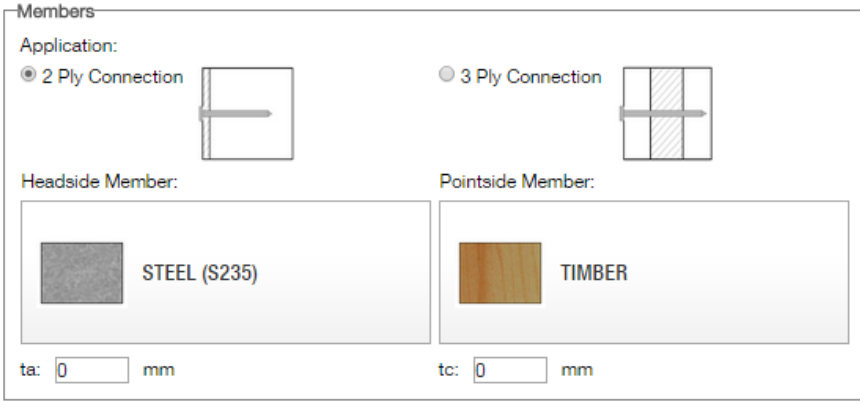
Installation Details – If this button is clicked, a PDF document will open showing how to install the connector including any variation in fastener positions etc.

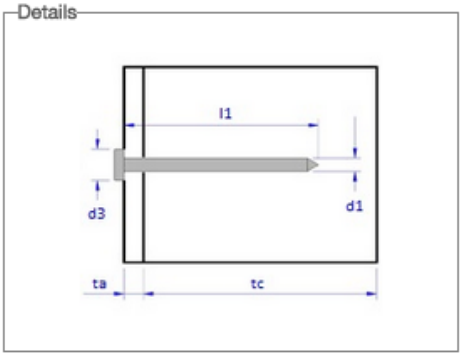
Design Output – If this button is clicked, a PDF document will open showing the design details and checks for the selected connector

6. FASTENERS

Members

In this section the specification of the various members are entered as described below. A value must be entered in these fields:





2 Ply Connection

Select this option if there are two separate members in the connection

Headside Member

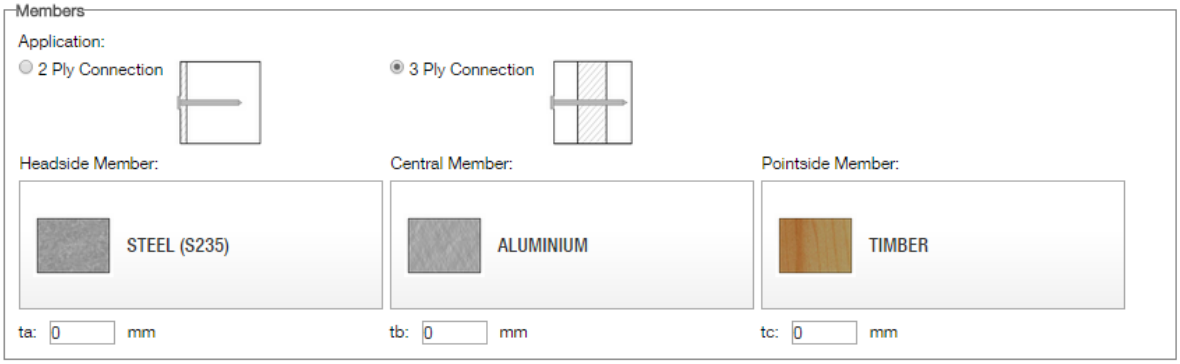
The headside member is the member adjacent to the head of the fastener. Select the specification of the headside member from the drop down menu.

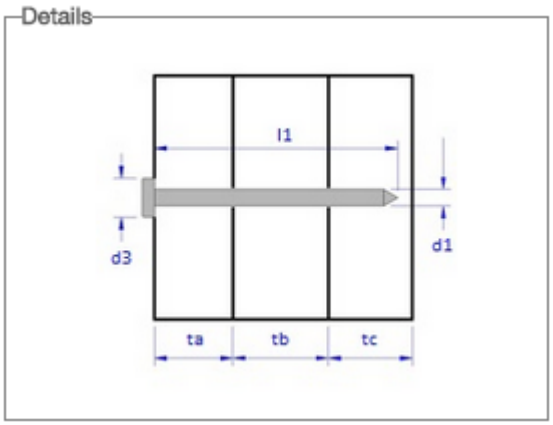
ta – specifies the width of the headside member in mm

Pointside Member

The pointside member is the member adjacent to the point of the fastener. Select the specification of the pointside member from the drop down menu.

tc – specifies the width of the pointside member in mm





3 Ply Connection

Select this option if there are three separate members in the connection

Headside Member

The headside member is the member adjacent to the head of the fastener. Select the specification of the headside member from the drop down menu.

ta – specifies the width of the headside member in mm

Central Member

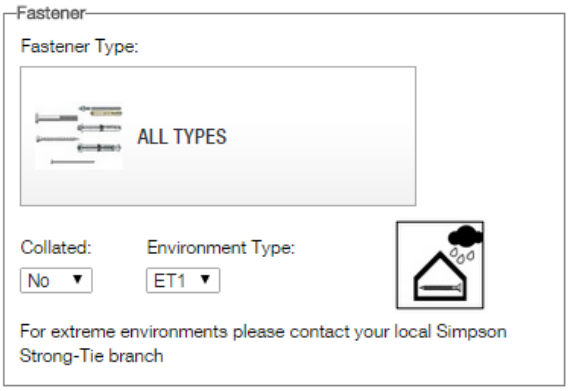
The central member is the member in between the headside member and the pointside member. Select the specification of the central member from the drop down menu.

tb – specifies the width of the central member in mm

Pointside Member

The pointside member is the member adjacent to the point of the fastener. Select the specification of the pointside member from the drop down menu.

tc – specifies the width of the headside member in mm



Fastener Type

Select your preferred fastener type e.g. Smooth Nails, SDS Screws etc. If you do not know which nail type use "All Nails" etc. If you do not know which fastener type use "All Types"

Collated

Select if you want the fasteners to be collated or not. Please bear in mind that not all fasteners are available, collated.

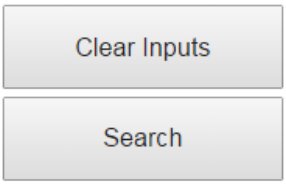
Environment Type

This defines the environment types in which the fasteners can be used.

Environment Type 1 (ET1): Internal heated space of a building with clean atmosphere e.g. Office, Shops, schools and hotels

Environment Type 2 (ET2): Internal unheated space of a building where condensation may occur e.g. warehouses and sports halls

Environment Type 3 (ET3): Internal unheated space of buildings with high moisture contents e.g. Laundries, breweries and dairies. Or external space far from the ocean or in non-aggressive environments.

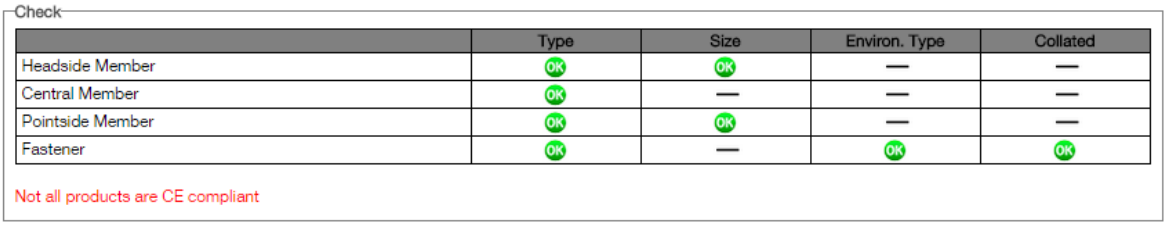


"Search" Button:

Once all search criteria have been entered and there are no blank cells click this button to perform the search of the product database.

"Clear Inputs" Button:

Use this button to clear all of the current search criteria from the cells



Check Grid - displays the areas of the selection criteria and helps the user determine the changes required to obtain a successful search. Ticks indicate a successful match; crosses indicate a match could not be found for the criteria.

If a cross appears in any of the boxes please try the following tips in order to successfully select a connector:

Headside Member / Type:

The type of the headside member may not be suitable with the other selected options, Try changing the specification of the headside member or changing some of the other options if the headside member is critical.

Headside Member / Size:

The width of the headside member may be too small or too big. Try increasing / reducing the "ta" value.

Central Member / Type:

The type of the central member may not be suitable with the other selected options, Try changing the specification of the central member or changing some of the other options if the central member is critical.

Pointside Member / Type:

The type of the pointside member may not be suitable with the other selected options, Try changing the specification of the pointside member or changing some of the other options if the pointside member is critical.

Pointside Member / Size:

The width of the pointside member may be too small or too big. Try increasing / reducing the "tc" value.

Fastener / Type:

The type of fastener may not be suitable or available for the type of connection specified. Try changing the type of fastener – or the collated option

Fastener / ET:

The type of fastener may not be suitable for the selected environment type – e.g. the environment type may be too high. Try changing the type of fastener or environment type.

Fastener / Collated:

Not all fasteners are collated, so try changing the collated option

Please note that not all fasteners are CE compliant, but any fasteners that are covered by a harmonised standard, such as EN14592, are CE compliant

Search Results

Model ↓	Type	d1	d2	d3	l1	l2	l3	Head Type	Drive Type	Collated
BSH12/180	All Bolts	12.00	-	-	180.00	100.00	-	N/A	Square	No
BSH16/180	All Bolts	16.00	-	-	180.00	100.00	-	N/A	Square	No
BSH18/180	All Bolts	18.00	-	-	180.00	100.00	-	N/A	Square	No
BSH20/180	All Bolts	20.00	-	-	180.00	100.00	-	N/A	Square	No
CNA2,5X35	Threaded Nails	2.50	-	5.00	35.00	25.00	1.00	Circular Flat	N/A	No
CNA2,8X60	Threaded Nails	2.80	-	5.60	60.00	50.00	1.30	Circular Flat	N/A	No
CNA3,1X22	Threaded Nails	3.10	-	6.20	22.00	15.00	1.00	Circular Flat	N/A	No

Results found: 43

Click on product for details

Search Results

In this section, the fasteners that match all of the search criteria have been listed along with the corresponding information. They have been listed in numerical order in the model field. The order of the display can be changed by clicking on the title box at the top of the column.

The "Results found" shows how many connectors match the search criteria

Model – is the model number of the fastener

Type – Is the type of fastener

d1 – Is the shank diameter of a nail or dowel. Or the minor diameter of a screw or bolt

d2 – Is the major diameter of a screw or bolt

d3 – Is the diameter of the head of the fastener

l1 – Is the length of the fastener

l2 – Is the length of the threaded part of the fastener (where applicable)

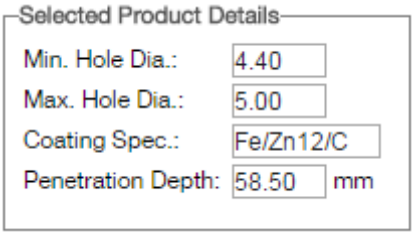
l3 – Is the length or thickness of the head of the fastener

Head Type – Is the type of head of the fastener (where applicable)

Drive Type – Is the type of drive of the fastener (where applicable)

Collated – Shows if the fastener is collated or not

Results Found – Is the number of results found for the selected search criteria



Selected Product Details

To select a particular fastener click on the model in the search results list.

Min Hole Dia. refers to the minimum size of hole the fastener can be used – if applicable

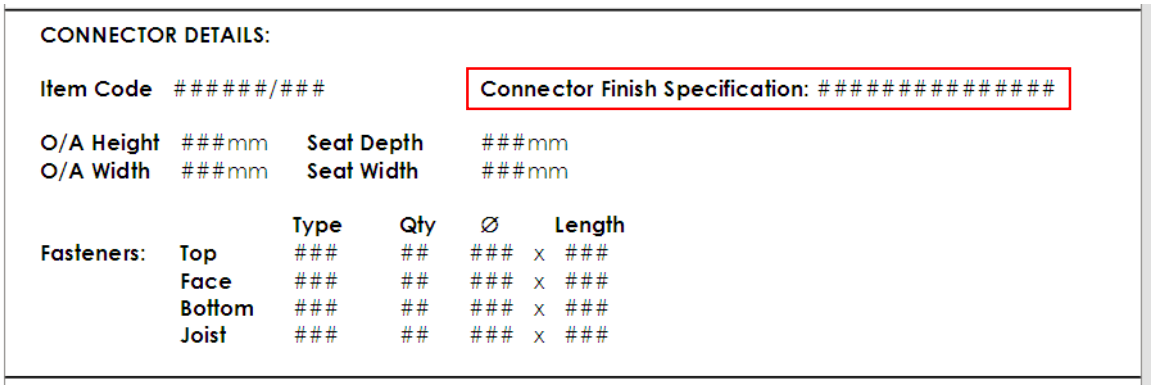
Max Hole Dia. refers to the maximum size of hole the fastener can be used – if applicable

Coating Spec. refers to the specification of the corrosive protection applied to the fastener

Penetration Depth – Is the distance from where the fastener enters the point side member to the point of the fastener

7. DESIGN OUTPUT

This section details additional information shown on the Design Output sheets that has not already been covered in previous sections.



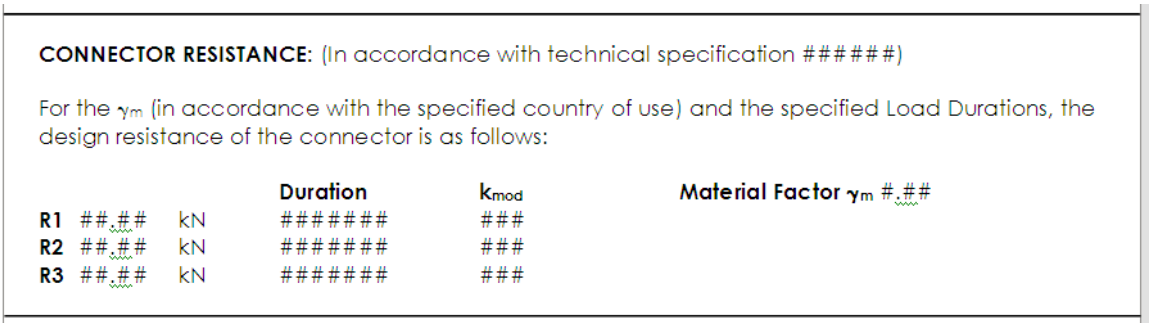
CONNECTOR DETAILS:

Item Code ######/### **Connector Finish Specification:** ##############

O/A Height ###mm **Seat Depth** ###mm
O/A Width ###mm **Seat Width** ###mm

		Type	Qty	Ø		Length
Fasteners:	**Top**	###	##	###	x	###
	Face	###	##	###	x	###
	Bottom	###	##	###	x	###
	Joist	###	##	###	x	###

Connector Finish Specification – shows the finish specification of the connector e.g. Galvanised Z275



CONNECTOR RESISTANCE: (In accordance with technical specification ######)

For the γ_m (in accordance with the specified country of use) and the specified Load Durations, the design resistance of the connector is as follows:

			Duration	k_{mod}	Material Factor γ_m #.##
R1	##.##	kN	#######	###	
R2	##.##	kN	#######	###	
R3	##.##	kN	#######	###	

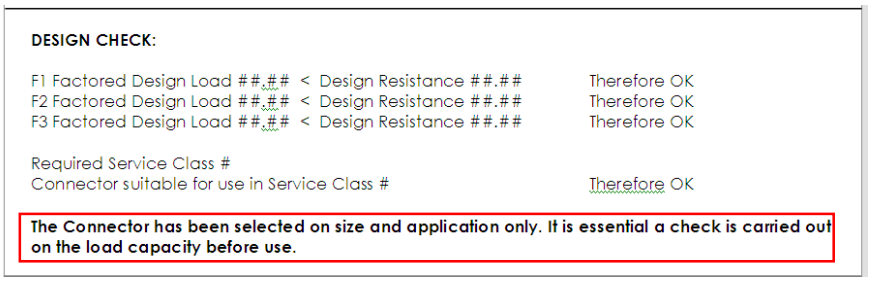
Technical Specification – shows the specification from which the design values of the connector have been obtained. This may be a specific ETA document e.g. ETA-07/0317 or a specific design standard e.g. EN845

Material Factor γ_m – This value is dependant on the selected country of use. This value effects the design calculations as each country may have different material factors from the general EC5 document in their National Annex. Not all countries have issued specific values, in these cases the software will use the general EC5 values. A table showing the various countries and the design values currently used by this software can be found in Annex A.

R1… - These are the design resistances of the connector in the corresponding directions

k_{mod} – These values depend on the selected load duration and service class. Values currently used by this software can be found in Annex B

Please note this area will be blank if the connector has been selected from the connector list or if the "Load Check" box has been selected as discussed in previous sections.



Design Checks – These design checks show that the selected connector has been checked to ensure that the design resistance is greater than the Design load and that it is suitable for the required service class, or environment.

Please note this area will be blank if the connector has been selected from the connector list.

If this is blank, the highlighted note will be displayed.

Connections using bolts or bolts groups need to be checked separately

The software does not currently check combinations of loads, it only checks individual loads in each direction against the corresponding capacity in that direction.

If combinations of loads acting simultaneously are required, it is necessary for the designer to use the following "general" combination methods for each product type – but please refer to relevant ETA for full details

Angle Brackets:

$$\left(\frac{F_{1,d}}{R_{1,d}}\right)^2+\left(\frac{F_{2,d}}{R_{2,d}}\right)^2+\left(\frac{F_{3,d}}{R_{3,d}}\right)^2\le 1$$

Joist Connectors:

$$\left(\frac{F_1}{R_1}\right)^2+\left(\frac{F_3}{R_3}\right)^2\le 1$$

$$\left(\frac{F_2}{R_2}\right)^2+\left(\frac{F_3}{R_3}\right)^2\le 1$$

Roof connectors & Post bases:

Load combination check to be carried out by engineer responsible for the design of the structure in accordance with technical standard

8. UPDATES

The software will always be the latest version as updates are instant

9. CUSTOMER FEEDBACK

If you have any questions or find any errors with this software please contact your local SST branch – details are on the front cover of this user manual.

We would also appreciate it if you would give us any feedback that you think might improve this application or if you would like to see more features adding.

10. CONTACT US

Contact details are shown on the front cover of this user manual.

Alternatively you can contact us via our website www.strongtie.eu

ANNEX A – MATERIAL FACTORS

Below is a table showing the various material factors (γ_m) used in each European country

	γ_m			
Country of Use	Timber	Steel	Masonry	Concrete
Austria	1.3	1.00	1.5	1.5
Belgium	1.3	1.00	1.5	1.5
Bulgaria	1.3	1.00	1.5	1.5
Cyprus	1.3	1.00	1.5	1.5
Czech-Republic	1.3	1.00	1.5	1.5
Denmark	1.35	1.1	1.7	1.6
Estonia	1.3	1.00	1.5	1.5
Finland	1.4	1.00	1.5	1.5
France	1.3	1.00	1.5	1.5
Germany	1.3	1.00	1.5	1.5
Greece	1.3	1.00	1.5	1.5
Hungary	1.3	1.00	1.5	1.5
Ireland	1.3	1.00	1.5	1.5
Italy	1.3	1.00	1.5	1.5
Latvia	1.3	1.00	1.5	1.5
Lithuania	1.3	1.00	1.5	1.5
Luxemburg	1.3	1.00	1.5	1.5
Malta	1.3	1.00	1.5	1.5
Netherlands	1.3	1.00	1.5	1.5
Norway	1.3	1.05	1.5	1.5
Poland	1.3	1.00	1.5	1.5
Portugal	1.3	1.00	1.5	1.5
Romania	1.3	1.00	1.5	1.5
Slovakia	1.3	1.00	1.5	1.5
Slovenia	1.3	1.00	1.5	1.5
Spain	1.3	1.00	1.5	1.5
Sweden	1.3	1.00	1.5	1.5
UK	1.3	1.00	1.5	1.5
Eurocode	1.3	1.00	1.5	1.5

ANNEX B – LOAD DURATION FACTORS

Below is a table showing the various load duration factors (k_{mod})

Supporting Member Type	Service Class	Load Duration-Class				
		Permanent	Long Term	Medium Term	Short Term	Instantaneous
Timber	1	0.6	0.7	0.8	0.9	1.1
	2	0.6	0.7	0.8	0.9	1.1
	3	0.5	0.55	0.65	0.7	0.9
Steel	1	1	1	1	1	1
	2	1	1	1	1	1
	3	1	1	1	1	1
Masonry	1	1	1	1	1	1
	2	1	1	1	1	1
	3	1	1	1	1	1
Concrete	1	1	1	1	1	1
	2	1	1	1	1	1
	3	1	1	1	1	1