

3 Connections Tutorial 3 – Screw Lap Splice (US)

3.1 Software Version and Standard

This tutorial was completed using WoodWorks® US 2019, and NDS 2018.

3.2 Introduction

This tutorial goes over the design of a screw lap splice connection between OSB and a solid sawn member. Due to the lack of screw penetration into the third member in the splice, the problem must be considered as a single shear connection.

Click [here](#) to download the Connections file (.con) created from going through this tutorial.

3.3 Connection Type

1. Click the **New** button on the toolbar.
2. Select the connection type **Lapped Shear, wood-to-wood, Splice two-member**.
3. Select **Wood Screws**.

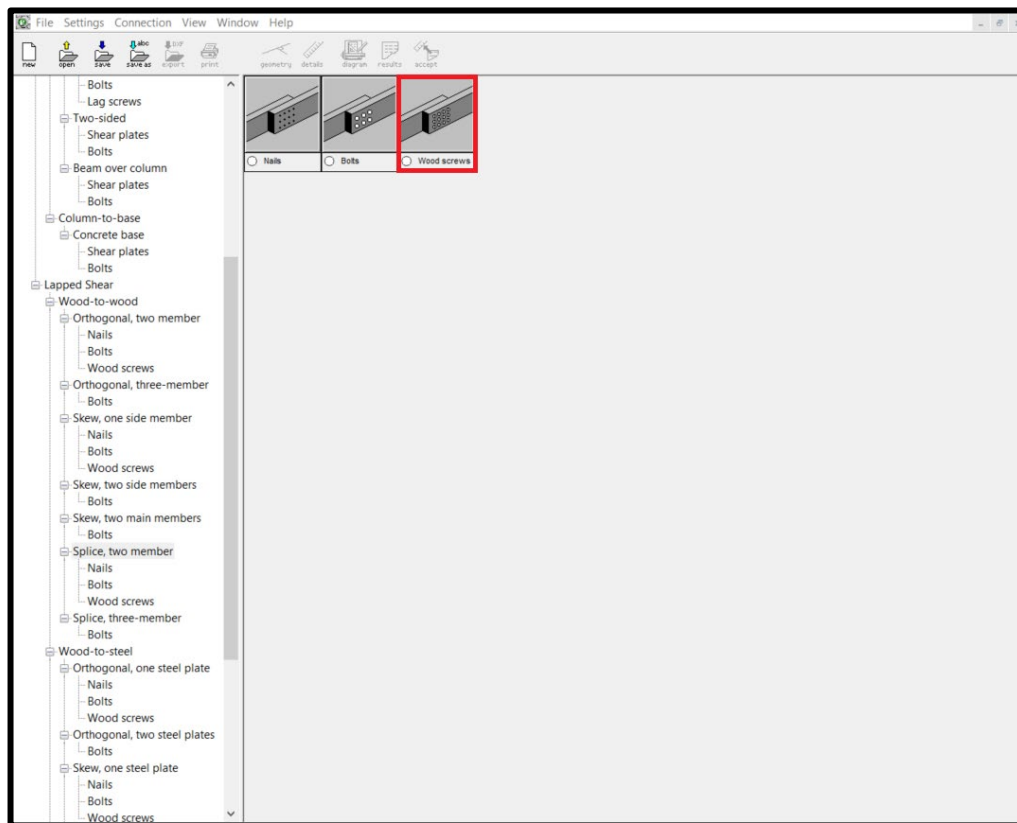


Figure 1: *Connections Tutorial 3 – Selecting Screw Splice Connection*

3.4 Connection Details

3.4.1 Main Member

1. Specify **Material** to **Lumber-soft**.
2. Specify **Species** as **S-P-F**.
3. Specify **Grade** as **No.1/No.2**.
4. Specify **Thickness** as **2 (in.)**.
5. Specify **Width** as **6 (in.)**.

The screenshot shows a software interface for configuring a Main Member. The interface is divided into two tabs: 'Main' and 'Side'. The 'Main' tab is selected. The form contains the following fields and options:

- Name:** Main
- Material:** Lumber-soft
- Species:** S-P-F
- Grade:** No.1/No.2
- Thickness:** 2 in.
- Width:** 6 in.
- Ply:** (greyed out)
- End Type:** Overlap
- Overlap:** 0.0 in.
- Moisture Content:**
 - In-Service: Dry
 - Fabrication: Dry
- Temperature (deg. F):** T < 100F
- Fire Retardant:**
 - Fire treatment factor: [not active]
- Loads (lbs):**
 - Force: 0
 - Duration: (greyed out)
 - Force: 0
 - Duration: (greyed out)

A 'Run Design' button is located at the bottom left of the form.

Figure 2: Connections Tutorial 3 – Main Member Details

3.4.2 Side Member

1. Specify **Material** to **Lumber-soft**.
2. Specify **Species** as **S-P-F**.
3. Specify **Grade** as **No.1/No.2**.
4. Specify **Thickness** as **2 (in.)**.
5. Specify **Width** as **6 (in.)**.
6. Specify **End Type** as **Unknown**.
7. Specify **Overlap** as **0.0 (in.)**.
8. Specify a **Force** of **2000 (lbs)**.

The screenshot shows a software interface for configuring a Side Member. It features two tabs: 'Main' and 'Side'. The 'Side' tab is selected. The interface is divided into two columns of input fields. The left column contains: Name (text box with 'Side'), Material (dropdown menu with 'Lumber-soft'), Species (dropdown menu with 'S-P-F'), Grade (dropdown menu with 'No.1/No.2'), Thickness (dropdown menu with '2' and 'in.'), Width (dropdown menu with '6' and 'in.'), Ply (dropdown menu), End Type (dropdown menu with 'unknown'), and Overlap (text box with '0.0' and 'in.'). The right column contains: Moisture Content (In-Service: dropdown with 'Dry', Fabrication: dropdown with 'Dry'), Temperature (deg. F) (dropdown with 'T < 100F'), Fire Retardant (Fire treatment factor: dropdown with '[not active]'), and Loads (lbs) (Force: text box with '2000', Duration: dropdown with 'Ten Years'). A 'Run Design' button is located at the bottom left of the interface.

Figure 3: Connections Tutorial 3 – Side Member Details

3.4.3 Screw Details

1. Specify a **Wood Screw Gauge Number** of **8**.
2. Specify a **Wood Screw Length** of **2-1/2 (in.)**.
3. Select the **Add Staggered Screws Between Rows** check box.
4. Leave all other parameters as **(unknown)**.
5. Click **Run** Design.

Wood Screw Gauge Number	8	▼	
Wood Screw Length	2-1/2	▼	
Number of Rows	(unknown)	▼	
Wood Screws Per Row	(unknown)	▼	<input checked="" type="checkbox"/> Add Staggered Screws Between Rows
Spacing Within Rows	(unknown)	▼	in
Spacing Between Rows	(unknown)	▼	in

Figure 4: Connections Tutorial 3 – Screw Details

3.5 Review and Accept Design Results

Once the design has been run, it is possible to review the **Diagram**, **Results** and **Accept** the design. For this example, thirty-two 2-1/2-inch screws were found to be adequate in resisting the specified load. Both the **Diagram** and **Results** can quickly be printed using the **Print** icon.

Click [here](#) to download a PDF of the design results.

Click [here](#) to download a PDF of the diagram.

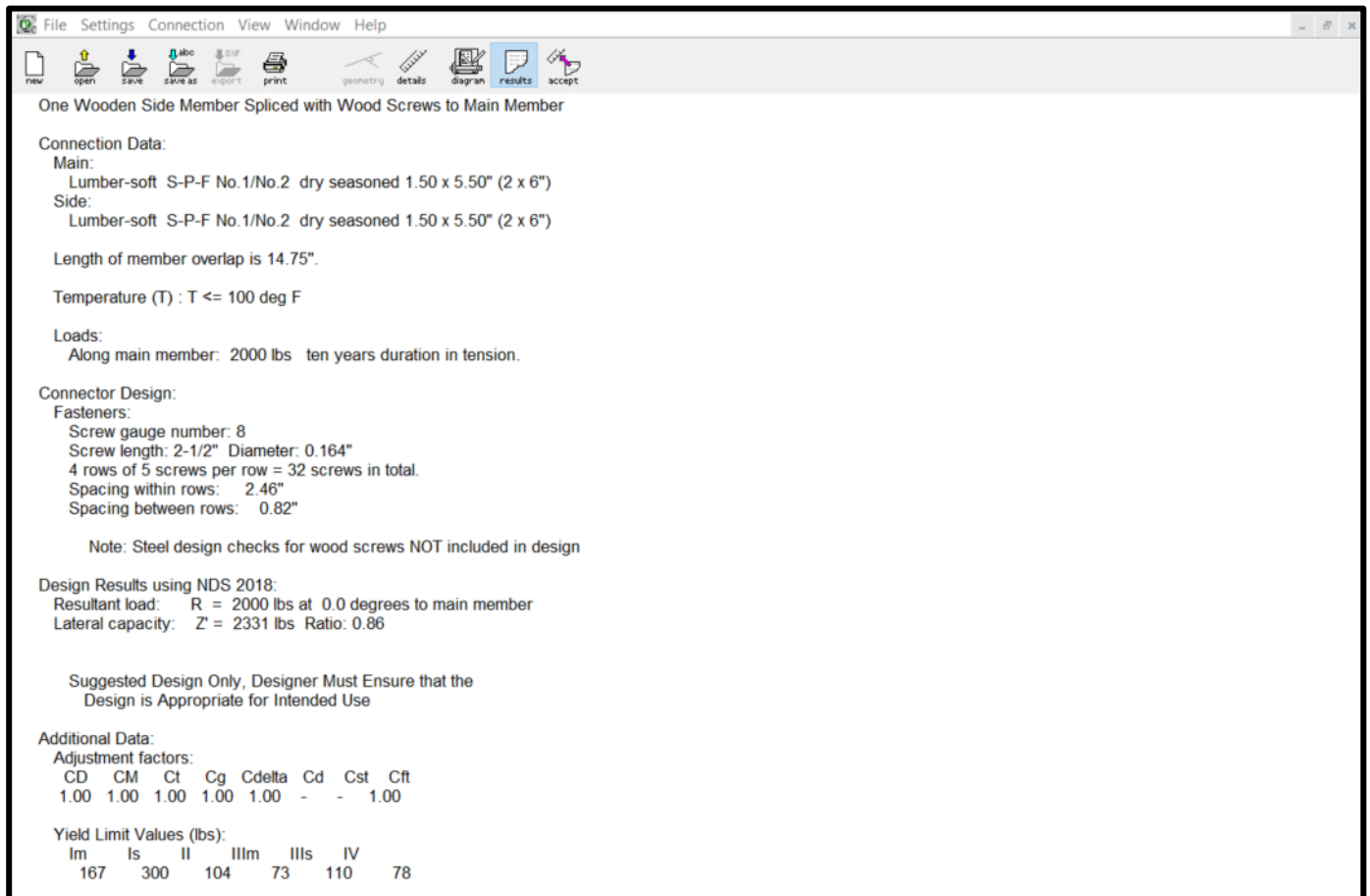


Figure 5: *Connections Tutorial 3 – Review Results*