MATERIAL PLATE WASHER OPTIONS

In SDS/2 v2020, you can add in a plate washer as a material plate. The new material plate washer will be add in the model as a piece of rectangular plate material. Because of this, the material will have a piecemark and be listed separately in the bill of material(BOM). This material plate also has different options on how to combine the material to cover more than just single holes in the connection.
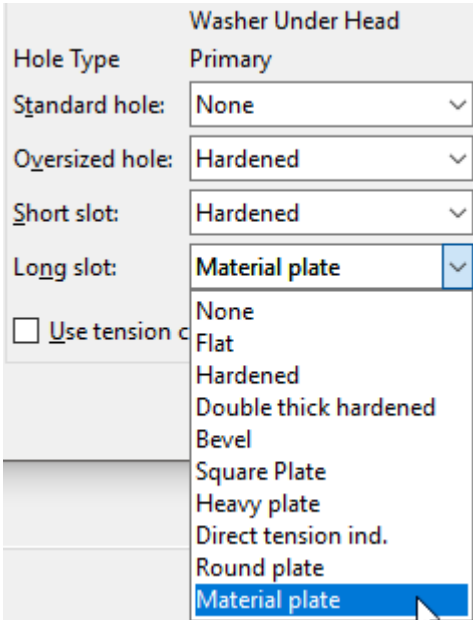
SETUP

Figure 1: Washer Criteria

You can setup material plate washers by going to **Washer Criteria** in your **Job Setup** options. In the washer drop-downs for the under head and under nut washer options, you now have a washer type called **Material plate**, as shown in Figure 2. The thickness for the material plate washers are controlled in the washer thicknesses section at the top. Material plate washers have setup to control other options in the **Material Plate Washers** button in the upper right of the *Washer Criteria* window.

The *Material Plate Washer* window will give you the option to make the material plate washers one combined plate or separate plates by checking on the option to *Combine material plate washers.*

When combined, you can choose *Combine to* options of *Strips* or *Single plate*; this applies when you have multiple columns of bolts in a connection. *Strips* will make separate plates that cover each column of bolts separately, while *Single plate* will make a single plate large enough to cover all rows and columns,(see Figures 3, 4, and 5)
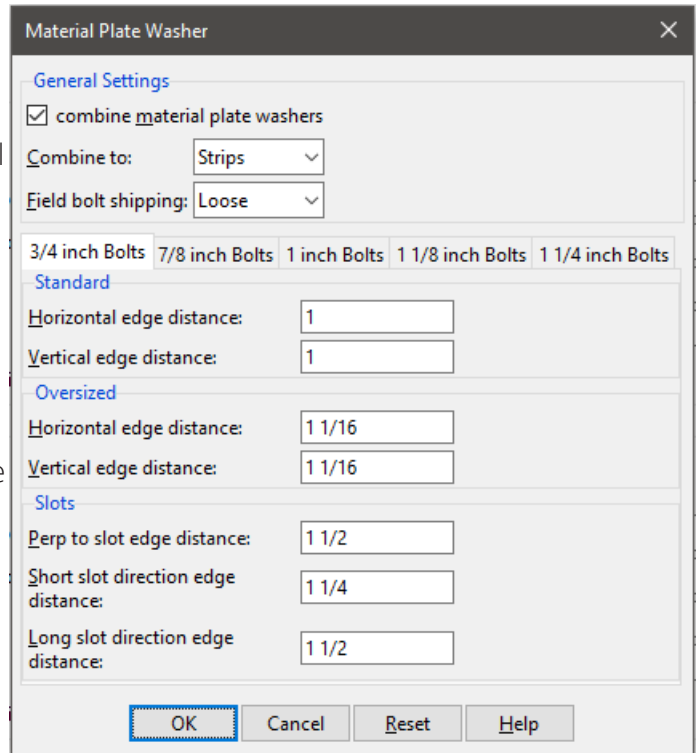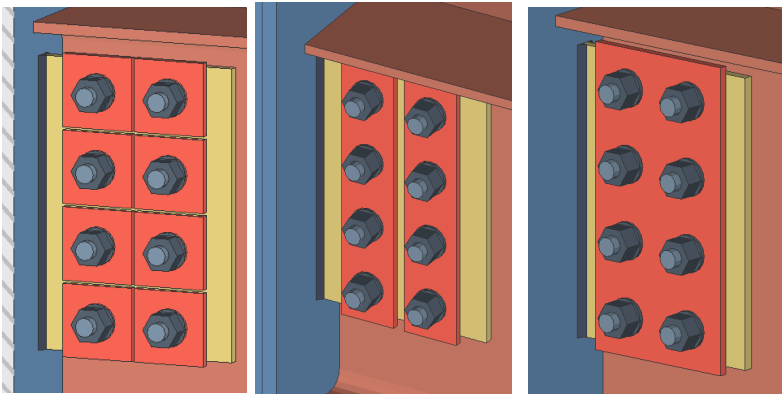
Figure 2: Material Plate Washers Setup

Figure 3: Material Plate Washers

Figure 4: Strips

Figure 5: Single Plate

Field bolt shipping controls how the plate washers are defined within the model and BOM when the plates are added to field bolted holes. *Loose* will break the plate washer material off into their own Miscellaneous members. *With Member* will list the plate washers on the member that the bolt will be listed on. Field bolted holes follow the **Bolt Detailing/Fabrication Options** for *List field bolts on:,* whether it is set to *Supporting* or *Supported* will control the member to which the washers are attached.

You also have control over the vertical and horizontal edge distances for the material plate washers being generated by the hole types for each bolt size. For slots, you have the edge distance in the direction that the slots — both short and long — are running, and the edge distance perpendicular to the slot direction to control the plate sizes.

The Plate washers will also use any flat bar size in your **Miscellaneous Connection Material - Flats** list if it finds one with the same size. In that case, you will get flat bar descriptions and callouts.

MODELING
You can manually add a material plate washer to a user added bolt, or a bolt that does not have one in the model, by editing the bolt. In the Bolt Edit window, you can set the washer type to Material plate washer just like in washer criteria. You can also control the plate washer edge distances, and whether to combine material plate washers in that hole group, and how to combine them.

Figure 6: Bolt Edit Window

User added bolts to user modeled material can also have the plate washers combined for each hole group added.

NOTE: IT CAN ONLY COMBINE THE PLATE WASHERS BETWEEN HOLES IN THE SAME HOLE GROUP.

For a member that has the *Break Apart* check box checked on, the material plate washer will be broken off as its own miscellaneous member, just like any other bolted material.
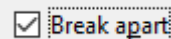
DRAWING EDITOR

The member detail for members that have material plate washers will list the plates with the rest of the member's material in the BOM, as shown in Figure 7.

Bill of Material

LINE #	QTY TOTAL	PC MARK	DESCRIPTION	LENGTH	REMARKS	WEIGHT TOTAL	ADVANCE MILL #	QTY UNIT	WEIGHT UNIT	MINOR MARK	STEEL GRADE	
1		1	B_22	BEAM			938			938			1
2		1	W18x35	24-6 1/4		858		1	858	B_22	A992	2
3		1	L3 1/2x3x5/16	10		6		1	6	a11	A36	3
4		1	L3 1/2x3x5/16	10		6		1	6	a12	A36	4
5		1	PL3/8x11	1-10 7/8		27		1	27	p16	A36	5
6		1	PL3/8x9 7/8	2-9 1/2		35		1	35	p15	A36	6
7		2	PL5/16x3	9		5		2	2	p76	A36	7
8		3	3/4 Dia A325		2+1HD WASH	2		3	1			8
9												9
10			FIELD BOLTS									10
11		6	3/4 Dia A325		2 1/4+1PL,1HD WASH							11
12		6	3/4 Dia A325		1 3/4+1HD WASH							12

Delete Line(s) Move Up Move Down Add Line Insert Paste Overwrite Paste Copy Line(s) Unhide Line OK Cancel Reset Help

Click on a row number to select it Click and drag to select multiple rows

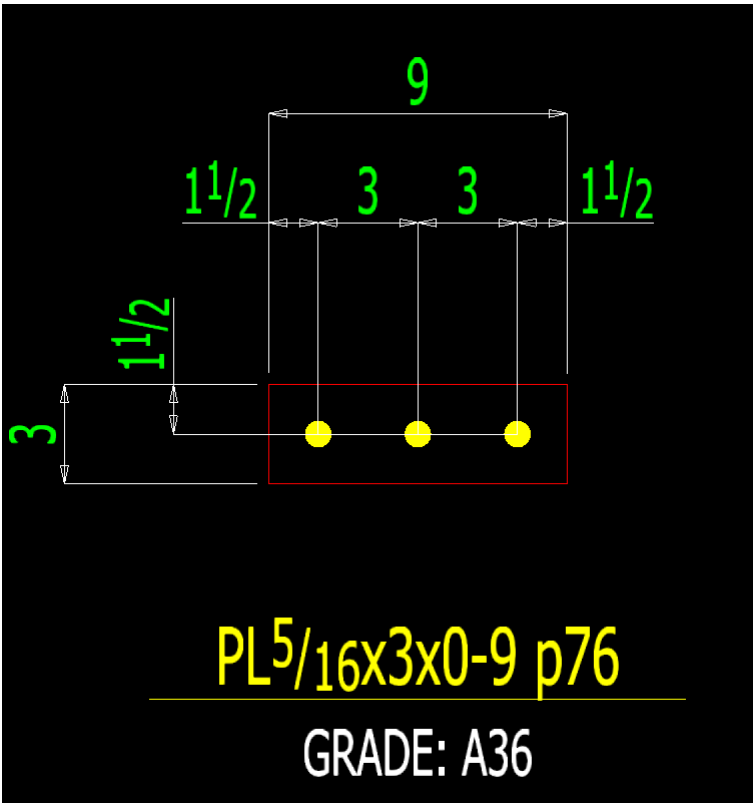Figure 7: Bill of Material

The material will also have its own submaterial detail.

Figure 8: Submaterial Detail