Filters

Create logic rules

Trimble.

Filters.

Filters are an important concept and tool to get your heads around early on in the use of Tekla Structures.

Filters allow you to create logic rules which need to be met in order to achieve the desired results.

You can find more detailed information on how filters work and are used in the system in Tekla User Assistance.
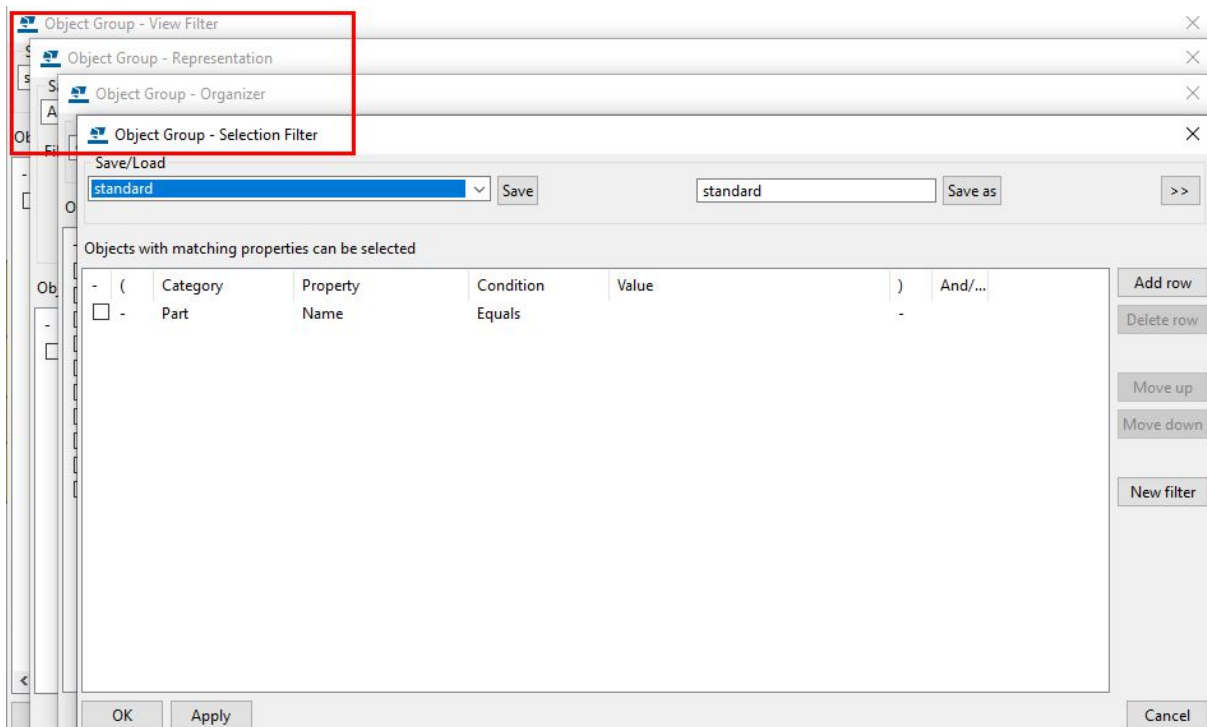Here are some useful links:

https://teklastructures.support.tekla.com/2020/en/gen_filter_objects
https://teklastructures.support.tekla.com/2020/en/gen_example_filters

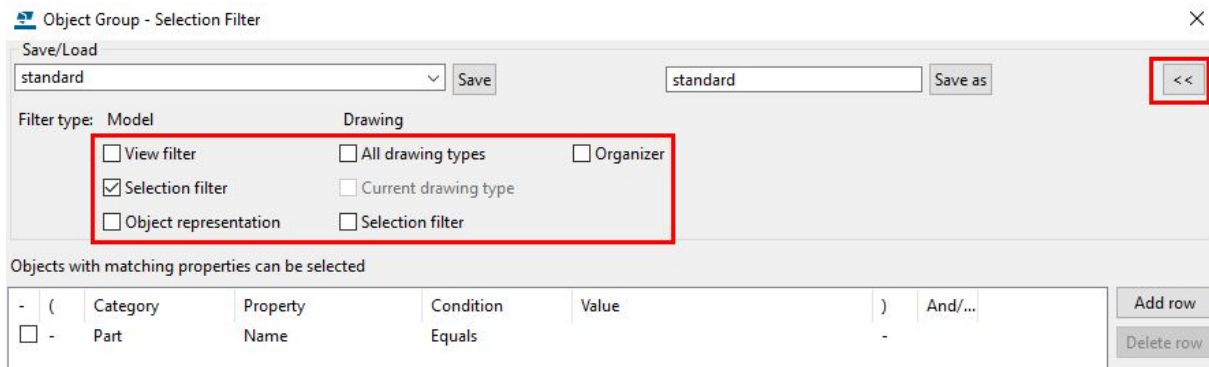They are used by most facets of the software and for many different uses.
- In the model view area to visualise required objects.
- To hide objects from the view in order to set up drawing content.
- By selection in order to generate reports
- As rules for object representation to visually portray information easily
- In Drawings to create line representation, mark type and style etc.

There are many different types of filters which can be created which are specific to the area in which they can be used. Bear in mind that some of these do cross over.

For example - When you create a Selection filter in the model area it will also be available to select in the Organiser and in Drawings.

You are also able to create a filter in one Filter type and at the point of saving select to save it as other filter types. Using the >> to open a save type checkbox area.

Creating the Filter

Once again, depending on your environment, you will have many pre-set filters which are available to you to use. These may be enough in order to continue on so we will check them first.

We will also be using the Naming and Numbering conventions checklist which we created in the preceding tutorial. This is where we will fill out the Filters column of the table.
Note: you do not have to use the spreadsheet but it is recommended for traceability that you have something in place for this.

Object Type	Name	Part Prefix	Part Start Number	Assembly/Cast Unit Prefix	Assembly/Cast Unit Start Number	Filter	Drawing Object Setting
Steel Beam	Beam	M	1	B	1	Add used filter here	(used in later tutorial)
Steel Column	Column	M	1	C	1		
Steel Rafter	Rafter	M	1	R	1		
Steel Purlin	Purlin	M	1	PN	1		
Concrete Beam	Beam	-	-	CB	1		
Concrete Column	Column	-	-	CC	1		
Concrete Pile	Pile	-	-	CP	1		
Concrete Ledge Beam*	Ledge Beam	-	-	LB	1		

* This entry was added from the previous tutorial and will be used in this section to create a filter. Note: Always keep your Drawing Office Standards up to date.

In this section, we will be focusing on the use of filters to create the drawings style. This will lead to the final stage of the setup tutorial.
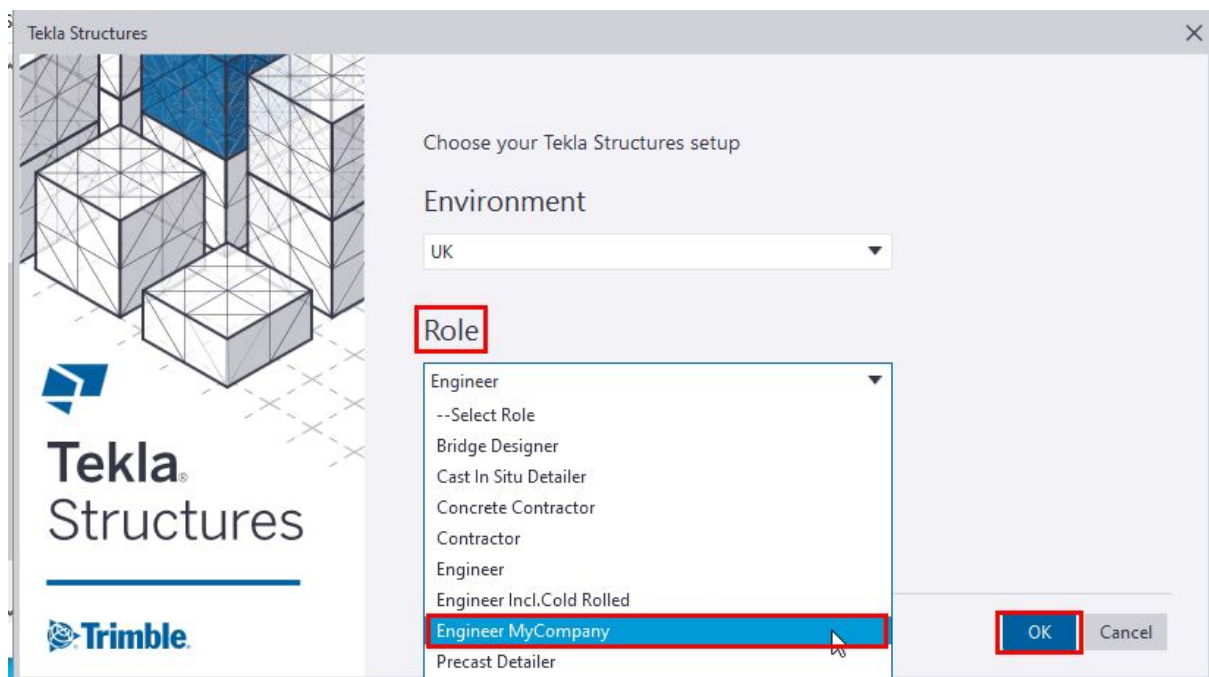
We will do this using the Selection filter and test them working in the model area. Then save them to the Firm folder.

The most efficient way to do this is to modify an existing filter which currently works for a standard pre-defined object. Such as a Beam or Column. All we have to do in this situation is to change the relevant property from Beam to the desired property.
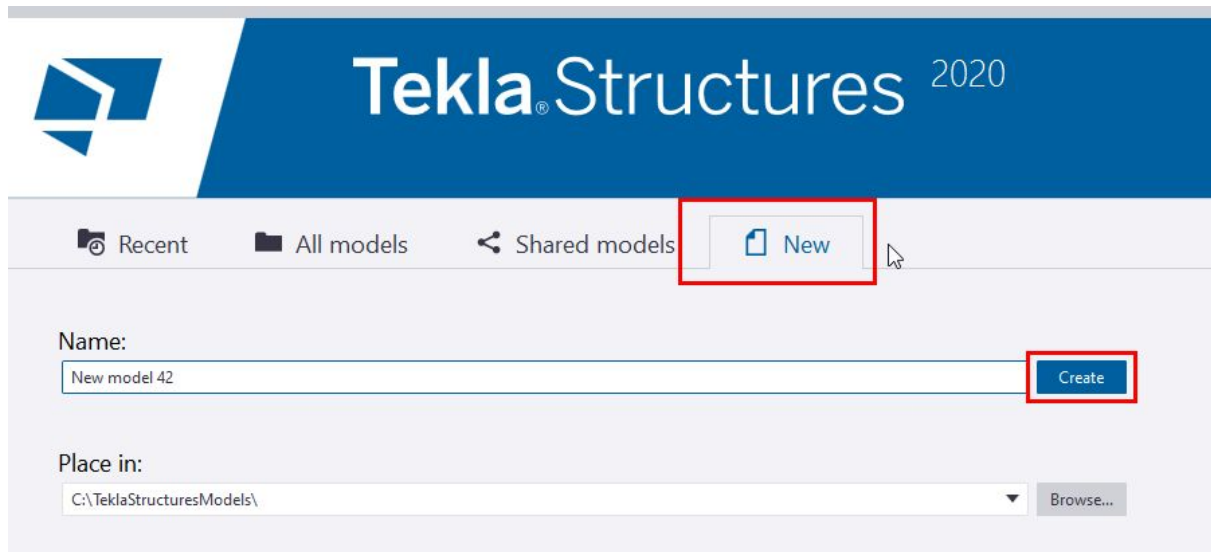
Tutorial.
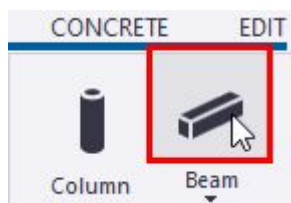
Step 1.

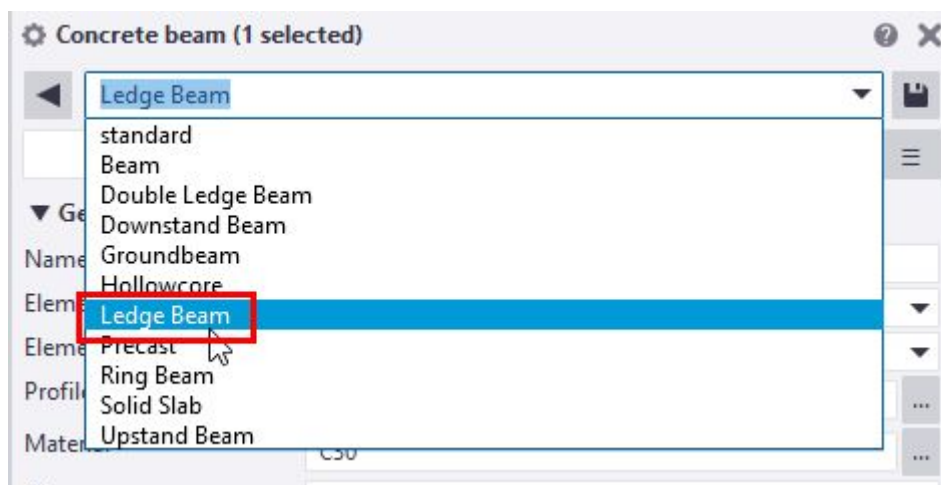Open Tekla Structures using your role.

Create a new model.

Tekla Structures 2020

Recent   All models   Shared models   New

Name:
New model 42   Create

Place in:
C:\TeklaStructuresModels\

Note: The model name is not important.

Select the Concrete Beam tool.

CONCRETE   EDIT
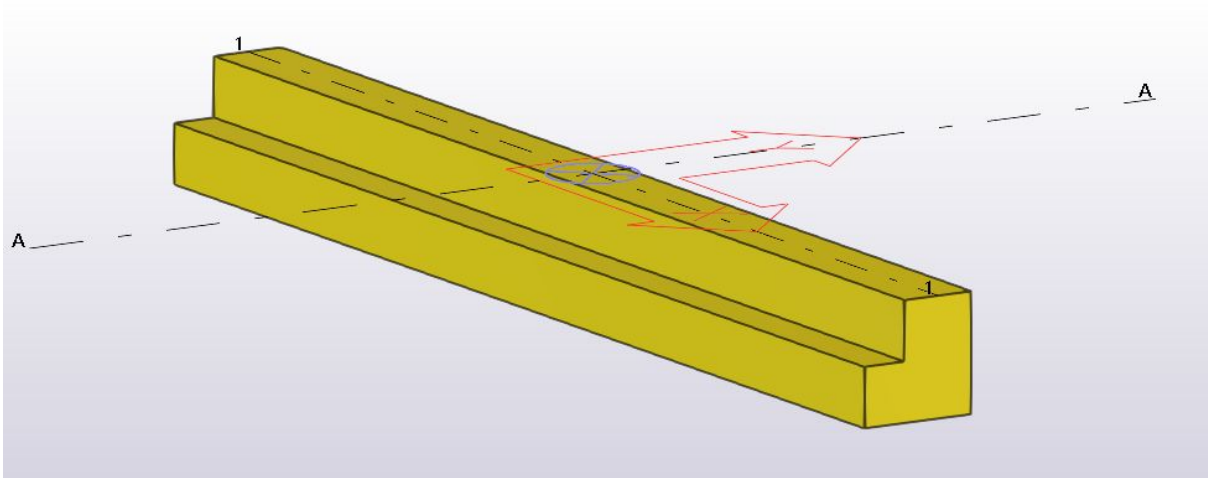
Column   Beam

In the Concrete Beam properties load dropdown, select the Ledge Beam setting created and saved in the previous stage.

Concrete beam (1 selected)

Ledge Beam

standard
Beam
Double Ledge Beam
Downstand Beam
Groundbeam
Hollowcore
Ledge Beam
Precast
Ring Beam
Solid Slab
Upstand Beam

Model in the beam.

Step 2.

Open the select filter on the select toolbar at the bottom of the Tekla Structures screen.

Selection filter (Ctrl+G)

Open the **Object Group - Selection Filter** dialog box where you can adjust selection filter settings and control which objects can be selected.

Tip: Use the selection filter together with the selection switches.

Press **Ctrl+F1** for more help on this.

Object Group - Selection Filter

Save/Load

| standard | | Save | | standard | Save as | >> |

Objects with matching properties can be selected

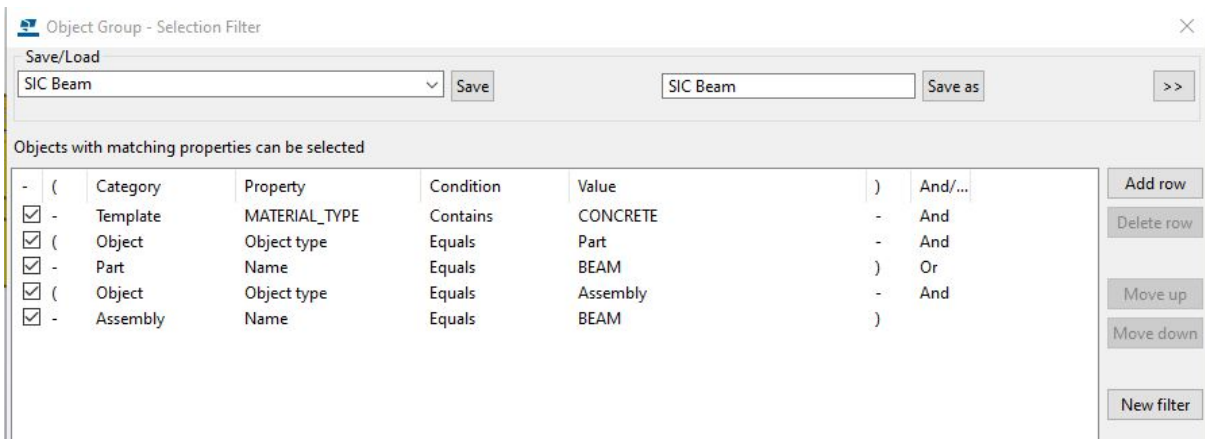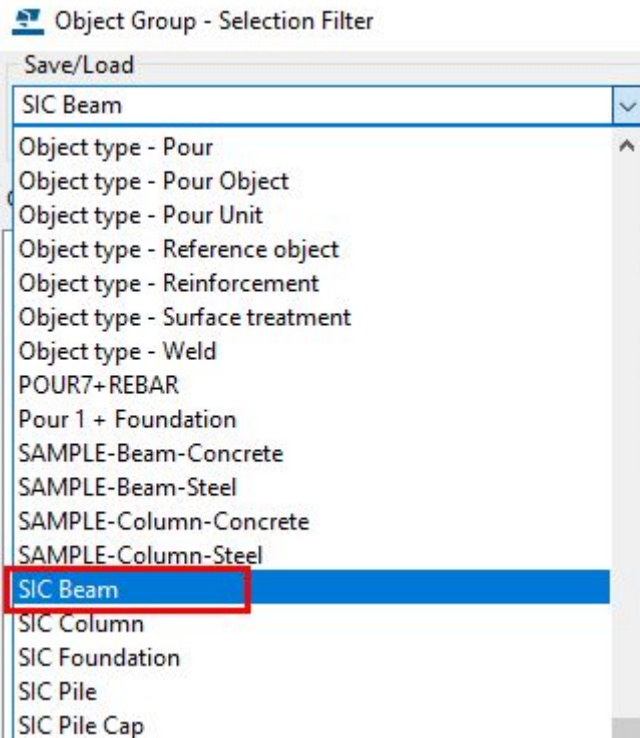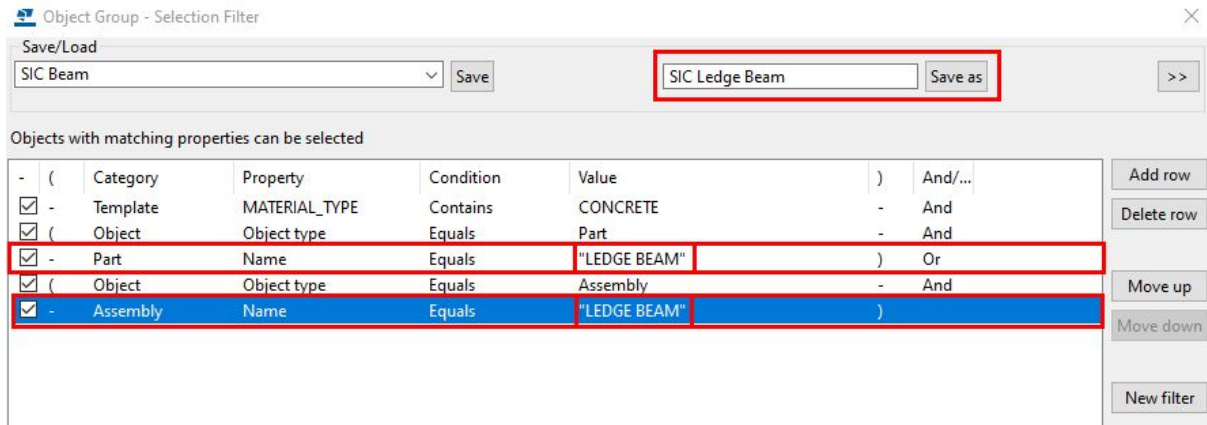| -	(	Category	Property	Condition	Value	)	And/...	
☐	-	Part	Name	Equals			-	Add row
								Delete row
								Move up
								Move down
								New filter

OK   Apply   Cancel

Select the load dropdown and select Concrete Beam filter (UK) or equivalent for your environment.

Change the value for the Property "Name" to the desired value "LEDGE BEAM" and Save as required.

If there is not an existing filter in your country's environment then you are able to follow these simple steps to create a new filter from the beginning.
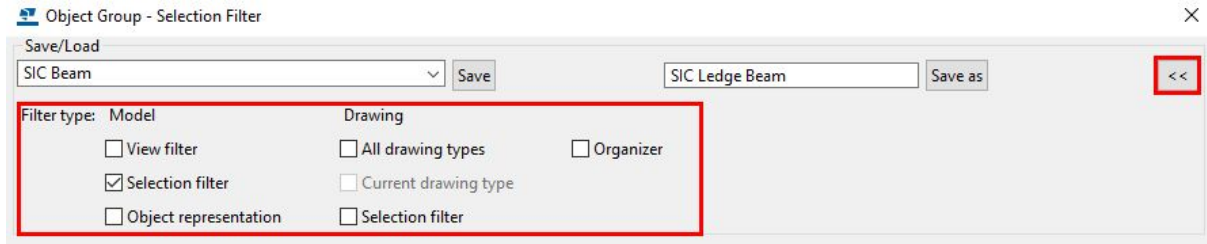
-	(	Category	Property	Condition	Value	)	And/Or
✔	-	Template	MATERIAL_TYPE	Contains	CONCRETE	-	And
✔	(	Object	Object Type	Equals	Part	-	And
✔	-	Part	Name	Equals	"LEDGE BEAM"	)	Or
✔	(	Object	Object Type	Equals	Assembly	-	And
✔	-	Assembly	Name	Equals	"LEDGE BEAM"	)	

Note: LEDGE BEAM is in " " as the naming convention given has a space between the words and is, therefore, the string "LEDGE BEAM".
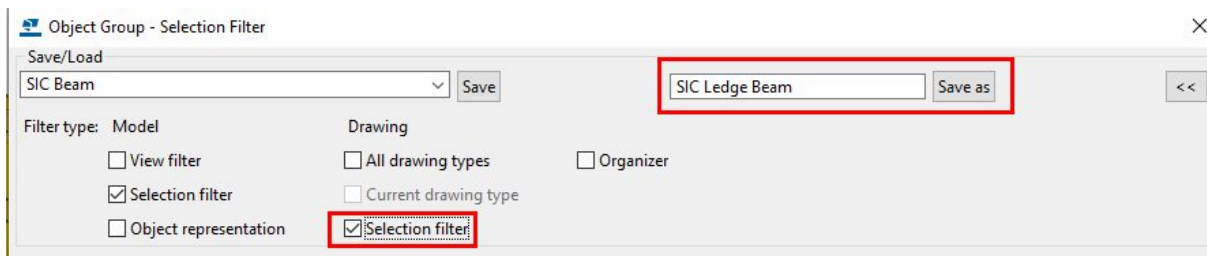
The purpose of this filter is to select only objects that are Concrete. The 2nd and 4th rows are setting the conditions to pick up either parts or assemblies in the model and the 3rd and 5th set the respective object types name designation to be Ledge Beam.

Step 3.

Once the properties of the filter are set, select the >> button.
This opens the additional filter type area.

Model - Selection filter will be selected as default.
Also select - Drawing - Selection filter. Click Save as.

Step 4.

In the Naming and Numbering conventions sheet add this filter name and any others you are
going to use or have created.
Note: You do not need to create again from the beginning, just select one you have already
set up and change the Name in the Value column as in Step 1 and 2 and then Save with an
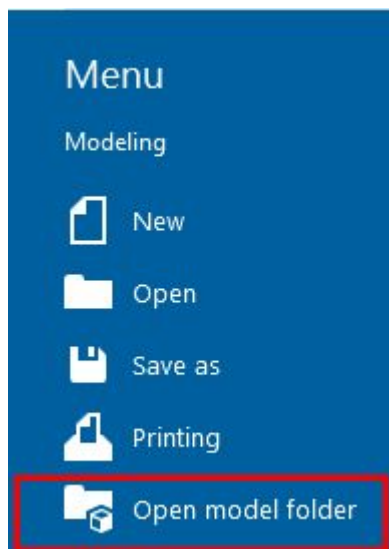appropriate name.

Object Type	Name	Part Prefix	Part Start Number	Assembly/Cast Unit Prefix	Assembly/Cast Unit Start Number	Filter	Drawing Object Setting
Steel Beam	Beam	M	1	B	1	SS Beam	(used in later tutorial)
Steel Column	Column	M	1	C	1	SS Column	

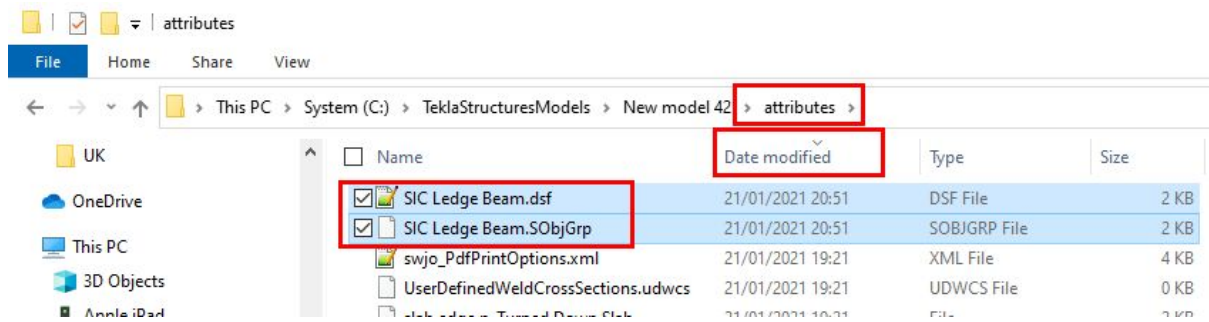| Steel Rafter	Rafter	M	1	R	1	SS Rafter	
Steel Purlin	Purlin	M	1	PN	1	SS Purlin	
Concrete Beam	Beam	-	-	CB	1	SIC Beam	
Concrete Column	Column	-	-	CC	1	SIC Column	
Concrete Pile	Pile	-	-	CP	1	SIC Pile	
Concrete Ledge Beam*	Ledge Beam	-	-	LB	1	SIC Ledge Beam	

Step 5.

Once complete, add the information to the Naming and Numbering conventions spreadsheet and then move the file from the model/attributes folder to your firm folder.

Open the model folder.

Open the attributes folder and sort by date modified. Select the ALL the created filter files.
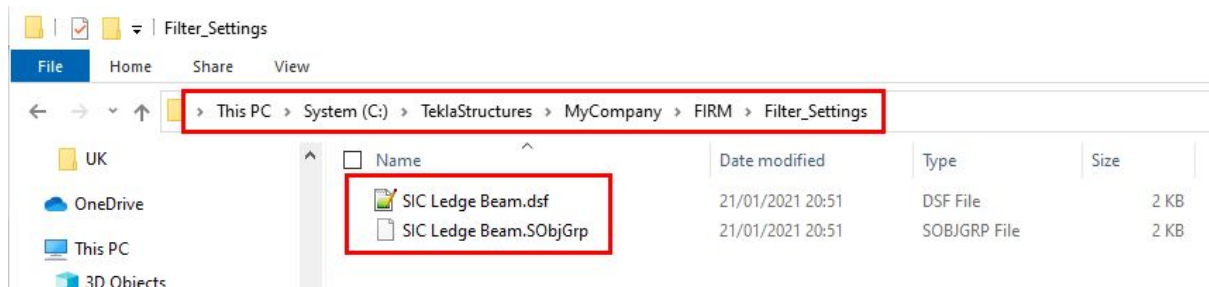

Note: Depending on the types of filters you selected to Save as there could be many to select. Look for all those which share the correct file names.

You can find more information on file types and extensions in Tekla User Assistance. https://teklastructures.support.tekla.com/2021/en/sys_files_and_file_extensions?da=GUID-F9C1DB0A-D734-402C-9E65-99E2CE25F864

Cut these files from the folder and add them to your firm folder in the Filter_Settings folder.

These files will now be available for all models.