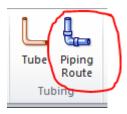
# Using PipeClass.txt for Solid Edge piping

This tech tip will look at using the Solid Edge piping tool to help you design the route and place fittings/components from your library.



The piping tool is to design system of pipes and components used for Industrial processes. Major difference compared to the tube tool is the pipe diameter and wall thickness used. Piping is used for large diameters and wall thickness and for bends, T-connections and for the mounting all kinds of appendages.

# **Configure standard parts**

It is recommended to configure the standard parts database first before start working with piping route. Use the smart installer to add the piping components you need for your design and select only those standards that are need. It's a common misunderstanding that "installing everything" is the best way to setup. Too many parts in the database will drop performance and makes it very hard to find your components.

It's possible to setup multiple databases for standard part by using the database manager in the standard parts administrator. E.g. you can create a separate database for plastic components or cast iron fittings only. This will make it easier to manage and work with the tool.

The piping route tool will only use the "working database" for selecting components.

Database Manage	er	
🗋 New 🔹 Workir Database selection:	ng 😨 Migrate 🗙 Delete	
<ul> <li>Local database</li> <li>External network</li> </ul>	d-t-b	
	Gatabase	
Working database		
localhost [Piping (ST8)	)]	
Databases		
Name 🚔	Version	
Demo_ST8	ST8	
Piping	ST8	
SEEC_ST8	ST8	
StandardParts108	ST8	
	OK	Help

### PipeClass.txt

In the Solid Edge preferences folder there is a configuration file PipeClass.txt that is used to select fittings. It's recommended to configure this file and define your company standards in a PipeClass. You can back up the original PipeClass.txt and create an new file with only the classes you need.

Every PipeClass is defined in the same format. Lines that begin with // are not processed.

	Piping Options
BeginClass ClassName STANDARDS FITTINGS EndClass	Pipes         Pipe Location            Select from Standard Parts Likrary         Browne for pipes         Precently used         Standard:         Diameter:         100 mm         Material:         Tube DIN 2440 - DN 100         Verily availability of fittings         Pittings         Pittings         Pittings         Verily availability of fittings         Standard:         Diameter:         Of TAC Example PipeClass         Clast:         GTACE sample PipeClass         Octor Weld fittings         Select Weld fittings         Planged fittings
Lindenass	Companion flange:
	Show this dalog when the command begins."  "This dalog can be shown by clicking the Options button on the command bar.  OK Cancel Save as Default Help
The FITTINGS line has 3 columns:	
//	
BeginClass	
GTAC Example PipeClass	
STANDARDS "DIN"	
ELBOW SIMPLE TEE SIMPLE	"DIN EN 10253-1:1999" "" "DIN EN 10253-1:1999" ""
EndClass //	• 

## Fitting

Each of the fittings supported for placement by the pipe command is listed in UPPERCASE in the first column.

## Search Method

The second column defines the search method used. Currently only SIMPLE is supported which uses the strings in the following columns to search in the pipe fitting database. This field enables support for more sophisticated search methods in the future. Entries in this field must be in UPPERCASE. The quotes ("") at start and end of the string will be removed prior to searching the database.

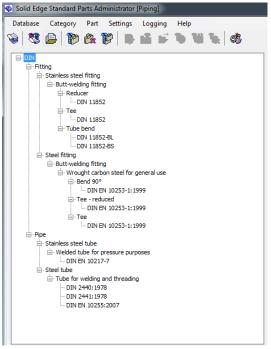
#### Search String

The third column is the search strings which are interpreted based on the search method and are appropriately applied to the piping database. You may define multiple strings in quotes and separated by spaces, like – "Class 25" "Malleable". A fitting will be selected which matches all the strings.

#### Example

For this example I've created a standard parts library with only a selection of pipes and fittings needed for my design.

With the installation of Solid Edge a pre-filled PipeClass.txt is delivered. The file is over complete and must be setup by the customer for his/her company standard. In this document I will use a very simplified class to explain the working.



// -----

BeginClass GTAC Example PipeClass STANDARDS "DIN" ELBOW SIMPLE "DIN EN 10253-1:1999" "" EndClass

// -----

#### Create a small path in piping route

( <u>Владияна)</u> на общатальната - в милостичната		
		-
No top tom part solutions.		
	_	Tee
To decign your piping route:	1	

To design your piping route:



- 1. Select "Piping Route"
- 2. The Piping Option Dialog is now shown

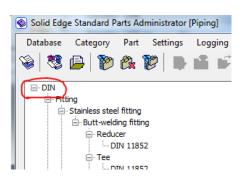
IN	Recently used:	
IN		
	•	
00 mm 🔻		
ube DIN 2440 - DN 100		•
	•	
TAC Example PipeClass		-
	<ul> <li>Butt weld fittings</li> <li>Flanged fittings</li> </ul>	Pipe penetration cuts
inge:		
	ally place fittings inlability of fittings DIN STAC Example PipeClass ) Threaded fittings ) Socket weld fittings	cation trom Standard Parts Lbrary  Browse for fittings ably place fittings Things INN Threaded fittings Socket weld fittings Butt weld fittings

The user has to define the pipe standard, diameter and material first.

Pipe Location Select from Standard Parts Library	O Browse for pipes
	Recently used:
Standard: DIN	•
Diameter: 100 mm 🔹	
Material: Tube DIN 2440 - DN 100	•

Selection in the 3 fields are working top down; e.g. the selection of the diameter will drive available field in the material drop down.

Standard -> "DIN"; this will select the main standard.



Diameter -> "100"; this is the selection of the outside diameter range.

Nominal size (DN)
6
8
10
15
20
25
32
40
50
65
80
100
125
150

Material -> based on the selection of the "Diameter" a list of available pipes is in the dropdown list. With the selection will define the diameter and wall thickness for the pipe run.

Pipes Pipe Loc	ation			
Sele	ct from Standard Parts <u>L</u> ibrary	Browse for pip	es 🗀	
		Recently used:		~
Standard:	DIN	•		
Diameter:	100 mm 👻			
<u>M</u> aterial:	S tube - 4 - H - EN 10255 S tube - 4 - H - EN 10255			•
Sele ✓ Automa ✓ Verify a Standard: Class:	$\begin{array}{llllllllllllllllllllllllllllllllllll$	, 1-7 1-7 1-7 1-7		
	dialog when the command beg			

Part name	Nominal size (DN)	Outside diameter	Wall thickness
Tube DIN 2440 - DN 6	6	10,2	2
Tube DIN 2440 - DN 8	8	13,5	2,35
Tube DIN 2440 - DN 10	10	17,2	2,35
Tube DIN 2440 - DN 15	15	21,3	2,65
Tube DIN 2440 - DN 20	20	26,9	2,65
Tube DIN 2440 - DN 25	25	33,7	3,25
Tube DIN 2440 - DN 32	32	42,4	3,25
Tube DIN 2440 - DN 40	40	48,3	3,25
Tube DIN 2440 - DN 50	50	60,3	3,65
Tube DIN 2440 - DN 65	65	76,1	3,65
Tube DIN 2440 - DN 80	80	88,9	4,05
Tube DIN 2440 <mark>- DN 100 -</mark>	100	114,3	4,5
Tube DIN 2440 - DN 125	125	139,7	4,85
Tube DIN 2440 - DN 150	150	165,1	4,85

3. Next step is the fittings selection

The selected standard will filter the available classes according the STANDARDS in the PipeClass.txt

		atically place fittings		
		availability of fittings		
	Standard:	DIN	▼	
-	Class:	GTAC Example PipeClass		•
		Threaded fittings Socket weld fittings		Pipe penetration cuts
			Flanged fittings	
7			- rianged littings	
//	 ass			
_	ass ample Pip			
-	ample Pip		- rianged likings	

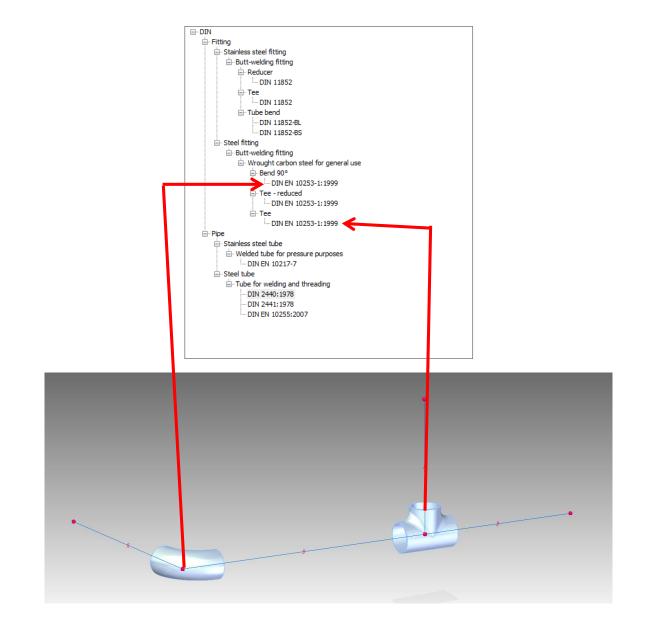
In this class I defined two types of fittings: Elbow and Tee

-	ELBOW		DIN EN 10253-1:1999	
---	-------	--	---------------------	--

How search is working:

- It will search the catefories only

- It will search for the string "DIN EN 10253-1:1999"



Because we don't have a filter on wall thickness it will use the first available fitting found in the list:

#### For the elbow

Part name	Nominal size (DN)	Outside diameter
💾 Elbow - EN 10253-1 type 3D - 90° - 108,0 x 3,6	100	108
Elbow - EN 10253-1 type 3D - 90° - 114,3 x 3,6	100	114,3
Elbow - EN 10253-1 type 2D - 90° - 114,3 x 3,6	100	114,3
Elbow - EN 10253-1 type 5D - 90° - 108,0 x 3,6	100	108
Elbow - EN 10253-1 type 5D - 90° - 114,3 x 3,6	100	114,3
Elbow - EN 10253-1 type 3D - 90° - 139,7 x 4,0	125	139,7
Elbow - EN 10253-1 type 2D - 90° - 139,7 x 4,0	125	139,7

#### For the tee

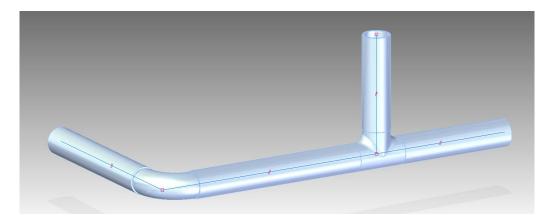
Part name	Nominal size (DN)	Outside diameter	Т
Tee - EN 10253-1 - 76,1 x 2,9	65	76,1	P
🎦 Tee - EN 10253-1 - 88,9 x 3,2	80	88,9	P
Tee - EN 10253-1 - 101,6 x 3,6	90	101,6	P
Tee - EN 10253-1 - 114,3 x 3,6	100	114,3	P
Tee - EN 10253-1 - 139,7 x 4,0	125	139,7	P
🎦 Tee - EN 10253-1 - 168,3 x 4,5	150	168,3	P
Tee - EN 10253-1 - 219,1 x 6,3	200	219,1	P
TTA EN 10252 1 272 0 4 6 2	250	272	п

#### Tip:

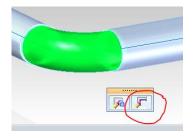
Only add those standard parts in your library that you use, otherwise you have to replace many fittings that are automatically placed! You can define multiple databases based on the Pipe Class you want to work with. Please note that the PipeClass.txt only search the working database.

4. Replace fittings

When you have finished the piping route you might want to replace some fittings because the selected one does not match your design. As yu can see in the screenshot the diameter of the elbow does not match the diameter of the tube.



Select the elbow and use 'Edit Fitting'



In the toolbar select 'Replace Fitting – select from standard parts library"



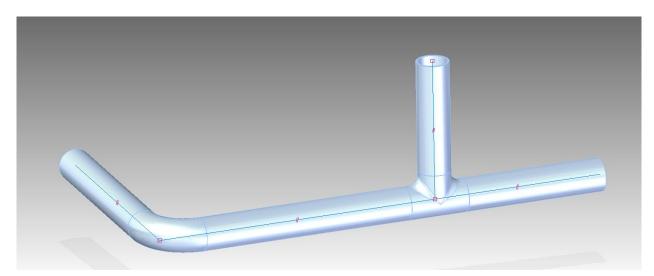
Now select the required fitting in the dialog

Standard Parts           View         Bookmarks         Tools         Help           Selecting Part         Standard Parts         Bookmarks			Selected Part Preview
Visual Categ. Specif. DIN ⊖ Fitting ⊕ Stanless steel fitting ⊕ Stanless steel fitting ⊕ Steel fitting ⊕ Wrought carbon steel for general use ⊕ Bend 90° □ DIN EN 10253-1:1999	Priority 1     Priority 1     Priority 1     Outside diameter     108     11433     Type     2D     5D     SD	Value Unit 100 mm mm	No preview available.
		Select	Cancel Help

## Use 'preview' to apply changes



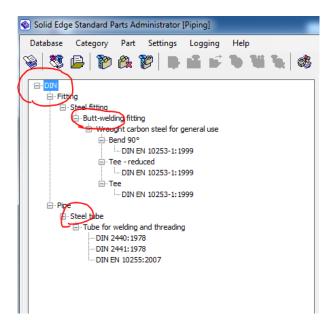
# And finish to complete the change



# PipeClass.txt FAQs

PipeClass.txt will search in the category name only

- Standard (e.g. DIN, ASME, ISO etc..)
- Material (e.g. Steel, Plastic etc...)
- Assembled (e.g. Butt-welding, Treaded etc...)
- No wall thickness, shape or pressure



The third column in PipeClass.txt is an 'AND' statement

In most cases you don't need this extra string to search. If the search string is not giving any result the class remains empty.

E.g. I used "DIN EN 10253-1:1999" AND "reduced" -> does not work because reduced tees don't have Nominal Diameter (DN) to select

PipeClass.txt will not select:

- Reduced Tees
- Vavles
- Y
- Returns
- ...

Be selective with adding parts to your library. Use the smart installer.

In many case users start with adding all components to the working database. This is not a good practice! It will slow down the standard parts library and you will end with endless search and browse actions to select components. Only install standards you need and select the components that are required for your design only. This need more time during the installation but will make the tool more useful for the end-users.