



Plumbing in Autodesk® Revit® MEP: You're No Longer Just a Subcategory MP1823

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Class Summary

This class is designed to improve design efficiency within Autodesk® Revit® MEP for the plumbing discipline.

Learning Objectives

At the end of this class, you will be able to:

- Create new Pipe System Types
- Utilize the 2013 pipe routing preferences
- Modify look up tables
- Map Pipe Connectors for proper flow
- Create Rough – in Schedules
- Utilize the Fixture Units
- Create plumbing groups for re-use

Pipe System Types - Definitions

System Classification

- Used in connectors and system browser
- Limited to:
Sanitary, Vent, Domestic Hot Water, Domestic Cold Water and Other

System Type

- Customizable
- Reference the system classification

Pipe Type

- Material Based
- Contain routing preferences

Pipe System Types – Creation and Usage

- Contain information on:

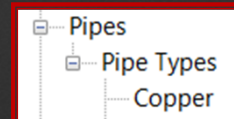
- Fluids
- Flow Conversion
- Symbology
- Abbreviations
- Graphic Overrides

Graphics	
Graphic Overrides	<input type="button" value="Edit..."/>
Materials and Finishes	
Material	<By Category>
Mechanical	
Calculations	All
System Classification	Domestic Cold Water
Fluid Type	Water
Fluid Temperature	60 °F
Fluid Viscosity	1.1211 cP
Fluid Density	62.360000 lb/ft³
Flow Conversion Method	Predominantly Flush Valves
Identity Data	
Abbreviation	CW
Type Comments	
URL	
Description	
Rise / Drop	
Two Line Drop Symbol	Yin Yang
Two Line Rise Symbol	Outline
Single Line Drop Symbol	Bend - ¾ Circle
Single Line Rise Symbol	Outline
Single Line Tee Up Symbol	Outline
Single Line Tee Down Symbol	Tee - Half Circle

- Piping Systems
 - Piping System
 - (P) Carbon Dioxide
 - (P) Cold Water
 - (P) Compressed Air
 - (P) Hot Water
 - (P) Hot Water (140)
 - (P) Hot Water (140) Recirculating
 - (P) Hot Water Recirculating
 - (P) Natural Gas
 - (P) Nitrogen
 - (P) Nitrous Oxide Piping
 - (P) Oil Interceptor Storm Water
 - (P) Oxygen
 - (P) Sanitary
 - (P) Storm Water
 - (P) Tempered Water
 - (P) Vacuum
 - (P) Vent
 - (WW) Wastewater
 - Domestic Cold Water
 - Domestic Hot Water
 - Fire Protection Dry
 - Fire Protection Other
 - Fire Protection Pre-Action
 - Fire Protection Wet
 - Hydronic Return
 - Hydronic Supply
 - Other
 - Sanitary
 - Vent

Pipe Routing Preferences

- Based on Pipe Material Types
- Not Specifically connected to one System Type or another.
- Allow for multiple pipe connection types, materials, or flanges based on size
- Segment description is an available field for scheduling.



The **Type Properties** dialog box shows the **Family** as **System Family: Pipe Types** and the **Type** as **Copper**. The **Type Parameters** table lists **Segments and Fittings** and **Identity Data**. The **Routing Preferences** dialog box is open, showing the **Pipe Type: Copper** and the **Segments and Sizes...** tab. The table below shows the routing preferences for Copper pipe segments and fittings.

Content	Min. Size	Max. Size
Pipe Segment		
Copper - K	1/4"	1"
Copper - M	1 1/4"	12"
Elbow		
Elbow - Generic: Standard	All	
Preferred Junction Type		
Tee	All	
Junction		
Tee - Generic: Standard	All	
Cross		
Cross - Generic: Standard	All	
Transition		
Transition - Generic1: Standard 2	All	
Union		
Coupling - Generic1: Standard 2	All	
Flange		
None	None	

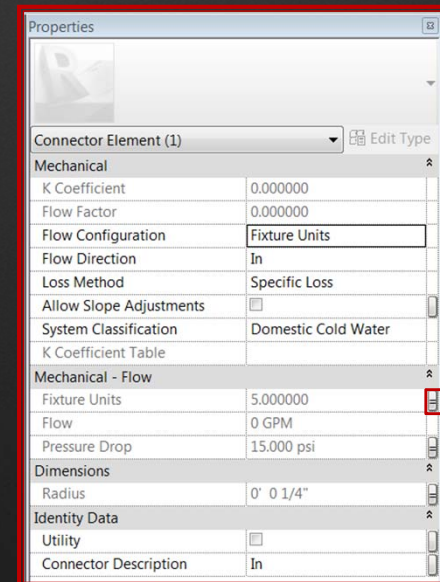
Modifying / Creating Look up Tables

- Use: Typically used for controlling multiple instance variables in pipe and conduit
- Components:
 - Lookup table .csv file
 - Path location available in the revit.ini file
 - Revit Family File .rfa
 - Lookup table referenced (with .csv extension) under "Other"
 - Parameters are instance parameters
 - Units of parameters must match .csv file ## formatting (i.e.. Length)



Connectors and Flow Information

- Connectors contain:
 - System Information
 - Flow Information
 - Pressure Drop Information
 - Size Information
- All information should be mapped to parameters



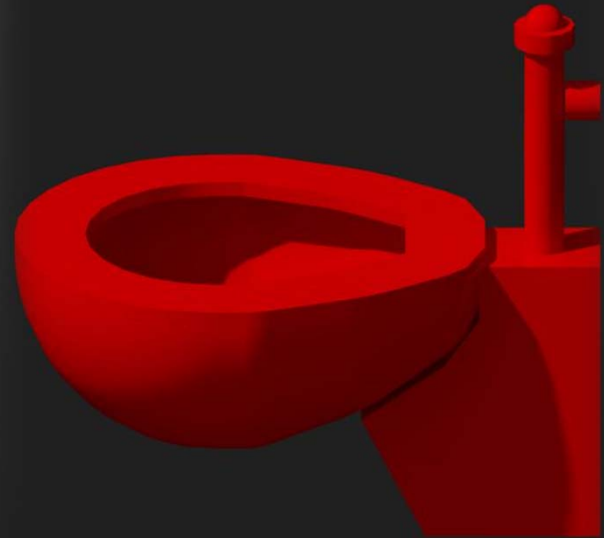
Tips For Sloped Piping

- Create a routing preference with correct fittings
- Ignore slope to connect
- “Toggle” to a tee
- Windows Tile, and “Walking Sections”
- Consider non-hosted families
- Start at the highest point and work backwards



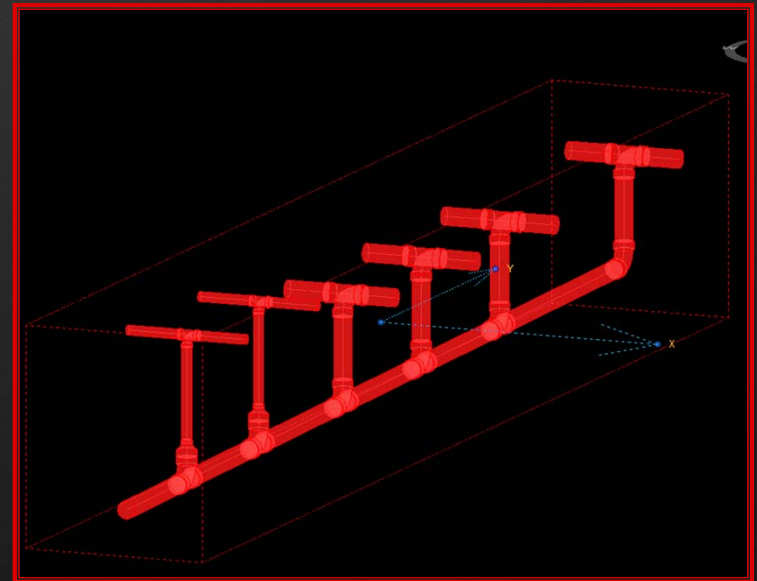
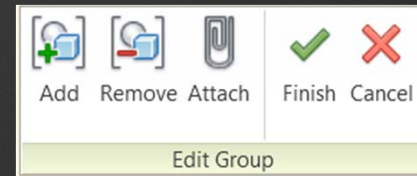
Fixture Units

- Utilize the information in the System type
 - Fluid
 - Flow Conversion
- Set at the connector element
- System MUST be closed



Plumbing Groups

- Repeating layouts can be reused on multiple levels
- Work best with un-hosted families
- Calculate flow and pressure drop information



Rough In Schedules

- Parameters – out of the box or custom – can be added to a schedule
- All data is pulled from the 3D fixture elements in the model
- Can be re-used on future projects
- Do not have to be stored in your model

PLUMBING FIXTURE SCHEDULE									
DESIG	TYPE	CONNECTIONS					BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	COMMENTS
		CW	HW	SAN	TW	VENT			
LAV-1	WALL MOUNTED LAV	1/2"	1/2"	1 1/2"	0"	0"	KOHLER	BRENHAM	
UR-1	WALL MOUNTED BACK OUTLET URINAL	1"	0"	3"	0"	0"	AMERICAN STANDARD	WASHBROOK	ADA Compliant
WC-1	WALL MOUNTED WATER CLOSET	1"	0"	3"	0"	0"	AMERICAN STANDARD	AFWALL	

Note: Save precious design time by filling out basis of design information in your families rather than inputting the data for every project

