OptiWater

optiDesigner ver. 1

Tips & Tricks

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Contents

How to design a parallel pipe?

In a case where there is an existing pipe and a parallel pipe is to be considered take the following steps:

- In the EPANET program enter the existing pipe with his known properties (diameter, roughness coefficient, length).
- Draw a parallel pipe with the same length and enter dummy data for the diameter and the roughness coefficient.
- In optiDesigner assign the design options to the parallel pipe and select it to be designed.
- No design options are needed for the existing pipe.

Pipes rehabilitation?

The rehabilitation of a pipe is reflected by the increasing of its roughness coefficient (CHw). To simulate the pipe rehabilitation enter a design option with the appropriate roughness coefficient and rehabilitation cost and then assign the design option to the pipe.

No pipe option

To give the “no pipe option” which means that the optiDesigner should consider not designing a new pipe you have to enter the following design option:

Description:	No pipe
Cost:	0
Diameter:	0
Roughness coefficient:	0

Since it is not allowed in EPANET to enter 0 as diameter and roughness coefficient,

optiDesigner will enter 0.1 for these parameters and will set the “Initial Status” to “closed”.

How to force an exact flow from a source?

If you want to simulate a source with a fixed flow take the following steps:

- In the EPANET program enter the source as a junction.
- Enter the source fixed head as the junction elevation.
- Enter the fixed flow as a negative demand.
- In optiDesigner enter the minimal pressure for the junction as 0 and for the maximal pressure enter a value close to 0 (0.3).
- Be sure to select the junction for design.

How to simulate load patterns?

To simulate load patterns all you have to do is enter them as patterns in the EPANET program. Set a pattern for the demands and for reservoirs heads. Be sure to run the system as an extended period simulation.

How to consider different soils?

The pipe installation cost varies from place to place. The cost of pipe installation in sand is different from the cost in hard rock. To take this different into consideration enter a design option for each soil with different cost:

Soil	Sand	Hard rock
Description	14in pipe in sand	14in pipe in hard rock
Cost	100	250
Diameter	14	14
Roughness coefficient	130	130

For each pipe assign the appropriate design option.