

FireFlow – User Manual

What is FireFlow

FireFlow is a Freeware, EPANET based tool, which will calculate the available flow at network junctions while a minimal pressure is kept at demand junctions. FireFlow can run in a steady state mode or perform an extended period simulation (EPS). Using the EPS mode you can find how long can a specified flow be delivered? Or, what is the maximal flow that can be delivered for a specified period?

FireFlow 2.10 by **OptiWater**
More products at: www.optiwater.com
FireFlow@optiwater.com

INP file name:

Output file name:

Minimal pressure: psi

Maximal flow: GPM

Flow interval: GPM

Find the duration that the required flow can be supplied while maintaining the minimum pressure
Required flow: GPM

Find the flow that can be supplied while maintaining the minimum pressure, for a required time
Required time: hours

Welcome to FireFlow!

This program was written by Elad Salomons. You can send bug reports and suggestions to fireflow@optiwater.com

How to use FireFlow

1. Build the network with EPANET and export it to an INP file by using the "File-> Export-> Network" menu.
2. Use each INP file in a different directory.
3. Run the FireFlow program.
4. Select the INP file by clicking the "File" button.
5. Select the junctions that have no pressure constraints or a special one. If you don't enter a value for the minimal pressure at a junction, the default value will be used. This information will be saved in a file named "NoCheck.txt" and will be located in the INP file directory.

Junction ID	Exclude	Minimal Pressures
10	<input type="checkbox"/>	
11	<input type="checkbox"/>	
12	<input type="checkbox"/>	
13	<input type="checkbox"/>	80
21	<input checked="" type="checkbox"/>	
22	<input type="checkbox"/>	
23	<input type="checkbox"/>	
31	<input type="checkbox"/>	
32	<input type="checkbox"/>	105

Select the junctions that are to be excluded from the pressure constraints (for example: the junction near a tank with normal low pressure)

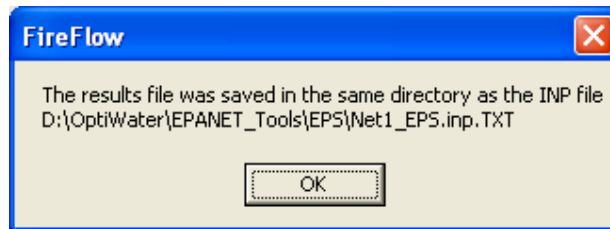
Enter specific pressure constraints for junctions to override the default value.

Minimal pressures file:
E:\EPANET_Tools\Steady\MinPressures.txt

Junction to exclude file:
E:\EPANET_Tools\Steady\NoCheck.txt

OK Cancel

6. Set default the minimal pressure by entering a value in the "Minimal pressure" text box. This information will be saved in a file named "MinPressures.txt" and will be located in the INP file directory.
7. Set the maximal flow to be checked by entering a value in the "maximal flow" text box.
8. Set the flow interval by entering a value in the "Flow interval" text box.
9. Select "Steady state" or the "EPS" mode.
10. For "EPS" mode select the run type and specified parameter
11. All values should be entered in the same units that were used in EPANET.
12. Click the "Run" button and wait until a message box appears. It will show the path and name of the result file:



Output file

The output file is in an ASCII format. You can select one of three file extensions: TXT, DAT and CSV. The CSV extension is useful if you want to easily open the file with Excel. For steady state runs the output file will have the following fields for each junction:

- "Check_Node" – the junction being checked.
- "Maximal_Flow" – the maximal flow possible in the junction.
- "Violating_Node" – the first junction that violate the pressure constraint.
- "Minimal Pressure" – the pressure at the "Violating_Node".

If the maximal flow parameter was reached without any pressure violations then a message "Maximal flow was reached" will appear.

For EPS output file, when the duration of a specified flow is calculated:

- "Check_Node" – the junction being checked.
- "Flow" – the specified flow.
- "Duration" – the duration that above flow can be maintained.

For EPS output file, when the maximal flow for a specified duration is calculated:

- “Check_Node” – the junction being checked.
- “Duration” – the specified duration.
- “Flow” – the flow that can be maintained in the above duration.

If the maximal flow parameter was reached without any pressure violations then a message “Maximal flow was reached” will appear.

Help and support

Limited help is available by the author at fireflow@optiwater.com

Please visit the authors web site: <http://www.optiwater.com>

If you would like to receive updates please send an email to fireflow@optiwater.com.