

- Add... Organize...
- Dell
- Links
- Media
- Shopping
- Broadband Favorites
- Comcast Favorites
- Comcast Support
- Comcast.com
- Comcast.net
- FEDERAL RAILROAD ADMINIS...
- Free AOL with Spam Blocker
- http--www.dot.ca.gov-hq-op...
- US EPA DFLOW A Tool for Low Flow A...
- Tree Ring Laboratory Home P...
- TREE-RING RECONSTRUCTE...
- http--ams.allenpress.com-pdfs...
- Yahoo! Search Results for wat...
- Bay Weekly Our Top Story
- Louisiana's Wetlands @ Nation...
- New Orleans' Tragic Paradox -...
- http--print.nap.edu-pdf-0309...
- US EPA http--www.epa.gov-ORD-NR...



Water Supply & Water Resources Home

Research Topics

- Urban Watershed Management
- Treatment Technology Evaluation
- Microbial Contaminants Control
- Water Quality Management

EPANET 2.0

- GIS Laboratory
- Publications
- Related Links
- Contacts

Water Supply & Water Resources Site Map

Risk Management Research Home

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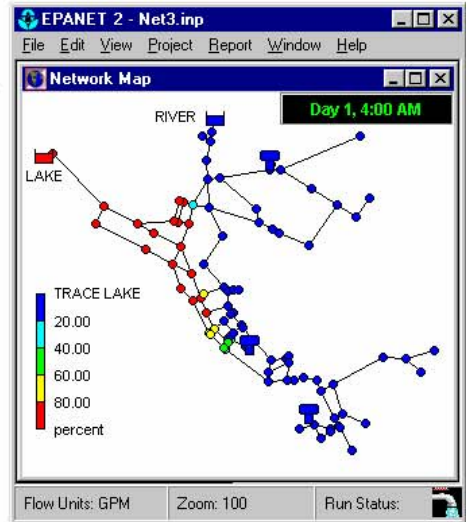
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[EPA Home](#) > [Research & Development](#) > [Risk Management Research](#) > [Water Supply & Water Resources](#) > [EPANET 2.0](#)

EPANET 2.0

EPANET models the hydraulic and water quality behavior of water distribution piping systems.

- [Description](#)
- [Capabilities](#)
- [Applications](#)
- [Programmers Toolkit](#)
- [Support](#)
- [Downloads updated 7/02/02](#)



Description:

EPANET is a Windows 95/98/NT program that performs extended period simulation of hydraulic and water-quality behavior within pressurized pipe networks. A network can consist of pipes, nodes (pipe junctions), pumps, valves and storage tanks or reservoirs. EPANET tracks the flow of water in each pipe, the pressure at each node, the height of water in each tank, and the concentration of a chemical species throughout the network during a simulation period comprised of multiple time steps. In addition to chemical species, water age and source tracing can also be simulated.

The Windows version of EPANET provides an integrated environment for editing network input data, running hydraulic and water quality simulations, and viewing the results in a variety of formats. These include color-coded network maps, data tables, time

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 - Del
 - Links
 - Media
 - Shopping
 - Broadband Favorites
 - Comcast Favorites
 - Comcast Support
 - Comcast.com
 - Comcast.net
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 - Louisiana's Wetlands @ Nation...
 - New Orleans' Tragic Paradox -...
 - http--print.nap.edu-pdf-0309...
 - US EPA http--www.epa.gov-ORD-NR...

Table of Hazen-Williams Coefficients (C has no units) [To top of page](#)

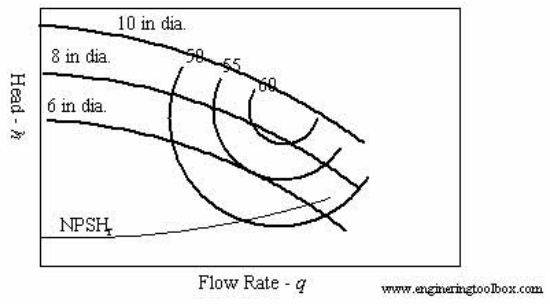
Material	C	Material	C
Asbestos Cement	140	Copper	130-140
Brass	130-140	Galvanized iron	120
Brick sewer	100	Glass	140
<i>Cast-Iron:</i>		Lead	130-140
New, unlined	130	Plastic	140-150
10 yr. old	107-113	<i>Steel:</i>	
20 yr. old	89-100	Coal-tar enamel lined	145-150
30 yr. old	75-90	New unlined	140-150
40 yr. old	64-83	Riveted	110
<i>Concrete/Concrete-lined:</i>			
Steel forms	140	Tin	130
Wooden forms	120	Vitrif. clay (good condition)	110-140
Centrifugally spun	135	Wood stave (avg. condition)	120

Table of Surface Roughnesses [To top of page](#)

Material	Surface Roughness, e	
	feet	meters
PVC, plastic, glass	0.0	0.0
Commercial Steel or Wrought Iron	1.5e-4	4.5e-5
Galvanized Iron	5.0e-4	1.5e-4
Cast Iron	8.5e-4	2.6e-4
Asphalted Cast Iron	4.0e-4	1.2e-4

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- Add... Organize...
 - Dell
 - Links
 - Media
 - Shopping
 - Broadband Favorites
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 - Free AOL with Spam Blocker
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 - Yahoo! Search Results for wat...
 - Bay Weekly Our Top Story
 - Louisiana's Wetlands @ Nation...
 - New Orleans' Tragic Paradox -...
 - http--print.nap.edu-pdf-0309...
 - http--www.epa.gov-ORD-NR...

and different speeds, and power consumption.

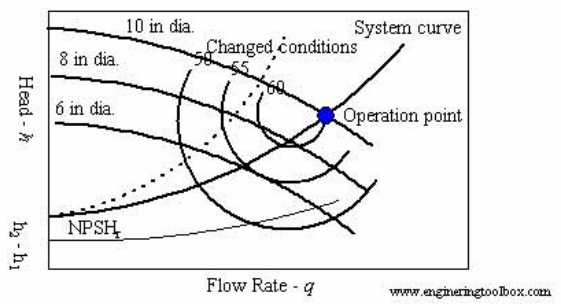


Increasing the impeller diameter or speed increases the head and flow rate capacity - and the pump curve moves upwards.

The head capacity can be increased by connecting two or more pumps in series, or the flow rate capacity can be increased by connecting two or more pumps in parallel.

Selection of Pump

A pump can be selected by combining the System Curve and the Pump Curve:



The operating point is where the system curve and the actual pump curve intersect.

Best Efficiency Point - BEP