



## Bentley® sisHYD

### District Heating Network Modeling and Analysis

Bentley sisHYD is a comprehensive analytical modeling and network design application that delivers the thermal and hydraulic calculations necessary for pipeline networks. Bentley sisHYD can quickly perform complex analyses on district heating networks to identify the asset usage costs, present operational status, location of critical points, failure simulation scenarios, and the calculation of all the major thermal and hydraulic parameters of the network.



*Output your results to PDF for easy distribution.*

#### Thermal-Hydraulic Calculations

To guarantee uninterrupted service, Bentley sisHYD runs steady-state and dynamic calculations to determine pressure, temperature, supply times and massflow distribution in the network. Model scenarios exist with multiple input stations operating on different supply temperatures, while using specific controls. In design mode, the calculation engine proposes new pipe types based on the specific pressure loss and velocity of a pipe.

#### Immediate Business Value

District heating owner-operators get immediate business value from the deployment of Bentley sisHYD. Bentley sisHYD ensures that as networks are built out to include new connections, that least-cost options are identified and selected. The modeling outputs mean that it takes fewer iterations to produce a design that meets the needs of new customers. In addition, the modeling outputs help ensure that customer service agreements are met by ensuring that heat is delivered at just the right temperature and pressure. By carefully calibrating the network, owner-operators can ensure that they are using the minimum amount of energy to generate the heat required to deliver the contracted service. Owner-operators also benefit from being able to model the most efficient pumping schedule. This means that money can be saved by reducing the energy needed to operate the pumps. Using the results of the dynamic calculations, owner-operators can smooth peak heat loads by increasing supply temperatures ahead of the expected peak.

#### Network, Profile, and Time Series Plots

Generate network plots adhering to a freely configurable labeling and color/weight coding schema to visualize your results. You can easily identify critical areas in your network and see the system reaction in operational mode. Create dynamic profile plots using a user-defined network path. The profile plot includes an elevation profile, the vapor pressure,

and pressure maintenance line on the same diagram. The time series plot displays the change of a physical property over time for a specific calculation scenario.

#### Integration with MicroStation® User Interface

Easily navigate between plots, reports and calculation logs, and the associated data with MicroStation-like ease. Experience a modeless dialog system with workflow-driven wizards. The Bentley sisHYD graphic tools are used to build and modify the modeled facility graphically.

#### Engineering Units and Engineering Libraries

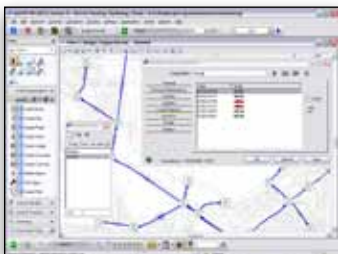
Units displayed in the user interface (dialog, plots, reports) are freely configurable and editable. Bentley sisHYD is delivered with a pipe-type catalog (Microsoft Excel spreadsheets). Extend that library with your own pipe types and reuse the catalog across projects.

#### Flexible Data Sources

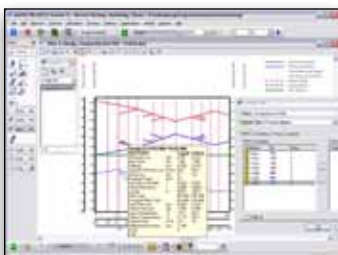
Bentley sisHYD works with Bentley® sisNET data but it can also use data from virtually any GIS or asset management resource. Bentley sisHYD can be used as a standalone calculator or it can be integrated into a complete Bentley district heating GIS and facilities management solution.

#### Reporting and PDF Output

Create reports on-the-fly to get statistical information and lists of object rules. Print the information or export to Microsoft Excel for additional post-processing. Create PDF outputs to share results with just a few clicks. Bentley sisHYD integrates with print preparation tools and adds functions to automatically populate labels and legends on print templates.



*Run steady state and dynamic calculations.*



*Generate dynamic profile plots.*

