

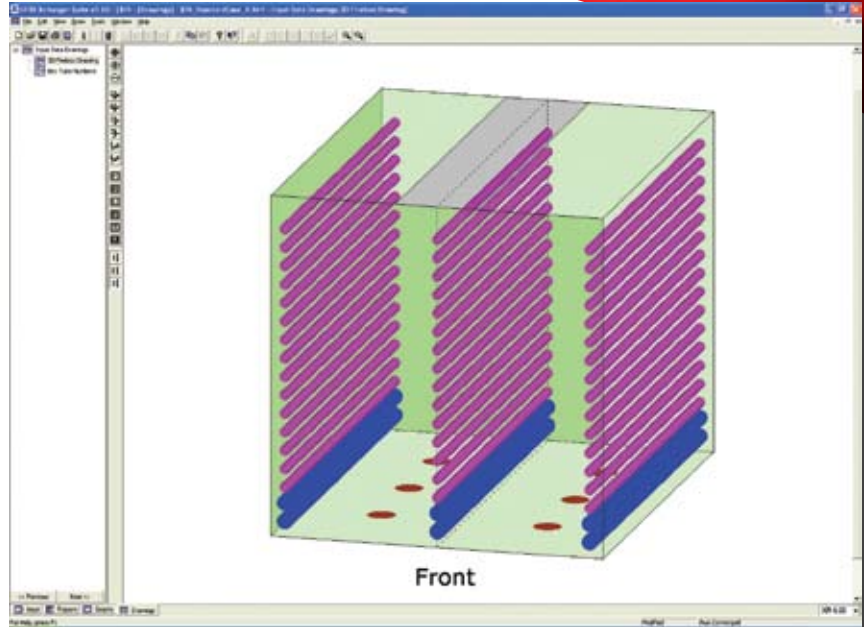


Model, evaluate, and simulate fired heaters

Xfh gives you the ability to evaluate fired heater designs and simulate the performance of existing fired heaters.

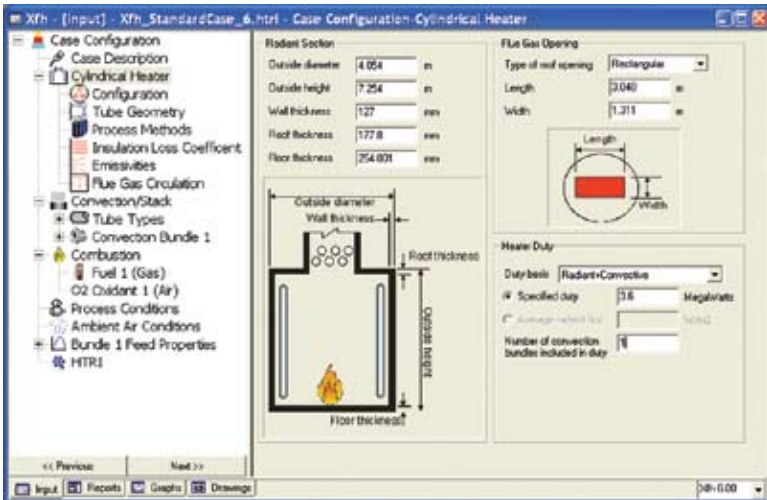
Independent modules for combustion, convection, radiant, and API 530 calculations allow you to model individual portions or the entire heater. The graphical interface makes specifying your heater extremely straightforward. And you can easily verify your design or spot local performance problems using the extensive output reports and graphing capabilities.

3D model of box heater



Features

- Xfh handles vertical cylindrical and single or multi-cell box heaters and supports up to ten process fluids in convection section.
- Hottel zoning in radiant section provides local predictions of heat flux and wall temperature.
- Detailed output reports provide overall and localized results.
- Extensive visualization tools show exactly how the heater is performing.
- Integrated physical property system eliminates requirement for additional property generation software. Xchanger Suite® includes VMGThermo™, an extensive and rigorous fluid physical property generator, from Virtual Materials Group, Inc.
- Xfh can import data from process simulators and physical property packages.
- Both input and output support multiple unit sets, and custom unit sets can be defined.



Geometry Specifications

- Radiant geometry, burner locations, tube geometry, and tube locations for both cylindrical and box heaters
- Complete control over convection section bundle layout and tubepass configuration
- Plain, stud-finned, and high-finned tubes in convection section
- Up to 1000 radiant tubes and up to 100 parallel passes
- Graphical tube layout tool for convection bundle layout
- Graphical pass layout tool for box heaters
- Multiple tube geometries in radiant coil and convection bundles

Calculation Features

- Rigorous process-side heat transfer and pressure drop calculations performed using an incrementation scheme to divide the flow path into a large number of zones
- Process pressure can be specified at inlet, outlet, or radiant section
- Single-zone model for simplified input or Hottel zoning option to calculate local heat flux and wall temperatures
- Process heat transfer calculated using HTRI method, API530/ISO 13704 method, or user-specified heat transfer coefficient
- Radiant flue gas circulation calculations with jet similarity model
- Independent modules for combustion, radiant, and convection sections allow modeling of one section or entire heater
- "No tubes" option to model radiant section without specifying tube coil geometry

API 530/ISO 13704 Tube Design

- Tube design and tube life evaluated using API 530/ISO 13704 procedures
- Required tube metal thickness and tube metal temperatures reported
- Check for elastic or rupture limitations
- Tube retirement tables can be used to determine optimum maintenance schedule

Output Reports

- Extensive set of spreadsheet-style output reports that can be printed or exported to Microsoft® Excel®
- Summary reports with overall results in one or two pages
- Detailed reports for local profiles of all important parameters (temperature, pressure, heat transfer coefficients, heat flux, etc.)
- Standard API 560/ISO 13705 specification sheet
- Selectable font sizes to make reports easy to view
- Customizable unit sets that can be changed dynamically as you work

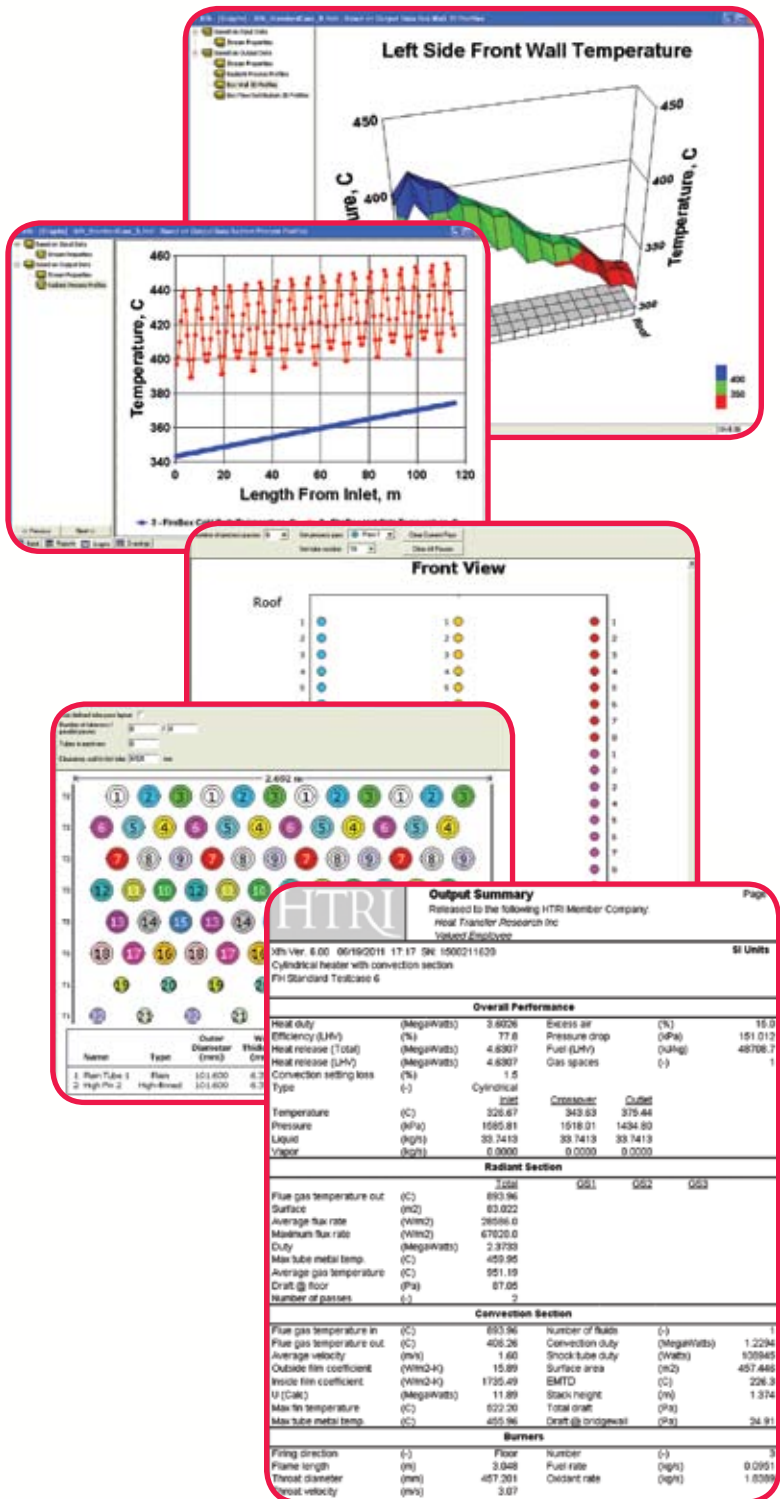
Graphic Visualization

- 2D and 3D scaled drawings provide visual confirmation of heater geometry
- 2D and 3D plots of local performance variables allow you to quickly spot any performance issues such as high wall temperatures

Minimum System Requirements

Xfh requires Microsoft Windows 2000 or later running on an Intel Pentium or compatible CPU with at least 128 MB RAM (512 MB for Windows Vista, Windows Server 2008, or Windows 7), and approximately 300 MB of free disk space.

HTRI recommends a 1GHz or faster processor, 1 GB RAM, the Windows XP operating system, and a graphics resolution of at least 1024 x 768. A complete installation of Xchanger Suite requires approximately 425 MB of available disk space.



Heat Transfer Research, Inc.

Global Headquarters
150 Venture Drive, College Station, Texas 77845 USA

+1.979.690.5050 voice
htri@htri.net | www.htri.net

