

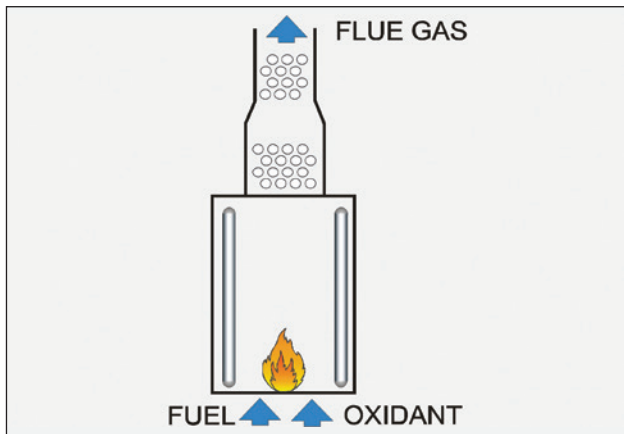


Simulate fired heaters

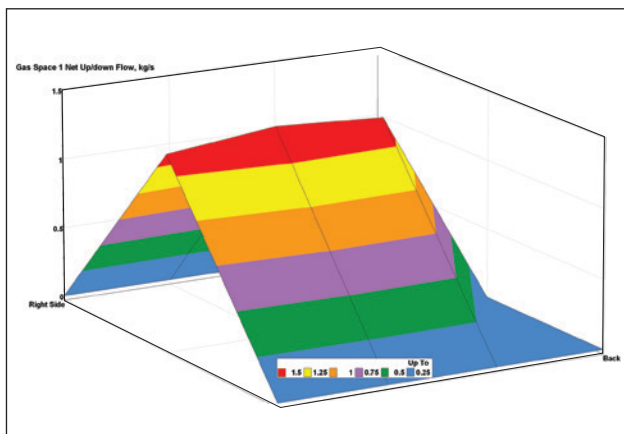
Xfh gives you the ability to simulate the performance of cylindrical and box heaters. Independent modules for combustion, convection, radiant, and API 530 calculations allow you to model individual portions or the entire heater.

The graphical interface makes specifying your heater straightforward. You can verify your design or spot local performance problems using the extensive output reports and graphing capabilities.

FEATURES



Conceptual flow diagram of vertical cylindrical fired heater.



3D display of local flue gas circulation in firebox.

- Models vertical cylindrical and single-cell or multicell 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. **Xfh® Ultra** is available for single-zone modeling.
- 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.
- Imports data from process simulators and physical property packages.
- Displays both input and output in multiple unit sets, including user-defined sets. Dynamic display of values in all unit sets.
- Session view allows tracking and retrieval of all runs made during a session.



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

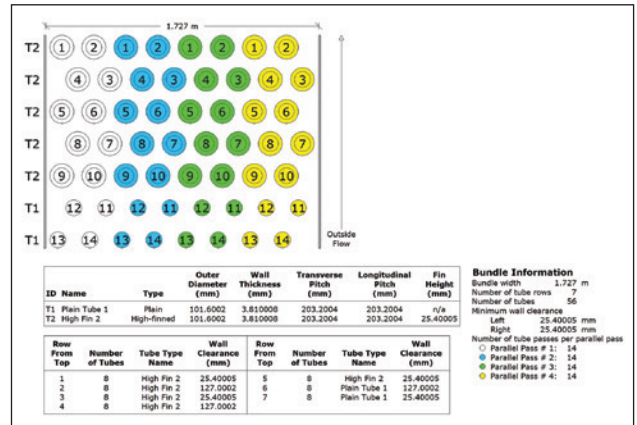
- Rigorous process-side heat transfer and pressure drop calculations using an incrementation scheme that divides the flow path into zones
- Optional specification of process pressure at inlet, outlet, or radiant section
- Process heat transfer calculations using HTRI method, API 530/ISO 13704 method, or user-specified heat transfer coefficient
- Radiant flue gas circulation calculations with jet similarity model
- Independent modules for combustion, radiant, and convection sections for modeling one section or entire heater
- “No tubes” option for modeling radiant section without specifying tube coil geometry

API 530/ISO 13704 TUBE DESIGN

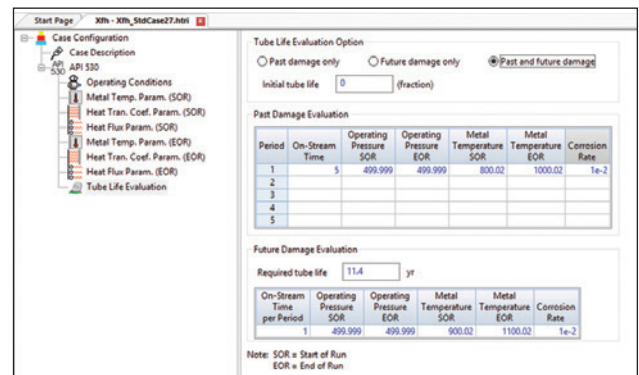
- Tube design and tube life evaluated using API 530/ISO 13704 procedures
- Required tube metal thickness and tube metal temperatures reported
- Check for elastic or rupture limitations
- Tube retirement tables to help determine optimum maintenance schedule

OUTPUTS

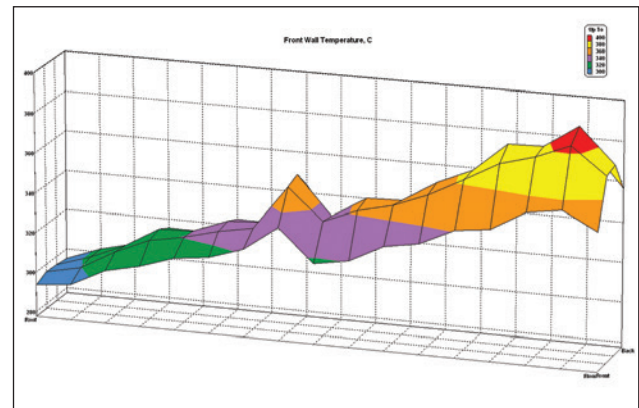
- Extensive set of spreadsheet-style output reports for printing or exporting to Microsoft® Excel®
- Summary reports with overall results in one or two pages
- Detailed reports for local profiles of all important parameters (temperature, pressure, heat transfer coefficients, heat flux, etc.)
- Standard API 560/ISO 13705 style specification sheet
- 2D and 3D scaled drawings provide visual confirmation of heater geometry
- User-defined graphs for easy accessibility



Bundle layout diagram for convection section.



Input panel for API 530 tube design/life evaluation.



3D display of front (flame facing) tube wall temperatures.



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