

# Introducing **FURNXP**ERT

The only software to help

- **Size Furnaces**
- **Setup Furnaces**
- **Simulate Furnaces**

**FurnXpert** is a desktop software that simplifies the job of sizing, designing and simulating industrial furnaces. The software has been developed to aid furnace designers, process engineers, and furnace operators configure their furnaces, select parts and run "what if analysis" to determine the best furnace design and/or optimum operating parameters.

**FurnXpert** can be used for initial furnace sizing as well as detailed design review. The information needed to begin a new design could be as little as time temperature profile and some basic information of the part being processed. The software then calculates part temperature during heating and cooling cycles. It also determines the required power input along with energy used and operating cost for the run. With this information maximum production rate and optimum operating parameters can be determined.

### Other modules and features:

#### Furnace Configurator

The Furnace Configuration module provides users the ability to define a virtual furnace to run their parts. Information such as furnace dimensions, zone lengths, thermocouple locations, and gas inlet details, are all entered to configure a furnace. It can be used to create a new furnace or modify an existing one.

#### Part Information

**FurnXpert** provides a selection of basic shapes to choose from. This includes bushing, cylinder, flange, inverted flange, blocks, inside-out flange, and Inverted inside-out flange. To configure a part one provides part dimensions and material properties. This data can be easily modified to create new part configurations.

#### Charge Setup

Furnace charge layout and part placement is key to accurate process simulation. Inputs to the charge setup include details such as the number of rows and columns of parts, gaps between them, and number of stacks of charge trays.

#### Process Parameters

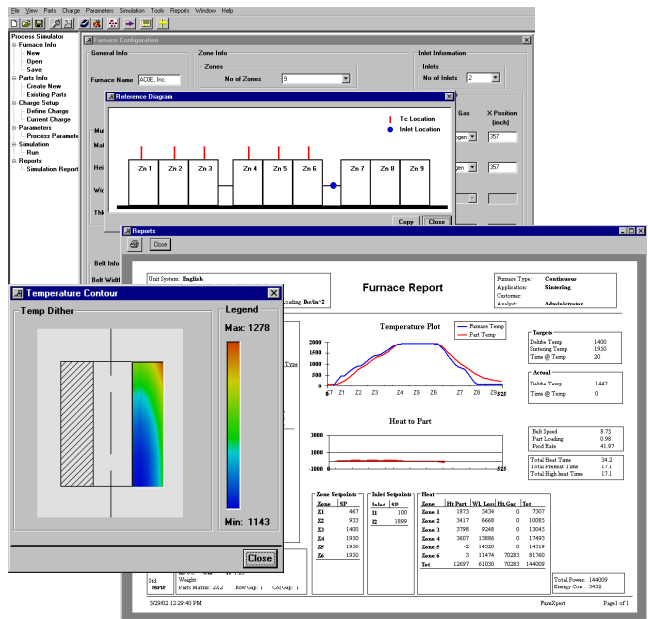
The software provides the ability to vary process parameters such as zone temperatures, production rate, and process gas flow. The idea is to run different scenarios and observe the effects of these changes on the part.

#### Thermal Coefficients

Based on furnace design, flow patterns, and part location **FurnXpert** determines thermal coefficients such as convective heat transfer coefficient, view factors, heat flux, and emissivity. However, the users have the option to input their own coefficients.

### Reports

Results from each calculation can be displayed in report format or easily printed for records. A typical process report includes furnace and part profile, operating parameters (temperature, cycle time), production rate, energy consumption in the individual zones and in the overall furnace. All **FurnXpert** reports carry date, time and user stamp.



For furnace manufacturers, **FurnXpert** will help evaluate and compare different furnace design criteria

For heat treaters, **FurnXpert** will assist determine the best setup for any furnace-part combination

## CompAS

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