

SUPERHEAT ACCELERATING HEAT-TREATMENT QUALITY PACKAGE DEVELOPMENT WITH DRAFTSIGHT PROFESSIONAL

Case Study



By using DraftSight Professional 2D design software, Superheat has dramatically reduced drawing and heat-treatment package development times, resulting in increased throughput and rapid growth.

Challenge:

Improve handling of DWG files received from customers, accelerate heat treatment package development, and make the manipulation of drawing layouts not only possible, but more efficient.

Solution:

Replace SmartDraw 2D software with DraftSight Professional 2D design software.

Results:

- Cut heat-treatment package turnaround time by 30 to 50 percent
- Increased design throughput
- Improved quality of engineering drawings
- Doubled the size of its engineering department to support growth

Founded on the principle that cutting-edge technology can offer a better way to provide on-site heat treatment solutions, Superheat is a leading innovative heat-treatment provider. Heat treatment is the controlled heating/cooling of a component to alter its mechanical and physical properties. During the manufacture, installation, or repair of certain components, the processes implemented may cause changes to the molecular structure of the material, requiring heat treatment to eliminate undesirable or even dangerous behaviors in the end product.

Superheat provides high-quality on-site heat-treatment solutions for a range of products in several industries. These include heat treatment of pressure vessels, catalyst crackers, piping, and component parts for oil refineries; ferrous alloys, high-pressure/high-temperature steam piping, headers, water wall/boiler tubes, and feedwater heaters for power generating stations; vessels and piping for chemical processing plants; advanced alloy materials, heavy-water and high-pressure steam piping, heavy-wall component parts, turbines, and containment structures for nuclear power plants; and structural components, bridges, and platforms for the construction and offshore industries.

Until 2018, Superheat utilized 2D diagramming software to create layouts for its heat-treatment quality packages and SOLIDWORKS® 3D design software to develop more specialized and sophisticated heat-treatment designs. However, the 2D software that Superheat used had limited capabilities, and its inability to read DWG files (the most common customer format for components requiring heat treatment) and manipulate engineering drawing layers prompted the company to evaluate other 2D design solutions, according to Engineering Tech Supervisor Brent Walton.

“We create our drawings in such a way that our field technicians know how to wrap vessels, components, or piping to meet code requirements for heat treatment, and our drawings include much of our valuable knowledge, expertise, and intellectual property (IP),” Walton explains. “In addition to reading in customer DWG files, we needed the capability to manipulate drawing layers, which allows us to then remove our sensitive IP from drawings that we deliver to our customers or charge them if clients choose to purchase drawings containing all layers as part of their heat-treatment solution.”

Because Superheat uses SOLIDWORKS 3D design software to complete special projects, it became aware of DraftSight® 2D design solutions and immediately began using DraftSight for opening DWG files from customers. The company then purchased many DraftSight Professional licenses to support the manipulation of drawing layers. Superheat chose DraftSight Professional software because it is familiar to and easy-to-use by engineers with experience using AutoCAD® software, is a fraction of the cost of AutoCAD, and is fully compatible with the SOLIDWORKS 3D design system.



“DraftSight [Professional] has enabled us to reduce drawing time despite the fact that our drawings are now much more detailed.”

— Brent Walton, Engineering Tech Supervisor

FASTER DESIGN, GREATER DESIGN REUSE

Since implementing DraftSight Professional software, Superheat has dramatically reduced drawing and heat-treatment quality package development times, partly by increasing its volume of design reuse. “DraftSight [Professional] has enabled us to reduce drawing time despite the fact that our drawings are now much more detailed,” Walton notes.

“With DraftSight, it’s much quicker and easier to create a drawing because we take advantage of a pre-populated template, resulting in a 30 to 50 percent reduction in heat-treatment package turnaround time,” Walton continues. “Part of this productivity improvement is related to our greater volume of design reuse. We have more than 2,300 drawing configurations in our design library, and because DraftSight is compatible with the DWG format, we are taking advantage of opportunities to reuse existing, proven configurations where applicable.”

INCREASING THROUGHPUT WHILE MINIMIZING ERRORS

With DraftSight Professional software, Superheat has increased its overall drawing throughput while simultaneously minimizing design errors and improving the quality of its engineering drawings. "Because we can turn heat-treatment drawing packages around more efficiently, we can handle more projects with the same resources, increasing throughput," Walton stresses.

"We haven't cut corners to achieve our productivity gains, and we have actually improved drawing quality and reduced drawing errors while increasing the amount of detail in our engineering drawings," Walton adds. "These drawing improvements help us make a better impression with our customers, and the quality of our drawings easily surpasses our competitors, whose drawings are not nearly as detailed and professional-looking."

SUPPORTING GROWTH WITH 2D AND 3D

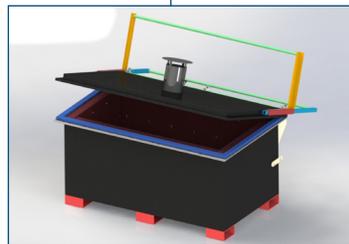
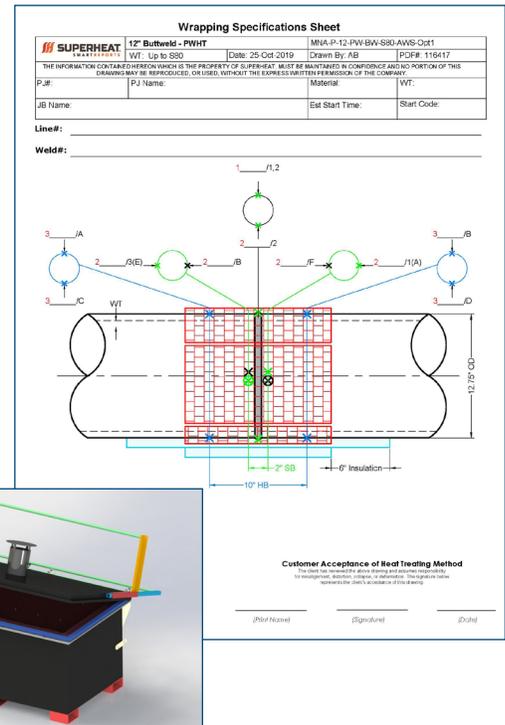
With DraftSight Professional 2D design and SOLIDWORKS 3D design software, Superheat is tapping both 2D and 3D design technologies to help it support, manage, and maintain rapid growth. "More than 99 percent of what we do is done in 2D, but we have one seat of SOLIDWORKS software so that we can execute specialized projects in 3D," Walton points out.

"Even with the efficiency improvements that we've realized with DraftSight, we've doubled the size of our engineering department to support Superheat's rapid growth," Walton says. "With DraftSight Professional 2D and SOLIDWORKS 3D design software, we have the 2D and 3D development tools that we need to keep our business growing—using DraftSight 2D for the common, everyday jobs and SOLIDWORKS 3D for more infrequent and challenging projects."

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With DraftSight Professional software, Superheat not only can read in DWG files of customer products requiring heat treatment but can also manipulate drawing layers on heat treatment designs to remove its sensitive IP from drawings or include it if clients choose to purchase drawings containing all layers as part of their heat-treatment solution.

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