

Post Weld Heat Treatment

- Equipment Calibration Services
- Preheating
- Dehydrogenation Heat Treatment
- Hydrogenation Bake out
- Heat treatment in-House
- Space heating for coating and linings
- Heat Shrink, Expansion and shaft/Bolt Heating
- Turbine Warming Systems
- Heat Treatment (Annealing and Normalizing)
- Hardness test services
- Engineering Technical support Group
- Heat treatment in Furnaces on site (Temporary)

The Post Weld Heat Treatment (PWHT) service, helps improve the weld microstructure, which in turn reduces the residual stresses that often develops during the welding stage. This is crucial to maximize the life of your vessels, pressure tanks, towers, equipment and pipes etc. Our team of engineers and highly experienced specialists is able to perform a wide array of PWHT services for industries like construction, pressure piping, bridges, offshore platforms, storage tanks, pressure vessels, petrochemical plants, refineries, and others. Our post-weld heat treatment procedure includes software based heat and thermal calculations, band width, weight and wind load analysis and Zick analysis for horizontal vessels and fully comply with the latest welding codes and other mandatory requirements for metals like stainless steel, carbon steel, work-hardened steel, and high alloy steel.

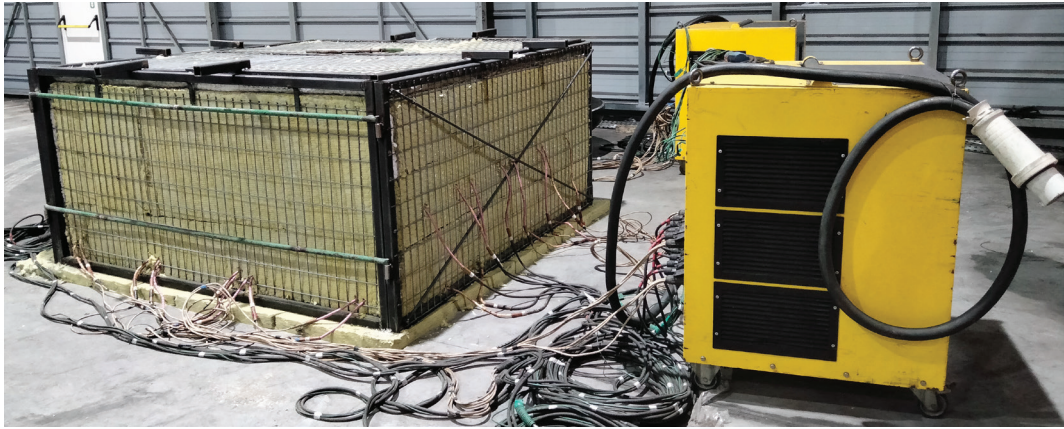


However, there are a couple of other benefits to its application which include:

- Improving the ductility of the materials
- Reducing the instances brittle fractures
- Tempered metal
- Improves and in some cases, reduces the metal's hardness
- Improve metallurgical properties
- The prevention of cracking caused by hydrogen by its removal

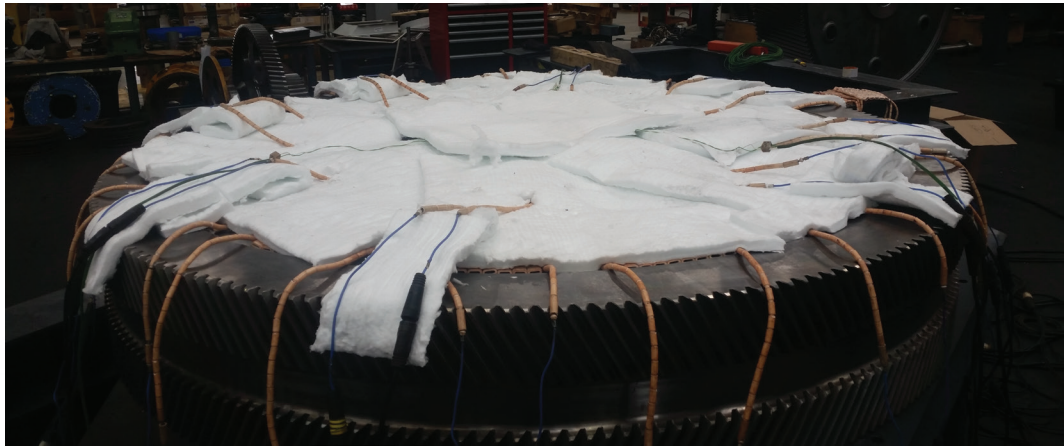
We provide and perform PWHT both at our clients' sites and our own factories globally. The on-site facilities include specialized furnaces of different sizes, where the weldments are placed for PWHT. Additionally, we also offer businesses the option of our pickup and delivery services. Strategically located hubs globally and highly skilled and experienced PWHT engineers enable us to respond to virtually any request, following highest safety and quality standards and ensuring that all treated surfaces or weldments meet the required welding code requirements. After treatment, our Non-destructive inspections include, ultrasound, Magnetic particle, Radiographic testing and Hardness testing. Partnering with metallurgical laboratories and engineers providing the flexibility to execute all types of pre weld heat treatment procedures with the highest quality assurance.





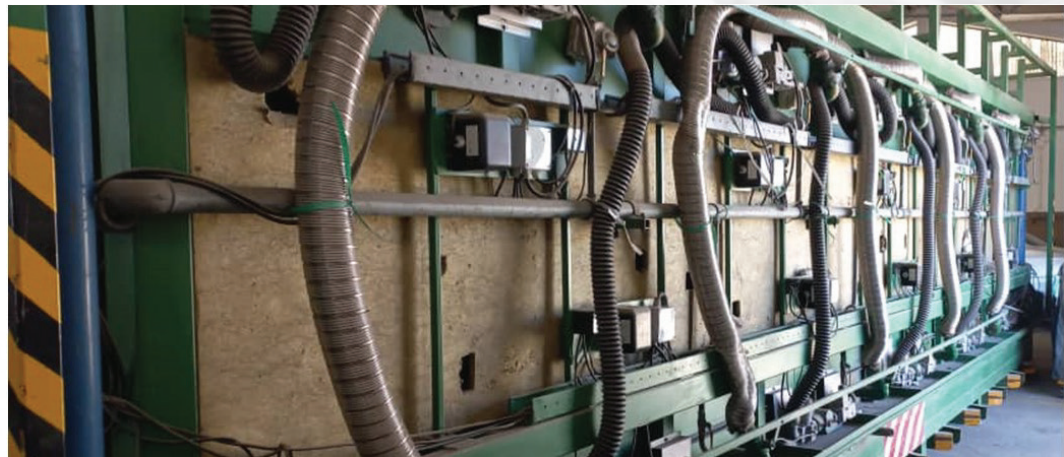
Heat treatment in Furnaces on site (Temporary)

Whenever it is not possible or reasonable to mobilize vessels, piping or construction parts to our facilities, we can erect a temporary furnace on site. This includes the design, fabrication and erection of either electrical or combustion heated furnaces, sized to the needs and according to the thermal treatment of the component.



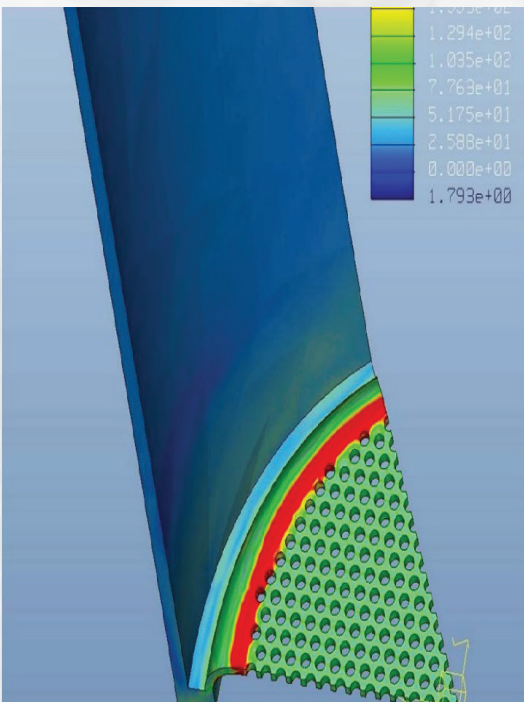
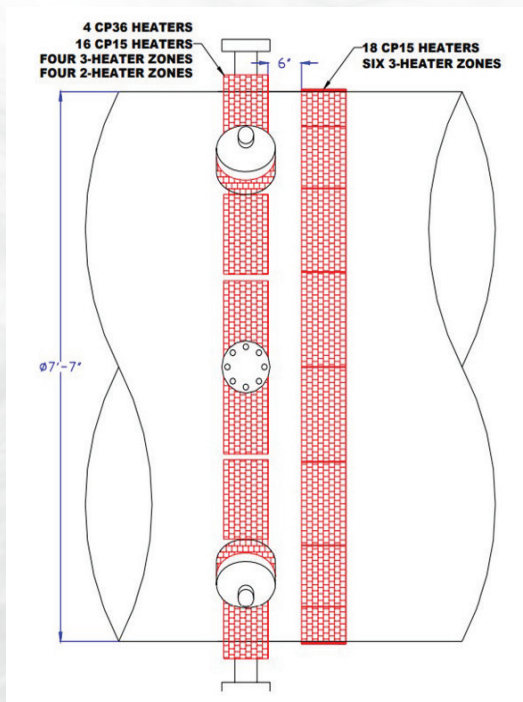
Heat Shrink, Expansion and shaft / Bolt Heating

Both electrical or induction systems generate heat so fast, so we can set up our heating band to take off shafts and other tight-tolerance parts, retaining rings, bearings and sleeves, nuts, bolts.



Heat Treatment in House

Our in house furnaces allow to post weld heat treatment of small and large vessels, piping and other constructions, approved for temperatures from ambient up to 980°C.



HEAT BAND / FEA

Zick and Load Analysis

Services



Preheating

Advanced control systems and recording the preheating during the welding process minimizes thermal efforts mainly in:

- Reducing humidity released by hydrogen which could penetrate the welded steel causing porous spots and cracks
- Reducing heat loss surrounding the welded surfaces making the weld stronger
- Improving the microstructure and durability of the zone affected by heat

Dehydrogenation Heat treatment

The likelihood of hydrogen induced cracking (HIC), can be reduced through Dehydrogenation Heat treatment to remove the induced hydrogen prior to initiating welds during the fabrication.

Heat treatment in warehouse Furnaces

We have in our installations furnaces to post weld heat treating of large vessel pressures or vessel sections, approved for temperatures from ambient up to 980°C.

Hardness test service

We count with the Hardness Tester NOVOTEST T-UD3, this combines two methods of measuring hardness by an indirect method: Ultrasonic Contact Impedance (ASTM A1038) and Leeb (ASTM A956). The ability to connect both probes combines the advantages of both methods and providing users the opportunity to use the one that is most suitable for solving a specific task. The Combined Hardness Tester allows us to measure the hardness of any metals, parts of any shape and thickness, measure the hardness of the surface hardened layers and evaluate the tensile strength according to our clients requirements.

Heat treatment in warehouse Furnaces

We have in our installations furnaces to post weld heat treating of large vessel pressures or vessel sections, approved for temperatures from ambient up to 980°C.

Heat Treatment (Annealing and Normalizing)

Here we use some special electrical resistance to provide a variety of services for annealing and normalizing to modify the properties of alloys according the client requirements.

Hydrogenation Bake out

Welding produces high temperature, severe temperature gradients, and rapid cooling and solidification, which increase residual stresses, grain size, and brittleness in the welds and its material base, to reduce this mechanism damage must be applied the hydrogenation bake out during the repair or modification of a component that have been introduced in services in a hydrogen environment.

Engineering Technical support Group

HOTWORK HEAT TREATMENT & SPECIALIZED SERVICES, all of this is supported by an engineering group with software for required heat and thermal calculations, band width, tower weight and wind load analysis and Zick analysis for horizontal vessels.

**World wide availability
24/7 - 365 days a year**

Rental equipment services

Portable Electrical Heating or Portable High Velocity Burners

Equipped with digital control systems to achieve a uniform thermal process are available in our hubs globally. Our team is able to assist you with a wide range of heat treatment parts, equipment or products for renting. Our products which include:

- Heating transformers
- Portables Heat Modules
- Temperatures Controllers
- Temperatures Recorders
- Power Cabling
- Transformer Parts
- Thermocouples
- Test Equipment
- Insulation
- Heaters
- Insulation Attachments
- Camlock Power Connectors



Six way Console

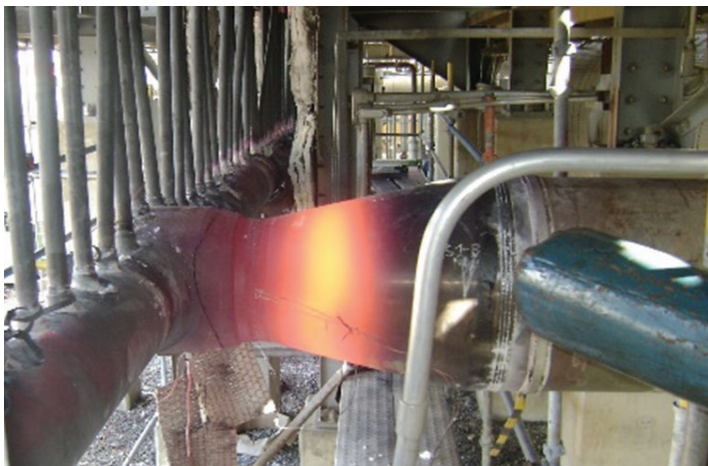
The most state-of-the-art of the market in heat treatment technology, can be or not operated the process remotely increasing the response time of our technicians



Hardness test services

This combines two methods of measuring hardness by an indirect method:

- Ultrasonic impact impedance
- Leeb



Annealing

Using our special heater we can reach out any temperature target according to the construction codes and client requirement



Equipment Rental and sales

We can help you with a widely range of heat treatment parts, equipment or products for rentals or sales



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Worldwide Availability:

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Orlando, USA	Berlin, Germany	Osaka, Japan
Houston, USA	Kindberg, Austria	Bangkok, Thailand
Cuernavaca, Mexico	Milan, Italy	Vadodara, India
	Istanbul, Turkey	Cebu, The Philippines
	Nazare, Portugal	Jakarta, Indonesia
	Cairo, Egypt	Noumea, New Caledonia