

Stress Relieving

CAPABILITY PROFILE

thornton
Depend on it

Project Enquiries

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At Thornton Engineering we offer one of the largest Stress Relieving ovens in the southern hemisphere. Extreme heat in metals causes unwanted changes to the microstructure of the material. Through Stress Relieving we can improve hardness, ductility and reduce the risk of brittle fracture to the material, by re-heating the material to temperatures dictated by specific codes.

EQUIPMENT

- ✓ Length: 25m
- ✓ Width: 7m
- ✓ Height: 7m
- ✓ Gas supply: 7kPa to 70kPa
- ✓ Combustion chamber volume: 936m³
- ✓ Operating temperature: 300–800°C
- ✓ Maximum temperature: 1000°C
- ✓ 21 burners at 30° incline
- ✓ 5 side wall flues and 4 chamfered edges spread evenly to improve circulations and prevent impingement

KEY APPLICATIONS

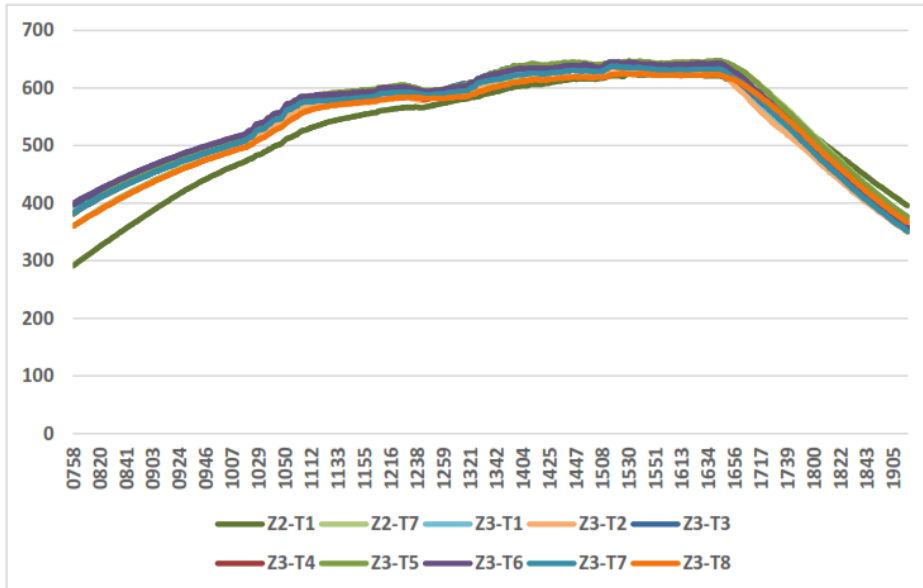
- ✓ Quenching and tempering
- ✓ Vessels, columns and towers
- ✓ Evaporators
- ✓ Reactors
- ✓ Autoclaves
- ✓ FFC Units
- ✓ Feedwater heaters and condensers
- ✓ Blow down receivers
- ✓ Waste heat boilers
- ✓ Tail gas heaters
- ✓ Hyperbaric chambers
- ✓ Scrubbers
- ✓ Frames

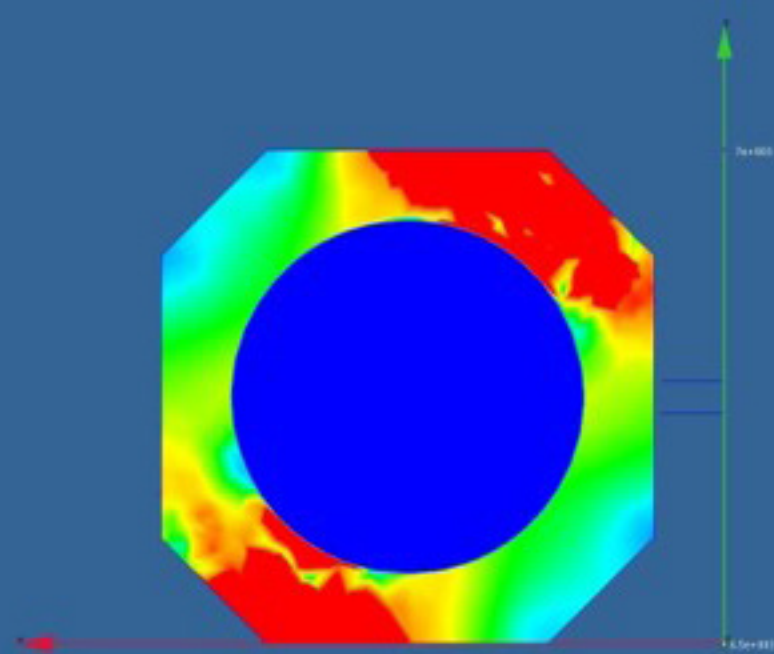
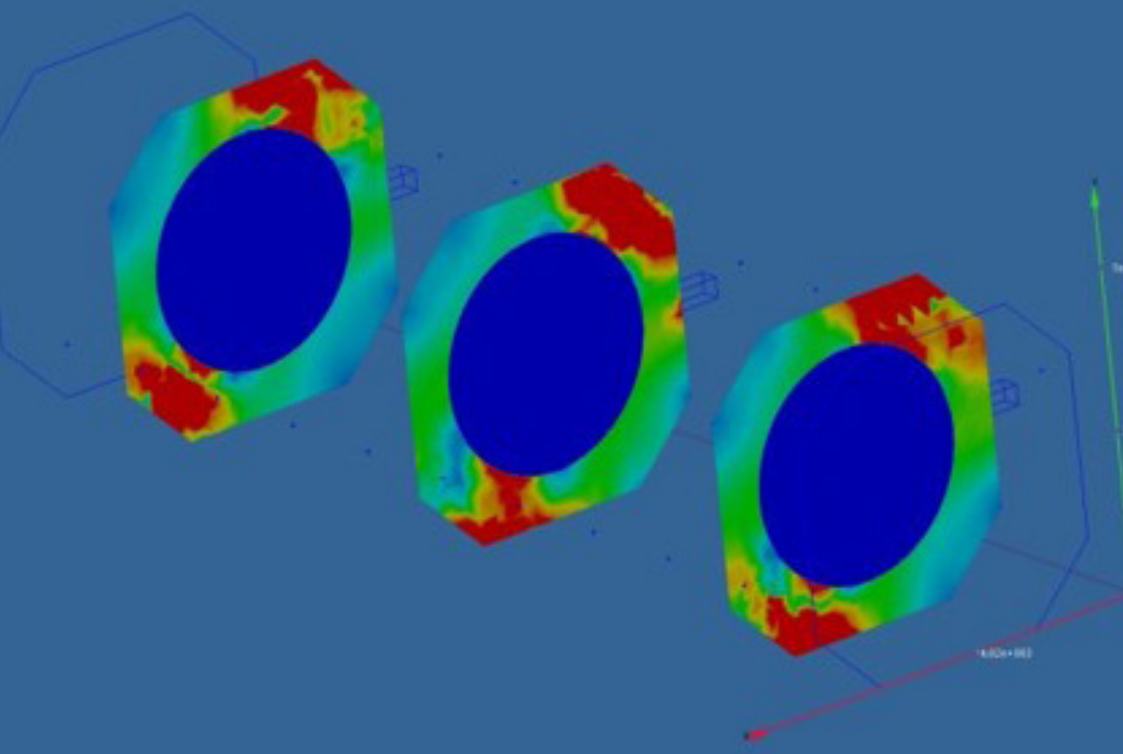
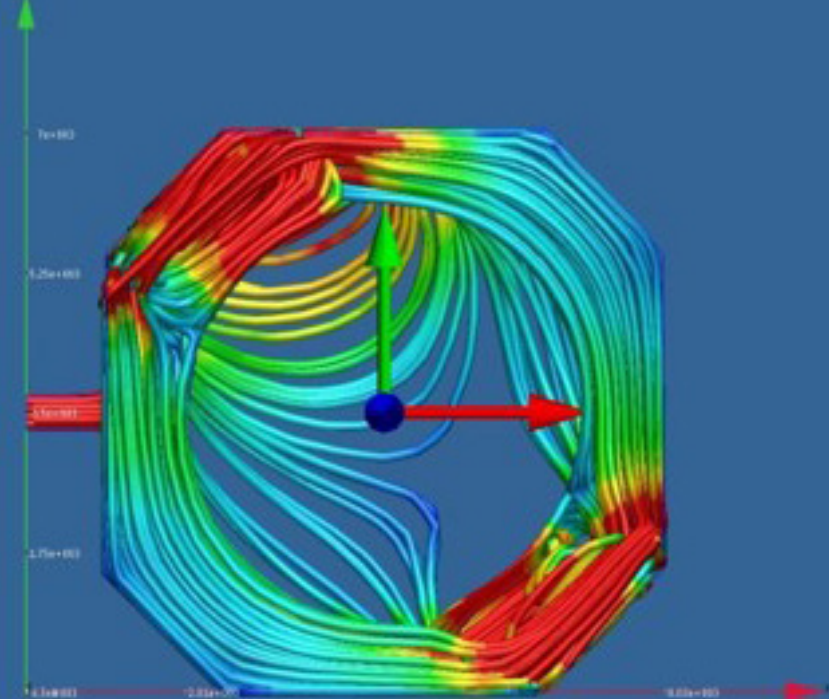
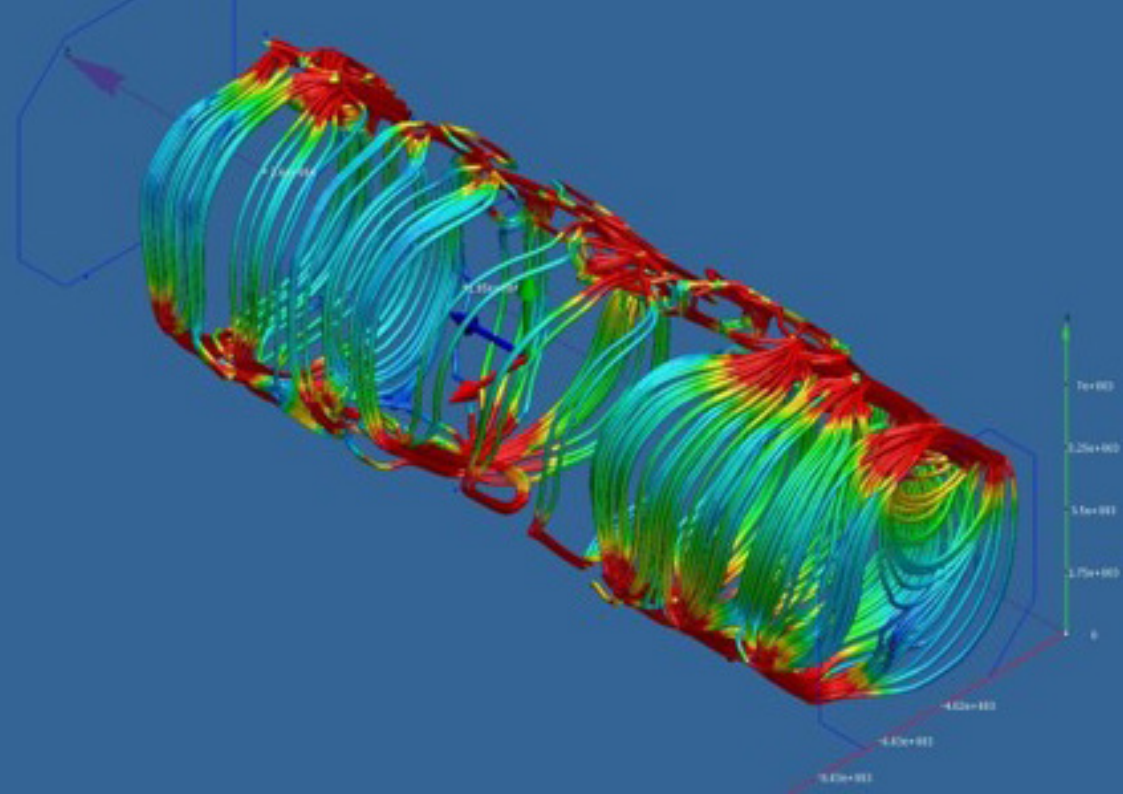




HEAT TREATMENT INSTRUCTION / REPORT

| | |
|-------------------|----------------------|
| HT Identification | HT 210201-21001 rev0 |
|-------------------|----------------------|

| | | | | | | | |
|---|--|--------------------------------------|--|--|--|-----------------------|--|
| Client | | Sample | | ACTUAL HEAT TREATMENT DETAIL | | | |
| Job Description | | Pressure Vessel | | Heating Equipment: | | Gas Furnace | |
| Job Num | | 21001 | | Maximum Temp range: | | 90 DegC at ≤ 600 DegC | |
| | | PO | | PO-12345 | | SN: BF2780 | |
| HEAT TREATMENT DETAIL | | | | Thermocouple Batch: 9888, TIK8954 | | | |
| 1.Code / Specification: | | AS 4458 | | Operator: | | Daniel Nouwen | |
| 2.Material Standard / Spec and Grade: | | A516-70 | | Date: 8 Feb 2021 | | | |
| 3.Thickness of part requiring PWHT (mm): | | 35mm | | HEATING CHART | | | |
| 4.Heating Rate: | | Rapid to (Deg C): 400 DegC | |  | | | |
| | | Then: (DegC/h) max: 140 DegC/h | | | | | |
| 5.Hold Temp (DegC): | | 635 DegC | | | | | |
| 6.Hold Time: | | 1h 30min | | | | | |
| 7.Cooling Rate (DegC/h): | | 150 DegC/h | | | | | |
| 8. Heat Cycles: | | One only | | | | | |
| 9.Support Method: | | Metal Stool supports DWG 15007-F1000 | | | | | |
| 10.Max Temp Range | | 90 DegC at ≤ 600 DegC | | 30 DegC at > 600 DegC | | | |
| 11.Additional Requirements | | | | | | | |
| <ul style="list-style-type: none"> • 1m Clearance above the ground. • Workpiece to be positioned centrally within the Furnace. • After cooling to shutdown temp, workpiece to continue cooling in still air. | | | | | | | |
| 12.Location of Thermocouples: X = Near Side; O = Far Side | | | | | | | |
| | | | | | | | |









01. Precision Design

Our team can prepare designs to your exact specifications and international design standards.



02. Extensive Capability

We leverage our industry leading machinery to produce an extensive range of steel products.



03. Proven Performance

We have a reputation for consistently delivering projects at scale, on time and on budget.



04. World Class Quality

We operate an advanced quality management system providing you with the quality you demand.



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