



UNEK

Shaping Australian Industry

Welding Capabilities

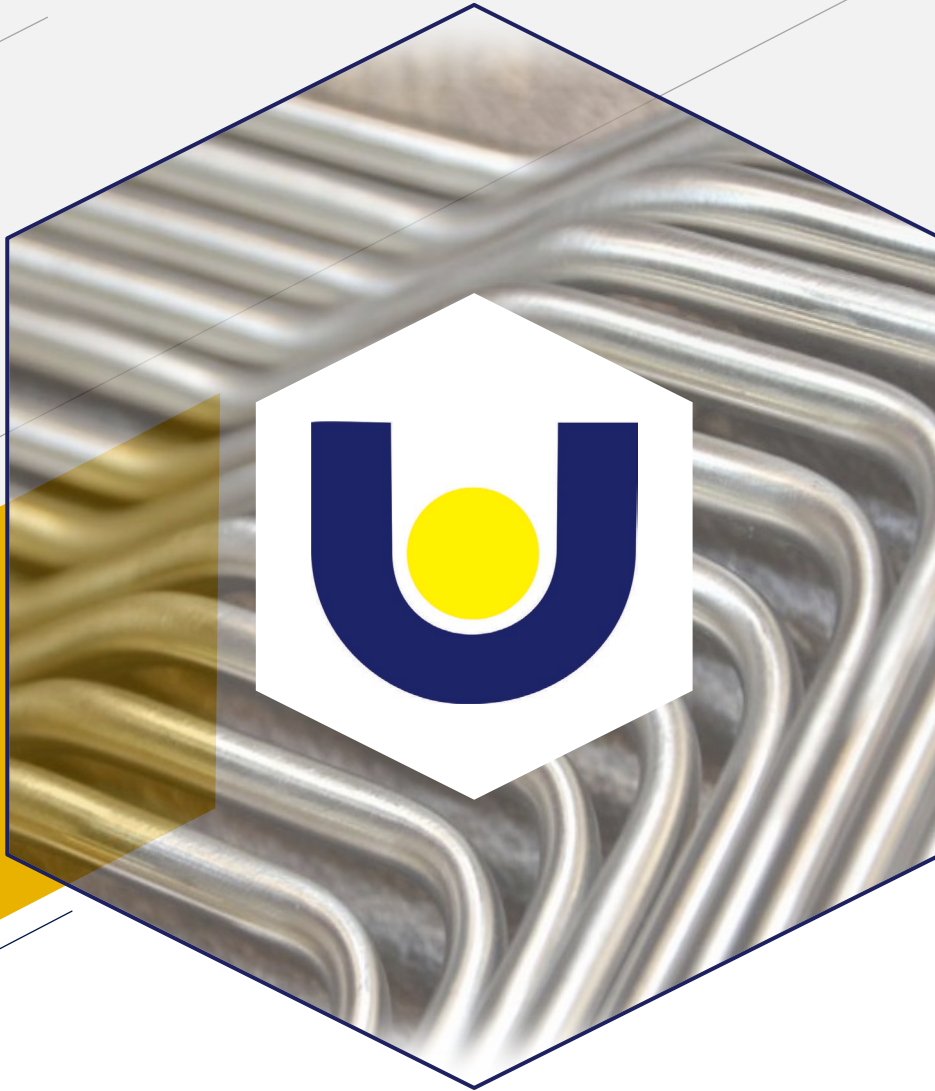


About Us

Uneek Bending Co. Pty Ltd

- 60+ years experience, since 1964
- Australia's leading bending, rolling & welding company
- Custom complex metal bending, rolling & welding
- Experienced engineers & design department
- Large scale engineering projects
- Small batch production and prototyping





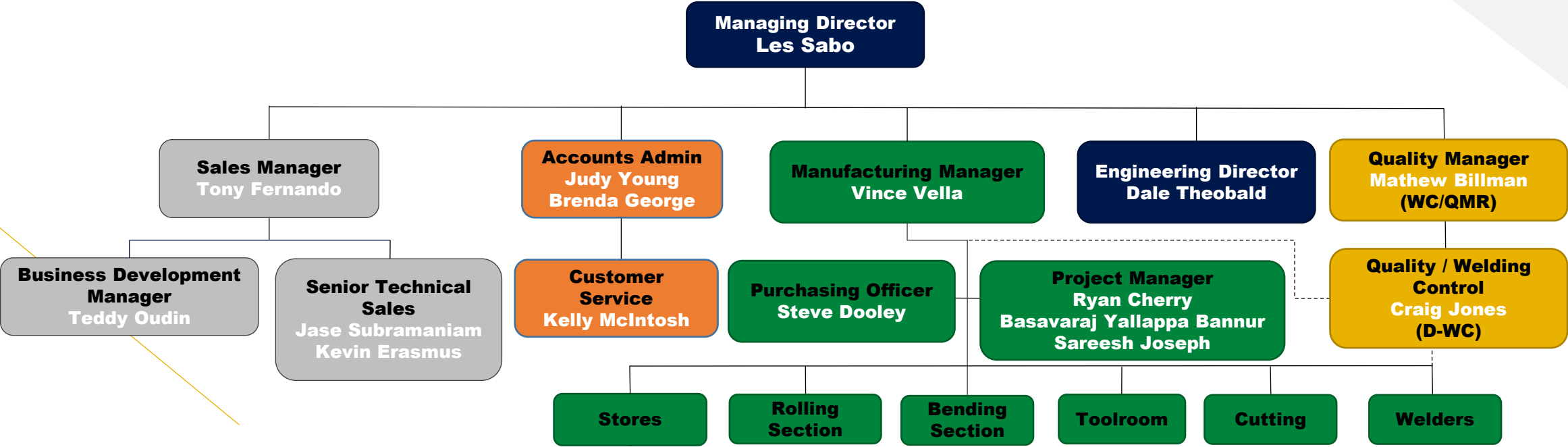
Our Mission

“To be the most innovative manufacturer and preferred supplier in Bending, Rolling and Welding”



The UNEEK Team

Organisation Chart



Welding Capabilities

Welding Capabilities Summary

At Uneek Bending, we offer industry-leading welding solutions backed by cutting-edge technology and highly skilled professionals. Our capabilities encompass a comprehensive range of welding processes, including Orbital GTAW, GMAW, WiseRoot+ (STT), Synergic GMAW, Manual GTAW, and Stick (MMAW). Most recently, we've expanded our expertise with the addition of Robotic Laser Welding, an exciting advancement that enhances precision, repeatability, and productivity.

Our team of qualified welders brings extensive experience working with a wide variety of materials such as Carbon Steels, Stainless Steels, Chromoly, Duplex, and Inconel, ensuring we can meet the demands of diverse industries and applications.

We operate under a welding management system certified to ISO 3834-2 (Comprehensive Level), the global benchmark for welding quality. This certification reinforces our commitment to delivering compliant, high-quality, fusion-welded products, on time and within budget.

At Uneek Bending, quality and precision are at the core of everything we do.





Welding in Defence

KEY DEFENCE CUSTOMERS

- Thales Australia Ltd. – Bushmaster & Hawkei Projects (Armored Personnel Carriers)
- AW Bell Pty Ltd. - F-35 Strike Fighter - EODAS (Lockheed Martin, Northrop Grumman & Raytheon)
- Mercedes Benz Aust/Pacific – Unimog (Defence Vehicles)
- Refuel Australia – JP157 Aviation Refueling Vehicle
- Levett Engineering – F-35 Strike Fighter - Chassis Cooling Pipe (BAE Systems USA)
- Rheinmetall Australia – Boxer Vehicles – Piping Systems



Welding in Rolling Stock

KEY RAIL CUSTOMERS

- Bombardier Transportation – V’locity & LRV Projects
- Alstom Transportation – X-Trapolis, Next Gen Trams & V’locity Project
- Metro Trains – SIEMENS Nexas Handrail Upgrade
- Yarra Trams – B, C, D & E Class Trams
- RPC Technologies – V’locity Projects
- Downer EDI – Comeng Life Extension Project
- Comeng – 667M Project

yarra trams

ALSTOM

Comeng

Keolis
Downer



SIEMENS

RPC

BOMBARDIER
TRANSPORTATION



Downer
EDI



Welding in Power Industry

KEY POWER INDUSTRY CUSTOMERS

- Burner openings
- Superheater and Economiser Elements
- Boiler Components – Elements and waterwalls
- Tube - Weld Overlay – Stainless Steel and Inconel
- Erosion Shields and Clips – 253Ma
- Heavy fabrication – Helical Heating Coils
- Header Fabrication – CrMo and P91





Management System Certification

- Quality Management System - ISO 9001:2015
- Occupational Health & Safety - ISO 45001:2018
- Environmental Management System - ISO 14001: 2015
- Aircraft, Space & Defence - AS9100D
- Welding Systems Certified – ISO 3834.2, DIN 2303 & EN15085-CL1/P

DISP Accreditation – Application submitted 2024

Currently working toward NADCAP third quarter 2025



Modern Manufacturing Facility

- 4500m² workshop + 1000m² workshop
- 9 meters under hook with 32T crane capacity
- Bay 1 has 2 x 16 Ton overhead cranes
- Bay 2 has 2 x 10 Ton overhead cranes
- CCTV Security monitoring



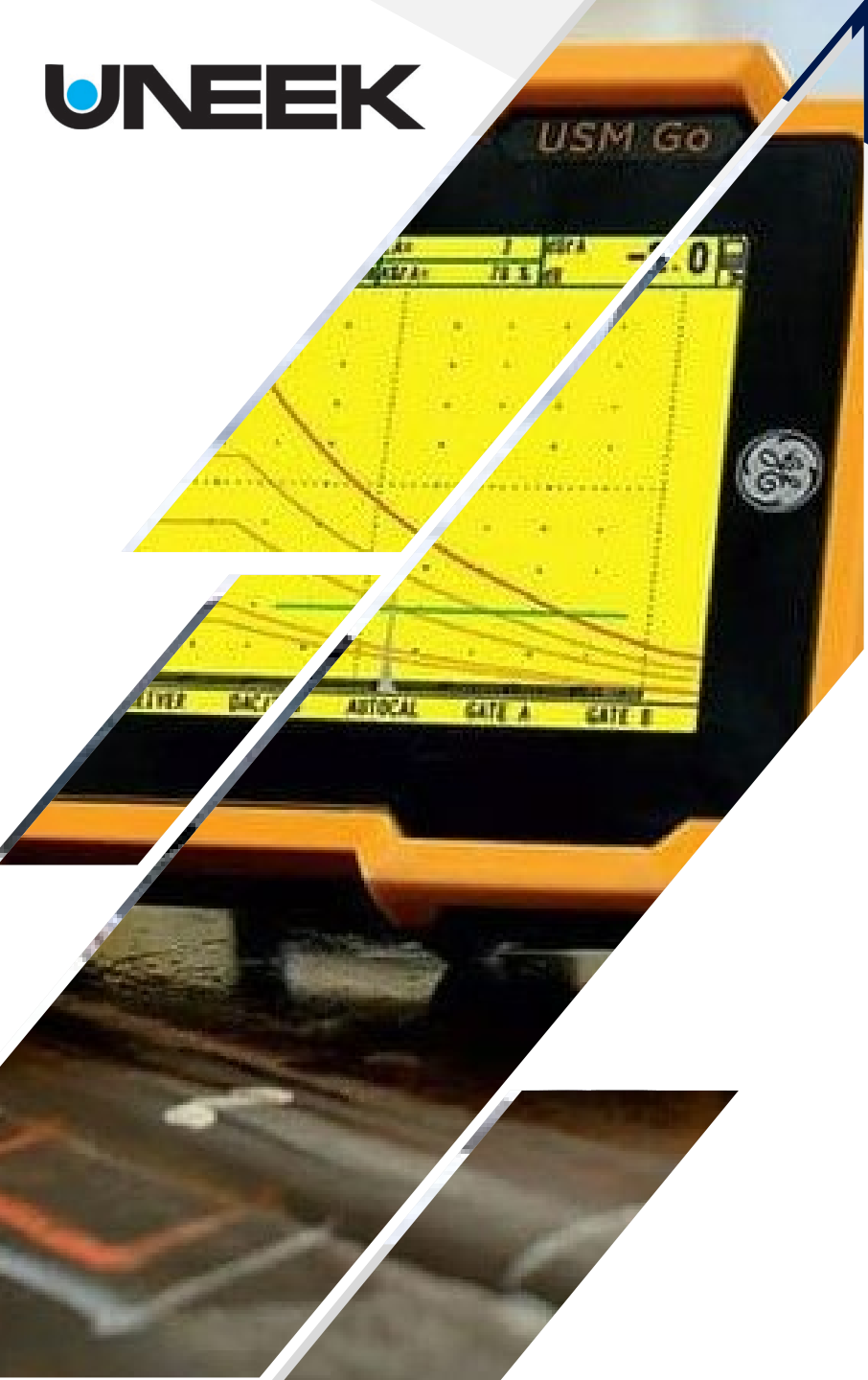
Manufacturing Capabilities

EQUIPMENT

- CNC Metal Bending Machines
- CNC Metal Rolling Machines
- Boost Bending Machine
- TIG, MIG, STT, Orbital TIG Welding
- Robotic Laser Welding
- Onsite Non-destructive Testing
- Heat Treatment
- CMM Measurement
- Design – SolidWorks, AutoCAD
- Pipe/Tube Swaging & Flaring
- Pipe/Tube Beveling & Scalloping

MATERIALS

- Carbon Steels
- Stainless Steels
- Cr-Mo
- Nickel Alloys
- Aluminium Alloys
- Quench & Tempered
- Titanium
- Inconel
- Copper Alloys
- Clad and Weld Overlay



Inspection Capabilities

INHOUSE

- Liquid Penetrant Testing
- Magnetic Particle Testing
- Ultrasonic Thickness Testing
- Hydrostatic Pressure Testing
- Air Leak Testing
- CMM Measurement
- PMI Analysis
- Macroscopic Testing
- Tensile Testing

THIRD PARTY – NATA CERTIFIED

- Liquid Penetrant Testing
- Magnetic Particle Testing
- Ultrasonic Thickness Testing
- Ultrasonic Weld Testing
- Radiographic Testing
- Eddy Current
- Phased Array
- Mechanical Testing



Welding Capabilities

- Robotic Laser Welding
- Orbital GTAW (TIG)
- Manual GTAW (TIG)
- GMAW (Synergic/Pulse)
- STT/WiseRoot+
- GMAW (MIG)
- Resistance Spot Welding
- Stick (MMAW)



Welding Capabilities

Our Team

Our **Welding Coordination Team** consists of IIW qualified,
2x International Welding Technologist

Our **Welding Supervision Team** consists of IIW qualified,
2x International Welding Specialist / AS1796 Certificate 10 / AS2214 Welding
Supervisors

Our **Welding Inspection Team** consists of IIW qualified,
International Welding Inspectors / AS1796 Certificate 11 / WTIA Senior Welding
Inspector
2x ISO9712 VT Level 2 Inspection Personnel
2x ISO9712 PT Level 2 Inspection Personnel

Our **Welding Team** consists of,
10x Qualified & Certified Welders – AS1796 / ISO9606 / AWS D17.1



Welding Capabilities

Procedure Qualification

Our extensive library of **Welding Procedures**

Almost 200 welding procedures qualified to a range of Australian and International Standards

Australian Standards

- AS 3992
- AS 1554.1
- AS 1554.4
- AS 1554.5
- AS 1554.6
- AS 1665

International Standards

- ASME XI
- AWS C1.1
- ISO 15614.1
- ISO 15614.2
- ISO 15613
- ISO 15614.11

Aerospace Standards

- AWS D17.1

Materials Qualified

- Carbon Steels
- Stainless Steels
- Cr-Mo
- Nickel Alloys
- Aluminium Alloys
- Quench & Tempered
- Titanium
- Inconel
- Hastelloy - C276
- Duplex / Super Duplex
- Copper Alloys
- Clad and Weld Overlay



Welding Procedure Specification EN ISO 15614-11 – Level B

WPS No.	WPS 101 (U11)	Revision No.	0	Date	01/11/2024
Supporting Procedure Qualification Record					
WPOR 101 (U11)					
Welding Process					
S2 - Laser Beam Welding					

Material Grade Qualified	301LN HT / UNS S30153 / 1.4318	Prequalified Joint No.	-
Steel Type/Weldability Group	-	Table No.	-
Pipe or Plate Thickness range	1.2 – 1.8	Root Gap	0 – 0.1
Pipe Diameter Range Qualified	-	Root Face	Full
Joint Type	Closed Square Butt	Included Angle	-
Weld positions qualified	2G / PC	Backing	-
Weld Direction	Forward		

Equipment Details

Laser Equipment	Trumpf TruLaser Weld 5000	Technology Set	U11
-----------------	---------------------------	----------------	-----

Welding Parameters

Spot Dia.	Laser End Ramp	Max. Laser Power	Robot Speed	Processing Angle
0.62 mm	12 ms	2000 W	0.075 m/s	0/8
Offset	Laser Start Ramp	Min. Laser Power	Laser Technology	Wire
0 mm	12 ms	500 W	Deep Pen. w/ BLS	None

Gas	Gas Type	Pre Flow Time	Fixture Gas Type	Pass Sequence
Crossjet	Ar	0.5 s	None	1
80 l/min	Nozzle Type	Post Flow Time	Fixture Flow	
30 l/min	Linear	0.5s	0 l/min	
Optics	Collimation	Focal Length	Laser	Operating Mode
100 mm	200 mm	TruFibre	Continuous	Full Penetration

Shielding type	Composition	Flow Rate (Litre/Min)
Argon 4.7	≥ 99.997%	30 l/min
Backing Type	Composition	Flow Rate (Litre/min)
-	-	-

Thermal Treatment (Welding):

Weld pre-heat temp Min	10°C	Time maintained for	-
Inter-run temp Max	-	Inter-run temp Min	-
This document aligns with the essential variable requirements outlined in ISO 15609-4 (CL4.1)			

Approved by U-NEEK Bending Co:

Written By	Qualification	Signature	U-NEEK Welding Coordinator
Mathew Billman	AU/IWT/0053	<i>Mathew Billman</i>	<i>MyB</i> Approval
Reviewed By	Qualification	Signature	
Craig Jones	CIWT/AU/S014/0	<i>Craig Jones</i>	

Robotic Laser Welding SS301LN HT –
Rolling Stock



Procedure Qualification Record

Number	PQR095
Date	1 st December 2023
Process	GTAW

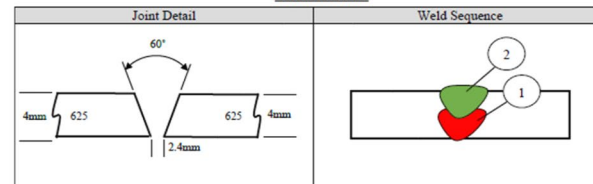
Material to be Welded:

Inconel 625 – Additive Manufactured			
Pipe diameter	190 OD	Prequalified Joint No.	Item 1
Pipe or Plate Thickness	4.0mm	Table No.	2.3
Steel Type/Group	43	Root Gap	2.4
Weld position qualified	6G/H-LO45	Root Face	0
Weld Direction	Up	Included Angle	60°
Joint Type	Single Vee	Backing	NA

Welding codes or standards for which this procedure has been approved:

AS3992:2020

Technical Data:



Gas Shielding type	Gas Composition	Gas Flow Rate (Litre/Min)
Coregas Argon 4.7	Ar 99.99%	13
Gas Backing Type	Gas Composition	Gas Flow Rate (Litre/Min)
Coregas Argon 4.7	Ar 99.99%	16

Thermal Treatment:

Weld pre-heat temp Min	18.5°C (Ambient)	Time maintained for	N/A - Hours
Inter-run temp Max	70°C	Method of measurement	Heat Gun - Infrared
Post Weld Heat Treatment	NA		
Initial Furnace Temp	NA		
Heating Rate	NA		
Holding Temp	NA		
Still air Cooling	NA		
Company Name	NA	Report No.	N/A
In Accordance to:	NA		

Additive Manufactured Inconel 625 –
Defence Research



Procedure Qualification Record

Number	PQR 031 Rev 1
Date	10 th December 2015
Process	

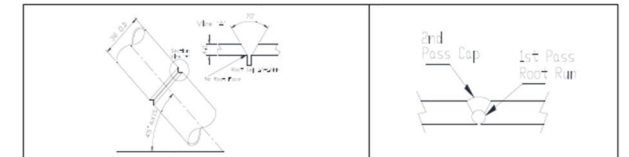
Material to be Welded:

ASTM A335 – P11			
Pipe diameter	38	Prequalified Joint No.	1
Pipe or Plate Thickness	4	Table No.	2.3
Steel Type/Group	C	Root Gap	1-1.6
Weld position qualified	6g	Root Face	0
Weld Direction	Down	Included Angle	70°
Joint Type	Single Vee	Backing	None

Welding codes or standards for which this procedure has been approved:

ASME IX AS/NZS 3992:1998

Technical Data:



Gases:

Shielding type	Composition	Flow Rate (Litre/Min)
Air Liquid M1	Argon- 82% Co2- 18%	12
Backing Type	Composition	Flow Rate (Litre/Min)
NA	NA	NA

Thermal Treatment:

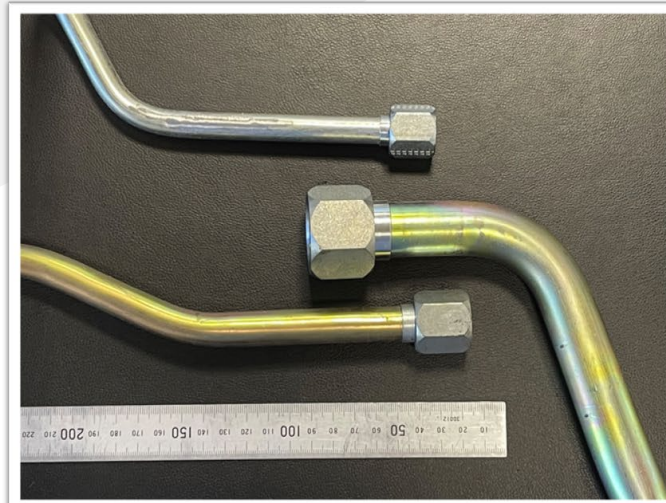
Weld pre-heat temp Min	50°C	Time maintained for	N/A Hours
Inter-run temp Max	150°C	Method of measurement	Infrared gun
Inter-run temp Min	50°C		

Post Weld Heat Treatment	NA		
Initial Furnace Temp	NA		
Heating Rate	NA		
Holding Temp	NA		
Still air Cooling	NA		

Manual GTAW Chrome Moly Steel P11 –
Power Industry

Defence

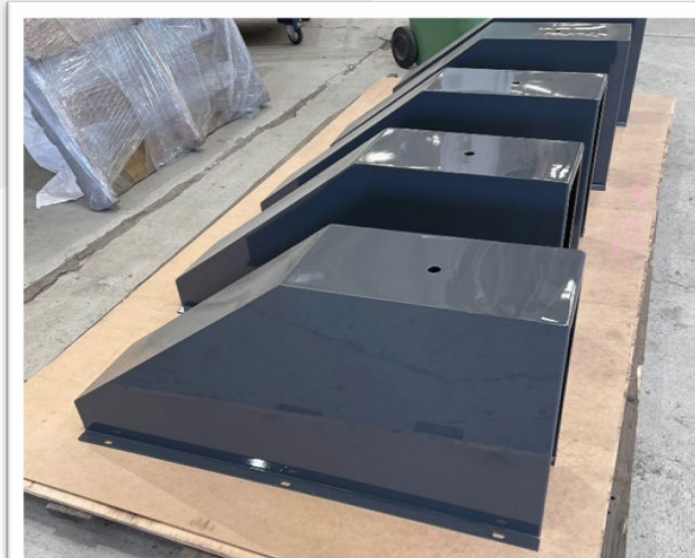
Application – Armoured Vehicles and Aerospace



Rolling Stock



Handrails



Sheet Metal Fabrication



Underfloor Piping



Mining & Chemical Processing

Manufacturing Examples



Sulphur melting coils for minerals processing



Titanium heating coil for minerals processing

Mining & Chemical Processing

Manufacturing Examples



Thermic fluid heater for offshore oil platform



Inconel fired heat coil for minerals processing

Power Generation

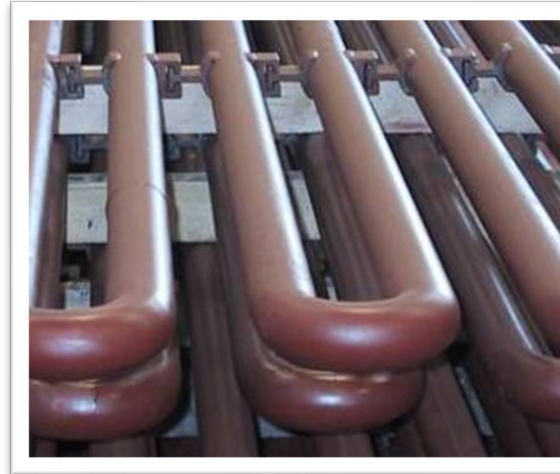
Manufacturing Examples



Superheater Elements



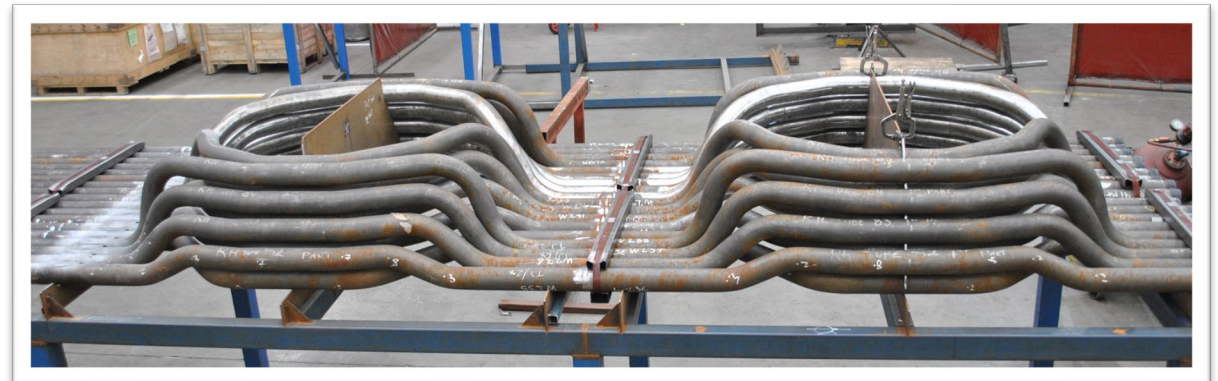
**Erosion
Shields**



1D Bends



Squeeze Bends



Burner Openings

International Capabilities

Pressure Parts



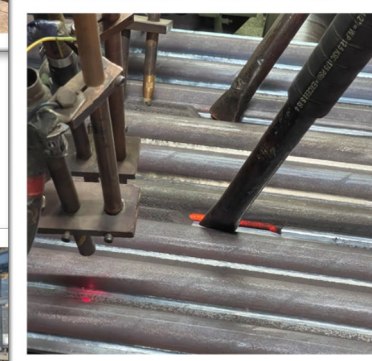
CERTIFICATION

- IBR Approved
- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018
- ASME "S" & "U" stamping.



CAPABILITIES

- Boiler pressure parts
 - Water walls
 - Tube coils
(Economizer, superheater, Evaporator Coils)
- Pressure Vessels
 - Piping



International Capabilities

Stainless Steel Fabrication



CAPABILITIES

Dedicated Stainless Steel
Fabrication Facilities

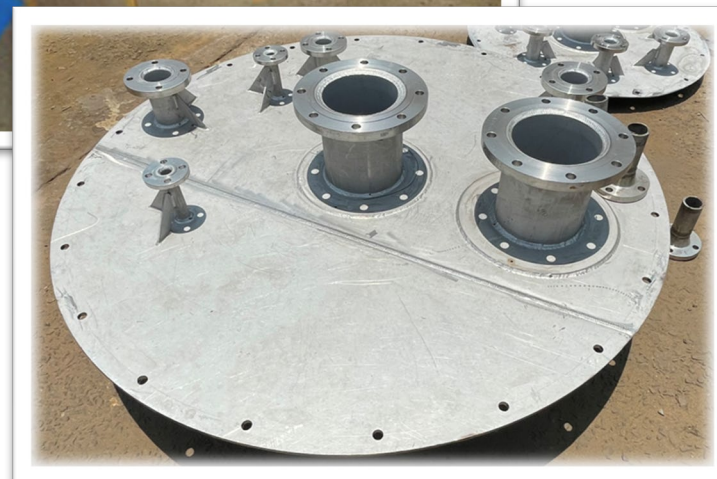
Digesters and Accumulators

Heat exchangers, Evaporators
and Reactors

Jacketed vessels with Limpet coil

Pressure vessels, Storage tanks,
Silos

Skid mounted assemblies



Our International Team



MR ARULSHANKARAN



MR RAJARATHANAM

Our Business Partners



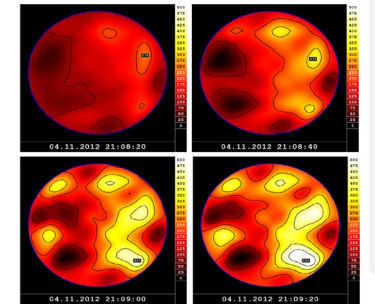
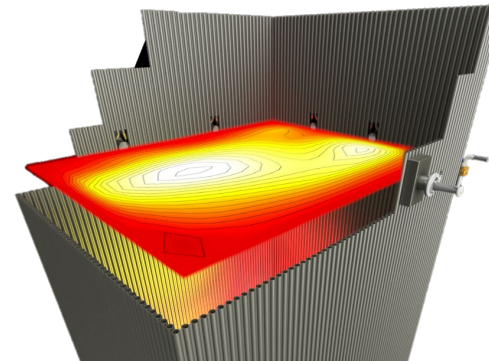
ENERGY SOLUTIONS



Bonnenberg & Drescher GmbH

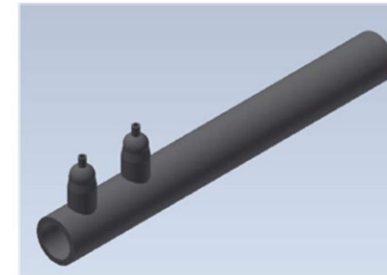
AGAM Acoustic Temperature Measurement

- true gas temperature
- without the influence of radiation
- no aging or no drift



Steinmuller Engineering Services GmbH

- design of plant/equipment
- Performance review & improvement



S.I.E.A- BIOCAL

- Biomass to energy



Our Engineering Team



Dr. Alf Ottrey, Senior Consultant

- >35 years' experience in process chemistry and engineering (large-scale plant)
- fuel preparation, gasification, combustion, emissions and plant behaviour
- feasibility studies (e.g., power generation, hydrogen production)
- economic and risk assessment
- liaison with international specialists:
 - Bonnenberg & Drescher GmbH
 - Steinmuller Engineering Services GmbH
 - S.I.E.A- BIOCAL



Industry Supply Chain

Supplying all industries



Transport



Defence



Power



Oil & Gas



Thank You.



Uneek Bending Co.



(03) 9771 4900



sales@uneek.com.au



www.uneek.com.au

UNEK
ENERGY SOLUTIONS

UNEK