

UNINTERRUPTED  
GROWTH ASSURED WITH  
JINDAL STAINLESS

# HOT ROLL BONDED CLAD PLATES

HOT ROLLED BONDING

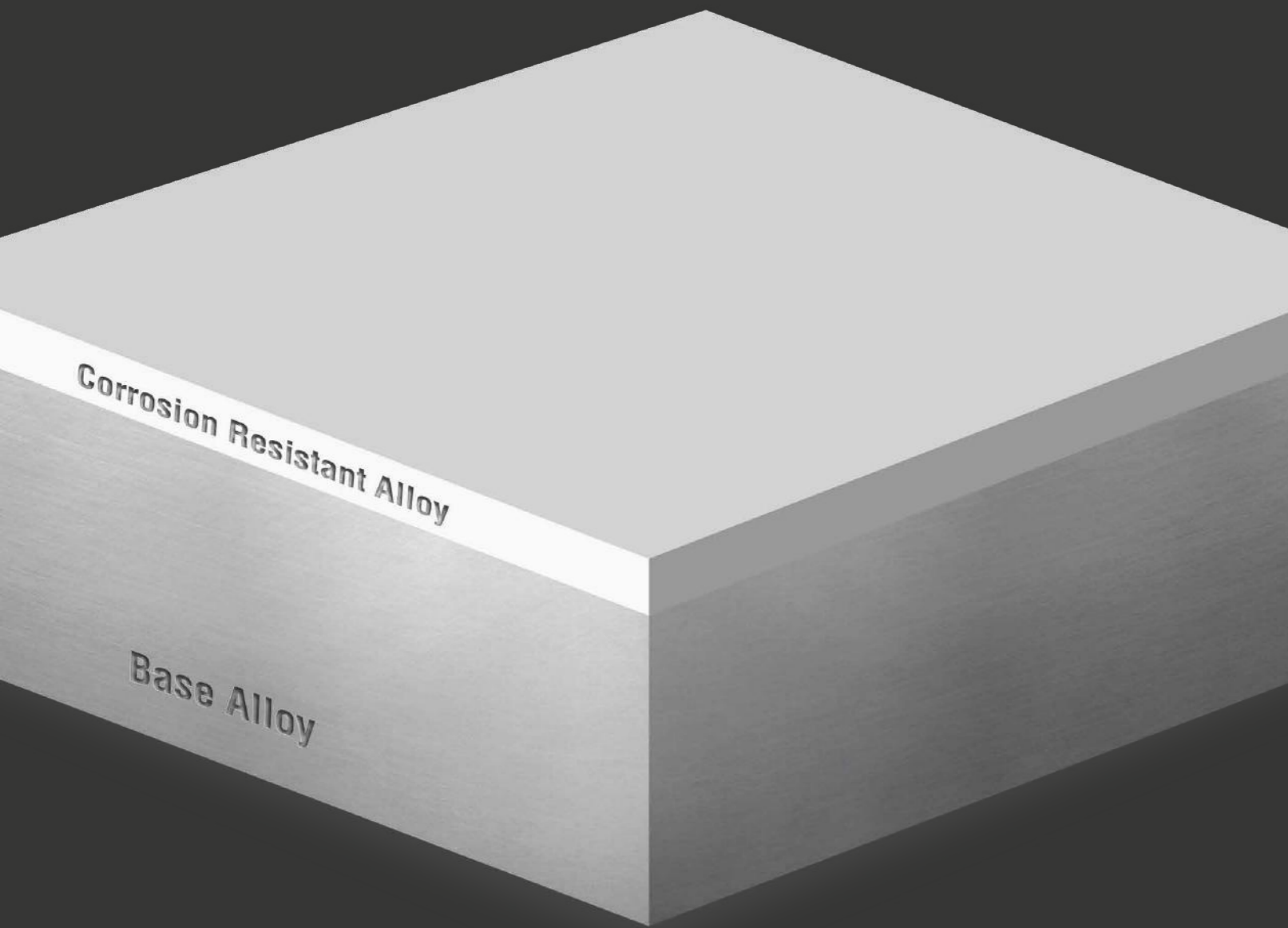


# A LEGACY BUILT ON SAFETY & TRUST

Founded by Shri O.P. Jindal in 1970, Jindal Stainless is one of the largest stainless steel conglomerates in India and ranks amongst the top 10 stainless steel conglomerates in the world. Jindal Stainless Group has an annual crude steel capacity of 1.9 MTPA and an annual turnover of \$2.7 billion (as on March 31, 2021).

Our growth has been backed by the excellence of our people, value driven business operations, customer centricity, adoption of one of the best safety practices in the stainless steel industry and a commitment towards social responsibility.





# HOT ROLL BONDED CLAD PLATES

Hot Rolled Clad Plates are metallurgically bonded composite of two layers produced through roll bonding which is done by hot rolling a welded composite assembly of steel clad plates.

- > The bond is created by high temperature and high pressure during hot rolling
- > A typical combination is a thin corrosion-resistant alloy (CRA) as clad material and a thick carbon steel as base material

Clad steel plate is used in a variety of industrial fields like Oil & Gas Production, refining construction and chemical, Pharmaceutical and Flue gas desulphurization industry for various equipment.



**Reliable for Continuous Operations**



**Lower Lead Time & Indigenous**



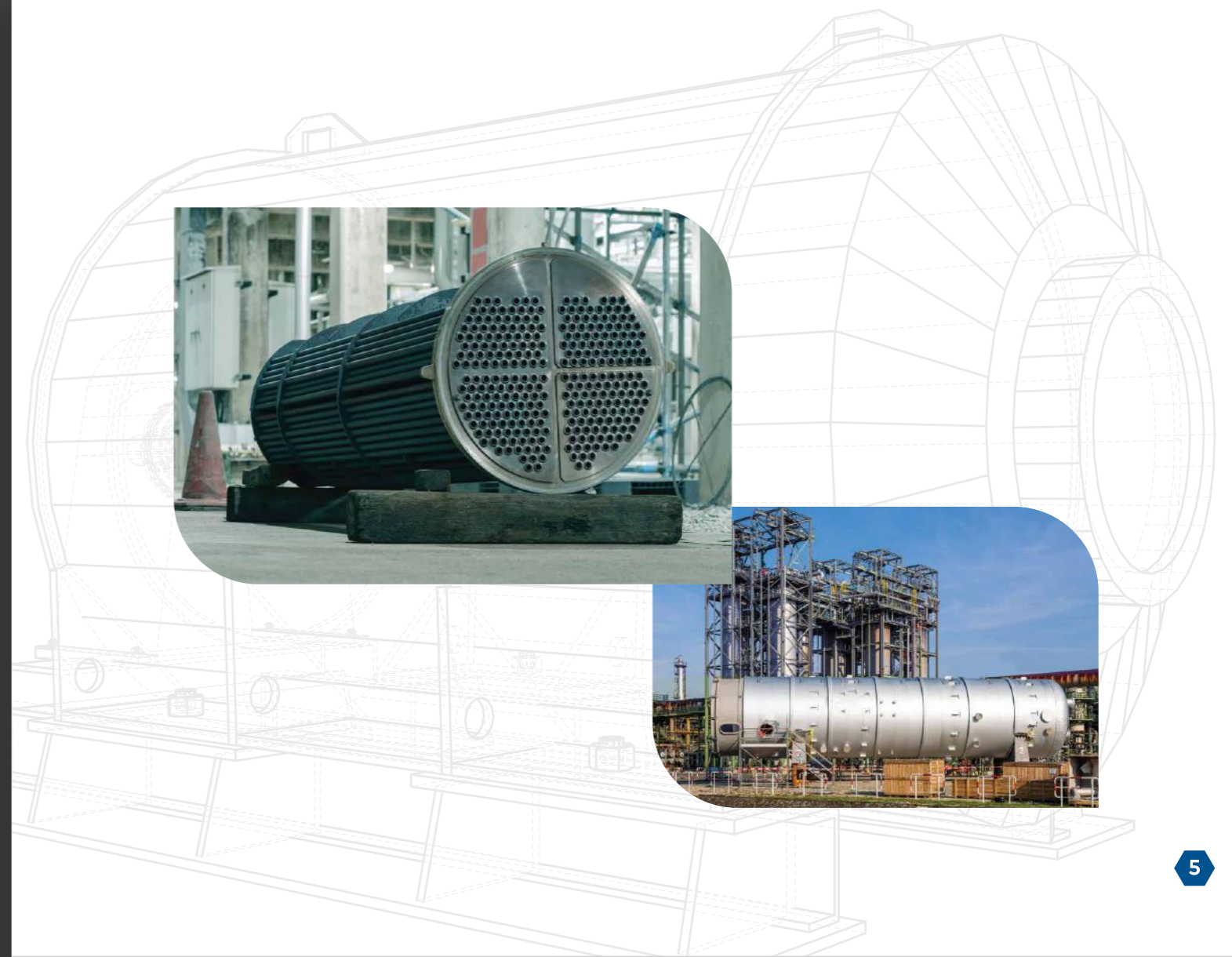
**Reduces Risk**



**Meets Global Standards**



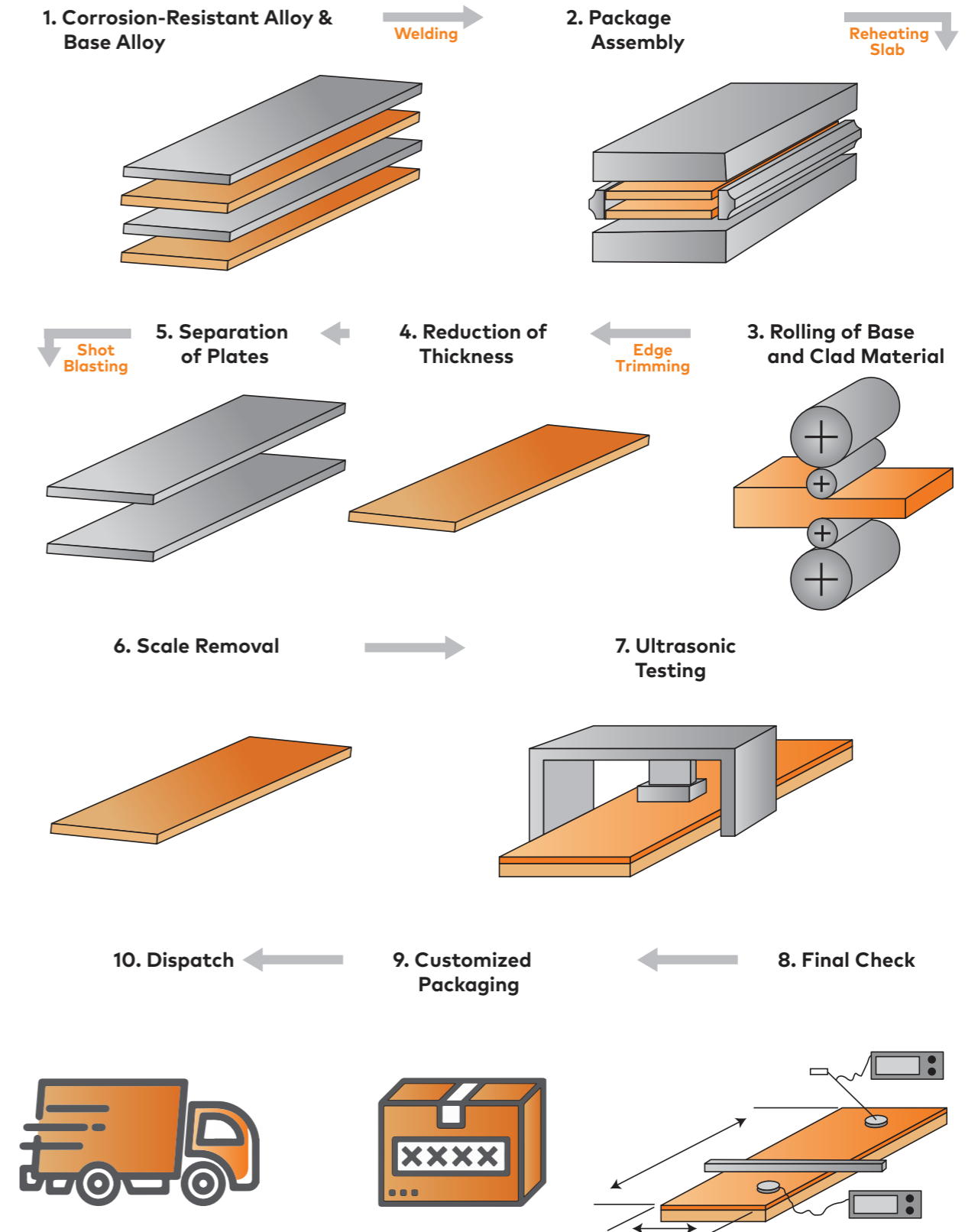
**Lower Lifecycle Cost**

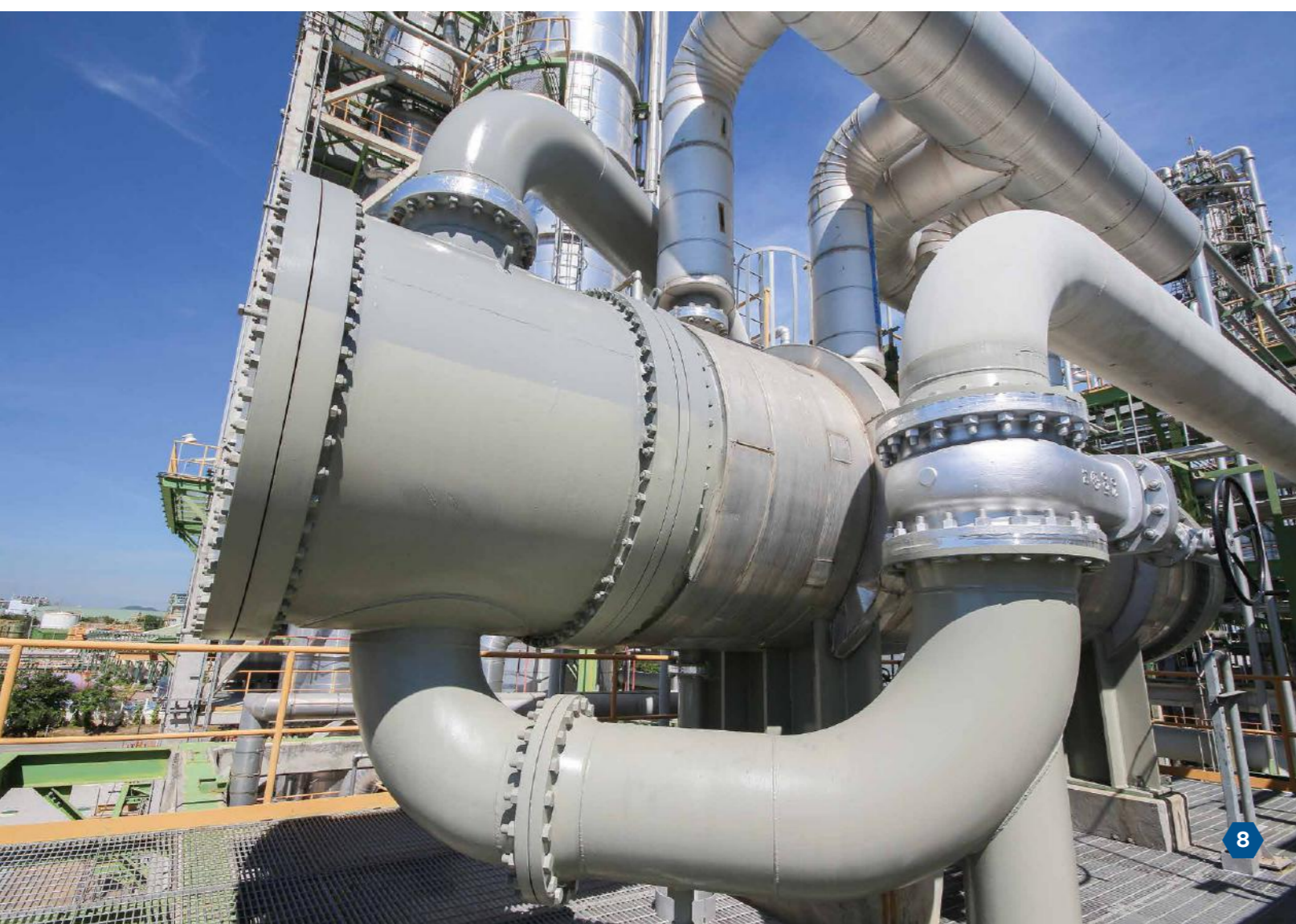




# HOT ROLL BONDING PROCESS

Our production equipment is highly automated and provides precise tolerances concerning dimensions, flatness and surface quality & properties





# CORROSION RESISTANT ALLOYS FOR UNPARALLELED STAINLESS SECURITY

Corrosion Resistant Alloys.  
Austenitic Stainless steel

Grades 304/L, 304LN, 309S, 310S, 316/L, 316LN, 316Ti, 317L, 317LN, 321/H, 347/H  
(Standards as per **ASTM, ASME, JIS & EN**)

Nickel Alloys

Grade: UNS N10276 & Other Nickel alloys

Thickness (mm)	Width (mm)	Length (mm)
8.0 - 20.0	1000 - 1200	Up to 8000

Minimum thickness of cladding alloy is 2.0 mm.

Tolerances as per ASTM A264, A265.

Contact our JSL representative for any customized requirement.

## TYPICAL BACKING STEEL

- IS 2062: E250 to E450
- EN 10025: S235 to S450
- ASTM A36, A283/283/285, A588
- ASTM A516: Grades 55 (380), 60 (410), 65 (450), 70 (485)
- API 5L Grade B, API 5L X-42/X-46/X-52/X-56/X-60/X-65/X-70





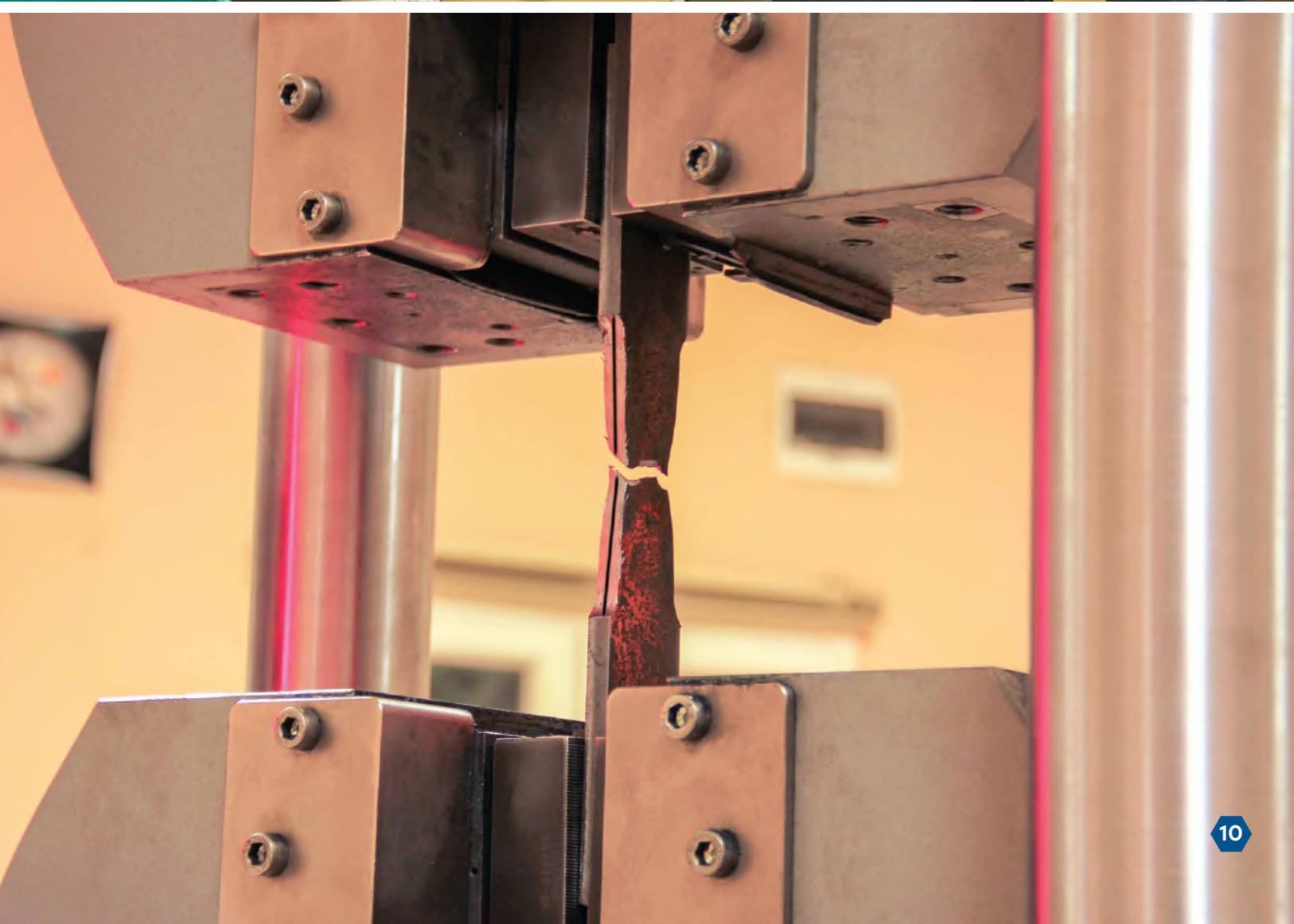
# TESTING & INSPECTION

## MULTIPLE CHECKS FOR ULTRA DURABILITY

Testing and inspection of Clad Plates are performed in accordance with the specification of ASTM A264 and A265.

- **Tensile Test:**  
The tensile properties shall be determined by a tension test of the composite plate or base plate for evaluation of strength of material.
- **Bend Test:**  
Bend tests with the cladding metal outside indicate the strength of the bond.
- **Shear Strength:**  
The ASTM specification requires minimum shear strength of 140 MPa.
- **Ultrasonic Test:**  
Ultrasonic inspection is performed as per ASTM A264/A265
- **Corrosion Test:**  
ASTM A262 Practice E for Stainless steel cladding material  
ASTM G48 method A for nickel alloy.

Any other type of testing as desired by the customer can be carried out based on mutual agreement.



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components.