

CLAD METAL PLATE

AMETEK Specialty Metal Products has been a leader in roll bonding dissimilar metals to produce high performance clad plate for more than fifty years. With our clad materials where the end products combines the superior properties of each metal you will benefit from:

- High mechanical strength
- Superior metallurgical bond
- Excellent corrosion resistance
- Outstanding thermal conductivity
- World class customer service

CLAD METAL EXPERTISE

AMETEK Specialty Metal Products (SMP) employs an industry leading roll bonding process to manufacture high quality, metallurgically bonded clad plate. Our multi-layered clad composite products deliver combinations of properties and advantages not available in monolithic metals. This delivers improved performance with the following advantages:

HIGH MECHANICAL STRENGTH

The combined high mechanical properties of clad metals achieves superior strength.

SUPERIOR METALLURGICAL BOND

Our well-established roll bonding process ensures the robust and integral metallurgical bond.

EXCELLENT CORROSION RESISTANCE

We specialize in processing high corrosion resistant alloys and BPVC rated materials.

CUSTOM SIZES

AMETEK metallurgists develop tailor made solutions to your exacting product specifications.

SMALL LOT SIZES

We offer small minimum order quantities and short lead times.

CLAD METAL PLATE



MARKETS

Extensively used for a wide range of industries:
Oil & Gas, Refineries, Petrochemical & Chemical,
Power Generation, Desalination, Shipbuilding
and Food Equipment.

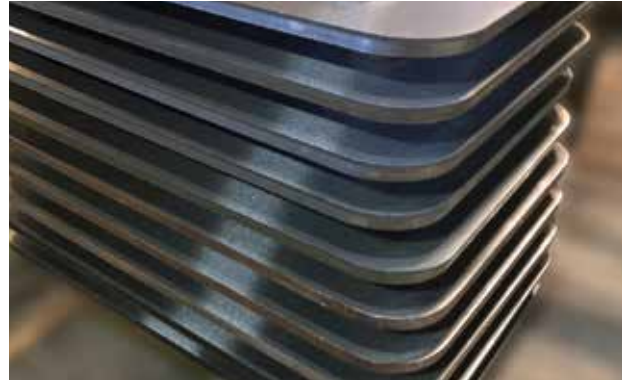


CLAD METAL PLATE

MANUFACTURING

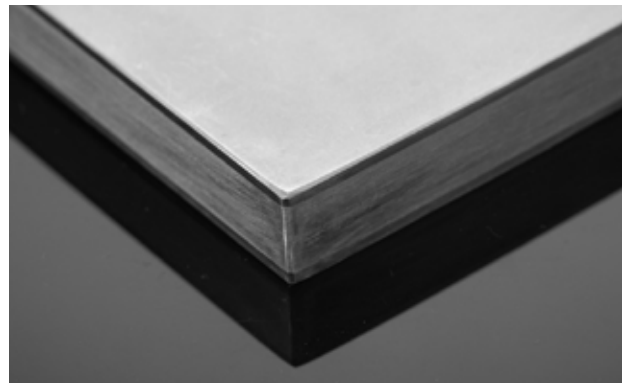
AMETEK SMP clad materials are manufactured by roll bonding a thicker, high strength backing sheet with a thinner layer of a corrosion-resistant specialty alloy layer to produce a metallurgically bonded clad.

Many different alloys can be combined through this technique providing a custom metal with the combined superior properties of each metal in comparison to a monolithic plate.

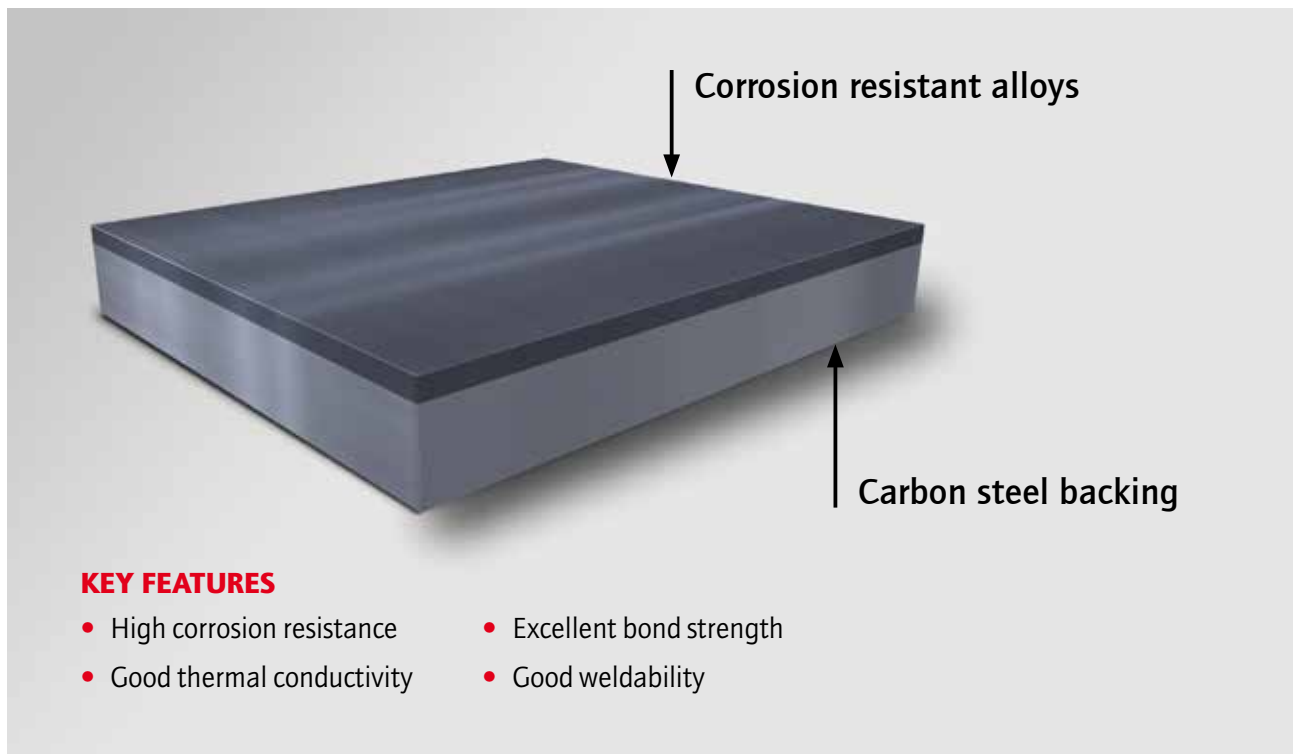


PROCESSING

Roll bonding is achieved by processing a specially prepared metal "sandwich" - made of layers of backing and cladding materials - through a conventional plate hot rolling mill. This high pressure and high temperature process compresses all metal plates and metallurgically bonds the backing material to the cladding material. After cutting to finish size, the bonded plates can be cleaned by blasting an abrasive mixed with glass beads to obtain a clean, relatively bright surface, both top and bottom, if desired.



CLAD PLATE (SS/CS)

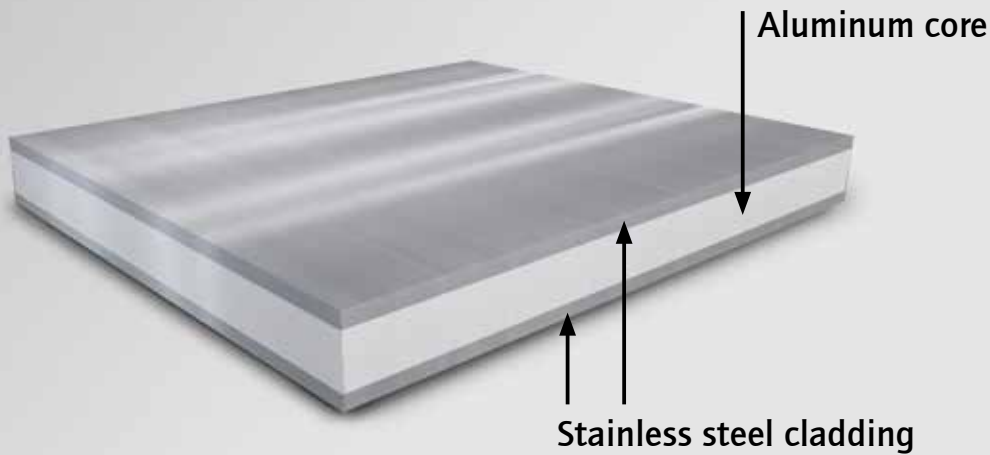


KEY FEATURES

- High corrosion resistance
- Excellent bond strength
- Good thermal conductivity
- Good weldability

CLAD METAL PLATE

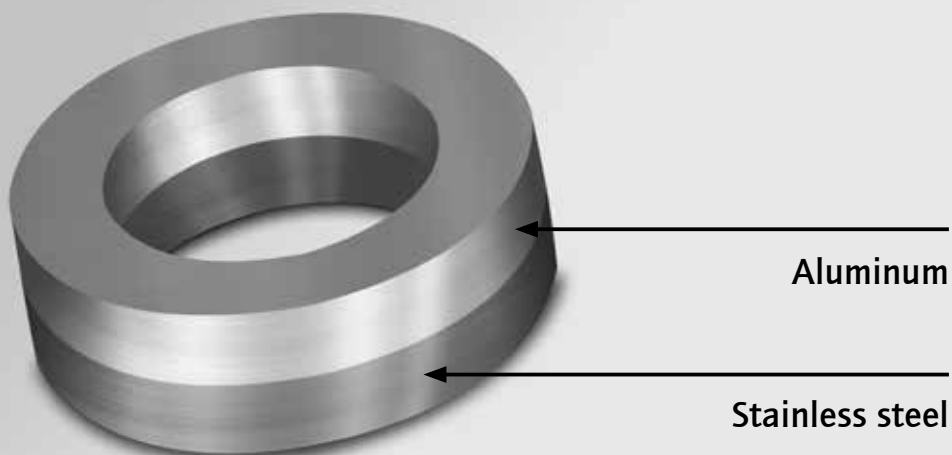
FASTAL (SS/Al/SS) CLAD PLATE



KEY FEATURES

- Excellent heat transfer - up to 5 times faster
- Excellent bond strength
- Ability to saw cut
- Good weldability
- Even heating surface
- Outstanding corrosion resistance
- Clean more quickly, low maintenance

WELDABLE TRANSITION PLATE (SS/AL)



KEY FEATURES

- High temperature resistance
- No galvanic corrosion
- Strong metallurgical bond between bimetallic plates
- No interlayers
- Eliminates need for mechanical fastening

CLAD METAL PLATE

FOOD EQUIPMENT

We have extensive experience in supplying the industrial food equipment service sector. Applications include braising pans, steamer vessels and commercial griddles. Our composite clad products offer thermal conductivity of solid materials, with the performance benefits of a stainless steel cooking surface.

COMMERCIAL GRIDDLES

FASTAL is our premium quality, tri-metal composite material which combines an aluminum core sandwiched between two corrosion resistant cladding of stainless steel. Alloys include SS 304, 316, 430 and 436. FASTAL delivers the industry leading heat transfer rate and optimum cooking uniformity with the following advantages:

- High induction rate - transfers heat up to 5 times faster
- Even heating surface for optimum cooking uniformity
- Outstanding corrosion resistance
- Excellent bond strength and weldability
- Ability to saw cut
- Clean more quickly
- Low maintenance



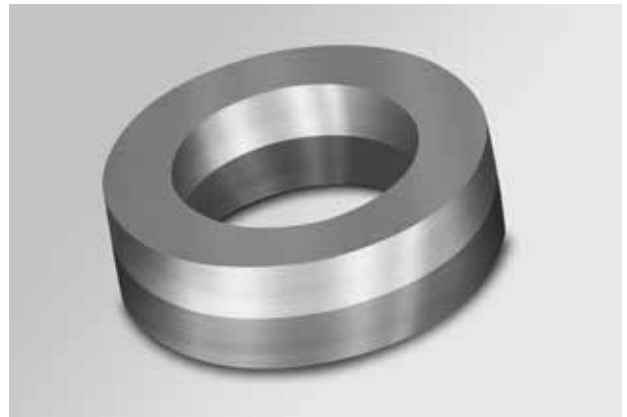
PRESSURE VESSELS / AUTOCLAVE

High alloy clad products are ideally suited for pressure vessels, autoclaves and industrial boilers where corrosion resistance, pressure resistance and structural performance are critical. Our high-performance materials deliver extended operational life.



STRUCTURAL TRANSITION JOINTS

High strength clad plate is used in a variety of industries for transition joints and allows for a weld free transition between stainless steel and aluminum. Our product is the recognised standard for stainless steel/aluminum transition joints, used for connecting superstructures and bulkheads to steel hulls, framing and decks and where ever a weldfree or flange free transition is desired.



CLAD METAL PLATE

QUALITY CONTROL, TESTING

Clad plate can be produced to meet ASME specification such as BPVC II. To meet these specifications, AMETEK SMP uses certified materials and routinely performs tensile tests, shear tests, hardness, bend tests, ultrasonic testing and impact tests (Charpy V-Notch).

TYPICAL CLAD MATERIALS

- Stainless clad / carbon steel
- Nickel clad / carbon steel
- Nickel alloy / clad carbon steel
- Titanium clad
- Stainless / aluminum clad
- Stainless / aluminum/stainless clad
- CRA / carbon steel clad

CLAD PLATE CAPABILITIES

- Thicknesses from 3/16" to 1" (4.76 to 25.4 mm)
- Widths to 98" (2,500 mm)
- Lengths to 540" (13,716 mm)
- Surface grinding (#3 & #4 finish)
- Normalizing & solution anneal
- Ultrasonic testing to SA 578
- % of clad: 5% to 40%
- Weight / plate: 8,000 lbs. max. (finished)

TYPICAL ALLOYS

304L	410S	Monel® 400	Iconel® 825	Titanium
316L	Nickel 200	Iconel® 625	Hastelloy® C276	Aluminum

Custom grades are available.

CLAD METAL PLATE



AMETEK Specialty Metal Products (SMP) is a division of AMETEK, Inc. a leading global manufacturer of electronic instruments and electromechanical devices with annual sales of approximately \$5 billion.

AMETEK has 18,000 colleagues at more than 150 operating locations, and a global network of sales, service and support locations in 30 countries around the world.

The Specialty Metal division consists of five businesses and operating facilities in the United States and the United Kingdom, all proven experts in the manufacture of advanced metallurgical products including precision metal strip, ultra-thin foil, specialty shaped wire, engineered shaped components, thermal management products, high purity powders, precision tube and clad plate.

These high performance metal products are used around the world for critical applications in a range of industries including aerospace, automotive, defense, medical, electronics, oil and gas and nuclear.



1085 Route 519, Eighty Four, PA 15330, United States

E: EFsales@ametek.com | T: (+1) 724-225-8400

www.powderclad.com