



FOSHAN KUN LIU SHENG COMPOSITE MATERIAL CO.,LTD

ADD:NO.27-33,2/F,No.5 Block,Lanshi (international) Metal Trading Center,ChanCheng District,
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CLAD

*Bonding Dissimilar Metals Into
High Performance*

PLATE



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Superior Properties Merged Into One

If you are looking for a combination of light weight,lower cost,good strength,corrosion resistance and thermal and electrical conductivity in a single metal,just consider the clad plates.

Clad plate a combination of two or more different metals,each chosen for its specific properties,metallurgically bond to obtain an integral continuous single metal material superior to that of any of the individual metals taken alone .

The base material in the composite is carbon steel or alloy steel and is the thicker of the two metals.This economical base material provides the required strength and structural integrity to the composite.The thinner layer of the composite,usually ranging between 10% and 20% of the total thickness, but still available from 5% to 40%,may be stainless steel,aluminum and aluminum alloy,copper and copper alloy,nickel and nickel alloy,titanium etc.The cladding is normally selected for corrosion resistance and allows the designer to gain the desired benefit of solid high-alloy plate.

The clad plate can be cut,welded or formed into a finished part ranging from reactors, chemical processing chambers ,heat exchangers,tanks and pressure vessels to small applications and clad pipe.Due to the superior properties offered by clad metals and the wide variety of available cladding material and base material, the clad plate can be combined to make customized materials for a wide variety of demanding industries like chemical & petroleum processing,paper making and pulp,food and food processing,power generation,water supply and municipal construction etc.

The common cladding combination as below:

- *Stainless steel / carbon steel cladding
- *Stainless steel / steel alloy cladding
- *Hastelloy / steel cladding
- *Stainless steel / aluminum & aluminum alloy cladding
- *Copper & copper alloy / steel cladding
- *Copper & copper alloy / aluminum &aluminum cladding
- *Titanium / steel cladding
- *Nickel / steel cladding

In summary,there is no end to the possibilities !



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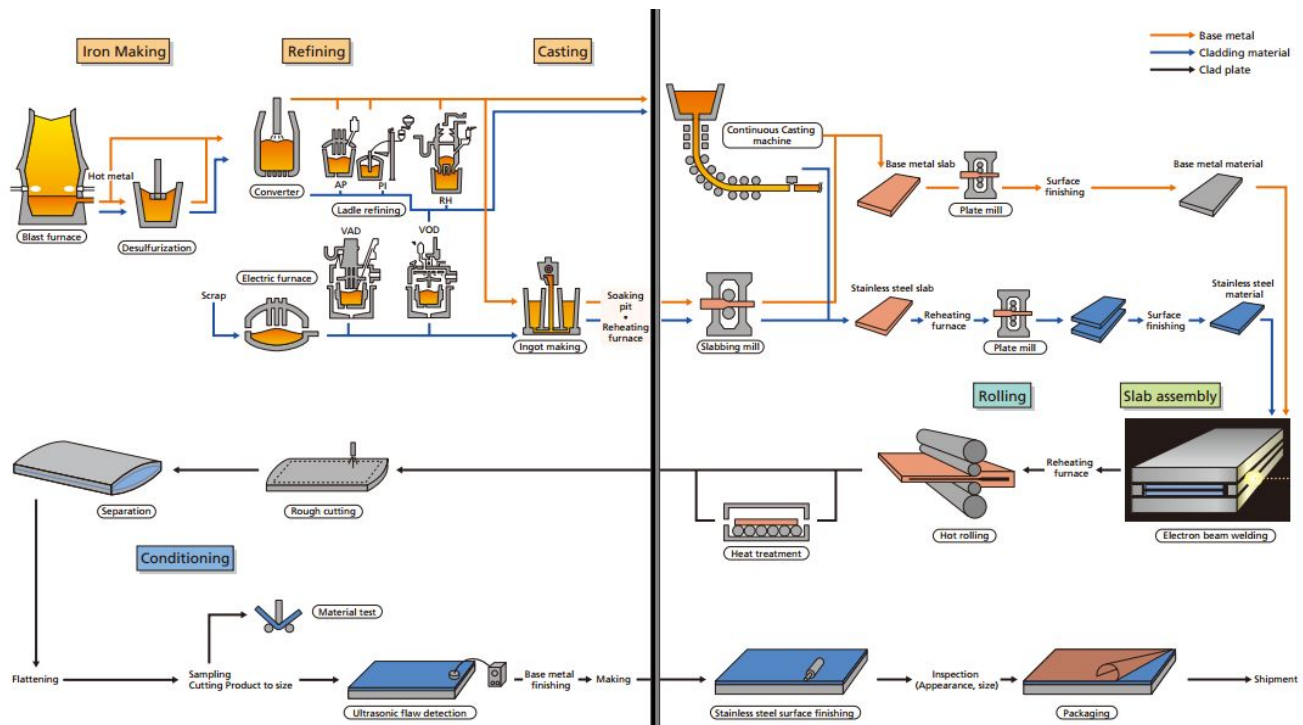
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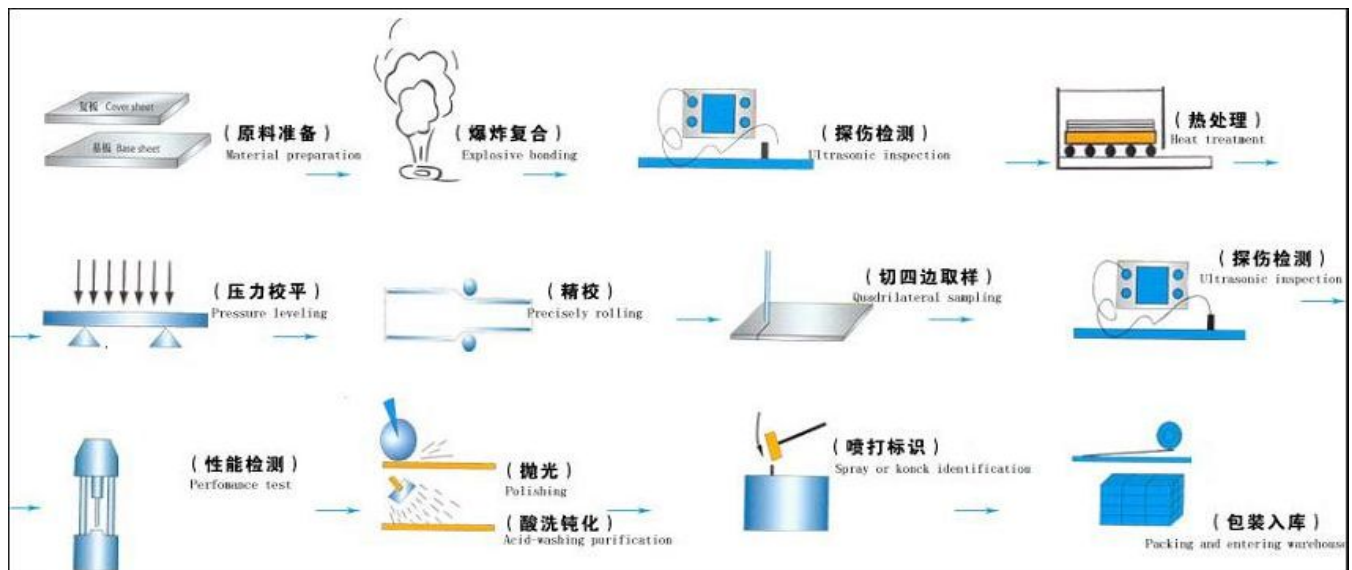
STAINLESS STEEL CLAD PLATE



Stainless steel & steel clad plate is the most common clad plate ever in industrial usage replacing the pure expensive stainless steel material. The common backing steel material is ASTM A36/A285/A387/A516, while the cladding stainless steel can be SS304/304L/316/316L/321 etc. Our clad plates are produced by roll-bonding and explosive bonding.



--Roll-bonding production technique--



--Explosive bonding production technique--



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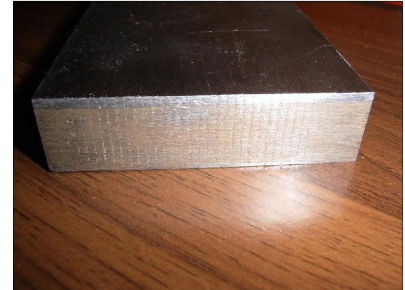
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Different kind of bonding way, the cladding surface between two metals is different.Please see below pictures:

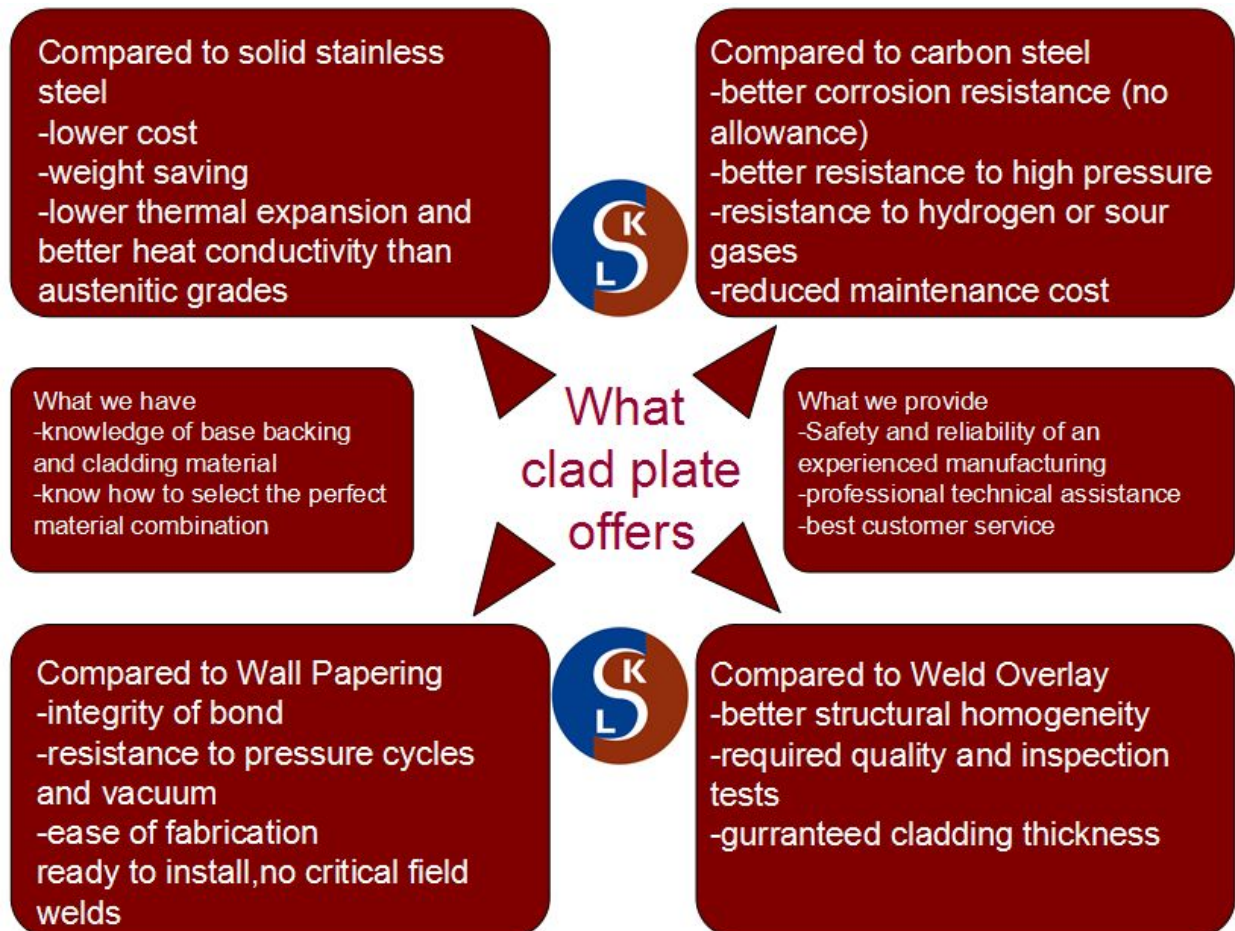


--Explosive bonding--
(Zigzag joint surface)



--Roll-bonding--
(flat joint surface)

By combining for example a stainless steel layer with a low alloy backer steel, it is possible to benefit from the mechanical properties of the backing material and the corrosion resistance of the stainless steel at a competitive price. Normally the backer metal is a carbon-manganese steel, CrMo or other alloy material and the cladding material can be a stainless steel, nickel base material or copper base material.





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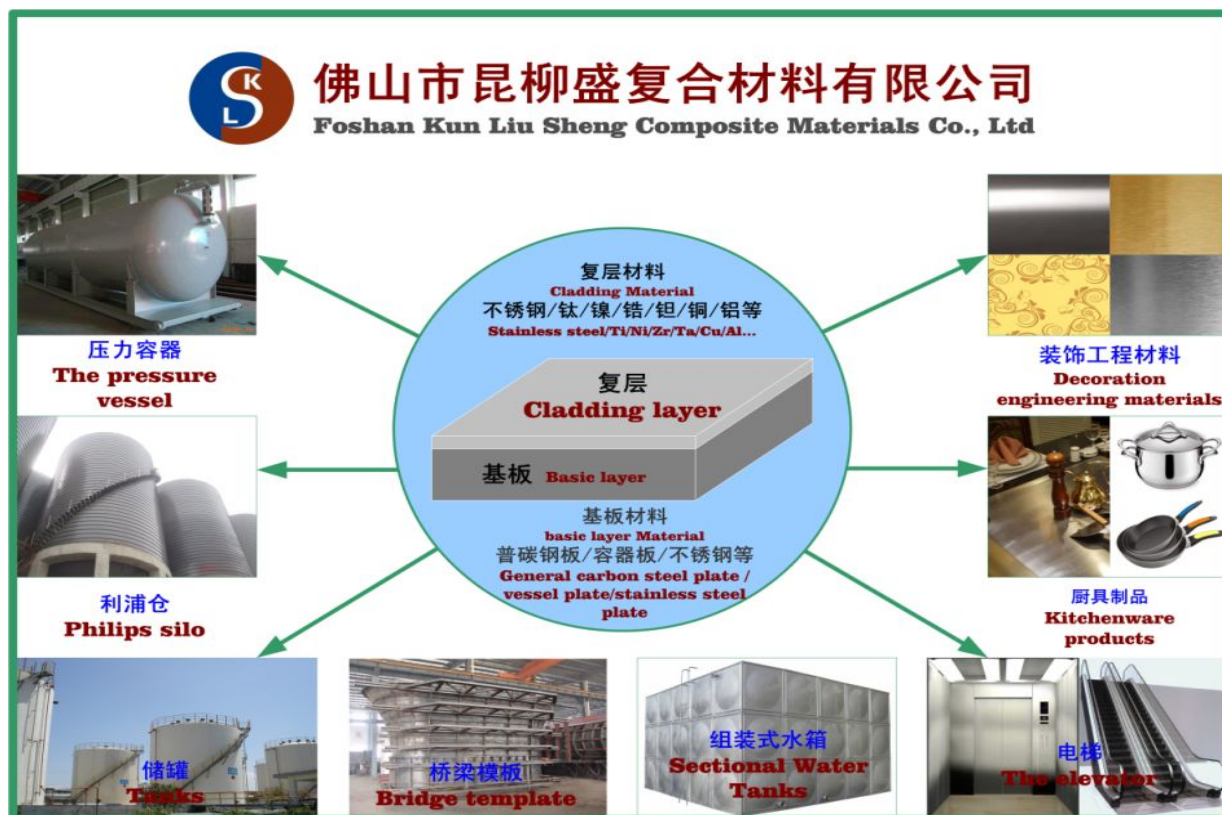
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STAINLESS STEEL CLAD PLATE APPLICATION



SPECIFICATION AVAILABLE

不锈钢复合冷轧卷板 Cold-rolled Stainless steel clad coil

材质 Material	厚度thickness (宽width1219mm)	材质Material	厚度thickness (宽width1219mm)
两层 double layers 304+Q195L	2.0(0.2+1.8)	三层 Three layers 304+Q195L+304	2.0(0.3+1.4+0.3)
	1.5 (0.2+1.3)		1.5 (0.18+1.14+0.18)
	1.2 (0.2+1.0)		1.2 (0.15+0.9+0.15)
	1.0 (0.2+0.8)		1.0 (0.2+0.6+0.2)
	0.8 (0.15+0.65+)		0.8 (0.1+0.6+0.1)
	0.6 (0.1+0.5)		0.6 (0.1+0.4+0.1)
两层 double layers 304+08AL	2.0(0.2+1.8)	三层 Three layers 304+08AL+304	2.0(0.3+1.4+0.3)
	1.5 (0.2+1.3)		1.5 (0.18+1.14+0.18)
	1.2 (0.2+1.0)		1.2 (0.15+0.9+0.15)
	1.0 (0.2+0.8+)		1.0 (0.2+0.6+0.2)
	0.8 (0.15+0.65)		0.8 (0.1+0.6+0.1)
	0.6 (0.1+0.5)		0.6 (0.1+0.4+0.1)
不锈钢冷轧复合镀锌卷板 Stainless steel cold-rolled clad sheet/coil with galvanization			
两层 double layers 304/08AL/镀锌 galvanization	0.8 (0.12+0.68)	镀锌层 Thickness of galvanization 70-80g/㎡	宽度width : 770mm 卷重Weight : 2-5t
	1.0 (0.15+0.85)		
	1.2 (0.18+1.02)		
	1.5 (0.22+1.28)		



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热轧复合卷板厚度组合表（三层双面复合）

Hot-rolled clad coil/sheet(Three layers,both sides cladding)

总厚度TTk 复材厚度CTk	0.2*2	0.25*2	0.3*2	0.35*2	0.4*2	0.45*2	0.5*2	0.55*2	0.6*2	0.65*2	0.7*2	0.75*2	0.8*2	0.85*2	0.9*2	0.95*2	1.0*2
1.5																	
1.6																	
1.7																	
1.8																	
1.9																	
2.0																	
2.1~2.5																	
2.6~3.0																	
3.1~3.5																	
3.6~4.0																	
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5.6~6.0																	
6.1~6.5																	
6.6~7.0																	
7.1~7.5																	
7.6~8.0																	

可以制造范围

specification production range

CTk : Thickness of cladding layer, TTk : Total thienkess

热轧复合卷板厚度组合表（两层单面复合）

Hot-rolled clad coil (double layer, one side cladding)

总厚度TTk 复材厚度CTk	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0
1.5																	
1.6																	
1.7																	
1.8																	
1.9																	
2.0																	
2.1~2.5																	
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6.6~7.0																	
7.1~7.5																	
7.6~8.0																	

可以制造范围

specification production range

CTk : Thickness of cladding layer, TTk : Total thienkess



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热轧复合中厚板厚度组合表 (单面复合)
Hot-rolled clad plate (one side cladding)

复材厚度 母材厚度CTk 厚度BTk	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.6	4.1	4.6
4.0~5.0																																
5.1~6.0																																
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30.5~40																																
40.5~50																																

CTk : Thickness of cladding layer, BTk : Thickness of basic layer

Note: The thickness combinations shown in the above tables are regular ones,for more thicker size combination need, please contact for available confirmation.

Clad Pipes



Clad pipes are used in oil and gas production under corrosive conditions: for pipelines, rise pipes in offshore applications and process pipes in refineries.

Metallurgically bonded clad pipes are made of roll-bond clad plates. The clad pipes provide the high strength and good toughness of the base material as well as the proper corrosion resistance of the clad material.



The metallurgical bond of the clad pipes is most efficient for highest mechanical demands and even can bear dynamic loads. Thus these clad pipes are highly useful in deepwater linepipes under corrosive conditions as well as for bends and fittings.



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Typical Fields Of Application

Refineries

- Fractionators
- Vacuum towers
- Coke drums
- Process pipes

Chemical industry

- Columns
- Pressure vessels
- Reactors
- Washers
- Heat exchangers

Sea-water desalination plants

- Evaporator shells
- Water boxes
- Pump vessels

Oil and gas production

- Clad pipelines
- Catenary riser pipes

Flue gas desulphurisation plants

- Flue gas channels
- chimneys
- Flue gas scrubbers



Information Required with orders or Inquiries

When placing an order or making an inquiry, please advise us of the following so that we may deliver products best suited to your needs.

- (1) Standards (of base metal and cladding material type).
- (2) Size and quantity.
- (3) Special specifications, if any. Chemical composition, dimensional allowances, heat treatment, surface finish, packaging, etc.
- (4) Intended application and conditions when using.
- (5) Fabrication method.
- (6) Delivery timing.