



**SIPREME**<sup>...</sup>

CRITICAL APPLICATION ALLOYS

**SICLAD**<sup>...</sup>

CLAD STEEL

**SINOXX**<sup>...</sup>

STAINLESS STEEL

**sij**<sup>...</sup>

Corrosion resistant steels and alloys  
**SINOXX | SIPREME | SICLAD**





# sij | group

SIJ is a vertically integrated holding company, the leading steel manufacturer in Slovenia, and one of the largest stainless and special steel manufacturers in Europe. SIJ Group consists of the two largest steel companies in Slovenia (SIJ Acroni and SIJ Metal Ravne), other manufacturing and processing companies (SIJ Ravne Systems, SIJ Elektrode, SIJ SUZ), specialized service and sales centers across Europe and the USA, and companies for scrap steel collection and sales.

[www.sij.si](http://www.sij.si)



#### **INCREASE YOUR PRODUCT'S LIFE SPAN**

The highest steel quality, based on world class production equipment and more than 400 years of experience in steel making



#### **DECREASE MACHINING COSTS**

Narrow dimensional tolerances, exceeding international standards



#### **OPTIMIZE YOUR MANUFACTURING PROCESSES**

Extensive range of mechanical treatment possibilities to find the best fit for your production process



#### **EXCEED YOUR CUSTOMERS' EXPECTATIONS**

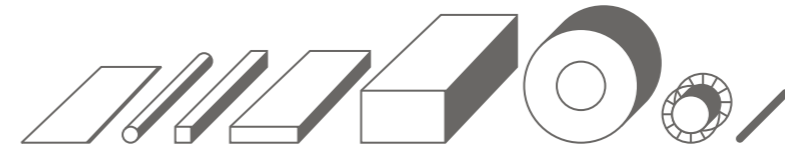
Strong in-house R&D Department and broad applied knowledge helps you get the best solutions for your customers' needs



SINOXX



SINOXX



**SINOXX** represents a family of corrosion-resistant steels that contain at least 10.5% of chromium. These steels are also alloyed with nickel, molybdenum, titanium, niobium and other elements. Their mechanical properties and application depend on their chemical composition. The careful choice of the correct steel grade affects the durability and serviceability of a manufactured product.

SINOXX products, produced by SIJ Group companies, are used in even the most demanding environments and applications in the following industries:

- Oil and gas
- Chemical and petrochemical
- Pulp and paper
- Energy
- Desalination
- Mining
- Automotive
- Household appliances
- Furniture
- Machinery and equipment

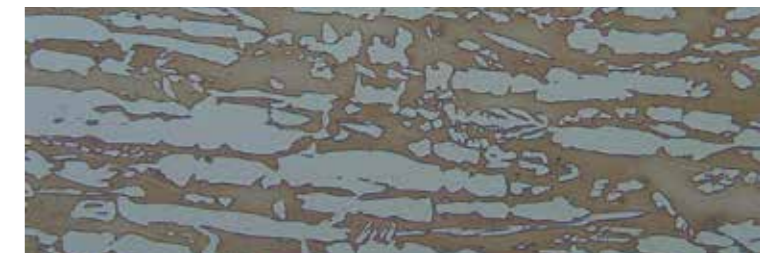
#### **AUSTENITIC STAINLESS STEEL** ( $\gamma$ - iron)

Austenitic stainless steels are characterized by good to excellent corrosion resistance combined with very good weldability and formability. The austenitic structure has good creep and oxidation resistance which makes it useful at elevated temperatures. Austenitic steel can also be used in cryogenic applications, and in the annealed condition it is the only non-magnetic steel.



#### **DUPLEX STAINLESS STEEL** (Austenitic-ferrite)

Duplex stainless steels have high strength, good toughness and very good corrosion resistance, especially toward stress corrosion cracking and corrosion fatigue. These steels also have good weldability and reasonable formability.



#### **FERRITIC - MARTENSITIC STAINLESS STEEL** ( $\alpha$ - iron)

Ferritic-martensitic stainless steels have good corrosion resistance, especially toward stress corrosion cracking. A lower carbon and nitrogen content improves both weldability and toughness, which otherwise can be limited.





# SIPREME<sup>•••</sup>



**SIPREME** nickel alloys are mostly used in the processing industry due to their excellent corrosion resistance in very aggressive corrosive environments, where high temperatures and stresses are present. Similar to stainless steels, nickel alloys cover a wide range of corrosion resistance. Due to the better solubility of different alloying elements in nickel (chromium, molybdenum, tungsten, etc.) compared to iron, nickel alloys can be used even in more aggressive environments than stainless steels.

**SIPREME 4858**, an austenitic nickel-iron-chromium alloy with additions of molybdenum, copper and titanium (Alloy 825, 2.4858, UNS N08825), is designed to provide exceptional resistance to many corrosive environments. It is resistant to chloride-ion stress-corrosion cracking, to reducing environments such as those containing sulfuric and phosphoric acids, to pitting and crevice corrosion and to a variety of oxidizing substances such as nitric acid, nitrates and oxidizing salts. The titanium addition serves, with the appropriate heat treatment, to stabilize the alloy against sensitization to inter-granular corrosion.

**SIPREME 4876**, a nickel-iron-chromium alloy (Alloy 800H, 1.4876/1.4958, UNS N08810), provides high strength and excellent resistance to oxidation and carburization at high temperatures. It also has good resistance to many nitriding atmospheres. The high creep strength is attained through control of the crystal grains in high temperature heat treatment, together with fine control over the carbon, titanium, and aluminum content.

## APPLICATIONS

- Industrial Heating Industry - radiant tubes, return bends, muffles, retorts and fixtures for heat treating furnaces
- Petrochemical furnace tubes
- Hydrocarbon Processing Industry – catalyst tubing, convection tubing, outlet manifolds and quenching system piping
- Power Generation Industry – steam super-heaters, high temperature heat exchangers, piping systems



**SICLAD**...

# SICLAD



**SICLAD** is a composite steel plate, produced by bonding two plates of different material grades. The thicker part of the clad plate is called the base metal, which is usually carbon steel plate. The thinner layer is called cladding, which can be stainless steel, a nickel alloy, or wear resistant or tool steel. Both plates are metallurgically bonded, so the clad plate behaves like a single plate.

#### THE ADVANTAGES OF USING CLAD PLATES

The plate has optimal properties on both sides of the plate, combining the advantages of both material grades

- Less weight and greater strength
- Costs benefits

Clad plates can be used in a variety of industries and applications. They are used in construction, for pipelines in the oil and gas industry and other piping, in the earth-moving and mining industries, in mechanical engineering for parts with extreme abrasion resistant properties, for pressure vessels, and for ballistic protection. All our plates are produced exclusively in our own steel mill plant, so we can ensure stable characteristics of our products and offer short delivery terms.

#### DIMENSIONAL RANGE

- Cladding material thickness: 3.2 mm
- Base material thickness: 12-40 mm
- Width: max. 2000 mm

STEEL GRADES	SIJ DESIGNATION	W.NR.NUMBER	DESIGNATION AISI/ ASTM	DESIGNATION EN	DESIGNATION GOST	QUARTO PLATES	HOT AND COLD ROLLED COILS AND SHEETS	FORGED AND ROLLED BARS FORGINGS	COLD DRAWN / GROUND BARS	COLD DRAWN WIRE	WELDING CONSUMABLES*	OLD DESIGNATION METAL RAVNE
AUSTENITIC	SINOXX 4301	1.4301	304	X5CrNi18-10	12X18H9	•		•	•	•	•	PK11EX
	SINOXX 4305	1.4305	303	X8CrNiS18-9		•		•	•	•	•	PK11S
	SINOXX 4306	1.4306	304L	X2CrNi19-11	06X18H11	•			•	•	•	
	SINOXX 4307	1.4307	304L	X2CrNi18-9	04X18H10	•			•	•	•	
	SINOXX 4307 easy mill		304L			•					•	
	SINOXX 4310	1.4310	301	X12CrNi17-7					•	•	•	PK11VZ
	SINOXX 4311	1.4311	304LN	X2CrNiN18-10		•					•	
	SINOXX 4315	1.4315	304N	X5CrNiN19-9		•					•	
	SINOXX 4541	1.4541	321	X6CrNiTi18-10	08X18H10T	•		•	•	•	•	PK11SP
	SINOXX 4550	1.4550	347 / 347 H	X6CrNiNb18-10	08X18H12B	•		•			•	PK11NB
	SINOXX 4878	1.4878	321H	X8CrNiTi18-10	12X18H10T	•					•	
	SINOXX 4948	1.4948	304H	X6CrNi18-10		•					•	
AUSTENITIC WITH MO	SINOXX S451				12X18H9T	•						
	SINOXX S466				08X18H10	•						
	SINOXX S465				03X18H11	•						
	SINOXX S464				08X18H12T	•						
	SINOXX S 463				12X18H12T	•						
	SINOXX S462				03X18H10T	•						
	SINOXX S461				05X18H10T	•						
	SINOXX 4401	1.4401	316	X5CrNiMo17-12-2		•		•	•	•	•	PK12
	SINOXX 4404	1.4404	316L	X2CrNiMo17-12-2		•		•	•	•	•	PK12 (+S)
	SINOXX 4404 easy mill		316L			•					•	
	SINOXX 4432	1.4432	316L	X2CrNiMo17-12-3		•					•	
	SINOXX 4435	1.4435	316L	X2CrNiMo18-14-3	03X17H14M3	•		•			•	PK327
	SINOXX 4436	1.4436	316L	X3CrNiMo17-13-3		•					•	
	SINOXX 4441	1.4441		X2CrNiMo18-15-3				•				PK332
	SINOXX 4429	1.4429	316LN	X2CrNiMoN17-13-3		•					•	
	SINOXX 4919		316H			•			•	•	•	
	SINOXX 4571	1.4571	316Ti	X6CrNiMoTi17-12-2	10X17H13M2T	•		•			•	PK12SP
	SINOXX S471	1.4438	317L	X2CrNiMo18-15-2		•					•	
	SINOXX 4919	1.4919				•					•	
	SINOXX 4560	1.4580	316Cb	X6CrNiMoNb17-12-2							•	PK12NB
SINOXX S571				08X21H6M2T	•							
HEAT RESISTANT	SINOXX 4828	1.4828	309	X15CrNiSi20-12		•		•			•	PK15
AUSTENITIC	SINOXX 4833	1.4833	309/309S/309H	X12CrNi23-13		•					•	
	SINOXX 4835	1.4835	UNS S 30815	X9CrNiSiN19-11-2		•			•	•	•	
	SINOXX 4841	1.4841	314/310	X15CrNiSi25-21		•			•	•	•	PK19
	SINOXX 4845	1.4845	310/310S/310H	X8CrNi25-21	20X23H18	•					•	
	SINOXX 4864	1.4864	330	X12NiCrSi36-16				•				PK20
HEAT RESISTANT FERRITIC	SINOXX 4713	1.4713		X10CrAlSi7		•	•	•			•	X10CrAl7
	SINOXX 4724	1.4724	405	X10CrAlSi13		•	•	•			•	PK924
	SINOXX 4742	1.4742		X10CrAlSi18		•	•	•			•	PK925
	SINOXX 4746	1.4746				•	•				•	
		1.4749									•	
SINOXX 4762	1.4762	446	X10CrAlSi25		•	•	•			•	PK10	

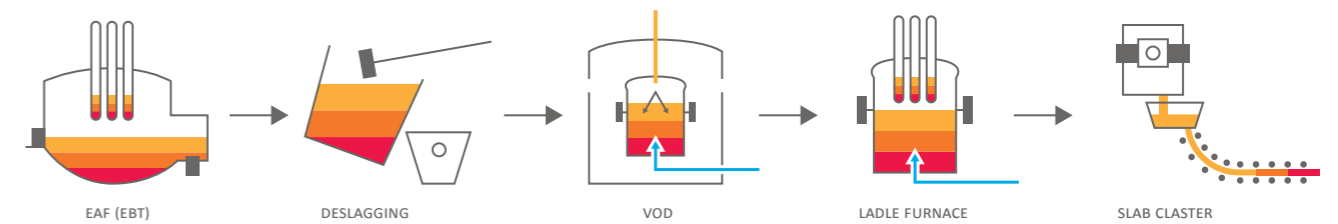
STEEL GRADES	SIJ DESIGNATION	W.NR.NUMBER	DESIGNATION AISI/ ASTM	DESIGNATION EN	DESIGNATION GOST	QUARTO PLATES	HOT AND COLD ROLLED COILS AND SHEETS	FORGED AND ROLLED BARS FORGINGS	COLD DRAWN / GROUND BARS	COLD DRAWN WIRE	WELDING CONSUMABLES*	OLD DESIGNATION METAL RAVNE
<b>FERRITIC OR MARTENSITIC</b>	SINOXX E870		403/410					•			•	PK330Nb
	SINOXX 4000	1.4000	403/405/410S/429	X6Cr13		•		•			•	PK1
	SINOXX 4003	1.4003		X2CrNi12		•			•	•	•	
	SINOXX 4005	1.4005	416	X12CrS13				•	•	•		PK333
	SINOXX 4006	1.4006	410	X12Cr13	12X13	•		•	•	•	•	PK330
	SINOXX 4016	1.4016		X6Cr17				•	•	•	•	PK336
	SINOXX 4021	1.4021	420	X20Cr13				•			•	PK3
	SINOXX E770	1.4021						•				PK3NI
	SINOXX 4028	1.4028	420	X30Cr13				•	•	•	•	PK4
	SINOXX 4031	1.4031							•	•	•	
	SINOXX 4034	1.4034	420	X46Cr13				•	•	•	•	PK4EX
	SINOXX 4057	1.4057	431	X17CrNi16-2				•	•	•	•	PK2SP
	SINOXX 4104	1.4104	430F	X14CrMoSi7				•	•	•	•	PK339
	SINOXX 4105	1.4105	430F	X6CrMoS17				•	•	•	•	PK331
	SINOXX 4112	1.4112	440B	X90CrMoV18				•	•	•	•	OCR6
	SINOXX 4113	1.4113									•	
	SINOXX 4116	1.4116	440A	X50CrMoV15				•			•	PK5
	SINOXX 4122	1.4122		X39CrMo17-1				•			•	PK335
	SINOXX 4125	1.4125	440C	X105CrMo17				•			•	PK348
	SINOXX 4138	1.4138		X120CrMo29-2				•			•	PK324
	SINOXX 4313	1.4313	415	X3CrNiMo13-4		•		•			•	PK340
	SINOXX 4509	1.4509									•	
	SINOXX 4510	1.4510	430Ti	X6CrTi17				•			•	PK328
	SINOXX 4511	1.4511									•	
	SINOXX 4512	1.4512									•	
	SINOXX 4542	1.4542		X5CrNiCuNb16-4		•		•			•	PK346
	SINOXX 4922	1.4922		X22CrMoV12-1				•				PT929
<b>DUPLEX / SUPERDUPLEX</b>	SINOXX 4462	1.4462	2205	X2CrNiMoN22-5-3	03X22H5AM3	•		•			•	PK338
	SINOXX 4362	1.4362	2304	X2CrNiN23-4		•					•	
	SINOXX S571		UNS S 32001			•					•	
	SINOXX 4410	1.4410	2507	X2CrNiMoN25-7-4		•					•	
	SINOXX 4520	1.4520									•	
	SINOXX 4521	1.4521									•	
	SINOXX S561				08X22H6T	•						
<b>NI ALLOY</b>	SIPRIME 4858	2.4858	UNS N08825 / A825			•					•	
	SIPRIME 4876	1.4876/1.4958	UNS N08810 / A800H			•					•	

\* we produce appropriate welding consumables



**SIJ ACRONI** is the largest Slovenian steel manufacturer, producing steel by recycling scrap in an electric arc furnace, casting it on a continuous caster and rolling it into quality flat rolled steel products.

With our modern plate mill, we are able to offer plates up to 2500 mm in width. Besides stainless plates, we also produce ferritic hot and cold rolled coils and sheets, nickel alloys, clad plates, and other high added value non-stainless flat rolled products.



## DIMENSIONAL RANGE

	Quarto Plates	
Thickness (mm)	8	9 – 130
Width (mm)	1000 – 2000	1000 – 2500
Length (mm)	2000 – 12000	2000 - 12000
Weight (kg)	max. 9600	max. 9600

	Hot and cold rolled STRIP	Hot and cold rolled SHEET
Thickness (mm)	1,0 - 6,0	1,0 - 6,0
Width (mm)	1000	1000
Length (mm)	2000 – 6000	2000 – 6000
Weight (kg/mm width)	Coil weight: 6 - 8	
ID (mm)	610	

## TYPE OF PROCESS ROUTE AND SURFACE FINISH OF THE PRODUCTS (EN 10088-2)

Symbol	Type of condition	Surface finish	Notes
1D	Hot rolled, heat treated, pickled	Free of scale	Usually standard for most steel grades; also common finish for further processing.
1C	Hot rolled, heat treated, not descaled	Covered with rolling scale	Suitable for parts which will be descaled or machined in subsequent production or for certain heat- resisting applications.
HOT ROLLED 1C	Hot rolled, heat treated, not descaled	Covered with rolling scale	Suitable for parts which will be descaled or machined in subsequent production or for certain heat- resisting applications.
COLD ROLLED 2C	Cold rolled, heat treated, not descaled	Smooth with scale from heat treatment	Suitable for parts which will be descaled or machined in subsequent production or for certain heat- resisting applications.



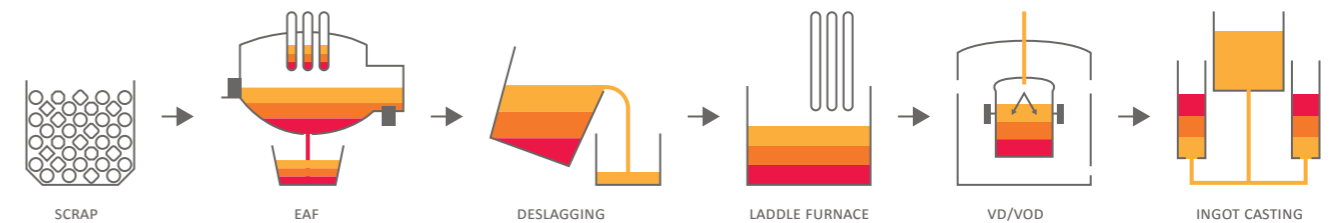
# sij | metal ravne



**SIJ METAL RAVNE**, the second largest Slovenian steel manufacturer, produces steel in an electric arc furnace, casting it into ingots and rolling or forging it into quality long steel products.

We make martensitic, ferritic, austenitic and precipitation hardening steels. Besides stainless, SIJ Metal Ravne is also a widely recognized producer of tool, high speed and special structural steels.

For the most challenging conditions, we offer steel grades made according to the ESR method.

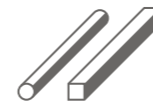


## ROUND

Rolled	Ø 26 mm – 105 mm, L = 3 – 6 m, according to EN 10060
Peeled/peeled&polished	Ø 25 mm – 80 mm, L = 2,5 – 6 m, according to EN 10278
Ground/ground&polished	Ø 25 mm – 80 mm, L = 2 – 4 m, according to EN 10278
Forged&peeled	Ø 105mm – 205mm, L = 2 – 6 m, tol. + 1 / - 0mm
Forged&turned:	Ø 206 mm – 350 mm, L = 2 – 6 m, tol. + 2 / - 0 mm

## FLAT

Rolled EN 10058	width 40 – 150 mm x thickness 8 – 65 mm, L = 3 – 6 m
Rolled DIN59200	width 155 – 255 mm x thickness 15 – 55 mm, L = 3 – 6 m surface: sandblasted
Forged DIN 7527/6	square 100 – max 300 mm, L = 2 – 6 m flat width 100 – 500 mm x thickness 100 - (max. 90,000mm <sup>2</sup> )
Forged&milled (tol. + 2 / - 0 mm)	square 100 – max 300 mm, L = 2 – 6 m, flat width 100 – 500 mm x thickness 100 - (max. 90,000mm <sup>2</sup> )



**SIJ SUZ** is a manufacturer of cold drawn, ground, peeled and hot rolled steel bars and wire. The product range comprises round, hexagonal and specially-shaped bars.

#### DIMENSIONAL RANGE

Bars		Wire	
Round	2 mm – 120 mm	Round	0,1 mm – 45 mm
Hexagonal	5 mm – 50 mm	Special	profiles in coils
Square	5 mm – 50 mm		
Special	(on the request of the customer)		

#### DELIVERY CONDITIONS AND TOLERANCES

Bars	
Cold drawn	h8 – h11
Peeled	h9 – h11
Ground	h6 – h11

SUZ also manufactures finished products, semi-products and spare parts on a classical turning machine and on universal CNC turning centers.

#### DIMENSIONAL RANGE OF CLASSICAL TURNING

- Turning of pieces up to 720 mm
- Max. length of 4000 mm

#### DIMENSIONAL RANGE OF UNIVERSAL CNC TURNING

- Turning of pieces up to 360 mm
- Max. length of 532 mm

# sij | elektrode



**SIJ ELEKTRODE** is the largest welding materials manufacturer in Slovenia, and a prominent one in Europe. Our manufacturing program includes welding materials for manual, semi-automatic and automatic robotic welding of all steel types. Our broad product range contains all kind of welding wires, electrodes, flux-cored wires and fluxes.

Our products are used for welding in the automotive industry, agro-machinery, heavy transportation, lifting, excavating and mining, energy and power, railways and shipyards, oil and gas, off shore and pipeline, chemical processing, pharmaceutical and food, maintenance and repair, construction and other industry sectors.

## DIMENSIONAL RANGE

Welding parameters			Packaging		
Diam. mm	Length mm	Current A	Weight / Packet in kg	Weight / Carton in kg	**Weight / 1000 pcs in kg
2	300	55-65	3,4	17	10,5
2,5	350	60-90	4,0	25,0	19,6
3,25	350/450	90-140	4,0/5,0	20,0/25,0	32,8/43,0
4	450	140-190	5,0	25,0	66,7
5	450	190-250	5,0	25,0	100,0
6	450	250-320	5,0	25,0	134,0

\* valid for all electrodes- example EVB S / E 7016 | \*\* approx.data

Packaging wires			Packaging rods		
Diam. mm	Spools	Spools weight in kg	Drums	Diam. mm/ length 1000 mm	Rods weight in kg
0,8	K300,	5 kg,	250 kg,	1,6	25 kg,
1,0	D300,	15 kg	350 kg,	2,0	5 kg* stainless rods
1,2	BS300,		500 kg	2,5	
1,4	D200			3,0	
1,6				4,0	

Wires for SAW-Submerged Arc Welding					
Diam. mm	K435	25kg	2,0 mm	2,5 mm	3,0 mm

\*\*\* valid for all wires and rods - example MIG 75 / VAC 65 and TIG VAC 65

## INCREASE IN WELDING EFFICIENCY OF UP TO 10%

Welding consumables produced by SIJ Elektrode are a carefully developed, customized solution for welding SINOXX grades, based on the specific characteristics of SINOXX steels. As a result, we are able to offer optimization and cost reduction for your welding processes. Welding SINOXX with Elektrode welding consumables has been shown to be up to 10%\* more efficient in comparison to other combinations. The smooth welding process and more precise welding flow results in a perfect joint welding structure.

\* internal testing data

## WELDING CONSUMABLES

DESIGNATION WELDING CONSUMABLES				TYPE	REMARK
W.NR	AWS	EN 1600 / EN 12072 / EN 760	SIJ ELEKTRODE	WELDING CONSUMABLES	SUITABLE FOR WELDING STEEL GRADES*
1.3416	308L	E 19 9 LR 12	INOX R 19/ 9NC	ELECTRODES	AUSTENITIC, FERRITIC
1.3416	308L	S 19 9 L/ SA FB 2 63 DC	EPP 19/9NC/ flux FB CrNi	WIRES /FLUXES	AUSTENITIC, FERRITIC
1.3416	308LSi	G 19 9 L Si	MIG 19/ 9 NC Si	WIRES /RODS	AUSTENITIC, FERRITIC
1.3416	308LSi	W 19 9 L Si	TIG 19/ 9 NC Si	WIRES /RODS	AUSTENITIC, FERRITIC
1.4009	410	E 13 B 43	INOX B 13 Fe	ELECTRODES	FERRITIC, MARTENSITIC
1.4009			INOX B 13/6 Fe	ELECTRODES	FERRITIC
1.4015	430	E 17 B 43	INOX B 17 Fe	ELECTRODES	FERRITIC
1.4015	430Mo		INOX B 17 Mo Fe	ELECTRODES	FERRITIC
1.4016	430	G 17	MIG 17	WIRES /RODS	FERRITIC
1.4018		E 13 1 B 43	INOX B 13/1 Fe	ELECTRODES	FERRITIC, MARTENSITIC
1.4332	309L	E 23 12 IR 12	INOX R 25/14NC	ELECTRODES	FERRITIC, MARTENSITIC, HEAT RESISTANT
1.4332	309LSi	G 23 12 L Si	MIG 25/14NC Si	WIRES /RODS	FERRITIC, MARTENSITIC, HEAT RESISTANT
1.4332	309LSi	W 23 12 L Si	TIG 25/14NC Si	WIRES /RODS	FERRITIC, MARTENSITIC, HEAT RESISTANT
1.4337	312	E 29 9 R 12	INOX R 29/9	ELECTRODES	DUPLEX, MARTENSITIC
1.4337	312	G 29 9	MIG 29/9	ELECTRODES	DUPLEX, MARTENSITIC
1.4337	312	W 29 9	TIG 29/9	WIRES /RODS	DUPLEX, MARTENSITIC
1.4337	2209	EN 22 9 3 NL	INOX R 22/9/3LN	ELECTRODES	DUPLEX
1.4337	2209	W 22 9 3 NL	TIG 22/9/3LN	WIRES /RODS	DUPLEX
1.4351	410NiMo	E 13 4 B 43	INOX B 13/4Fe	ELECTRODES	FERRITIC
1.4351	E410NiMo	E 13 4 B 43	INOX B 13/4FeNC	ELECTRODES	FERRITIC
1.4370	307	E 18 8 Mn B 22	INOX B 18/8/6	ELECTRODES	FERRITIC, MARTENSITIC
1.4370	308	E 18 8 Mn R 12	INOX R 18/8/6Fe	ELECTRODES	FERRITIC
1.4370	308	E 18 8 Mn R 26	INOX R 18/8/6	ELECTRODES	FERRITIC
1.4370	308	S18 8 Mn / SA FB 2 63 DC	EPP 18/8/6/Flux FB CrNi	WIRES /FLUXES	FERRITIC
1.4370	3087Si	G 18 8 Mn	MIG 18/8/6 Si	WIRES /RODS	FERRITIC, MARTENSITIC
1.4370	308Si	W 18 8 Mn	TIG 18/8/6 Si	WIRES /RODS	FERRITIC, MARTENSITIC
1.4430	316L	E 19 12 3 LR 12	INOX R 19/3/4 L	ELECTRODES	AUSTENITIC WITH Mo, FERRITIC
1.4430	316L	S 19 12 3 L/ SA FB 2 63 DC	EPP 19/ 12/3NC/ flux FB CrNi	WIRES /FLUXES	AUSTENITIC WITH Mo, FERRITIC

## SPECIFIC PROCEDURES

- The correct welding material according to corrosion resistance, tensile strength and the temperature of application should be selected.
- To reduce corrosion and the appearance of cracks it is important to select the correct tools, to clean the surfaces, to remove the slag after welding and passivation, and to carefully control the heat input.
- Ferritic steel grades can be welded with appropriate ferritic or with suitable austenitic welding filler materials.

DESIGNATION WELDING CONSUMABLES				TYPE	REMARK
W.NR	AWS	EN 1600 / EN 12072 / EN 760	SIJ ELEKTRODE	WELDING CONSUMABLES	SUITABLE FOR WELDING STEEL GRADES*
1.4430	316LSi	G 19 12 3 L Si	MIG 19/ 12/3 NC Si	WIRES /RODS	AUSTENITIC WITH Mo, FERRITIC
1.4430	316LSi	W 19 12 3 L Si	TIG 19/ 12/3 NC Si	WIRES /RODS	AUSTENITIC WITH Mo, FERRITIC
1.4453	317L	E 19 13 4 IR 12	INOX R 19/13/4	ELECTRODES	AUSTENITIC WITH Mo
1.4551	347	E 19 9 Nb B 12	INOX B 19/9 Nb	ELECTRODES	AUSTENITIC, FERRITIC, MARTENSITIC
1.4551	347	E 19 9 Nb R 12	INOX B 13/4 Fe ,13/6 Fe INOX R 19/9 Nb	ELECTRODES	AUSTENITIC, FERRITIC, MARTENSITIC
1.4551	347	G 19 9 Nb Si	MIG 19 9 Nb Si	WIRES /RODS	AUSTENITIC, FERRITIC, MARTENSITIC
1.4551	347	S 19 9 Nb/ SA FB 2 63 DC	EPP 19/9Nb/fluxFB CrNi	WIRES /FLUXES	AUSTENITIC, FERRITIC, MARTENSITIC
1.4551	347	W 19 9 Nb Si	TIG 19 9 Nb Si	WIRES /RODS	AUSTENITIC, FERRITIC, MARTENSITIC
1.4576	318	E 19 12 3 Nb B 12	INOX B 19/12/3 Nb	ELECTRODES	AUSTENITIC WITH Mo, FERRITIC
1.4576	318	E 19 12 3 Nb R 12	INOX R 19/12/3 Nb	ELECTRODES	AUSTENITIC WITH Mo, FERRITIC
1.4576	318	S 19 12 3 Nb/ SA FB 2 63 DC	EPP 19/ 12/3 Nb/ flux FB CrNi	WIRES /FLUXES	AUSTENITIC WITH Mo, FERRITIC
1.4576	318Si	G 19 12 3 Nb Si	MIG 19/ 12/3 Nb Si	WIRES /RODS	AUSTENITIC WITH Mo, FERRITIC
1.4576	318Si	W 19 12 3 Nb Si	TIG 19/ 12/3 Nb Si	WIRES /RODS	AUSTENITIC WITH Mo, FERRITIC
1.4820	446	E 25 4 B 43	INOX B 25/4 Fe	ELECTRODES	FERRITIC, HEAT RESISTANT
1.4820	446	E 25 4 R 43	INOX R 25/4 Fe	ELECTRODES	FERRITIC
1.4842	310	E 25 20 B 42	INOX B 25/20	ELECTRODES	FERRITIC, HEAT RESISTANT
1.4842	310	E 25 20 R 42	INOX R 25/20	ELECTRODES	HEAT RESISTANT
1.4842	310	G 25 20	MIG 25/20	WIRES /RODS	FERRITIC, HEAT RESISTANT
1.4842	310	W 25 20	TIG 25/20	WIRES /RODS	FERRITIC, HEAT RESISTANT
1.4842	309Mo	E 23 12 2 IR 12	INOX R 25/14/3NC	ELECTRODES	FERRITIC
1.4842	309Mo	E 23 12 2 R 12	INOX R 22/12/3 Fe	ELECTRODES	FERRITIC

\* please consult datasheets for detailed instructions

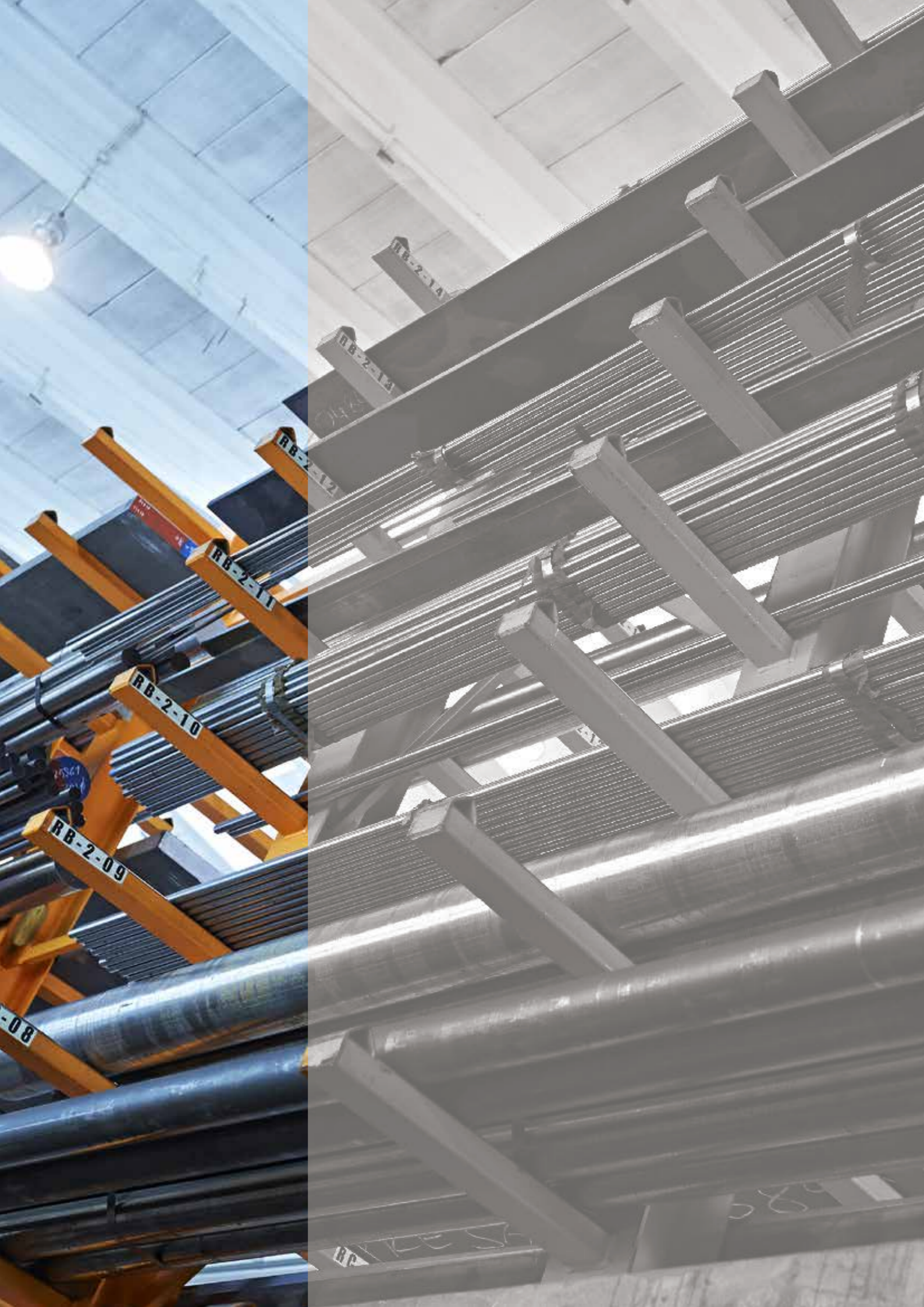
**DISSIMILAR WELDING**

SIJ BRAND		SINOXX 4301	SINOXX 4845	SINOXX 4404	SINOXX 4541	SINOXX 4835	SINOXX 4162	SINOXX 4462	SINOXX 4410	SINOXX 4547				
BASE METAL	AISI/AWS	AISI 304L	AISI 310	AISI 316L	AISI 321	Acroni 4835	S32101*	AISI 2205	AISI 2507	Alloy 625 **	904L	S31254	CARBON STEEL	
		W.Nr.	1.4301	1.4845	1.4404	1.4541	1.4835	1.4162	1.4462	1.4410	2.4856	1.4519	1.4547	
SINOXX 4301	AISI 304L	1.4301	308L TIG19/9NCsI	309L INOX R 25/14 NC	308 /316L TIG 19/12/3Nb	347 INOX R 19/9NB	INOX R 25/14 NC	309LMO INOX R 25/14/3NC	309LMO INOX R 25/14/3NC	309LMO INOX R 25/14/3NC	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	309L INOX R 25/14NC
SINOXX 4851	AISI 310	1.4845	309L INOX R 25/14 NC	310 INOX B 25/4Fe	309L/625 INOX R 25/14 NC	309L INOX R 25/14NC	253MA/309L INOX R 20/10/3L	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R25/14/3NC	309LMO/2209 INOX R 25/14/3NC	625 TIG/MIG 625	309L/904L INOX R 25/14NC	310/625 INOX R 25/20	309L INOX R 25/14NC
SINOXX 4404	AISI 316L	1.4404	3016LMO INOXR25/14/3NC	309L/625 INOX R 25/14 NC	316L INOX R 19/12/3NC	316L/309LMO MIG/TIG 19/12/3Nb	309L/253MA INOX R 25/14NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	625 TIG/MIG 625	625/904L INOX R 20/25L	309LMO/625 INOX R 25/20	309L/ 309LMO INOX R 25/14/3NC
SINOXX 4541	AISI 321	1.4541	309L INOX R 25/14	309L INOX R 25/14 NC	309LMO INOX R 25/14/3NC	347 INOX R 19/9NB	309L/253MA INOX R 25/14NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	309L INOX R 25/14NC
SINOXX 4835	Acroni 4835	1.4835	309LMO INOX R 25/14 NC	309L INOX R 25/14NC	309L INOX R25/14NC	309L INOX R 25/14NC	253MA INOX R 20/10/3L	309L/2209 INOX R 25/14NC	309L/2209 INOX R 25/14NC	309L/2209 INOX R 25/14NC	625 TIG/MIG 625	309L 625 INOX R 25/14NC	309L 625 INOX R 25/14NC	309L INOX R 25/14NC
SINOXX 4162	S32101*	1.4162	309LMO/2209 INOX R 25/14/3 NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309L INOX R 25/14NC	2101/2209 INOX R 25/4Fe	2209 INOX R 22/9/3LN	2209 INOX R 22/9/3LN	INOX R 25/14 NC	309L/309LMO INOX R 25/14/3NC	309L/309LMO INOXR25/14/3NC	309LMO/2209 INOXR25/14/3NC
SINOXX 4462	AISI 2205	1.4462	309LMO/2209 INOX R 25/14/3 NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309L INOX R 25/14NC	2101/2209 INOX R 22/9/3 LN	2209 INOX R 22/9/3LN	2209 INOX R 22/9/3LN	INOX R 25/14 NC	309L/309LMO INOX R 25/14/3NC	309L/309LMO INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC
SINOXX 4410	AISI 2507	1.4410	309LMO/2209 INOX R 25/14/3 NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	309L INOX R 25/14NC	2101/2209 INOX R 25/4Fe	2209 INOX R 22/9/3LN	2507 INOX R 25/14NC	INOX R 25/14 NC	309L/309LMO INOX R 25/14/3NC	309L/309LMO INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC
	Alloy 625 **	2.4856	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625 / 2209 INOX R 22/9/3LN	625 / 2209 MIG 625 INOX R 22/9/3LN	625 / 2209 MIG 625 INOX R 22/9/3LN	625 TIG/MIG 625	904L INOX R 20/25L	625 TIG/MIG 625	625 MIG 625
	904L		625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/ NC	309LMO/2209 INOX R 25/14/3NC	625 TIG/MIG 625	904L INOX R 20/25L	625 TIG/MIG 625	309LMO INOX R 25/14/3NC
SINOXX 4547	S31254	1.4547	625 TIG/MIG 625	625 MIG 625	625/309LMO INOX R 25/14/3NC	625/309LMO INOX R2 5/14/3NC	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625 MIG 625	625 TIG/MIG 625	625/309LMO INOX R 25/14/3NC
	CARBON STEEL		309L INOX R 25/14NC	309L INOX R 25/14NC	309LMO INOX R 25/14/3NC	309L INOX R 25/14NC	309L INOX R 25/14NC	309LMO/2209 INOX R 25/14/3NC	309LMO/2209 INOX R 25/14/3NC	2505 INOX R 25/14/3NC	625 TIG/MIG 625	625 TIG/MIG 625	625 TIG/MIG 625	Carbon steel

Special grades available upon request

\* S32101; W.nr.:1.4162 = Lean Duplex

\*\* Alloy 625; W.nr.:1.4162 Wire classification : ERNiCrMo- 3



### SIJ STEEL SERVICE AND PROCESSING DIVISION

At the SIJ Group we make our customers the focus of our everyday activities, so we are constantly looking for ways to get closer to our customers, to understand their needs and to improve our services to best meet their demands. The SIJ Steel Service and Processing Division is oriented toward professional service, quick delivery and a high level of flexibility.

Located in key markets, the SIJ Steel Service and Processing Division member companies offer technical support and services such as cutting, surface grinding, edge preparation, straightening and shearing.

When quick delivery and reliable professional service are required, the SIJ Steel Service and Processing Division companies are your answer.

### CUSTOM MADE SHAPES, HIGH FLEXIBILITY, QUICK DELIVERY



SIJ NIRO WENDEN,  
WENDEN, DE

SIJ GRIFFON & ROMANO,  
CORSICO, IT

SIJ KOPO INTERNATIONAL,  
NEW JERSEY, US

SIJ STEEL SHANGHAI,  
SHANGHAI, CN



# sij | niro wenden

## **PRECISION-ENGINEERED PRODUCTION AND FULLY-AUTOMATED ORDER PROCESSING SYSTEMS COMBINED WITH STATE-OF-THE-ART LOGISTICS COME AS STANDARD.**

Founded in 1994, NIRO Wenden GmbH is currently one of the leading stainless steel processors on the German and international markets, with the potential to process plates of up to 150 mm in thickness. As a part of SIJ the Steel Service and Processing Division, and in conjunction with its specialist partners, NIRO covers an extensive range of stainless steel blanks and machining options, and offers a complete supply program for stainless steel fabricators from a single source.

Precision-engineered production and fully-automated order processing systems combined with state-of-the-art logistics come as standard.

Special priority is given to the regular availability of special and heat resistant materials. This guarantees efficient on-time delivery of precision cut blanks and unit weights from a few grams to several tonnes. By offering additional services such as edge preparation for welding and surface grinding, NIRO is able to meet a wide variety of commercial and technical requirements.

### **SERVICE OVERVIEW**

- Plasma cutting
- Waterjet cutting
- Laser cutting
- Shearing
- Straightening with multi-roll flattener
- Hydraulic straightening
- Surface grinding (dry)
- Edge preparation



# sij | griffon & romano

Since 1954, Griffon & Romano has been pursuing a constant policy of modernization by the timely application of every technological innovation. Today Griffon & Romano is considered a company of primary importance in the field of stainless steel in Italy, particularly in plasma and mechanic cutting. With a full complement of appropriate machinery, the company has reached a high qualitative level, ensuring its ability to satisfy the requirements of the most demanding customers.

Being able to process plates up to 150 mm thick and up to 3000 mm wide gives us a high level of flexibility, meeting all the diverse needs of our clients: from the cutting of very small to large pieces in custom forms, and from a minimal batch of one piece up to serial production. We use plasma high definition and saw cutting technology to produce customized stainless steel from 8 to 150 mm thick. The wide range of stainless steel and complementary products in stock ensures fast delivery of all products. This, along with our high cutting quality, are the features most appreciated by our customers.

## **SERVICE OVERVIEW**

- Plasma cutting
- Saw cutting
- Hydraulic straightening
- Deburring
- Shearing



TRUSTED BY THE BEST

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**ANDRITZ**

 **BALTIC SHIPYARD**  
SHIPBUILDING

**VOITH**

**ASPARSOPI**

**INOXCVA**  
Experience × Expertise × Excellence

**WEISSTALER**  
BÖDENPRESSWERKE

**JACQUET**

 **PELFA**  
group

  
**HOLTEC**  
INTERNATIONAL

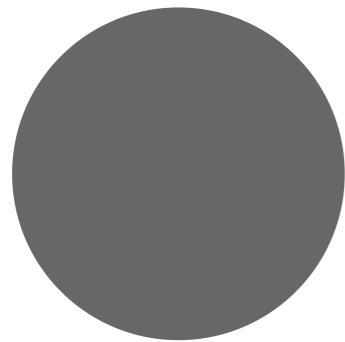
 **INOX**  
**TECH**

  
**FIB** *industries*

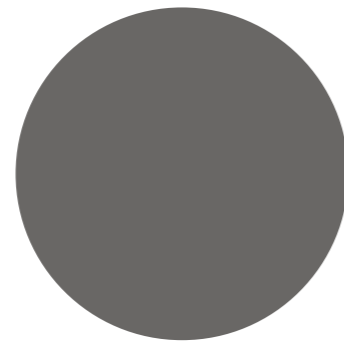
 **HONEX**

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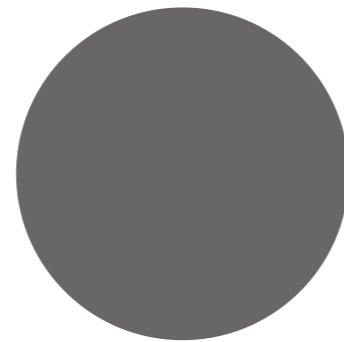
Our work is never truly done; we are a part of an endless process. This is symbolised by the **three dots** in our corporate logo, and the logos of each SIJ Group product and service brand. **Three dots equals three values.** Each one stands firmly on its own, and they all stand together, forever. As a sign of trust and quality, they symbolise our three main values, which define who and what we are.



**CUSTOMISATION.**



**STRIVING.**

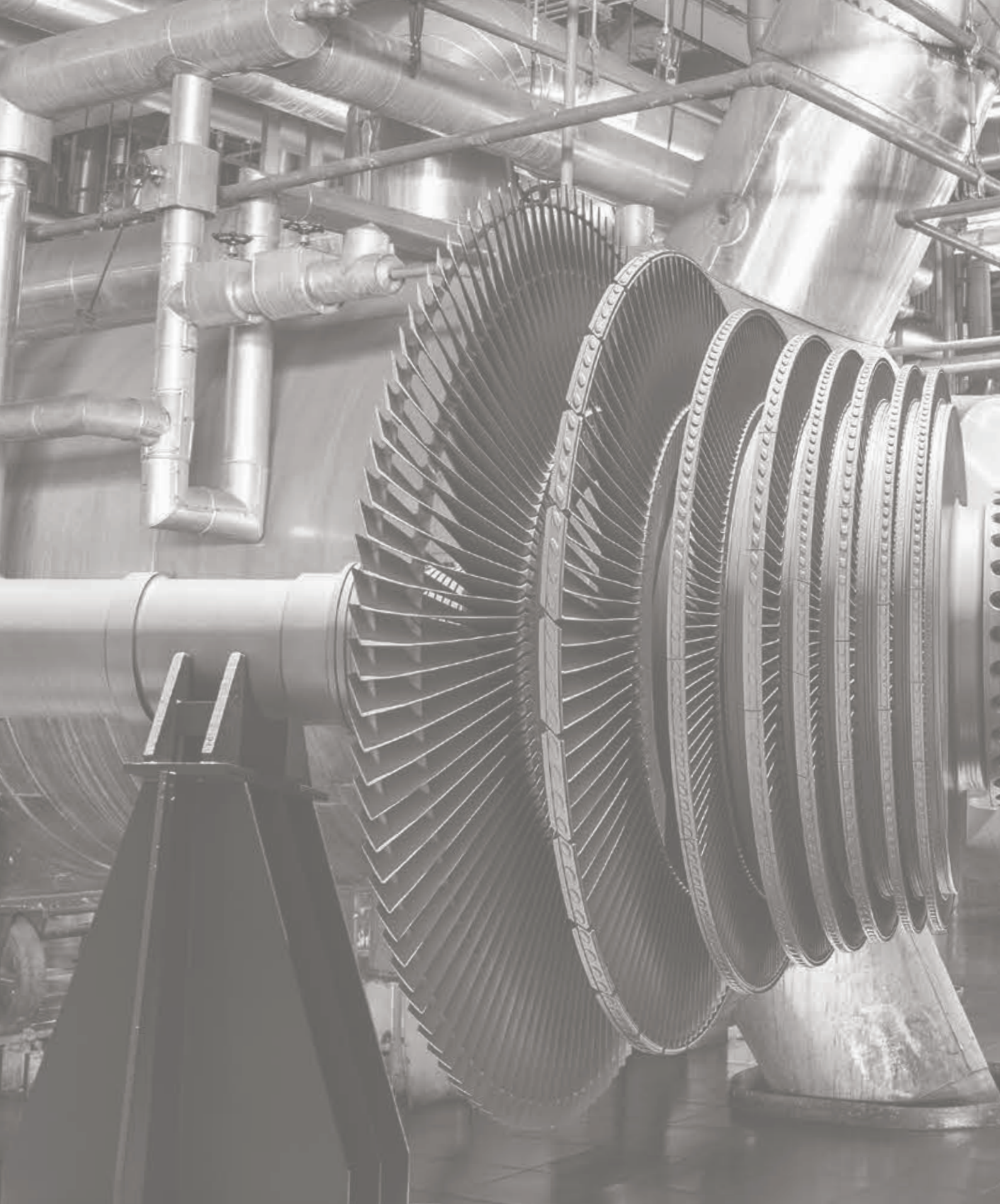


**PROVEN.**

**sij** | group



**BEST THINGS IN THE WORLD  
CONTAIN SLOVENIAN STEEL**



**SIJ Group**

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