

NUCLEAR, OIL & GAS

TECHNICAL DATA SHEET

SIJ Metal Ravne is a member of the SIJ Group – Slovenian Steel Group. With its 1,000 employees and almost 80,000 tonne annual production, SIJ Metal Ravne belongs to the group of mini mills at the global level. Therefore, we found our niche in production which is characterised by specific knowledge and experience, greater flexibility, and higher added value. We produce steel in an electric arc furnace, casting it into ingots and rolling or forging it into high-quality long steel products. For the most challenging conditions we use VOD (vacuum oxygen decarburisation) and ESR (electroslag remelting) methods. Our own steel plant, forging shop, rolling mill, and a wide range of heat treatment and machining processes allow us to produce a wide variety of more than 200 steel grades in different shapes and sizes.

The nuclear and oil & gas sectors are highly demanding fields where products with high added value, backed by extensive expertise and specialised knowledge, are required. SIJ Metal Ravne is a globally recognised steel producer and has been supplying its steels to these sectors for many years, mainly under the brand names SINOXX and SIQUAL.

STEEL GRADES

AUSTENITIC STAINLESS STEEL GRADES

SIJ Brand	W.Nr.	AISI	ASTM	Chemical composition
SINOXX 4301	1.4301	304	A276, A479	C max. 0.08 Si max. 1.00 Mn max. 2.00 Cr 18.00–20.00 Ni 8.00–10.50
SINOXX 4305	1.4305	303	A582	C max. 0.15 Si max. 1.00 Mn max. 2.00 Cr 17.00–19.00 Ni 8.00–10.00 S min. 0.15
SINOXX 4401	1.4401	316	A276, A479	C max. 0.08 Si max. 1.00 Mn max. 2.00 Cr 16.00–18.00 Ni 10.00–14.00 Mo 2.00–3.00
SINOXX 4550	1.4550	347	A276, A479	C max. 0.08 Si max. 1.00 Mn max. 2.00 Cr 17.00–19.00 Ni 9.00–12.00 Nb min. 10xC–1.1
SINOXX 4980	1.4980	660	A453	C max. 0.08 Si max. 1.00 Mn max. 2.00 Cr 13.50–16.00 Mo 1.00–1.50 Ni 24.00–27.00 Ti 1.90–2.35 V 0.10–0.50 B 0.003–0.010
SINOXX S490		S21800	A276, A479	C max. 0.10 Si 3.50–4.50 Mn 7.00–9.00 Cr 16.00–18.00 Ni 8.00–9.00 N 0.08–0.18
SINOXX 4541	1.4541	321		C max. 0.08 Cr 17.00–19.00 Ni 9.00–12.00 Ti min. 5 x C
SINOXX E790				C max. 0.01 Cr 10.00–12.50 Ni 18.00–21.00 B 0.008–0.020 Ti 1.90–2.30
SINOXX S450				C max. 0.015 Cr 16.00–18.00 Mo 1.50–2.50 Nb 0.2–0.3

MARTENSITIC STAINLESS STEEL GRADES

SIJ Brand	W.Nr.	AISI	ASTM	Chemical composition
SINOXX 4006	1.4006	410	A276, A479	C 0.08-0.15 Si max. 1.00 Mn max. 1.00 Cr 11.50-13.50
SINOXX 4057	1.4057	431	A276	C 0.12-0.22 Si max. 1.00 Mn max. 1.50 Cr 15.00-17.00 Ni 1.50-2.50
SINOXX 4418	1.4418			C max. 0.06 Si max. 0.70 Mn max. 1.50 Cr 15.00-17.00 Mo 0.80-1.50 Ni 4.00-6.00
SINOXX 4542	1.4542	17-4 PH	A564	C max. 0.07 Si max. 1.00 Mn max. 1.00 Cr 15.00-17.50 Ni 3.00-5.00 Nb 0.15-0.45 Cu 3.00-5.00
SINOXX 4903	1.4903	F91	A182	C 0.08-0.12 Si 0.20-0.50 Mn 0.30-0.50 Cr 8.00-9.50 Mo 0.85-1.05 V 0.18-0.25 Nb 0.06-0.10 N 0.035-0.070
SINOXX 4545	1.4545	15-5 PH		C max. 0.07 Cr 14.00-15.50 Ni 3.5-5.5 Cu 2.5-4.5 Nb + Ta 0.15-0.45
SINOXX 4313	1.4313	415		C max. 0.05 Cr 12.00-14.00 Ni 3.50-4.50 Mo 0.30-0.70 N min. 0.02

DUPLEX STAINLESS STEEL GRADES

SIJ Brand	W.Nr.	AISI	ASTM	Chemical composition
SINOXX 4462	1.4462	F51; F60	A182	C max. 0.03 Si max. 1.00 Mn max. 2.00 P max. 0.035 S max. 0.015 Cr 21.00-23.00 Mo 2.50-3.50 Ni 4.50-6.50 N2 0.10-0.22



ENGINEERING STEEL

SIJ Brand	W.Nr.	AISI	ASTM	Chemical composition
SIQUAL 0460	1.0460	LF2	A105, A350	C max. 0.03 Si 0.15-0.30 Mn 0.60-1.05
SIQUAL S130	1.6562	4340	A29, A540	C 0.38-0.43 Si 0.20-0.35 Mn 0.70-0.90 Cr 0.70-0.90 Ni 1.65-2.00 Mo 0.30-0.40
SIQUAL 6580	1.6580	SA723 GR.1	A723 GR.1	C 0.26-0.34 Si max. 0.40 Mn 0.40-0.60 Cr 1.80-2.20 Ni 1.80-2.20 Mo 0.30-0.50
SIQUAL 6582	1.6582			C 0.30-0.38 Si max. 0.40. Mn 0.50-0.80 Cr 1.30-1.70 Ni 1.30-1.70 Mo 0.15-0.30
SIQUAL 6948	1.6948			C 0.22-0.32 Mn 0.15-0.40 Cr 1.20-1.80 Mo 0.25-0.45 Ni 2.40-3.10
SIQUAL 6958	1.6958	SA723GR3	A723, A723 Gr.3	C max. 0.40 Si max. 0.35 Mn max. 0.90 Cr 0.80-2.00 Ni 3.30-4.50 Mo 0.40-0.80
SIQUAL 7218	1.7218			C 0.22-0.29 Si 0.10-0.40 Mn 0.60-0.90 Cr 0.90-1.20 Mo 0.15-0.30
SIQUAL 7225	1.7225	4140	A29	C 0.38-0.43 Si 0.15-0.35 Mn 0.75-0.90 Cr 0.90-1.10 Mo 0.15-0.25
SIQUAL 7335	1.7335	F11	A182	C 0.05-0.15 Si 0.50-1.00 Mn 0.30-0.60 Cr 1.00-1.50 Mo 0.44-0.65
SIQUAL 7362	1.7362	501, F5	A182	C 0.10-0.15 Si max. 0.50 Mn 0.30-0.60 Cr 4.00-4.60 Mo 0.45-0.60
SIQUAL 7380	1.7380	F22	A182	C 0.05-0.15 Si max. 0.5 Mn 0.30-0.60 Cr 2.00-2.50 Mo 0.87-1.13
SIQUAL 7386	1.7386	F9	A182	C max. 0.15 Si 0.50-1.00 Mn 0.30-0.60 Cr 8.00-10.00 Mo 0.90-1.10
SIQUAL 7709	1.7709			C 0.17-0.25 Si max. 0.40 Mn 0.40-0.80 Cr 1.20-1.50 Mo 0.55-0.80 Ni max. 0.60 V 0.20-0.35
SIQUAL 8936	1.8936			C max. 0.20 Si max. 0.60 Mn 1.10-1.70 Cr max. 0.30 Ni max. 1.00

Melting route: all steel grades are available as airmelted or airmelted + ESR.

QUALITY SYSTEM MANAGEMENT

- EN/AS 9100
- ISO 9001
- ISO 14001
- OHSAS 18001
- ISO/IEC 17025
- ISO 45001
- ISO 50001

PRODUCT RANGE AVAILABILITY

Rolled bars

	ROUND	Ø 15–105 mm, length: 3000–6000 mm
	SQUARE	25–75 mm, length: 3000–6000 mm
	FLAT	width 40–130 mm with thickness 7–65 mm, 130–255 mm with thickness 7–50 mm, length: 3000–6000 mm
	PEELED & POLISHED	Ø 16–80 mm, length: 2500–6000 mm
	GROUND & POLISHED	Ø 7–80 mm, length: 2000–4000 mm

Wide flat sections

	WIDE FLAT SECTIONS	width 251 – 505 mm with thickness 25 – 90 mm, length: 1600 – 4500 mm
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Forged bars

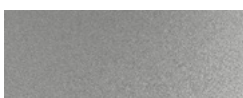
	ROUND	Ø 90–950 mm, length: 2000–10000 mm
	FLAT	80x70 mm to 260x120 mm, 261x80 mm to 1600x550 mm, length: 2000–8000 mm
	SQUARE	80–850 mm, length: 2000–8000 mm

Surface

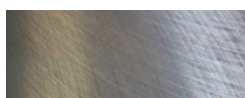
Black



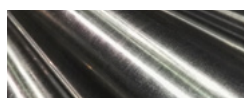
Sandblasted



Milled



Peeled



G round



Additional offer

We also supply different open-die machined forgings and round profiles for the oil and gas industry as well as for other sectors (energy, mechanical engineering, automotive, etc.).

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