

AEROSPACE INDUSTRY

SPECIFICATION SHEET

SIJ Metal Ravne with its 1.000 employees and almost 85.000 ton annual production belongs to the group of mini mills at the global level. We found our opportunity in the so called niche production which is characterized by specific knowledge and experience, larger flexibility and higher added value. We produce steel in an electric arc furnace, casting it into ingots and rolling or forging into high-quality long steel products. For the most challenging conditions we use VOD (Vacuum Oxygen Decarburization) 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 rich pallet of more than 200 steel grades in different dimensional shapes.

SIJ Metal Ravne is a member of the SIJ Group – Slovenian Steel Group.

➤ AEROSPACE MATERIALS

Aerospace industry is a demanding industry in terms of quality control and new developments. This high-technology industry requires high-performance and ultimate safety materials which perform exceptionally at all times. For parts where high strength, corrosion resistance and temperature resistance are necessary, stainless steel is suitable for a wide range of aerospace parts. SIJ Metal Ravne offers them under the brand name SINOXX. Another important steel group are quenched and tempered steels known under the brand name SIQUAL which are high-strength and abrasion-resistant steels with high fabrication qualities and mechanical properties.

As producer of steel materials with 400 years of tradition, supported by expert skills and strong own development, we meet specific requirements of the high demanding aerospace sector. SIJ Metal Ravne is the name you can trust.



STEEL GRADES

STAINLESS STEELS

SIJ BRAND	W.Nr.	AMS	EN	U.S. DESIGNATION	UNS	AIR 9160 C	OTHER SPECIFICATIONS
SINOXX ^{***} SINOXX 4057	1.4057	-	X17CrNi16-2	431	UNS S43100	Z15CN17-3	WL 1.4044
SINOXX ^{***} SINOXX 4125	1.4125	5630 5880	X105CrMo17	440C	UNS S44004	-	-
SINOXX ^{***} SINOXX 4301	1.4301 1.4307	5639 5647	X5CrNi18-10	304 304L	UNS S30400	Z2CN18-10	-
SINOXX ^{***} SINOXX 4305	1.4305	5640	X8CrNiS18-9	303	UNS S30300	-	-
SINOXX ^{***} SINOXX 4401	1.4401 1.4404	5648 5653	X2CrNiMo17-12-2 X5CrNiMo17-12-2	316 316L	UNS S31600 UNS S31603	-	-
SINOXX ^{***} SINOXX 4418	1.4418	-	X4CrNiMo16-5-1	-	-	Z8CND17-04	-
SINOXX ^{***} SINOXX 4429	1.4429 1.4910 1.3952	-	X2CrNiMoN18-14-3	316LN	UNS S31653	-	WL 1.3952
SINOXX ^{***} SINOXX 4541	1.4541	5645	X6CrNiTi18-10	321	UNS S32100	-	WL 1.4544
SINOXX ^{***} SINOXX 4542	1.4542 1.4548	5622 5643	X5CrNiCuNb16-4	17-4 PH 630	UNS S17400	-	WL 1.4548
SINOXX ^{***} SINOXX 4545	1.4545	5659 type II 5862 type II	X5CrNiCuNb15-5-4	15-5 PH 630	UNS S15500	-	WL 1.4545
SINOXX ^{***} SINOXX 4550	1.4550 1.4546	5646	X6CrNiNb18-10	347	UNS S34700	-	WL 1.4546
SINOXX ^{***} SINOXX 4939	1.4939	-	X12CrNiMo12	-	UNS S64152	-	WL 1.4939
SINOXX ^{***} SINOXX 4980	1.4980 1.4944	5731 5732	X6NiCrTiMoVB25-15-2	660	UNS S66286	-	-

QUENCHED AND TEMPERED STEEL

SIJ BRAND	W.Nr.	AMS	EN	U.S. DESIGNATION	UNS	AIR 9160 C	OTHER SPECIFICATIONS
SIQUAL ^{***} SIQUAL 6580	1.6580 1.6604	-	30CrNiMo8	4340	UNS G43400	-	WL 1.6604
SIQUAL ^{***} SIQUAL 6582	1.6582	6415	34CrNiMo6	4337 4340	-	-	-
SIQUAL ^{***} SIQUAL 6657	1.6657	-	14NiCrMo13-4	-	-	16NCD13	-
SIQUAL ^{***} SIQUAL 6773	1.6773	-	36NiCrMo16	-	-	35NCD16	-
SIQUAL ^{***} SIQUAL 6949	1.6964	-	35NiCrMoV11-5	4330V	UNS K23080	-	WL 1.6964
SIQUAL ^{***} SIQUAL 7220	1.7220	6370	34CrMo4	4130	UNS G41300	-	-
SIQUAL ^{***} SIQUAL 7225	1.7225	6349 6382	42CrMo4	4140	UNS G41400	-	-
SIQUAL ^{***} SIQUAL 7734	1.7734	-	14CrMoV6-9	-	-	15CDV6	WL 1.7734
SIQUAL ^{***} SIQUAL 8515	1.8515	-	31CrMo12	-	-	30CD12	-
SIQUAL ^{***} SIQUAL S130	-	6409 6414 6484	-	4340 mod E4340H	-	-	-

➤ QUALITY SYSTEM MANAGEMENT

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

➤ APPROVED SUPPLIER BY:

- TURKISH AEROSPACE INDUSTRIES
- LEONARDO HELICOPTERS

➤ PRODUCT RANGE AVAILABILITY:

Rolled bars:

ROUND: \varnothing 7-105 mm, SQUARE: 25-75 mm, FLAT: 40-150 mm width with 7-65 mm thickness, 150-255 width mm with 7-50 mm thickness. Length: 3000-6000 mm. PEELED&POLISHED: \varnothing 16-80 mm, length: 2500-6000 mm. GROUND&POLISHED: \varnothing 7-80 mm, length: 2000-4000 mm.

Forged bars:

ROUND: \varnothing 90-950 mm, length: 2000-10000 mm. FLAT: from 80x70 mm to 260x120 mm or 261x80 mm to 1600x550 mm. SQUARE: 80-850 mm. Length for flat and square: 2000-7000 mm.

Surface:

Black, sandblasted, milled, peeled, turned, ground.

Additional offer:

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

➤ CONTROL AND TESTING OF MATERIAL



For aerospace steels, we use an extensive and a very precise final control. Final inspection is performed on every finished product to ensure that customer specifications have been fully met. We determine mechanical properties, toughness, macrostructure, microstructure, grain size and cleanliness, hardness and make visual and dimensional controls, ultrasonic testing and identity control. If specifically required by customers, we also determine FATT (Fracture Appearance Transition Temperature) and examine morphology of fracture steel surfaces, evaluate the share of intercrystalline fracture.

With own metallurgical research, we foster development of new grades, products and improvement of technologies together with our customers. We also advise our customers as to which steel is best for their applications.

We have quality control&research equipment such as: optical microscopes, SiS imaging and analysis system for optical microscopes, x-ray diffractometer, scanning electron microscope (SEM), microanalysis system (EDS), dilatometer, tension testing, testing machine for elevated temperatures and a creep rupture testing machine.

➤ DISCLAIMER

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The name you can trust

