Project leader
www.global-links.it

ACCIAIERIE VALBRUNA
High quality is our standard

ACCIAIERIE VALBRUNA
Viale della Scienza, 25 36100 Vicenza - ITALY
Tel. +39 0444 968211 Fax +39 0444 963836
www.valbruna-stainless-steel.com
e-mail: info@valbruna.it

ACCIAIERIE VALBRUNA
Via Volta, 4 39100 Bolzano - ITALY
Tel. +39 0471 924111 Fax +39 0471 924497

VALBRUNA SLATER STAINLESS INC.
2400 Taylor Street West 46801 Fort Wayne, IN - USA
Tel. +1 (260) 434 2800 Fax +1 (260) 434 2801
www.valbrunastainless.com
e-mail: info@valbruna.us

VALBRUNA ASW INC.
42 Centre Street L3B 0E5 Welland, ON - CANADA
Tel. +1 (905) 735 5500 Fax. +1 (905) 735 4603
www.asw-steel.com
e-mail: InfoValbrunaASW@ValbrunaASW.ca

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ACCIAIERIE VALBRUNA
High quality is our standard

We master the fire in the era of steel

Since the discovery of fire, man has radically changed his life; he discovers metals, learns how to melt them, and begins to progress.
The innate talent of human beings, continues to realise the great works of our day.
All this thanks to the discovery of... Stainless Steel !

ACCIAIERIE VALBRUNA
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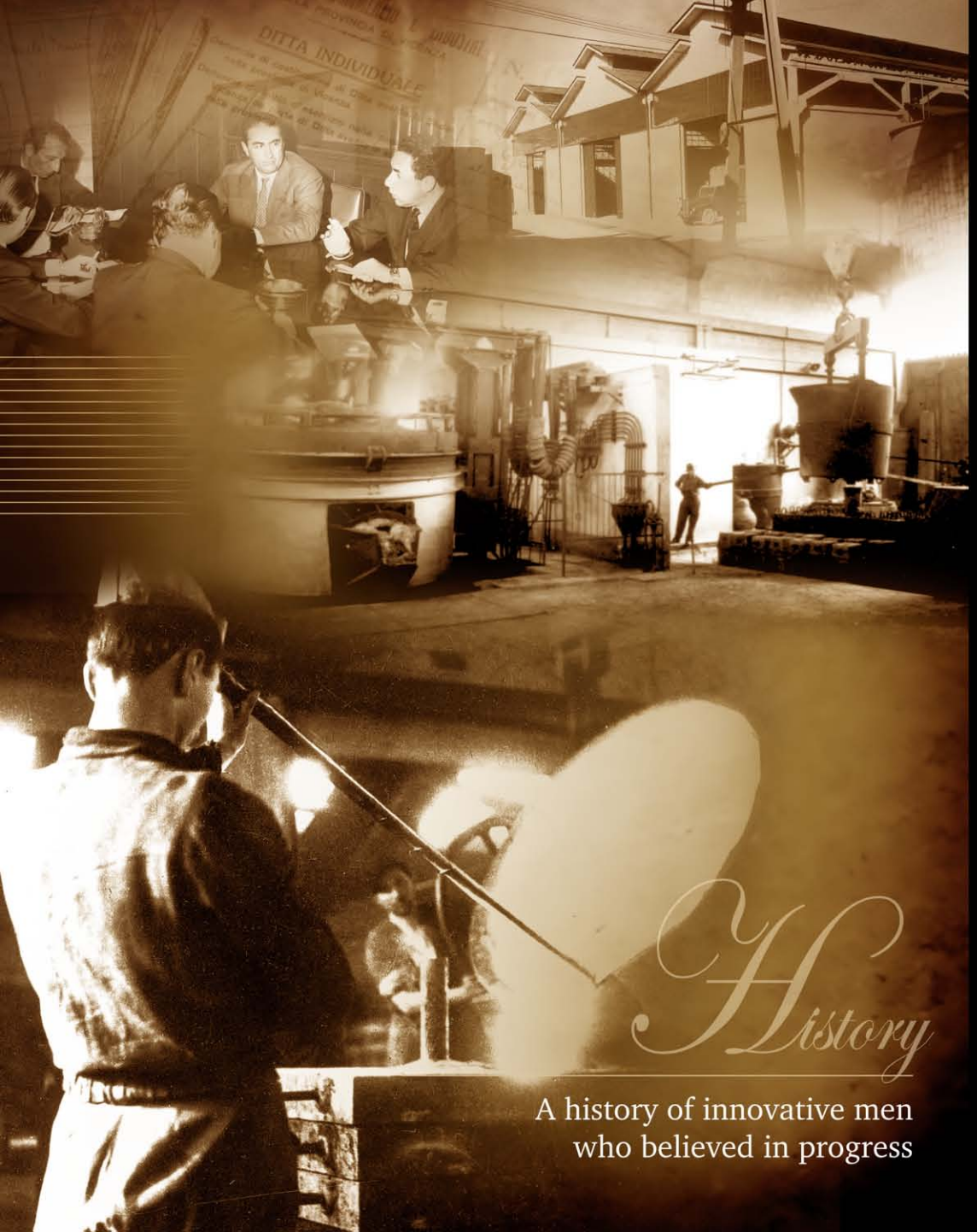
Stainless and Specialty Steel
Long products



History

A history of innovative men
who believed in progress

How Valbruna began

Valbruna, was founded in 1925 when Ernesto Gresele decided to expand his metal trading activities by commencing the manufacture of new products from the recovery and reutilization of disused or discarded items.
At the end of the Thirties, a steelworks and a rolling mill for bars came on stream alongside the ironworks.
After suffering a major setback in 1944, when the works was totally destroyed by aerial bombardment, production recommenced in the post-war period.
At the end of the 1950s, production of specialty low alloyed steels was superseded by the production of high alloy steels, stainless steels, high speed steels and specialty alloys.

A company rooted in its past history, making progressively further steps to the future

A GLOBAL ORGANIZATION
Efficient in every department,
in Italy and Worldwide...

WE ARE WHEREVER YOU NEED US TO BE

THE COMPANY

Valbruna, founded in 1925 and leader in the production of Stainless steel, Nickel alloys and Titanium long products, is underpinned by long experience and a highly qualified customer service.

VALBRUNA... SUCH A GREAT REALITY!

Our extensive and strategic distribution network is our corner stone in a global market, granting a worldwide commercial presence with the opportunity for continuous feedback from our customers.

Mills

ITALY: Vicenza, Bolzano
USA: Fort Wayne
CANADA: Welland

ITALY
Ancona
Torino
Milano
Brescia
Parma
Bologna
Treviso

EUROPE
Germany
France
United Kingdom
Spain
Ireland
Denmark
Switzerland
Nederland
Poland
Finland
Sweden
Norway
Czech Republic

AMERICA
Canada
United States
Mexico

ASIA - OCEANIA
Turkey
Hong Kong
Australia
Malaysia
UAE
India

AFRICA
South Africa

Vicenza plant, ITALY
(Total Surface: 294.608 m²)

Bolzano plant, ITALY
(Total Surface: 197.049 m²)

Fort Wayne plant, IN-USA
(Total surface: 248.356 m²)

Welland plant, ON-CANADA
(Total surface: 339.288 m²)

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SCM

A strategic organization developed in the world

Supply Chain Management consists in a fully integrated approach to the strategic management of production, distribution and delivering processes, crossing borders within companies to pursue common goals.
Following this principle, Valbruna has developed its Supply Chain, building strong partnerships with key customers by proactively designing and delivering customer-tailored solutions and services to mutually gain competitive edge.

Communicating and Interacting in the right way with our customers ... our priority!

CORPORATE IDENTITY

An investment in the company's future

OPTIMIZED TECHNOLOGY FOR A WIDE PRODUCTION CAPACITY

- A whole production cycle from melting to distribution.
- An extensive production range of grades.
- The availability of raw material, hence a steadfast supply on time.
- Products fitting the customers' needs by continuous feedback and versatility.
- The conformity of our products with the main international standards.

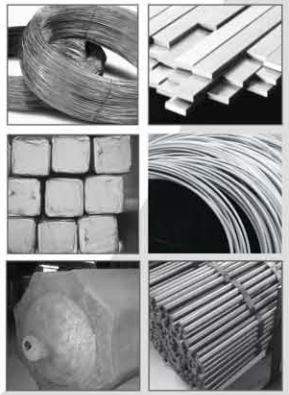
ACCIAIERIE VALBRUNA
High quality is our standard

PRODUCT RANGE

PROFILES	PROCESSING ROUTES	TOLERANCES	mm SIZES	inch SIZES
Blooms and Billets	Hot rolled Forged	ASTM A484 - EN 10031 ASTM A484 - EN 10031	40 ÷ 200 100 ÷ 600	1.500" ÷ 8.000" 4.000" ÷ 23.500"
Ingots	Square 8-sided 16-sided Round	- - - -	2.000 ÷ 16.000 kg 3.000 ÷ 32.000 kg 47.000 kg 1.900 ÷ 24.000 kg	4,400 ÷ 35,000 lbs 6,600 ÷ 70,000 lbs 100,000 lbs 4,000 ÷ 52,000 lbs
Rounds	Hot rolled Cold drawn from coils Cold drawn from bars Peeled Peeled reeled Centerless ground Forged + peeled Forged rough turned	ASTM A484 - EN10060 ASTM A484 - EN10278 - EN20286 (k9 - k12; h9 - h12) ASTM A484 - EN10278 - EN20286 (k9 - k12; h9 - h12) ASTM A484 - EN10278 - EN20286 (k9 - k12; h9 - h12) ASTM A484 - EN10278 - EN20286 (k9 - k12; h9 - h12) ASTM A484 - EN10278 (h6 - h9) ASTM A484 - EN20286 (k12 - k13) - EN10031 ASTM A484 - EN20286 (k13) - EN10031	5,5 ÷ 180 5 ÷ 32 32 ÷ 80 16 ÷ 180 16 ÷ 180 5 ÷ 200 180 ÷ 520 520 ÷ 600	0.217" ÷ 7.000" 0.197" ÷ 1.250" 1.260" ÷ 3.000" 0.625" ÷ 7.000" 0.625" ÷ 7.000" 0.197" ÷ 8.000" 7.000" ÷ 20.000" 20.000" ÷ 23.500"
S.S. Rebars	Cold drawn Hot rolled	BS 6744 D.M. 2008 - BS 6744	3 ÷ 12 6 ÷ 50	0.118" ÷ 0.500" 0.250" ÷ 2.000"
Hexagons	Hot rolled Cold drawn	ASTM A484 - EN10061 ASTM A484 - EN10278 (h11)	8 ÷ 72,5 5 ÷ 70	0.315" ÷ 2.854" 0.187" ÷ 2.750"
Flats	Cold drawn Hot rolled Forged	ASTM A484 - EN10278 (h11) ASTM A484 - EN10058 ASTM A484 - EN10031	W. 10÷100 – Th. 4÷60 W. 15÷200 – Th. 4,5÷70 W. 60÷600 – Th. 30÷550	W. 0.375" ÷ 4.000" – Th. 0.157"÷ 2.000" W. 0.500" ÷ 8.000" – Th. 0.177"÷ 2.500" W. 2.500" ÷23.000" – Th. 1.250"÷ 21.650"
Squares	Cold drawn Hot rolled Forged	ASTM A484 - EN10278 (h11) ASTM A484 - EN10059 ASTM A484 - EN10031	11 ÷ 70 13 ÷ 80 85 ÷ 600	0.433" ÷ 2.750" 0.512" ÷ 3.125" 3.3125" ÷ 23.500"
Angles	Hot rolled	ASTM A484 - EN10056	20x20x3 ÷ 100x100x12	0.7500"x0.7500"x0.125" ÷ 4.000"x4.000"x0.500"
Wire Rod	Hot rolled Coils from 1000 to 1300 Kg	ASTM A555 - EN10108	5 ÷ 38	0.197" ÷ 1.500"
Wire	Cold drawn Coils from 25 to 800 Kg	ASTM A484 - EN10278 (h9 - h11)	1 ÷ 23	0.039" ÷ 0.8750"

We also offer:

Chromium Plated S.S. Bars	Dia from 8 to 200 mm Lengths from 3 to 8,3 metres	Dia from 0.3125" to 8.000" Lengths from 9.5 to 27 ft	Tolerances: ASTM A484 - EN10278 - EN20286 (h7 - h9; f7 - f9)
Threaded Rods	Type A2 and A4 Dia from M5 to M24 Lengths from 1 to 4 metres	Type A2 and A4 Dia from M5 to M24 Lengths from 3 to 13 ft	Metric sizes according to ISO 3506 - 1



STAINLESS STEELS

AUSTENITIC STAINLESS STEELS

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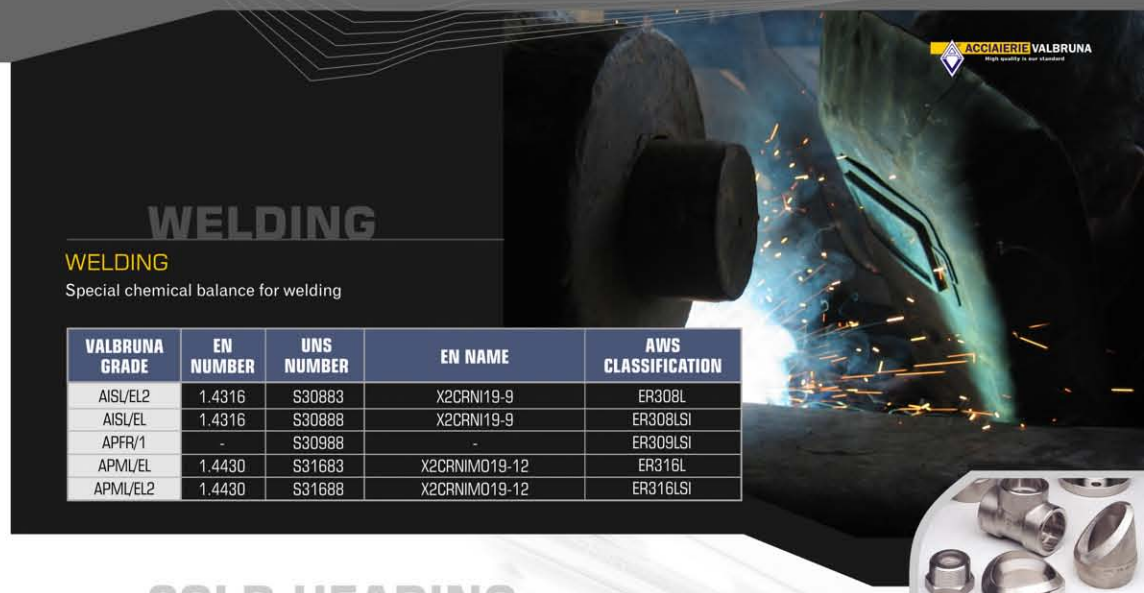
High quality is our standard

Steels with Chromium content between 16% and 26%, Nickel between 7% and 35% and Carbon 0.15% max which cannot be strengthened by quench hardening but only through cold working (e.g cold drawing). The main features of these steels are their resistance to corrosion, which is generally higher than other stainless steels, and their nonmagnetic behaviour.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
AIM/1	-	201	S20100	-	-
AIMR	-	XM-28	S24100	-	-
AIP	1.4303	305	S30500	X4CRNI18-12/X5CRNI18-12	-
AIP/DE	-	-	-	-	305S11
AISC	1.4550/1.4546	347/347H	S34700/S34709	X6CRNINB18-10/X5CRNINB18-10	347S31/347S20
AISH	1.4948	304H	S30409	X6CRNI18-10/X6CRNI18-11	-
AISH1	1.4948	304H	S30409	X6CRNI18-10/X6CRNI18-11	-
AISH2	-	304H	S30409	-	-
AISL	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15/304S31
AISL/DE	1.4306	-	-	X2CRNI19-11	304S11
AISLN	1.4311	304LN	S30453	X2CRNIN18-10	-
AISN	-	XM-21	S30452	-	-
AIST	1.4541	321	S32100	X6CRNITI18-10	321S31
AISTH	1.4878/1.4544	321H	S32109	X8CRNITI18-10	-
AMS	-	317	S31700	-	-
AMSL	-	317L	S31703	-	-
AMSL/DE	1.4438	-	-	X2CRNIMO18-15-4	-
AMSL/DE2	1.4439	-	-	X3CRNIMON17-13-5	-
APFIS	1.4845	310/310S	S31000/S31008	X8CRNI25-21/X12CRNI25-21	310S31
APFI/SI	1.4841	314	S31400	X15CRNISI25-21/X15CRNISI25-20	314S25
APFR/SI	1.4828	-	-	X15CRNISI20-12	-
APFR	1.4833	309	S30900	X12CRNI23-13/X7CRNI23-14	-
APFRS	-	309S	S30908	-	309S20
APM/DE2	1.4432/1.4436	-	-	X2CRNIMO17-12-3/X5CRNIMO17-13-3	316S33/316S14
APMC	-	316CB	S31640	-	-
APMC/DE	1.4580	-	-	X10CRNIMONB18-10	-
APMH	-	316H	S31609	-	-
APML	1.4401/1.4404	316/316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2	316S14/316S19
APMLD2	1.4435	-	-	X2CRNIMO18-14-3	316S13/316S14/316S33
APMLN	1.4429	-	-	X2CRNIMON17-13-3	-
APMLN/DE	1.4406	316N/316LN	S31651/S31653	X2CRNIMON17-11-2	-
APML/FR	-	-	-	-	316S31/316S14
APMT	-	316TI	S31635	-	-
APMT/DE	1.4571	-	-	X6CRNIMOTI17-12-2	-
APMZ/UK	1.4427	-	-	X12CRNIMOS18-11	-
AU188ZU	1.4570	-	-	X6CRNICUS18-9-2	-
AU188	1.4310/1.4300/1.4324	302	S30200	X10CRNI18-8/X12CRNI18-8	302S31/301S22
AU188Z	1.4305	303	S30300	X8CRNIS18-9	303S31
AV203	-	XM-1	S20300	-	-
NTR50	-	XM-19	S20910	-	-
NTR60	-	-	S21800	-	-
V2111N	1.4835	F45	S30815	X9CRNISINCE21-11-2	-
V2018MN	1.4547	F44	S31254	X1CRNIMOCUN20-18-7	-



WELDING

WELDING

Special chemical balance for welding

VALBRUNA GRADE	EN NUMBER	UNS NUMBER	EN NAME	AWS CLASSIFICATION
AISL/EL2	1.4316	S30883	X2CRNI19-9	ER308L
AISL/EL	1.4316	S30888	X2CRNI19-9	ER308LSI
APFR/1	-	S30988	-	ER309LSI
APML/EL	1.4430	S31683	X2CRNIMO19-12	ER316L
APML/EL2	1.4430	S31688	X2CRNIMO19-12	ER316LSI

COLD HEADING

COLD HEADING

Copper is added to improve the austenitic structure and make the steel less prone to cold work hardening.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
AISR	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15/304S31
AISRU/1	1.4567	-	S30430	X3CRNICU18-9-4	394S17
AISRU/2	-	304CU	S30430	-	394S17
AISRU	1.4567	304CU	S30430	X3CRNICU18-9-4	-
AISRUH	1.4567	304CU	S30430	X3CRNICU18-9-4	394S17
AISRUB	1.4560	-	-	X3CRNICU19-9-2	-
APMR	1.4401/1.4404	316/316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2	316S14/316S19
APMRU	1.4578	316CU	-	X3CRNICUMO17-11-3-2	396S17

STAINLESS STEELS

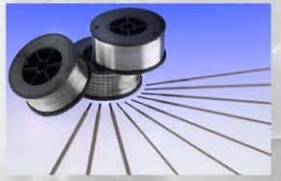
MARTENSITIC STAINLESS STEELS

Steels with Chromium content between 10-18%, Carbon up to 2% and with the addition of other elements. In order to improve both mechanical properties and corrosion resistance, they are heated to an appropriate temperature, 950° - 1050° C, followed by suitable quenching and tempering.
Martensitic steels are ferromagnetic.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
CMXA	-	440A	S44002	-	-
CMXB	-	440B	S44003	-	-
CMXBM	1.4112	-	-	X90CRMOV18	-
CMXC	1.4125	440C	S44004	X105CRMO17	-
CMXC/1	-	440C	S44004	-	-
CMX/DE	1.4037	-	-	X65CR13	-
VAL1	1.4006/1.4011	403/410	S40300/S41000	X12CR13/X12CR12	410S21
VAL1AL/2	1.4002	405	S40500	X6CRAL13	-
VAL1B/DE	1.4024	-	-	X15CR13	-
VAL1HS	1.4005	416	S41600	X12CRS13	416S21
VAL1Z	1.4005	416	S41600	X12CRS13	416S21
VAL2A	1.4021	420	S42000	X20CR13	-
VAL2AM	1.4120	-	-	X20CRMO13	-
VAL2A/UK	-	-	-	-	420S29
VAL2A/UK2	-	-	-	-	420S37
VAL2B	1.4028	420	S42000	X30CR13	420S45
VAL2C	1.4031	420	S42000	X39CR13	-
VAL2CZ	1.4035	-	-	X46CRS13	-
VAL2D	1.4116	-	-	X50CRMOV15	-
VAL2/DE	1.4034	-	-	X46CR13	-
VAL2/DS	1.4036	-	-	X46CR13	-
VAL2BZ	1.4029	420F	S42020	X29CRS13	-
VAL3	1.4122	-	-	X39CRMO17-1	-
VAL3S	1.4122	-	-	X35CRMO17	-
VAL4	1.4057	431	S43100	X17CRNI16-2	-
VAL4/UK	-	-	-	-	431S29
X134M	1.4313	-	S41500	X3CRNIMO13-4	-
X134M/1	1.4313/1.4413	-	S41500	X3CRNIMO13-4/X4CRNIMO13-4	-
X134M/3	-	-	S41500	-	-
X164M	1.4418	-	-	X4CRNIMO16-5-1	-

WELDING

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
X134/EL	1.4313	-	S41500	X3CRNIMO13-4



PRECIPITATION HARDENING

These steels with a minimum of 10.5% Cr have exceptional strength due to heat treatment at various temperatures that induces precipitation hardening (also known as aging). This process allows a sub microscopic precipitation of phase rich in elements coherent with the matrix (for example Cu) that greatly increases the mechanical properties of the steel.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
AV177AL	1.4568	631	S17700	X7CRNIAL17-7
V138	1.4534	XM-13	S13800	X3CRNIMOAL13-8-2
V157M	1.4574	632	S15700	-
V145	-	XM-25	S45000	-
V145/1	1.4594	-	-	X5CRNIMOCUNB14-5
V155	1.4545	XM-12	S15500	X5CRNICUNB15-5
V174	1.4542	630	S17400	X5CRNICUNB16-4
V174/1	1.4548	630	S17400	X5CRNICUNB17-4-4
V174LC*	1.4542	630	S17400	X5CRNICUNB16-4
V176T	-	635	S17600	-
X154MU/2	1.4594	-	-	X5CRNIMOCUNB14-5

* For load cells or higher Rp_{02}/Rm ratio

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High quality is our standard

FERRITIC STAINLESS STEELS

Steels with a chromium content higher than 10.5% and a Carbon of 0.15% maximum. Unlike martensitic steels these grades cannot be stiffened by quench hardening but only through cold working (e.g. cold drawing).
Ferritic steels are ferromagnetic.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
VAL1LC	-	-	S40940	-	-
VAL1LCNI	-	-	S40976	-	-
VAL1NI	-	414	S41400	-	-
VAL1PT	1.4512	409	S40900	X2CRTI12	-
X7AL	1.4713	-	-	X10CRALSI7	-
X11L	1.4003	-	S41003	X2CRNI12/X2CR11	-
X17AL	1.4742	-	-	X10CRALSI18/X10CRAL18	-
X17L	1.4016	430	S43000	X6CR17	430S11/430S18
X17M	1.4113	434	S43400	X6CRMO17-1	434S20
X17MZ	1.4105	430F	S43020	X6CRMOS17	-
X17NBL	1.4511	-	-	X3CRNB17	-
X17T	1.4510	430TI	S43036	X3CRTI17	-
X17Z	-	430F	S43020	-	-
X17Z/DE	1.4104	-	-	X14CRMOS17	-
X18DZ	-	XM-34	S18200	-	-
X24AL	1.4762	-	-	X10CRALSI25/X10CRAL24	-
X25R	-	446	S44600	-	-
X182N	1.4521	444	S44400	X2CRMOTI18-2	-

STAINLESS STEELS

DUPLEX STAINLESS STEELS

These steels have a Cr content higher than 16% with Ni of 4-6% and Mo of 1.5-3%. Their dual austenitic and ferritic grain structure (hence the term duplex) means that they have the good mechanical properties of austenitic stainless steels but with a superior resistance to stress corrosion and pitting.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
*MV274MDE	1.4460	329	S32900	X3CRNIMON27-5-2
V225MN	1.4462	F51/F60	S31803/S32205	X2CRNIMON22-5-3
V234N	1.4362	-	S32304	X2CRNIN23-4
V257MNC	1.4582	-	-	X4CRNIMONB25-7
V2101MN	1.4162	-	S32101	-
**LDX2101®	1.4162	-	S32101	-

* Improved machinability steel
** Outokumpu registered trademark

SUPERDUPLEX STAINLESS STEELS

Characterised by higher contents of Cr, Mo, and N than standard duplex steels, resulting in increased corrosion resistance, these steels were developed for applications in aggressive chloride environments.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
V257M	1.4410	F53	S32750	X2CRNIMON25-7-4
V257MWU	1.4501	F55	S32760	X2CRNIMOCUWN25-7-4

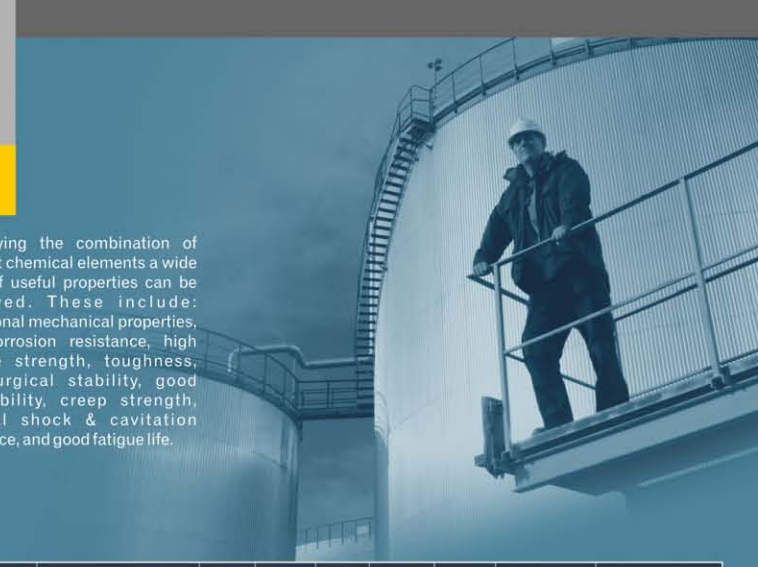
STAINLESS STEELS FOR FORGING

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
AISLF	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15/304S31
AISLF1*	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15/304S31
AISTF	1.4541	321	S32100	X6CRNITI18-10	-
AISTF1*	1.4541/1.4544/1.4878	321/321H	S32100/S32109	X6CRNITI18-10/X8CRNITI18-10/X12CRNITI18-9	-
APMLF	1.4401/1.4404	316/316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2 X2CRNIMO17-13-2	-
APMLF1*	1.4401/1.4404	316/316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2 X2CRNIMO17-13-2	-
APMTF	1.4571	-	-	X6CRNIMOTI17-12-2	-
V174F	1.4542	630	S17400	X5CRNICUNB16-4	-
V174F/1*	1.4542	630	S17400	X5CRNICUNB16-4	-
VAL1F	1.4006	410	S41000	X12CR13	-

* For heavy forging parts

NICKEL ALLOYS

NICKEL ALLOYS



More and more requests coming from new technologies and industries for enhanced performance and resistance to aggressive environments has driven the development of Nickel Alloys. This encompasses iron base, nickel base and cobalt base alloys.

By varying the combination of different chemical elements a wide range of useful properties can be achieved. These include: exceptional mechanical properties, high corrosion resistance, high rupture strength, toughness, metallurgical stability, good fabricability, creep strength, thermal shock & cavitation resistance, and good fatigue life.

Corrosion Resistant Alloys

VALBRUNA GRADE	Commercial name	UNS	W.N.	BS	International designation	ASTM	ASME	AMS	EN	DIN	BS	Other
SG1	Alloy 200 Alloy 201	N02200 N02201	2.4068	NA11 NA12	LC-Ni99.0	B160 B564	SB160 SB564	-	-	17740	3076	-
AN2	Alloy 825 Alloy 65	N08825 N08065	2.4858	NA16 NA41	NiCr21Mo NiFe30Cr21Mo3	B425 B564	SB425 SB564	-	-	17744 1736	3076 2901	A5.14 ERNiFeCr-1
AV925	Alloy 925	N09925	-	-	-	-	-	-	-	-	-	NACE MR0175
AN4	Alloy 904L	N08904	1.4539	904S14	X1NiCrMoCu25-20-5	A182	SB649	-	10088-3 10272	-	-	-
VAL4529	Alloy 926	N08926	1.4529	-	X1NiCrMoCuN25-20-7	B472 B649	SB649	-	10088-3	-	-	SEW 400
	Alloy 367	N08367	-	-	-	A182 B472 B564 B691	SB564	-	-	-	-	-
AN5	Alloy 660 Alloy A286	S66286	1.4980	286S31	X6NiCrTiMoVB25-15-2	A638 A453	-	5731 5732 5734 5737	10269 10302	-	-	-
AV20	Alloy 20	N08020	2.4660	-	NiCr20CuMo	B473 B472	SB473	-	-	-	-	-
EG1	Alloy 400	N04400	(2.4360)	NA13	NiCu30Fe	B164 B564	SB164 SB564	4674	-	(17743) (17752)	3076	QQ-N-281 D/2
EG2	Alloy K500	N05500	(2.4375)	NA18	NiCu30Al	B865	-	4676	-	(17743) (17752)	3076	QQ-N-286 E/2
GL3	Alloy 625	N06625	2.4856	NA21	NiCr22Mo9Nb	B446 B564	SB446 SB564	5666	17744	-	3076	-
AVC276	Alloy C276	N10276	2.4819	-	NiMo16Cr15W	B564 B574	SB564	-	-	-	-	-
AV718CRV	Alloy 718	N07718	2.4668	NA51	NiCr19Fe19Nb5Mo3; NiCr19NbMo	B637*	SB637*	-	-	-	-	API6A718
AV718HTV	Alloy 718	N07718	2.4668	NA51	NiCr19Fe19Nb5Mo3; NiCr19NbMo	B637	SB637	5662 5663	-	-	-	-

* Only for chemistry

High Temperature Alloys

VALBRUNA GRADE	Commercial name	UNS	W.N.	BS	International designation	ASTM	ASME	AMS	EN	DIN	BS	Other
AN1	Alloy 800 Alloy 800H Alloy 800HT	N08800 N08810 N08811	1.4876	NA15 NA15(H)	X10NiCrAlTi32-21; X10NiCrAlTi32-20	B408 B564	SB408 SB564	5766	10095	-	3076	SEW 470
AN3	Alloy DS	-	1.4862	NA17	X8NiCrSi38-18	-	-	-	10095	-	3076	-
AN3US	Alloy 330	N08330	-	-	-	B511	-	5716	-	-	-	-
AN3CB	Alloy 330CB	-	-	-	-	-	-	-	-	-	-	-
GL1	Alloy 600	N06600	2.4816	NA14	NiCr15Fe	B166 B564	SB166 SB564	5665	10095	17742 17752	3076	-
GL2	Alloy 80A	N07080	2.4952	NA20	NiCr20TiAl	B637	SB637	-	10302 10269 10090	17480 17240 17742	3076	-
GL5	Alloy 601	N06601	2.4851	NA49	NiCr23Fe	B166 B564	SB166 SB564	5715	10095	17742 17752 1736	2901-5	-

Welding Alloys

VALBRUNA GRADE	Commercial name	UNS	W.N.	BS	International designation	ASTM	ASME	AMS	EN	DIN	BS	Other
GL3/EL	Alloy 625	N06625	2.4831	NA43	SG-NiCr21Mo9Nb UP-NiCr21Mo9Nb	B446	-	-	1736	-	2901	A5.14 ERNiCrMo-3
AN2	Alloy 825 Alloy 65	N08825 N08065	2.4655	NA41	SG-NiCr27Mo	F45	-	-	-	-	2901	A5.14 ERNiFeCr-1
GL4	Alloy 82	N06082	2.4806	NA35	SG-NiCr20Nb UP-NiCr20Nb	-	-	-	1736	-	2901	A5.14 ERNiCr-3
GL5	Alloy 601	N06601	2.4826	NA49	-	B166	-	-	-	1736	2901-5	-
EG3	Alloy 60	N04060	2.4377	NA33	SG-NiCu 30 MnTi UP-NiCu 30 MnTi	-	-	-	1736	-	2901	A5.14 ERNiCu-7
SG2	Alloy 55	W82002	(2.4560)	NA47	S-NiFe 40	-	-	-	1736	-	2901-5	A 5.15 ErNiFe-CL A 5.15 ENiFe-CL
SG3	Alloy 55 Ti	-	-	-	-	-	-	-	-	-	-	-
SG6	Alloy 61	N02061	2.4155	NA32	SG-NiTi 4	-	-	-	1736	-	2901	A5.14 ERNi-1

Electrical resistance and Electronic Instrument Alloys

VALBRUNA GRADE	Commercial name	UNS	W.N.	BS	International designation	ASTM	ASME	AMS	EN	DIN	BS	Other
SG4	Alloy 212	N02212	2.4110	-	NiMn 2	-	-	-	-	17741	-	-
EG4	Alloy 401	N04401	2.0842	-	-	F30	-	-	17644	-	-	-
SG5	Alloy 36	K93601	1.3912	-	Ni36	-	-	-	-	17745	-	SEW 385
VAL40	Alloy 40	-	1.4860	-	NiCr 30 20 (X16NiCr30-20)	-	-	-	-	17470	-	-
VAL60	Alloy 60/40	N06004	2.4867	-	NiCr6015	B344	-	-	-	17742	-	-
VAL80	Alloy 80/20	N06003	2.4869	-	NiCr80-20	B344	-	-	-	17742	-	-
X21AL*	CrAl20-5	-	1.4767	-	-	B603	-	-	17470	-	-	-
X22AL*	CrAl25-5	-	1.4765	-	-	B603	-	-	17470	-	-	-

* Cr-Al Alloys

TITANIUM

TITANIUM

The unique and interesting chemical, mechanical and physical properties of titanium and its alloys leads to its use in a wide range of applications, such as Aerospace, Chemical processing, Oil & Gas, Electrochemical industry, Medical & surgical devices, Automotive industry, marine industry, desalination and desulphurization plants, food and pharmaceutical industry.

THE WITNESS OF TIME...

Valbruna specialises in the production of the following grades:

Commercial pure grades:

Ti-Gr. 1: The very low content of oxygen creates a reduced tensile strength and high ductility as well as excellent corrosion resistance in bland reducing to strongly oxidazing environments.

- *Availability upon minimum production lot quantity*

Ti-Gr. 2: This grade is considered the most commonly used in industrial service, offering a good combination of high corrosion and erosion resistance, good cold formability and excellent weldability. Compared to Ti-Gr.1 it shows a higher oxygen content and tensile strength.

Ti-Gr. 4: Among the commercial pure grades, this one shows the highest tensile, while ductility and cold formability are slightly reduced.
It is used for draft gears and components operating in marine environments.

- *Availability upon minimum production lot quantity*

α – β Alloys: Titanium with other elements added

Ti-Gr. 5: Recommended for high mechanical resistance applications up to 350° - 400°C, it combines an ideal set of properties: high tensile strength, low density, toughness and ductility, weldability and machinability comparable to austenitic stainless steel.
These materials are suitable for solution and precipitation heat treatments.

Ti-Gr. 5 eli: Ti6Al4V with extra low interstitial elements content , with enhanced ductility, typically used in the non aged condition for maximum toughness. Widely used for cryogenic devices as well as medical applications.

Ti-Gr. 2	Ti-Gr. 4	Ti-Gr. 5	Ti-Gr. 5 eli
ASTM B348	ASTM B348	ASTM B348	ASTM F136
ASTM F67	ASTM F67	AMS 4928	ISO 5832 - 3
ISO 5832-2	ISO 5832-2		AMS 4930





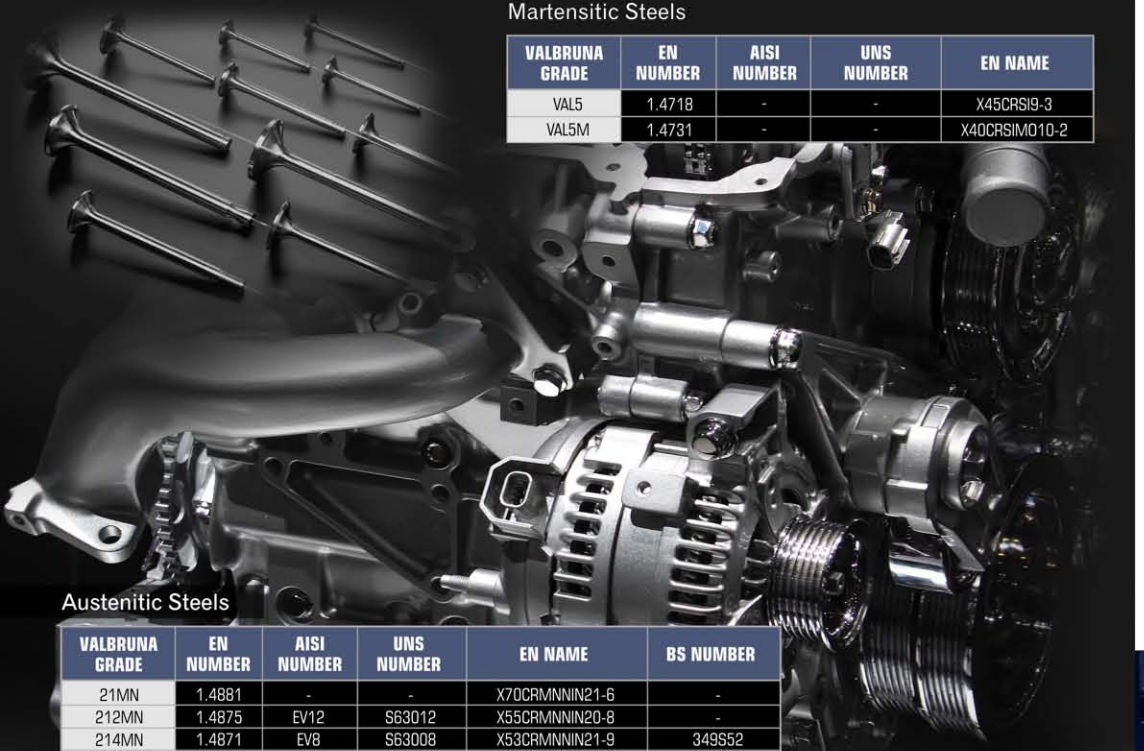




VALVE STEELS

Valve Steels

Valbruna can supply steels and special alloys for engine valves in rough ground, ground, or ground and polished bars depending on the production process of the customer. Rough ground or ground bars are offered for engine valves obtained by extrusion, while the ground and polished bars are proposed for upsetting.



Martensitic Steels

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
VAL5	1.4718	-	-	X45CRSI9-3
VAL5M	1.4731	-	-	X40CRSIMO10-2

Austenitic Steels

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
21MN	1.4881	-	-	X70CRMNNIN21-6	-
212MN	1.4875	EV12	S63012	X55CRMNNIN20-8	-
214MN	1.4871	EV8	S63008	X53CRMNNIN21-9	349S52
214MNC	1.4870	-	-	X53CRMNNINBN21-9	352S52
214MNCW	1.4882	XEV-F	S63019	X50CRMNNINBN21-9	-
ACMV	1.4748	-	-	X85CRMOV18-2	-
ACNW	-	-	-	-	331S40
APFR/2	-	EV4	S63017	-	381S34
AVW	1.4873	-	-	X45CRNIW18-9	-
AVS	1.4747	-	-	X80CRNISI20	-
AVS/DE	1.4732	-	-	X80CRSIMOW15-2	-
NTR20	1.4866	-	-	X33CRNIMNN23-8	-
S5220	1.4785	-	-	X60CRMNMOVNBN21-10	-

Availability of some grades upon minimum production lot quantity

Nickel Alloys

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
GL2	2.4952	-	N07080	NICR20TIAL

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High quality is our standard

MAXIVAL®

Maxival®

Cutting data in the web-site
WWW.MAXIVAL-STAINLESS-STEEL.COM

Maxival® is a technologically advanced process carried out on conventional stainless steels such as Type 304 and 316 that greatly improves machinability without jeopardize mechanical properties or resistance to corrosion.

The advantages offered to a machine shop when working with Maxival® process treated grades are:

- a greater number of machined pieces
- less tool wear
- a reduction of down times for tool replacement

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME	BS NUMBER
MVAISL	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15
MVAISLDE	1.4306	-	-	X2CRNI19-11	304S11
MVAISLFR	1.4301/1.4307	304/304L	S30400/S30403	X5CRNI18-10/X2CRNI18-9	304S15
MVAISRU	1.4567	304CU	S30430	X3CRNICU18-9-4	-
MVAIST	1.4541	321	S32100	X6CRNITI18-10	-
MVAPMDE2	1.4432/1.4436	-	-	X2CRNIMO17-12-3/X5CRNIMO17-13-3	316S14/316S19/316S33
MVAPML	1.4401/1.4404	316/316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2	316S14/316S19
MVAPMLD2	1.4435/1.4437	-	-	X2CRNIMO18-14-3/X6CRNIMO18-12	316S13/316S33/316S14/316S19
MVAPMLDE	-	-	-	-	316S11/ 316S31/316S14/316S19
MV188HS	1.4305	303	S30300	X8CRNIS18-9	-
MV274MDE	1.4460	329	S32900	X3CRNIMON27-5-2	-
VPAU188Z	1.4305	303	S30300	X8CRNIS18-9	-
VAL2A	1.4021	420	S42000	X20CR13	-

OTHER GRADES AVAILABLE ON REQUEST

SOFT MAGNETIC STEELS

MAGIVAL®

Magival® is a range of ferritic stainless steels, with a high degree of machinability, designed for magnetic applications where there are requirements for:

- high permeability
- low coercive force
- high machinability

Carefully controlled chemical analysis and sophisticated working processes create a ferritic structure which is highly sensitive to variations in a magnetic field. This avoids the need for expensive heat treatment by the user after machining. Due to their extreme ease of magnetization and demagnetization, the Magival® grades can be used to advantage in the manufacture of:

- magnetic cores
- solenoid valves
- electromagnetic devices
- flow regulators
- injector components

VALBRUNA GRADE	ASTM	DESIGNATION	EURONORM	W.N.	MAGNETIC PROPERTIES	CORROSION RESISTANCE
MG1	A838 Alloy 1; A582	430F	10088-3	1.4105	**	**
MG2	A838 Alloy 2	430FR	-	-	***	**
MG3	A582	XM-34	-	1.4114	**	***
MG3/1*	A582	XM-34	-	1.4114	*	***
MG4	A838 Alloy 2 Mo 1,5 ÷ 2 %	-	-	1.4106	***	***
MG5	-	X12CRS13	-	≈ 1.4005	****	*
MGC	-	18% CR+NB	-	-	***	****
MGT	-	-	-	1.4523	***	*****

* Material normally supplied in the annealed, cold drawn and ground condition

OTHER GRADES AVAILABLE ON REQUEST

SILICON IRON ALLOYS

VALBRUNA GRADE	ASTM
FeSi1P	ASTM A 867 - TYPE 1F
FeSi3	ASTM A 867 - TYPE 2
FeSi3P	ASTM A 867 - TYPE 2F
FeSi4	ASTM A 867 - TYPE 3

Silicon Iron alloys are generally used in applications requiring higher electrical resistivity, higher permeability, lower coercive force and residual magnetism than provided by either carbon steels or soft magnetic stainless steels such as the Magival® series.
Valbruna grades of Silicon Iron alloys are classified according to the Silicon content in the chemical composition according to the standard classification of ASTM A 867.

Each single grade has got its enhanced machinability option where required.
Silicon Iron alloys are normally supplied in the annealed condition since the best magnetic properties can be reached through a soft magnetic annealing carried out after part machining.
Silicon Iron alloys rust easily under ordinary atmospheric conditions and therefore a protective coating should be applied to the heat treated parts if exposed during their life cycle.
Due to their high magnetic properties, Silicon Iron alloys are mainly used in the manufacture of relays, solenoids and injectors parts.

MARINOX® - AQUASHAFT®

MARINOX®-AQUASHAFT®

Marinox® and Aquashaft® identify a series of austenitic stainless steels, precipitation hardening grades and duplex steels intended for the manufacture of propeller shafts in the shipbuilding industry.
Utilising these types of steel, the designer can reduce the shaft dimensions and hence use smaller supports and seals.
The simultaneous reduction of weight and hydrodynamic resistance, permits better performances and greater efficiency.
A boat with propeller shafts made of high-performance stainless steel can thus give greater speeds with savings in operating costs compared with crafts that use conventional shafts.
Our bars are wrapped up in plastic and supplied in wooden boxes.

VALBRUNA GRADE	EN NUMBER	AISI NUMBER	UNS NUMBER	EN NAME
MARINOX16	1.4401/1.4404	316L	S31600/S31603	X5CRNIMO17-12-2/X2CRNIMO17-12-2
MARINOX17	1.4542	630	S17400	X5CRNICUNB16-4
MARINOX18	1.4418	-	-	X4CRNIMO16-5-1
MARINOX19	-	304HN/XM-21	S30452	-
MARINOX22/22HS	-	XM-19	S20910	-
MARINOX25	1.4462	2205	S31803/S32205	X2CRNIMON22-5-3
MARINOX EG2	(2.4375)	-	N05500	NICU30AL

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High quality is our standard

	MARINOX 16	MARINOX 17	MARINOX 18	MARINOX 19	MARINOX 22	MARINOX 22HS	MARINOX 25	MARINOX EG2
STRENGTH	*	*****	*****	***	****	*****	**	*****
TOUGHNESS	***	*	**	***	***	***	****	***
CORROSION RESIST.	****	*	**	**	*****	*****	****	******

REVAL®

REVAL®

Stainless Steel Reinforcement

A permanent solution to concrete decay, structure safety and continuous maintenance.

The benefits of using Reval® in roads, bridges and buildings are:

- Excellent corrosion resistance to chlorides
- More than 100 years of expected service life in concrete
- Higher strength levels
- Better self healing in handling damage and abrasion when compared to galvanized or epoxy coated steel
- Low life cycle cost
- High ductility
- Longer storage and service life
- Better resistance to localized corrosion mechanisms
- Low magnetic permeability
- Better fire and heat resistance compared to black bar
- Resistance to seismic loading
- Easy use with carbon steel by lapping or coupling

WWW.REVAL-STAINLESS-STEEL.COM

AUSTENITIC		DUPLEX	SUPERAUSTENITIC
304/304L	316/316L	318	1.4529
304LN	316LN	318S13	
304S31	1.4571	1.4462	
1.4307	316S33	S31803	
1.4301	1.4404	1.4362	
1.4541	1.4436	1.4162	
S30400/S30403	1.4429	*LDX2101®	
S30453	S31600/S31603		
S24100	S31653		

*Outokumpu registered trademark

COILS	Dia from 3 to 20 mm	700 Kg - 1500 Kg
BARS	Dia from 3 to 50 mm	12 metres max

ACCIAIERIE VALBRUNA
High quality is our standard

BIOVAL®

BIOVAL®

Complementary selection of Stainless Steels and Titanium Alloys for medical devices & surgical instruments, developed to reach high biocompatibility, corrosion resistance and microcleanliness standards.

High quality ESR and VAR remelted stainless steel grades and titanium alloys readily available in accordance to medical standards or designed to meet customer medical specifications.

VALBRUNA GRADE	DESIGNATION	UNS NUMBER	ASTM STANDARDS	NFS STANDARDS	ISO STANDARDS	APPLICATIONS
APML/IMP	Fe-18Cr-14Ni-2.5Mo	S31673	F138	-	5832 - 1	ORTHOPEDIC, SPINAL, DENTAL IMPLANTS AND OSTEOSYNTHESIS DEVICES
NTR50IMP	Fe-21Cr-10Ni-3Mn-2.5Mo	S31675	F1586	-	5832 - 9	
NTR50	Fe-22Cr-12.5Ni-5Mn-2.5Mo	S20910	F1314	-	-	
TIGR2	Ti-CP	R50400	F67	-	5832 - 2	
TIGR5	Ti6Al4V	R56400	-	-	5832 - 3	
TIGR5ELI	Ti6Al4VELI	R56401	F136	-	5832 - 3	
V174	X5CrNiCuNb16-4	S17400	F899	94 - 090	-	SURGICAL TOOLS AND INSTRUMENTS
VAL4	X17CrNi16-2	S43100	F899	94 - 090	-	
APML	X5CrNiMo17-12-2 X2CrNiMo17-12-2	S31600 S31603	F899	94 - 090	-	

OTHER GRADES AVAILABLE ON REQUEST

AEROVAL®
AEROSPACE SPECIAL GRADES

Valbruna is approved by many of the major players and OEM in the Aerospace Market

AEROVAL® V155

is a martensitic Stainless Steel which can be strengthened by precipitation treatment leading to a Cu-containing phase to precipitate in the alloy. It is typically used for parts requiring corrosion resistance and high mechanical properties up to 315°C.

The proper chemical composition and the manufacturing process promote improved toughness in the transverse direction and good ductility; these features are obtained by balanced chemistry capable to limit the content of δ-ferrite and by consumable electrode remelting practice capable to control a tight inclusion content.

This grade could be multiple melted using AOD practice followed by either vacuum or electroslag consumable electrode remelting.

DESIGNATIONS

UNS	AECMA	AFNOR	ASTM	EN
S15500	FE-PM64/FE-PM1802	EZ5CNU15-04	XM-12	1.4545/X5CrNiCuNb15-5

SPECIFICATIONS

ASTM	AMS
A564	5659
	Type 1 (VAR) Type 2 (ESR)

AEROVAL® V174

Martensitic precipitation hardening with high mechanical properties together with good toughness also at sub-zero temperature.

This grade could be multiple melted using AOD practice followed by either vacuum or electroslag consumable electrode remelting.

DESIGNATIONS

UNS	AECMA	AFNOR	EN
S17400	FE-PM61 / FE-PM3801 FE-PM65 / FE-PM3803	Z5CNU17-04 EZ5CNU17-04	1.4542 / X5CrNiCuNb16-4 1.4548 / X5CrNiCuNb17-4-4

SPECIFICATIONS

ASTM	AMS
A564	5643
	5622 Type 1 (VAR); Type 2 (ESR)

AEROVAL® X154MU/2

Martensitic precipitation hardening with high corrosion resistance and toughness. These properties are obtained by a solution treatment and aging.

DESIGNATIONS

UNS	AECMA	AFNOR	EN
~ S45000	-	-	1.4594 / X5CrNiMoCuNb14-5

SPECIFICATIONS

BS
S143; S144; S145

AEROVAL® AISC

Austenitic stainless steel stabilized by the addition of Columbium.
Mechanical properties can be increased by cold working only. AISC exhibits good intergranular corrosion resistance.

DESIGNATIONS

UNS	AISI	AECMA	AFNOR	EN
S34700	347	FE-PA 14/ FE-PA 3701	Z6CNNb18 - 10	X6CrNiNb18-10/1.4550/1.4546

SPECIFICATIONS

ASTM	AMS	EN
A182, A276, A479, A580	5646, AMS - QQ - S - 763	10088 - 3; 10272

AEROVAL® AIST

Austenitic Stainless Steel stabilized by the addition of Titanium. Since this grade is an austenitic one, it can not be precipitation hardened; mechanical properties can be increased by cold working only. AIST exhibits good intergranular corrosion resistance.

DESIGNATIONS

UNS	AISI	AECMA	AFNOR	EN
S32100	321	FE-PA 13/FE-PA 3601	Z6CNT18-10	X6CrNiTi18-10/1.4541/1.4544

SPECIFICATIONS

ASTM	AMS	EN
A276; A182; A479	5645, AMS - QQ - S - 763	10088 - 3

AEROVAL® GL3

is a solid solution nickel-base alloy. This alloy shows high mechanical properties at temperatures up to 450°C and, above 600°C, good corrosion resistance in different environments (mineral and organic acids), as well as good resistance to crevice corrosion, pitting, erosion, intergranular attack, stress corrosion cracking.

This performances are achieved by the combination of Nickel, Chromium, Molybdenum and Columbium.
This grade can be subjected to two different heat treatments to achieve appropriate mechanical properties for different applications: annealing (grade 1) and solution annealing (grade 2).

This alloy could be multiple melted using AOD practice followed by either vacuum or electroslag consumable electrode remelting.

DESIGNATIONS

UNS	AECMA	AFNOR	EN
N06625	Ni-P97HT/Ni-PH3601	NC22DNb	2.4856/NiCr22Mo9Nb

SPECIFICATIONS

ASTM	AMS	DIN	EN	BS
B446, B564	5666	17744, 17752	10095	3076-NA21

AEROVAL®

EROSPACE SPECIAL GRADES

AEROVAL® AN5

is an iron-nickel-chromium alloy. The elements Al and Ti in an austenitic structure make it aged-hardenable by appropriate heat treatment with increases in strength and hardness. The addition of Molybdenum provides high-temperature stability and reduces high-temperature creep. This alloy has greater resistance to high temperature than low-alloy steel and stainless steel and shows good mechanical properties at temperatures up to 700°C.

This alloy could be multiple melted using AOD practice followed by either vacuum or electroslag consumable electrode remelting.

DESIGNATIONS

UNS	AECMA	AFNOR	ASTM	EN
S66286	FE-PA 92HT/FE-PA 2601	EZ6NCT25	660	1.4980/1.4944/X6NiCrTiMoVB25-15-2

SPECIFICATIONS

ASTM	AMS	EN	BS
A453, A638	5731, 5732, 5734, 5737	10269, 10302	HR51

AEROVAL® X122MV

Hardenable martensitic grade with high tensile properties, good ductility and good creep rupture strength.

This grade could be multiple melted using AOD practice followed by either vacuum or electroslag consumable electrode remelting.

DESIGNATIONS

UNS	AECMA	AFNOR	AISI/SAE	EN
S64152	FE-PM37/FE-PM1502	Z12CNDV12	XM-32	1.4939/X12CrNiMoN12

SPECIFICATIONS

ASTM	AMS	EN	BS
A 565, XM-32	5719	10269,1.4939	S151, S159

AEROVAL® VD40VAR

VD40VAR is a though hardening, low alloy steel with additions of Chromium, Molybdenum, Nickel and Manganese. This material can be heat treated to demonstrate a desirable combination of high strength , ductility and impact resistance.
Vacuum Arc Remelted (VAR) material demonstrates an excellent combination of mechanical properties in the longitudinal and transversal orientation.

DESIGNATIONS

UNS	EN	AFNOR	AECMA	BS
G43400	~ 1.6944 / ~ 40NiCrMo6	-	FE-PL 77 S	-

SPECIFICATIONS

AMS	AMS
6414	6415

STAINLESS AND SPECIALTY STEELS FOR ENERGY & POWER GENERATION

STAINLESS STEELS

Valbruna	Steel Type	Trade Name	AISI	UNS	WERKSTOFF	DESIGNATION	RCC-M MATERIAL REF.	JIS	GOST
AISL	Austenitic	304/304L	304/304L	S30400 S30403	1.4301 1.4307	X5CrNi18-10 X2CrNi18-9	Z2CN18-10 Z2CN19-10 Z5CN18-10 Z6CN18-10	-	-
AIST	Austenitic	321	321	S32100	1.4541	X6CrNiTi18-10	-	-	-
AISWT	Austenitic	ST17/13W	-	-	1.4962	X12CrNiWTiB16-13	-	-	-
APMC/DE	Austenitic	316CB	316CB	S31640	1.4580	X10CrNiMoNb18-10	-	-	-
APML	Austenitic	316L	316/316L	S31600 S31603	1.4401 1.4404	X5CrNiMo17-12-2 X2CrNiMo17-12-2	Z2CND17-12 Z2CND18-12 Z6CND17-12 Z5CND17-12	-	-
APMLDVAR	Austenitic	316LN-IG	-	-	-	-	-	-	-
APMLN	Austenitic	316LN	316N 316LN	S31651 S31653	1.4406 1.4429	X2CrNiMoN17-13-3 X2CrNiMoN17-11-2	-	-	-
APMLNH	Austenitic	316LN	316LN	-	1.4429	-	-	-	-
NTR50	Austenitic	XM-19	XM-19	S20910	-	-	-	-	-
V2018MN	Austenitic	F44	F44	S31254	1.4547	X1CrNiMoCuN20-18-7	-	-	-
V145	Precip. Hardening	XM-25	XM-25	S45000	-	-	X5CrNiCuMo15-06	-	-
V174	Precip. Hardening	630	630	S17400	1.4542	X5CrNiCuNb16-4	X6CrNiCu17-04	-	-
V155	Precip. Hardening	XM-12	XM-12	S15500	-	-	-	-	-
X154MU/2	Precip. Hardening	1.4594	-	-	1.4594	X5CrNiMoCuNb14-5	X6CrNiCuMo15-04	-	12KH13 15KH13L
VAL1B/1	Martensitic	403/410	403/410	S40300/S41000	1.4006/1.4011	X12Cr13/X12Cr12	X12Cr13/X12CrNi13	SUS410	-
VAL1C	Martensitic	403CB	403CB/XM-30	S41040	-	-	-	-	-
VAL1MP	Martensitic	-	-	S41025	-	X13CrMo12	-	-	-
VAL1MPV	Martensitic	12CR	-	-	-	-	-	-	-
VAL2A/1	Martensitic	420	420	S42000	1.4021	X20Cr13/X20Cr14	-	SUS420J1	20KH13
VAL2AM	Martensitic	1.4120	-	-	1.4120	X20CrMo13/X19CrMo12-1	-	-	-
VAL2MCV	Martensitic	422CB	422CB	S42200	1.4913	X19CrMoNbVN11-1	-	-	-
VAL2MV	Martensitic	1.4923	-	-	1.4922/1.4923	X22CrMoV12-1 X21CrMoNiV12-1	-	-	-
VAL2W	Martensitic	422	422/616/B4B	S42200	-	-	-	-	-
X134M	Martensitic	F6NM	415/F6NM	S41500	1.4313	X3CrNiMo13-4	-	-	-
X164M	Martensitic	1.4418	-	-	1.4418	X4CrNiMo16-5-1	X6CrNiMo16-04	-	-
X122MV	Martensitic	XM-32	XM-32	S64152	1.4938/1.4939	X12CrNiMoV12-3 X12CrNiMoN12	X12CrNiMoV12-3	-	-

NICKEL & TITANIUM ALLOYS

Valbruna	Steel Type	Trade Name	AISI	UNS	WERKSTOFF	DESIGNATION	RCC-M MATERIAL REF.	JIS	BS
GL1	Nickel Alloy	Alloy 600	-	N06600	2.4816	NiCr15Fe	-	-	NA14
GL2	Nickel Alloy	Alloy 80A	-	N07080	2.4952	NiCr20TiAl	-	-	NA20
GL3	Nickel Alloy	Alloy 625	-	N06625	2.4856	NiCr22Mo9Nb	-	NCF625	NA21
AV718HTV	Nickel Alloy	Alloy 718	-	N07718	2.4668	NiCr19Fe19Nb5Mo3; NiCr19NbMo	-	-	-
AN1	Nickel Alloy	Alloy 800/800H/800HT	-	N08800/N08810/ N08811	1.4876	X10NiCrAlTi32-21 X10NiCrAlTi32-20	-	NCF800	NA15 NA15(H)
AN2	Nickel Alloy	Alloy 825	-	N08825	2.4858	NiCr21Mo	-	NCF825	NA16
AN5	Nickel Alloy	Alloy A286 Alloy 660	660	S66286	1.4980	X6NiCrTiMoVB25-15-2	X6NiCrTiMoVB25-15-2	-	-
TIGR5	Titanium Alloy	Ti6Al4V	-	R56400	3.7164	-	-	-	-

Industrial markets:
OIL & GAS

Stainless and Specialty Steels for Oil & Gas

Many grades of Stainless Steels and High Nickel Alloys are extensively used in oil and gas applications thanks to their unique combination of high strength and excellent resistance to corrosion, in chloride containing environments and environments where induced cracking is a problem.

ACCIAIERIE VALBRUNA
High quality is our standard

High quality is our standard

STAINLESS STEELS

VALBRUNA GRADE	STEEL TYPE	AISI NUMBER	EN NAME	EN NUMBER	UNS NUMBER	ASTM	BS NUMBER
* V2018MN	Austenitic	F44	X1CrNiMoCuN20-18-7	1.4547	S31254	A479+A276	-
NTR50	Austenitic	XM-19	-	-	S20910	A479+A276	-
NTR60	Austenitic	-	-	-	S21800	A479+A276	-
AIST	Austenitic	321	X6CrNiTi18-10	1.4541	S32100	A479+A276	321S31
AISC	Austenitic	347/347H	X6CrNiNb18-10/X5CrNiNb18-10	1.4550/1.4546	S34700/S34709	A479+A276	347S31/347S20
AMSL	Austenitic	317/317L	-	-	S31700/S31703	A479	-
V174	Precip. Hard.	630	X5CrNiCuNb16-4	1.4542	S17400	A564	-
V174/1	Precip. Hard.	630	X5CrNiCuNb17-4-4	1.4548	S17400	-	-
V155	Precip. Hard.	XM-12	X5CrNiCuNb15-5	1.4545	S15500	A564	-
X154MU/2	Precip. Hard.	-	X5CrNiMoCuNb14-5	1.4594	-	-	-
VAL1	Martensitic	410	X12Cr13	1.4006	S41000	A479+A276	-
X134M	Martensitic	F6NM	X3CrNiMo13-4	1.4313	S41500	A479+A276	-
X135M	Martensitic	-	-	-	S41426	-	-
X164M	Martensitic	-	X4CrNiMo16-5-1	1.4418	-	-	-
VAL1BC	Martensitic	410CB	-	-	S41040	-	-
VAL2AH	Martensitic	420MOD	-	-	S42000	-	-
VCD7/1	Alloy Steel	504	9Cr1Mo	-	S50400	-	-
* V225MN	Duplex	F51/F60	X2CrNiMoN22-5-3	1.4462	S31803/S32205	A276+A479	-
* V257M	Superduplex	F53	X2CrNiMoN25-7-4	1.4410	S32750	A276+A479	-
* V257MWU	Superduplex	F55	X2CrNiMoCuWN25-7-4	1.4501	S32760	A276+A479	-

* Steels certified according to Norsok/Statoil M 650

HIGH NICKEL GRADES

VALBRUNA GRADE	Commercial name	UNS	W.N.	BS	International Designation	ASTM	ASME	AMS	EN	DIN	BS	OTHER
EG1	Alloy 400	N04400	(2.4360)	NA13	NiCu30Fe	B164 B564	SB164 SB564	4674	-	(17743) (17752)	3076	QQ-N-281 D/2
EG2	Alloy K500	N05500	(2.4375)	NA18	NiCu30Al	B865	-	4676	-	(17743) (17752)	3076	QQ-N-286 E/2
GL3	Alloy 625	N06625	2.4856	NA21	NiCr22Mo9Nb	B446 B564	SB446 SB564	5666	17744	-	3076	-
GL5	Alloy 601	N06601	2.4851	NA49	NiCr23Fe	B166 B564	SB166 SB564	5715	10095	17742 17752 1736	2901-5	-
AV718CRV	Alloy 718	N07718	2.4668	NA51	NiCr19Fe19Nb5Mo3; NiCr19NbMo	B637*	SB637*	-	-	-	-	API6A718
AVC276	Alloy C276	N10276	2.4819	-	NiMo16Cr15W	B564 B574	SB564	-	-	-	-	-
VAL4529	Alloy 926	N08926	1.4529	-	X1NiCr-MoCuN25-20-7	B472 B649	SB649	-	10088-3	-	-	SEW 400
	Alloy 367	N08367	-	-	-	A182 B472 B564 B691	SB564	-	-	-	-	-
AN1	Alloy 800 Alloy 800H Alloy 800HT	N08800 N08810 N08811	1.4876	NA15 NA15(H)	X10NiCrAlTi32-21; X10NiCrAlTi32-20	B408 B564	SB408 SB564	5766	10095	-	3076	SEW 470
AN2	Alloy 825 Alloy 65	N08825 N08065	2.4858	NA16 NA41	NiCr21Mo NiFe30Cr21Mo3	B425 B564	SB425 SB564	-	-	17744 1736	3076 2901	A5.14 ERNiFeCr-1
AV925	Alloy 925	N09925	-	-	-	-	-	-	-	-	-	NACE MR0175
AN5	Alloy A286	S66286	1.4980	286S31	X6NiCrTiMoVB25-15-2	A638 A453	-	5731 5732 5734 5737	10269 10302	-	-	-
SG5	Alloy 36	K93601	1.3912	-	Ni36	-	-	-	-	17745	-	SEW 385
AV20	Alloy 20	N08020	2.4660	-	NiCr20CuMo	B473 B472	SB473	-	-	-	-	-

* Only for chemistry

CONTROLS AND QUALITY CERTIFICATED

Research
and development...
constant for a superior quality

The company's quality assurance system is certified to ISO 9001, AS 9100 and IATF 16949.
The product quality is assured by full conformity with a range of European Standards for special steels (eg. UNI - EN 10088), and with the strictest international standards certified by TÜV, Lloyd's Register and Det Norske Veritas.
Checks are continuous throughout the whole production cycle, including for Mercury and radioactive contamination, starting from the scrap to be melted, during the various process steps, through the monitoring of the process parameters.
Non destructive testings are carried out by UT, ET, MT, VT methods and the personnel is qualified and certified according to ISO 9712.

Laboratory facilities are available for chemical analysis using an Optical Emission spectrometer or wet analysis; metallographic evaluation by optical and Scanning Electron Microscopes; mechanical properties with hot and cold tensile tests, creep tests, and magnetic properties by a permeameter.

QUALITY MANAGEMENT SYSTEM CERTIFICATION

- **ISO 9001:2015**
- **AS9100D**
- **AS9120B**
- **CARES**
- **IATF 16949:2016**

PRODUCT CERTIFICATION

- **ABS**
- **Bureau Veritas**
- **TUV**
- **CARES**
- **DNV-GL**
- **Kontrollradet**
- **Lloyd's Register**
- **RINA**
- **Ministero Infrastrutture**

Please visit our website
www.valbruna-stainless-steel.com
in order to check our latest certification.

Care for the Environment, Health and Safety

ENVIRONMENTAL POLICY

Natural environment is a common resource to be respected and preserved.
Valbruna is in the business of material recovery and reuse, through development of the metals contained in the residues at the end of their useful life. In the melting shop we recover the metals for the production of new articles minimizing the consumption of natural resources. In recent years we have committed more and more to the compatibility and sustainability of our activities with the local environment through investments and new facilities in order to reduce the impact of our industrial production.
In order to maintain these commitments towards the local communities and the market we have also adopted the implementation of a Management Scheme conforming to the international norm ISO 14001.

HEALTH & SAFETY POLICY

Health & safety of our workers and of the communities where we operate our industrial activities are a fundamental reference for the EHS management system. We operate in conformity to the EU legislation known as Seveso Law, and also the norms OHSAS 18001 and ISO 45001. We are committed to continuous improvement projects with particular attention to the training of our workers.Through investments in new facilities and maintenance projects we aim to reduce more and more the possibility of accidents during the operations inside and outside our production plants.