STAINLESS AND SPECIALTY STEELS FOR

ENERGY & POWER GENERATION

LONG PRODUCTS

ACCIAIERIE VALBRUNA

High quality is our standard

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Our products change with you

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Stainless & Specialty Steels Long Products for
ENERGY & POWER GENERATION

Vicenza plant, Italy

Valbruna, founded in 1925 and leader in the production of Stainless Steels, Nickel Alloys and Titanium long products, by the support of a long experience and high qualified customer service, presents a selected range of Billets, Flats and Rounds for the Energy & Power Generation markets.

Bolzano plant, Italy

Fort Wayne plant, IN-USA

ITALY: Vicenza, Bolzano
Mills
USA: Fort Wayne

ITALY
Ancona
Torino
Milano
Brescia
Parma
Bologna
Treviso

EUROPE
Germany
France
England
Spain
Ireland
Denmark
Switzerland
Nederland
Poland
Finland
Sweden
Norway
Turkey

AMERICA
Canada
United States
Mexico

ASIA - OCEANIA
Hong Kong
Australia
Malaysia
UAE
India

VALBRUNA...
SUCH A GREAT REALITY!

Our extensive and strategic distribution network is our corner stone in a global market, granting not only a worldwide commercial presence but also a continuous feedback with our customers.

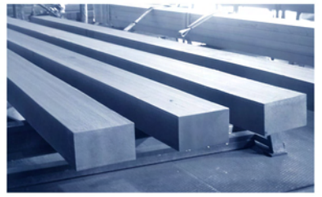
ACCIAIERIE VALBRUNA
High quality is our standard

Our products change with you

Our Product range

Stainless Steels and other corrosion resistant alloys are extensively used in the Energy and Power Generation industry to prevent corrosion, particularly at high temperatures.

Flats

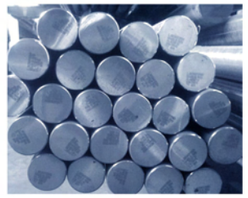


Hot rolled:
up to 170 x 60 mm
Rotatory forged:
up to 200 x 125 mm
Press Forged:
up to 600 x 500 mm

Billets

Hot Rolled: 40 ÷ 230 mm
Forged: 230 ÷ 600 mm

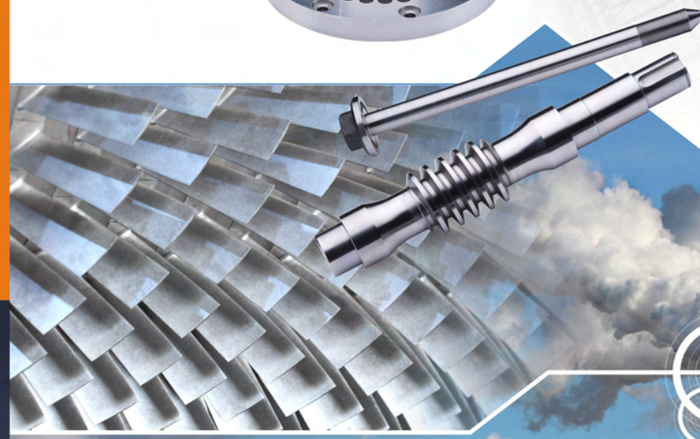
Rounds



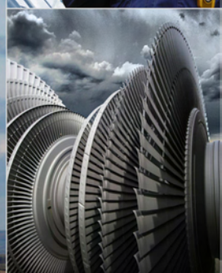
Hot Rolled and Peeled:
18 ÷ 170 mm
Forged and Peeled:
180 ÷ 300 mm
Forged and Turned:
310 ÷ 600 mm

Our Customers final applications

Steam & Gas Turbine Blades and Components



ENERGY & POWER GENERATION



Complete process Flow Chart for

ENERGY & POWER GENERATION PRODUCTS

ACCIAIERIE VALBRUNA

High quality is our standard

Charge	Melting	Elaboration	Casting	Conditioning	Billet/Ingot yard	Forging or Blooming	Hot Rolling	Work in progress	Heat Treatments	Straightening	Surface Treatments	Cold Drawing & testing	Peeling & Reeling & UT-ET NDT	Centerless grinding	Final test

Raw Materials

Charge basket

Electric Arc Furnace

AOD

LF + VD

Ingot Casting Bottom pouring

Conditioning

Billets Stock

Ingot Stock

Open die forging

Forged billets for rolling mills

Blooms for rolling mills

Hot Rolling

Hot Rolling in bars

Rolled products

Forged products

Bars WIP

Blooming

Blooms for rolling mills

Bloomed products

Blooms for Radial forge

Electrodes for Remelting

ESR Remelting

VAR Remelting

Remelted ingot Stock

Radial forging

Radial Forged products

Batch furnaces

Lab Testing

Continuous furnaces

Rough bars Straightening

CD bars straightening

Grinding

Shot blasting & Pickling

Bar to bar Cold Drawing

UT-MT-PT-VT (NDT)

UT-ET-VT (NDT)

Ground products

Shot blasted/Pickled products

Peeling & reeling

Phased arrays UT+ET NDT

Centerless grinding

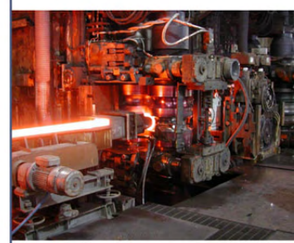
Cold drawn products

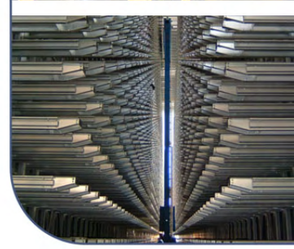
Hot formed products

Peeled products

Centerless ground products

A fully integrated production process



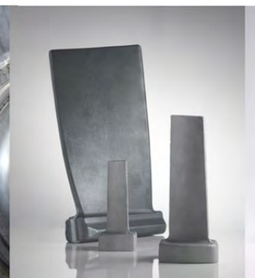


Power-Generation

For the Power-Generation market, Valbruna can count on a wide range of grades of Stainless Steel, Nickel and Titanium Alloys for bolts and fasteners, as well as turbine blading and vanes.
Profiles are billets (round cornered squares) and rounds for forging, heat treated flat bars and rounds for machining.
Thanks to a long-time consolidated experience, Valbruna has been already approved by some of the major OEMs in the PG market with regards to most materials; for the still missing ones, Valbruna is committing itself in order to be approved as well.
Our engineers are fully qualified to analyse specifications and to define the proper production cycle in accordance to the several different applications and customers requests.
Valbruna's aim is to offer high-quality products and on-time delivery by a medium/long term planning, which guarantees both stock availability, dedicated consignment stock and maximum flexibility on deliveries at any Customers need and urgency.

Stainless Steels - DESIGNATIONS

VALBRUNA	STEEL TYPE	TRADE NAME	CUSTOMER	MARKET SPECIFICATION (for reference only)	AISI	UNS	WERKSTOFF	DESIGNATION	JIS	GOST
AISWT	Austenitic	ST17/13W	ALSTOM	NB 00144	-	-	1.4962	X12CrNiWTiB16-13	-	-
V145	Precip. Hardening	XM-25	GE	B50A789	XM-25	S45000	-	-	-	-
V174	Precip. Hardening	630	SIEMENS	10705BX 10705GE 10705GV TLV 9239 02	630	S17400	1.4542	X5CrNiCuNb16-4	-	-
			NUOVO PIGNONE	ITN 07763.17/A						
			MAN TURBO	TLV 1505						
			MITSUBISHI	GTC-0005						
V155	Precip. Hardening	XM-12	-	-	XM-12	S15500	-	-	-	-
VAL1B/1	Martensitic	403/410	SIEMENS	10705BC 10705AT 10725AH 10725BA 916208 APP-MV11-Z0-020 090-297	403 / 410	S40300 S41000	1.4006 1.4011	X12Cr13 X12Cr12	SUS410	-
			DRESSER-RAND	CM-8661						
			ANSALDO	1.12.DA.01 TSM 1015 TSM 1026						
			FRANCO TOSI	1.12.DA.56						
			GE	B50A947 B7B20A						
			MITSUBISHI	PS-00028						
VAL1C	Martensitic	403CB	GE	B50A790	403CB XM-30	S41040	-	-	-	-
			NUOVO PIGNONE	ITN 07763.08						
VAL1MP	Martensitic	-	FRANCO TOSI	1.58.DA.56	-	S41025	-	X13CrMo12	-	-
			SIEMENS	10725BH 26A 26H						
VAL1MPV	Martensitic	12CR	SIEMENS	28A 28H	-	-	-	-	-	-
VAL2A/1	Martensitic	420	SIEMENS	TLV 9238 01	420	S42000	1.4021	X20Cr13 X20Cr14	SUS420J1	20KH13
			MAN TURBO	837 696 167						
			MAN	QSTD-51-214/000						
			ANSALDO	WTLV9238.01						
VAL2AM	Martensitic	1.4120	MAN	TLV 1206	-	-	1.4120	X20CrMo13 X19CrMo12-1	-	-
VAL2MCV	Martensitic	422CB	SIEMENS	10705Z2 TLV 9367 03	422CB	S42200	1.4913	X19CrMoNbVN11-1	-	-
			ALSTOM	STV M23001 STV M13122						
			NUOVO PIGNONE	ITN 02116/A						
			MAN	TLV 1104						
			SKODA	TPQ100888/A						

VALBRUNA	STEEL TYPE	TRADE NAME	CUSTOMER	MARKET SPECIFICATION (for reference only)	AISI	UNS	WERKSTOFF	DESIGNATION	JIS	GOST
VAL2MV	Martensitic	1.4923	SIEMENS	0-2813-4923-00 1CWW000330 TLV 9246 03 TLV 9248 02 TLV 9248 06 TLV 9248 07	-	-	1.4922 1.4923	X22CrMoV12-1 X21CrMoNiV12-1	-	-
			ANSALDO	203W343 WTLV8248.21 WTLV8248.41 WTLV9248.06 WTLV9248.07						
			ABB	23 90 95 HZLM 00036						
			ALSTOM	ATD1231001 ATM1230001 9ANA370206 NB 00141 STV M14105 STV M23002						
			NUOVO PIGNONE	ITN 07763.08/A						
			MAN	QSTD-51-216/000						
			SKODA	TP 0009 M						
VAL2W	Martensitic	422	FRANCO TOSI	1.12.KA.80 1.58.KA.80	422 616 B4B	S42200	-	-	-	-
			SIEMENS	10705BL/M 10705BR 10705BU						
			GE	B50A951A1, A2						
			NUOVO PIGNONE	ITN 02123/A ITN 07760 ITN 07763.09						
			ANSALDO	TSM0706						
X134M	Martensitic	F6NM	MAN	TLV 1111 TLV 1205	415 F6NM	S41500	1.4313	X3CrNiMo13-4	-	-
X154MU/2	Precip. Hardening	1.4594	SIEMENS	MAT238863	-	-	1.4594	X5CrNiMoCuNb14-5	-	12KH13 15KH13L
X164M	Martensitic	1.4418	MAN	Q-ST-51-005 QSTD-51-206/000 TLV 1112 TLV 1211	-	-	1.4418	X4CrNiMo16-5-1	-	-
			SIEMENS	TLV 9311 01						
X122MV	Martensitic	XM-32	SIEMENS	29A 29H MAT239204 TLV 9251 01	XM-32	S64152	1.4938 1.4939	X12CrNiMoV12-3 X12CrNiMoN12	-	-
			ALSTOM	HRLM600080 ITP00716 STV M14101 STV M23004 STV M23022						
			NUOVO PIGNONE	ITN 07744.08/A						
			SKODA	TP 0010						
			MAN	QSTD-51-231/000						

Nickel & Titanium Alloys - DESIGNATIONS

VALBRUNA	STEEL TYPE	TRADE NAME	CUSTOMER	MARKET SPECIFICATION (for reference only)	AISI	UNS	WERKSTOFF	DESIGNATION	JIS	BS
GL1	Nickel alloy	Alloy 600	-	-	-	N06600	2.4816	NiCr15Fe	-	NA 14
GL2	Nickel alloy	Alloy 80A	-	-	-	N07080	2.4952	NiCr20TiAl	-	NA 20
GL3	Nickel alloy	Alloy 625	-	-	-	N06625	2.4856	NiCr22Mo9Nb	NCF625	NA 21
AV718HTV	Nickel alloy	Alloy 718	-	-	-	N07718	2.4668	NiCr19Fe19Nb5Mo3 NiCr19NbMo	-	-
AN1	Nickel alloy	Alloy 800 Alloy 800H Alloy 800HT	-	-	-	N08800 N08810 N08811	1.4876	X10NiCrAlTi32-21 X10NiCrAlTi32-20	NCF800	NA 15 NA 15(H)
AN2	Nickel alloy	Alloy 825	-	-	-	N08825	2.4858	NiCr21Mo	NCF825	NA 16
AN5	Nickel alloy	Alloy A286 Alloy 660	-	-	660	S66286	1.4980	X6NiCrTiMoVB25-15-2	-	-
TIGR5	Titanium alloy	Ti6Al4V	-	-	-	R56400	3.7164	-	-	-

CHEMICAL COMPOSITION • *All the values are given in percentage (%)*

Stainless Steels

VALBRUNA	STEEL TYPE	TRADE NAME	C max	Mn max	Si max	P max	S max	Cr max	Ni max	Mo max	Nb + Ta max	Cu max	N max	V max	B max	Sn max	Cb max	W max	Ti max
AISWT	Austenitic	ST17/13W	0,08 - 0,15	1	1	0,04	0,015	16 - 18	13 - 16	-	-	-	-	-	-	-	-	2,5 - 4	(5xC) - 0,8
V145	Precip. Hardening	XM-25	0,05	1	1	0,03	0,03	14 - 16	5 - 7	0,5 - 1	8 X C min	1,25 - 1,75	-	-	-	-	-	-	-
V174	Precip. Hardening	630	0,07	1	0,7	0,04	0,03	15 - 17	3 - 5	0,5	-	3 - 5	-	-	-	-	0,15 - 0,45	-	-
V155	Precip. Hardening	XM-12	0,07	1	1	0,03	0,015	14 - 15,5	3,5 - 5,5	0,5	-	2,5 - 4,5	-	-	-	-	0,15 - 0,45	-	-
VAL1B/1	Martensitic	403/410	0,12 - 0,15	0,6	0,5	0,025	0,025	11,5 - 13,5	0,75	0,5	-	0,5	0,08	-	-	0,05	-	-	-
VAL1C	Martensitic	403CB	0,18	1	1	0,04	0,03	11,5 - 13,5	-	-	0,05 - 0,3	-	-	-	-	-	-	-	-
VAL1MP	Martensitic	-	0,15	1	0,5	0,04	0,03	11,5 - 13	0,6	0,6	-	-	-	-	-	-	-	-	-
VAL1MPV	Martensitic	12CR	0,1 - 0,15	1	0,6	0,04	0,03	11,5 - 13	1	0,4 - 0,8	-	-	-	0,1 - 0,3	-	-	-	-	-
VAL2A/1	Martensitic	420	0,17 - 0,22	1	1	0,035	0,03	12,5 - 14	1	-	-	-	-	-	-	-	-	-	-
VAL2AM	Martensitic	1.4120	0,17 - 0,22	1	1	0,04	0,015	12 - 14	1	-	-	-	-	-	-	-	-	-	-
VAL2MCV	Martensitic	422CB	0,16 - 0,22	0,3 - 0,8	0,1 - 0,5	0,035	0,035	10 - 11,5	0,3 - 0,8	0,5 - 1	0,15 - 0,5	-	0,05 - 0,1	0,1 - 0,3	0,01	-	-	-	-
VAL2MV	Martensitic	1.4923	0,18 - 0,24	0,4 - 0,9	0,5	0,025	0,015	11 - 12,5	0,3 - 0,8	0,8 - 1,2	-	-	-	0,25 - 0,35	-	-	-	-	-
VAL2W	Martensitic	422	0,20 - 0,25	0,5 - 1	0,5	0,025	0,025	11 - 12,5	0,5 - 1	0,9 - 1,25	-	-	-	0,2 - 0,3	-	-	-	0,9 - 1,25	-
X134M	Martensitic	F6NM	0,05	1,5	0,7	0,04	0,015	12 - 14	3,5 - 4,5	0,3 - 0,7	-	-	0,02 min	-	-	-	-	-	-
X154MU/2	Precip. Hardening	1.4594	0,07	1	0,7	0,04	0,025	13,2 - 14,7	5 - 5,8	1,2 - 2	-	1,2 - 2	-	-	-	-	-	0,1 - 0,4	-
X164M	Martensitic	1.4418	0,06	1,5	0,7	0,04	0,03	15 - 17	4 - 6	0,8 - 1,5	-	-	0,02 min	-	-	-	-	-	-
X122MV	Martensitic	XM-32	0,08 - 0,15	0,5 - 0,9	0,35	0,025	0,015	11 - 12,5	2 - 3	1,5 - 2	-	-	0,02 - 0,04	0,25 - 0,4	-	-	-	-	-

Nickel Alloys

VALBRUNA	STEEL TYPE	TRADE NAME	C max	Mn max	Si max	P max	S max	Cr max	Ni max	Mo max	Cu max	Fe max	Al max	Ti max	B max	Co max	Nb max	Nb + Ta max	V max
GL1	Nickel Alloy	Alloy 600	0,15	1	0,5	0,02	0,015	14 - 17	72 min	-	0,5	6 - 10	0,3	0,3	0,006	1	-	-	-
GL2	Nickel Alloy	Alloy 80A	0,04 - 0,1	1	1	0,02	0,015	18 - 21	65 min	-	0,2	3	1 - 1,8	1,8 - 2,7	0,008	1	-	-	-
GL3	Nickel Alloy	Alloy 625	0,1	0,5	0,5	0,015	0,015	20 - 23	58 min	8 - 10	0,5	5	0,4	0,4	-	1	3,15 - 4,15	3,15 - 4,15	-
AV718HTV	Nickel Alloy	Alloy 718	0,08	0,35	0,35	0,015	0,015	17 - 21	50 - 55	2,8 - 3,3	0,3	15 - 21	0,2 - 0,8	0,65 - 1,15	0,006	1	4,75 - 5,5	-	-
AN1	Nickel Alloy	Alloy 800 Alloy 800H Alloy 800HT*	0,06 - 0,1	1,5	1	0,03	0,015	19 - 23	30 - 34	-	0,75	39,5 min	0,15 - 0,6	0,15 - 0,6	-	-	-	-	-
AN2	Nickel Alloy	Alloy 825	0,05	1	0,5	0,03	0,03	19,5 - 23,5	38 - 46	2,5 - 3,5	1,5 - 3	22 min	0,2	0,6 - 1,2	-	2	-	-	-
AN5	Nickel Alloy	Alloy A286 Alloy 660	0,08	2	1	0,025	0,025	13,5 - 16	24 - 27	1 - 1,5	0,5	balance	0,35	1,9 - 2,30	0,003 - 0,01	1	-	-	0,1 - 0,5

*Al+Ti= 0,85 - 1,2

Titanium Alloys

VALBRUNA	STEEL TYPE	TRADE NAME	N max	C max	H max	Fe max	O max	Al max	V max
TIGR5	Titanium Alloy	Ti6Al4V	0,05	0,08	0,0125	0,3	0,2	5,50 - 6,75	3,5 - 4,5

Nuclear

For the Nuclear market, Valbruna can count on many stainless steel corrosion resistant grades such as 321, 304L, 316LN, XM-19, Nickel and Titanium Alloys working in the most severe condition of the plant and produced according to the world-wide standards and "ad hoc" Customers specifications.
Their special applications go from the system and circuits subjugated to the reactor for the steam generators, through guide-tubes, up to turbines linked to generators.
Valbruna is currently working according to the ASME and RCC-M codes, which are the most world-wide known quality and safety standards in the Nuclear market.
In order to assure and guarantee high-quality and full-safety level, Valbruna is provided with particular solutions, both with regards to the manufacturing plant and to the technical staff. Each product has to pass successfully several and tough tests along with paper and processes inspections.
Valbruna is a very active part in the ITER project with regards to round & square bars in 316LN-IG both for Cover Plates and Vacuum Vessel, as well as to XM-19 for Bolts & Fasteners.
Valbruna is currently facing a qualification process with EDF to become a RCC-M bars producer & stockist.

CHEMICAL COMPOSITION • *All the values are given in percentage (%)*

Stainless Steels

VALBRUNA	STEEL TYPE	TRADE NAME	C max	Mn max	Si max	P max	S max	Cr max	Ni max	Mo max	Nb + Ta max	Cu max	N max	V max	Ti max	Sn max	Cb max
AISLNU	Austenitic	304/304L	0,03	2	1	0,045	0,03	18 - 20	8 - 10	1	-	1	0,1	-	-	-	-
AISLN	Austenitic	304LN	0,03	2	1	0,045	0,03	18 - 19,5	8,5 - 11	-	-	-	0,12 - 0,16	-	-	-	-
AIST	Austenitic	321	0,08	2	1	0,045	0,03	17 - 19	9 - 12	1	-	1	0,1	-	(5x(C+N)) - 0,7	-	-
APMLNU	Austenitic	316/316L	0,03	2	1	0,045	0,03	16,5 - 18	10 - 13	2 - 2,5	-	1	0,1	-	-	-	-
APMLDVAR	Austenitic	316LN-IG	0,03	2	1	0,025	0,015	17 - 18	12 - 12,5	2,3 - 2,7	-	0,5	0,05 - 0,1	-	-	-	-
APMLN	Austenitic	316LN	0,03	2	1	0,045	0,015	16,5 - 18	11 - 14	2,5 - 3	-	1	0,12 - 0,16	-	-	-	-
APMLNH	Austenitic	316LN	0,03	2	1	0,02	0,015	16 - 18,5	12 - 14	2 - 3	-	1	0,1 - 0,22	-	-	-	-
NTR50	Austenitic	XM-19	0,06	4 - 6	1	0,04	0,03	20,5 - 23,5	11,5 - 13,5	1,5 - 3	-	-	0,2 - 0,4	0,1 - 0,3	-	-	0,1 - 0,3
V145	Precip. Hardening	XM-25	0,05	1	1	0,03	0,03	14 - 16	5 - 7	0,5 - 1	8 X C min	1,25 - 1,75	-	-	-	-	-
V174	Precip. Hardening	630	0,07	1	0,7	0,04	0,03	15 - 17	3 - 5	0,5	-	3 - 5	-	-	-	-	0,15 - 0,45
V2018MN	Austenitic	F44	0,02	1	0,7	0,03	0,01	19,5 - 20,5	17,5 - 18,5	6 - 6,5	-	0,5 - 1	0,18 - 0,22	-	-	-	-
VAL1B/1	Martensitic	403/410	0,12 - 0,15	0,6	0,5	0,025	0,025	11,5 - 12,5	0,75	0,5	-	0,5	0,08	-	-	0,05	-
VAL2MV	Martensitic	1.4923	0,18 - 0,24	0,4 - 0,9	0,5	0,025	0,015	11 - 12,5	0,3 - 0,8	0,8 - 1,2	-	-	-	0,25 - 0,35	-	-	-
X122MV	Martensitic	XM-32	0,08 - 0,15	0,5 - 0,9	0,35	0,025	0,015	11 - 12,5	2 - 3	1,5 - 2	-	-	0,02 - 0,04	0,25 - 0,4	-	-	-
X154MU/2	Precip. Hardening	1.4594	0,07	1	0,6	0,04	0,025	13,2 -14,7	5 - 5,8	1,2 - 2	-	1,2 - 2	-	-	-	-	0,1 - 0,4
X164M	Martensitic	1.4418	0,06	1,5	0,7	0,04	0,03	15 - 17	4 - 6	0,8 - 1,5	-	-	0,02 min	-	-	-	-

Nickel Alloys

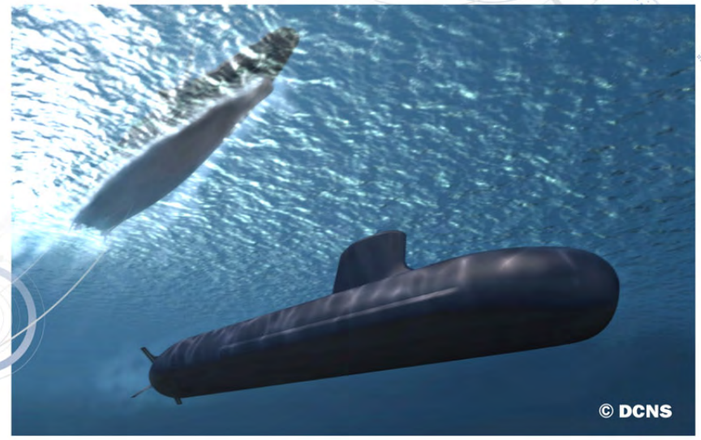
VALBRUNA	STEEL TYPE	TRADE NAME	C max	Mn max	Si max	P max	S max	Cr max	Ni max	Mo max	Cu max	Fe max	Al max	Ti max	B max	V max	Co max
AN5	Nickel Alloy	Alloy A286 Alloy 660	0,08	2	1	0,025	0,025	13,5 - 16	24 - 27	1 - 1,5	0,5	balance	0,35	1,9 - 2,30	0,003 - 0,01	0,1 - 0,5	1

Stainless Steels and Nickel Alloys - DESIGNATIONS

VALBRUNA	STEEL TYPE	TRADE NAME	MARKET SPECIFICATION (for reference only)	AISI	UNS	WERKSTOFF	DESIGNATION	RCC-M MATERIAL REF.	BS
AISLNU	Austenitic	304/304L	-	304 304L	S30400 S30403	1.4301 1.4307	X5CrNi18-10 X2CrNi18-9	Z2CN18-10 Z2CN19-10 Z5CN18-10 Z6CN18-10	304S15 304S31
AISLN	Austenitic	304LN	-	304LN	S30453	1.4311	X2CrNiN18-10	-	-
AIST	Austenitic	321	-	321	S32100	1.4541	X6CrNiTi18-10	X6CrNiTi18-10	321S31
AN5	Nickel alloy	Alloy A286 Alloy 660	-	660	S66286	1.4980	X6NiCrTiMoVB25-15-2	X6NiCrTiMoVB25-15-2	-
APMLNU	Austenitic	316/316L	-	316 316L	S31600 S31603	1.4401 1.4404	X5CrNiMo17-12-2 X2CrNiMo17-12-2	Z2CND17-12 Z2CND18-12 Z6CND17-12 Z5CND17-12	316S14
APMLDVAR	Austenitic	316LN-IG	D_2DX6KS D_2FNP46	-	-	-	-	-	-
APMLN	Austenitic	316LN	-	316N 316LN	S31651 S31653	1.4406 1.4429	X2CrNiMoN17-13-3 X2CrNiMoN17-11-2	-	-
APMLNH	Austenitic	316LN	1000 1001	316LN	-	1.4429	-	-	-
NTR50	Austenitic	XM-19	D_2DUZZX	XM-19	S20910	-	-	-	-
V145	Precip. Hardening	XM-25	-	XM-25	S45000	-	-	X5CrNiCuMo15-06	-
V174	Precip. Hardening	630	-	630	S17400	1.4542	X5CrNiCuNb16-4	X6CrNiCu17-04	-
V2018MN	Austenitic	F44	-	F44	S31254	1.4547	X1CrNiMoCuN20-18-7	-	-
VAL1B/1	Martensitic	403/410	-	403 410	S40300 S41000	1.4006 1.4011	X12Cr13 X12Cr12	X12Cr13 X12CrNi13	-
VAL2MV	Martensitic	1.4923	-	-	-	1.4923	X22CrMoV12-1	-	-
X122MV	Martensitic	XM-32	-	XM-32	S64152	1.4938 1.4939	X12CrNiMoV12-3 X12CrNiMoN12	X12CrNiMoV12-3	-
X154MU/2	Precip. Hardening	1.4594	-	-	-	1.4594	X5CrNiMoCuNb14-5	X6CrNiCuMo15-04	-
X164M	Martensitic	1.4418	-	-	-	1.4418	X4CrNiMo16-5-1	X6CrNiMo16-04	-

ACCIAIERIE VALBRUNA
High quality is our standard

Stainless Steels aimed to obtain mechanical parts (flanges or any other component) working in under-pressure conditions as in the submarines.



Stainless Steels

DESIGNATIONS

VALBRUNA	STEEL TYPE	TRADE NAME	MARKET SPECIFICATION (for reference only)	AISI	UNS	WERKSTOFF	DESIGNATION	RCC-M MATERIAL REF.	BS
APMC/DE	Austenitic	1.4580/316CB	-	316CB	S31640	1.4580	X10CrNiMoNb18-10	-	-

CHEMICAL COMPOSITION • *All the values are given in percentage (%)*

VALBRUNA	STEEL TYPE	TRADE NAME	C max	Mn max	Si max	P max	S max	Cr max	Ni max	Mo max	Cb max
APMC/DE	Austenitic	1.4580/316CB	0,08	2	1	0,045	0,015	16,5 - 18,0	10,5 - 13,5	2 - 2,5	10xC-1

STAINLESS STEEL REBAR FOR NUCLEAR APPLICATION