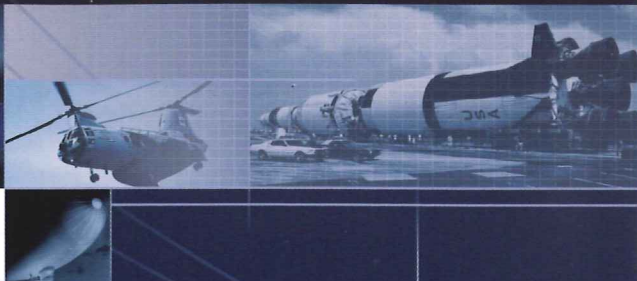


AEROVAL AISC



ACCIAIERIE VALBRUNA

MATERIAL DESCRIPTION

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

APPLICATIONS

AISC can be used for aircraft components as collector rings, exhaust manifolds, expansion joints. Generally AISC is used for applications subjected to intermittent heating from 450° and 800°C as: fireproof bulkhead, pressure vessels, welded structures, high-temp. chemical processing and gas turbine blades.

CORROSION AND OXIDATION RESISTANCE

Because of the Columbium addition capable to enhance the intergranular corrosion resistance, AISC can be used for many different applications as chemical and oil processing, textile manufacturing and food industry.

AISC provide a good resistance to scale formation up to 860°C.

WELDABILITY

AISC can be welded. If filler metal is requested AWS E/ER347 should be used. Post-weld heat treatment is not strictly needed unless high temperature service is required.

DESIGNATIONS

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

CHEMICAL COMPOSITION (chemistry shall conform to the following percentages by weight)

Element	Fe	C	Mn	Si	P	S	Cr	Ni	Cb	Cu	Mo
Min[%]	Bal.	-	-	-	-	-	17.00	9.00	10xC	-	-
Max[%]		0.08	2.00	1.00	0.045	0.015	19.00	12.00	1.00	-	-

PHYSICAL PROPERTIES

Density (gr/cm ³ at 20°C)	7,90
Modulus of elasticity (GPa)	200
Mean Coefficient of Thermal Expansion (10 ⁻⁶ /°C)	20° → 200°C: 16.50 20° → 400°C : 17.50 20° → 500°C : 18.0
Thermal Conductivity (W/mK at 20°C)	15.0
Electrical resistivity (μΩ×m at 20°C)	0,740
Magnetic Permeability	Non-magnetic

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MECHANICAL PROPERTIES

Condition	HB	Ultimate Tensile Strength (N/mm ²)	0.2% Yield Strength (N/mm ²), min	Elongation [5D] (%), min
Annealing	220 max	500 - 750	205	40

HEAT TREATMENTS

Condition	Temperatures	Soaking times	Cooling
Annealing	1000°-1080°C	Commensurate to section	Water

HOT WORKING

Process	Heating temperatures	Cooling
Forging	900°-1150°C	Air

SPECIFICATIONS

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



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