TorqBolt Inc.

MATERIAL GRADE DATA SHEET

AISI 316LN STAINLESS STEEL

BOLTING MATERIAL FOR HIGH TEMPERATURE SERVICE

Tensile and low-cycle fatigue tests were performed on a 316LN austenitic stainless steel at liquid nitrogen temperature, The presence of a martensite was detecting using a ferromagnetic-fluid method and evaluated quantitatively using magnetic saturation method. A high density of thin lamella of twins and a martensitic island embedded in the austenic matrix were identified. The tensile and low-cycle fatigue properties were obtained and analysed in terms of the influence of temperature on the plastic deformation process and the formation of strain-induced martensite

Chemical Properties

C	Mn	P	S	Si	Cr	Mo	Ni	N
0.030 Max	2.00 Max	0.045 Max	0.030 Max	1.00 Max	16.0-18.0	2.00-3.00	11.0-14.0	0.10-0.16

Mechanical Properties

Yeild strength	Tensile strength	Elongation	Reduction
Min 0.2% Mpa	Min Mpa	Min %	Min %
205	515	30	50

Physical Properties

Density	Elastic Modulus	Mean Coefficient of Thermal			Thermal Conductivity		Specific Heat	Electrical Resistivity
(Kg/m^3)	(Gpa)	Expansion(µm/m/°C)			(W/m.K)		0-100°C	(nΩ.m)
7.98	200	16.5	17.5	18.5	15.1	21.3	500	740

Heat Treatment

Solution Annealed @ 1040°C & Liquid Quenched @ 260°C

Equivalent Designation

UNS S31653
Din X6 CrNiMoN 17 2 2
Werkstoff.No. 1.4406
SUS 316LN
AFNOR Z 2 CND 17.12

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