

S 32750/F53

SUPER DUPLEX ALLOY

BOLTING MATERIAL FOR HIGH TEMPERATURE SERVICE

Super Duplex UNS S32750 combines the most desirable characteristics of both ferritic and austenitic steels. It has excellent corrosion resistance to a wide variety of media, with outstanding resistance to pitting and crevice corrosion in seawater and other chloride containing environments due to its high chromium, molybdenum, and nitrogen level, with Critical Pitting Temperature exceeding 50°C. S32750 High resistance to abrasion, erosion and cavitation erosion, ductility and impact strength at both ambient and sub-zero temperatures. S32750 has Excellent resistance to stress corrosion cracking in chloride containing environments. S32750 has High strength compared to austenitic and 22%Cr duplex stainless steels. The duplex microstructure gives this grade high strength UNS S32750 a low coefficient of thermal expansion and higher heat conductivity than austenitic steels and is suitable for working temperatures up to 300°C.

Listed in NACE MR 01 75 for sour service UNS S32750 and having gained ASME Approval for Pressure Vessel applications it can be used in a wide variety of applications.

Chemical Properties

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N
0.03 Max	1.20 Max	0.04 Max	0.02 Max	0.80 Max	24.0-26.0	6.0-8.0	3.0-5.0	0.50 Max	0.24-0.32

Mechanical Properties

Yield strength	Tensile strength	Elongation	Hardness
Mpa	Mpa	%	BHN
min	min	min	
550	800	15	310

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	(µΩ.m)
7810	199	11.1 X10 ⁻⁶	14.2	475	0.8

Heat Treatment

Solution Annealed @1020°C & liquid Quenced @260°C

Additional Tests:

ASTM G48A Corrosion test at 40°C	No pitting and weight loss <4.0 g/m ²
Ultrasonic Testing	According to ASTM A388
Ferrite Content	35%-55%
Microstructure	Microstructure certified free from grain boundary carbides, sigma, chi and laves phases

Equivalent Designation

UNS S32750
EN number 1.4410
AISI F53
W.Nr.1.4468
SS 2328
AFNOR Z3CND25.07Az

Applications

Chemical Process Industry
Marine Industry and Shipbuilding
Oil and Gas Industry:
Pollution Control
Pulp and Paper Industry:
Food Industry:
Agrochemicals

CUSTOMER ASSISTANCE : customer@TorqBolt.com