First Choice for the Offshore and Chemical Industry

Material datasheet for **1.4501 Super Duplex | S32760 | X2CrNiMoCuWn25-7-4 | AISI F55**

1.4501 is a c**orrosion-resistant austenitic ferrous (duplex) steel**. It exhibits outstanding resistance to acidic and chlorinated media.

Due to its good seawater resistance, it is frequently found in offshore industry applications, as well as in seawater desalination and brackish water treatment plants. However, 1.4501 Super Duplex is also frequently found in food technology applications, the chemical and petrochemical industries and in pipeline construction.

WELDING

1.4501 can be welded with any method with the exception of gas welding. It should be noted that increased levels of ferrite content and chromium carbide deposits can occur in the heat-affected zone.

ROUND BAR STEEL

AVAILABLE DIMENSIONS

25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 200, 225, 250, 275, 300, 350, 400 mm

APPLICATIONS

- Onshore/offshore industries
- Pipeline construction
- Chemical tanker building
- Seawater desalination plants
- Petrochemical industry
- Chemical industry

MACHINING

It is best machined in a solution annealed state, at low cutting speeds and with a reduced feed drive. The machining properties are somewhat similar to those of the material 1.4462.

The high alloy content and two-phase structure can make machining difficult.

MECHANICAL PROPERTIES UNDER HIGH TEMPERATURES

Tensile strength value	Delivery state	Temperature °C				
		100	150	200	250	300
Rp0.2	solution annealed	≥450	≥420	≥400	≥380	-

MECHANICAL PROPERTIES AT ROOM TEMPERATURE

Stated values apply to bar steel up to 160 mm max.
(EN 10088-3)

Heat treatment condition:
solution annealed

Yield strength Rp0.2 (N/mm²):
at least 530

Tensile strength Rm (N/mm²):
730 - 930

Elongation at fracture A5 (%):
longitudinal: min. 25

Notch-impact strength (ISO-V) J:
longitudinal: min. 100

HEAT TREATMENT

Hot forming:
1000 - 1200 °C

Solution annealing:
1040 - 1120 °C

Cooling:
Air or water

CHEMICAL ANALYSIS

Chem. element	1.4501 Super Duplex	
	min.	max.
C	-	0.03
Si	-	1.0
Mn	-	1.0
P	-	0.035
S	-	0.015
Cr	24.0	26.0
Mo	3.0	4.0
N	0.2	0.3
Ni	6.0	8.0
Cu	0.5	1.0
W	0.5	1.0

STAPPERT Deutschland GmbH

Willstätterstraße 13 · 40549 Düsseldorf
T +49 211 5279-0 · F +49 211 5279-177

deutschland@stappert.biz
deutschland.stappert.biz

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Note: All information regarding material properties, recommendations for use of the material, and available delivery configurations have been carefully researched, and is provided according to the best of our knowledge. However, no guarantee is made for the information provided. In the case of orders, all information and data must always be agreed in a separate written agreement.