

The material with special mechanical properties

Information about the material 1.4542 H1150D | S17400 | X5CrNiCuNb16-4 | 17-4 PH

The material 1.4542 H1150D is a precipitation-hardened, stainless, martensitic chromium-nickel steel with high wear resistance, good corrosion resistance and a very high yield strength. For special applications, such as aerospace, 1.4542 H1150D can also be supplied in a remelted version.

WELDING

When welding, the condition of the base material must first be considered. In this case, since the copper is in a stable form, it does not promote hot cracking. In addition to setting optimal welding conditions, it is crucial to carefully avoid undercuts or other welding defects that could cause notches. After welding, the material should undergo solution annealing followed by aging within a short period to prevent potential stress cracking.

AVAILABLE DIMENSIONS

Round Bars:

50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 175 and 200 mm



APPLICATIONS

- Aerospace
- Plant engineering
- Mechanical engineering
- Paper industry
- Sports and leisure industry
- Oil industry
- Shipbuilding
- Chemical industry

MACHINING

The material can be machined both in the solution-annealed and the precipitation-hardened condition. Compared to 1.4542, the H1150D version has a lower hardness, higher elasticity and greater elongation, making it easier to machine and process. Unlike the „only“ solution-annealed version, the H1150D version typically does not require heat treatment after machining. Additionally, H1150D exhibits significantly less cracking.

MECHANICAL CHARACTERISTICS AT ROOM TEMPERATURE (ASTM A 564)

Heat treatment condition: H1150D	Elongation at fracture A5 (%): min. 16
Yield strength Rp0.2 (N/mm²): min. 725	Impact toughness (Charpy impact test): min. 41
Tensile strength Rm (N/mm²): min. 860	

HEAT TREATMENT (ASTM A 564)

Hot forming: 900 - 1150 °C	Cooling: Air, oil
Solution annealing: 1030 - 1050 °C	Precipitation hardening Twice at 620°C for 4 hours / Cooling in air

CHEMICAL ANALYSIS (ASTM A 564)

Chem. Element	1.4542 H1150D	
	min.	max.
C	-	0,07
Si	-	1,0
Mn	-	1,0
P	-	0,04
S	-	0,03
Cr	15,0	17,5
Ni	3,0	5,0
Cu	3,0	5,0
Nb+Ta	0,15	0,45

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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.