

AS-548 ESU

Material no. **1.4548**

DIN: **X5CrNiCuNb17-4-4**

Comparison of standards: 17-4PH UNS S17400

Chemical composition: (Approximate values in %)

C	Si	Mn	Cu	Cr	Ni	Nb	N
0,04	0,30	0,60	3,30	15,00	5,00	0,25	0,0300

Description and applications:

AS-548 ESU is a martensitic precipitation hardening steel that offers good toughness and strength even at large dimensions with excellent corrosion resistance. The workability is good and the different strength levels can be adjusted by simple heat treatment at low temperatures.

Application: Aerospace, mechanical engineering, energy technology, high-pressure parts, etc.

Heat treatment:

Forging or rolling	1150 – 900 °C	Air cooling
Solution annealing	1030 – 1060 °C	Air or oil cooling < 32 °C
Condition H900	480 °C / 1h / Air	
Condition H925	495 / 4h / Air	
Condition H1025	550 °C / 4h / Air	
Condition H1075	580 °C / 4h / Air	
Condition H1100	595 °C / 4h / Air	
Condition H1150	620 °C / 4h / Air	
Condition H1150-M	760 °C / 2h / Air + 620 °C / 4h / Air	
Microstructure: solution annealed		Martensite + Austenite + Ferrite
Microstructure: hardened		Martensite + Austenite + Ferrite + intermetallic phase

Welding: Electric arc welding and TIG are applicable. Welding should only be carried out in a solution-annealed condition. The heat input should be minimised. Preheating to 100-200 °C is only recommended for thicknesses over 25 mm.

Heat treatment after welding:

Solution annealing, age hardening or solution annealing and age hardening

Physical properties:

Density at 20 °C:	7,80 kg/dm ³
Thermal conductivity at 20 °C:	16,0 W/(m.K)
Magnetizability:	available