

# AS-545

Material no. **1.4545**

**Comparison of standards:** 15-5PH      ASTM XM-12    UNS S15500

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-545 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 industry, general- and electric engineering, high-pressure parts,...

## Heat treatment:

Hot forming	1150 – 900 °C	Luftab Air cooling
Solution annealing	1030 – 1060 °C	Air- or oil cooling < 32 °C
Condition H900	480 °C / 1h / air	
Condition H925	500 °C / 4h / air	
Condition H1025	550 °C / 4h / air	
Condition H1075	580 °C / 4h / air	
Condition H1100	600 °C / 4h / air	
Condition H1150	620 °C / 4h / air	
Condition H1150-M	760 °C / 2h / Luft + 620 °C / 4h / air	
Microstructure: solution annealed	Martensite + Austenite + Ferrite	
Gefüge: Ausgehärtet	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 anneal, precipitate harden or both.

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