



Grade	Code	AISI	High Strength Stainless Steel
1.4418	X4CrNiMo16-5-1	S165M	

### Steel Properties

Material 1.4418 (S165M) is one of the martensitic corrosion resistant chromium-nickel-molybdenum steels with excellent fatigue resistance, high tensile strength, good weldability, high toughness, even maintained after welding, better corrosion properties than most stainless martensitic steels. In our stock standard condition, the steel matrix consists of 80% Martensite, 10% Austenite and 10% Ferrite. This composition allows a low carbon martensitic structure after quenching and tempering.

### Chemical Composition (1.4418, S165M)

C %	P %	Si %	Mn %	S %	Cr %	Mo %	Ni %	N %	Cu %
0,06 max.	0,04 max.	0,70 max.	1,50 max.	0,03 max.	15,00 – 17,00	0,80 – 1,50	4,00 – 6,00	-	-

### Mechanical Properties

Condition	Rp0.2, Mpa	Rm, Mpa	Elongation [%]	Hardness [HB]
Bar QT900	≥ 700	900 – 1100	≥ 16	280 - 340
Typical	720 – 850	950 – 1050	18	300

### Suitable For

1.4418 (S165M) is designed for applications in slightly corrosive environments, where good fatigue resistance, strength and weldability are required. Specific uses are water turbine parts, propeller shafting, shafting, bolts, shear pins, piston rods and equipment for hydro power stations.

### Remarks

1.4418 (S165M) is delivered most often after heat improvement – in QT760 and QT900 conditions in the form of round bars.

### Specification

1.4418, AISI S165M, X4CrNiMo16-5-1