

GENERAL INFORMATION

HIGH TEMPERATURE/HIGH PRESSURE FASTENERS

Ref: DIN 267 - Part 13 and Part 29

Fastener assemblies subject to elevated temperatures require special material that help them maintain the integrity of the connection. Bolts made from ASTM A193 (B7) and Nuts made from ASTM A194 (2H) are examples commonly used in the utility, boiler, power generation and petrochemical industry to address this matter. Very special applications for extreme high temperature (+700°C) strength and low temperature (-200°C) toughness, can be solved by using alternate materials that can also include corrosion resistance.

Bolts Studs Rods

B7 - Designation and Composition

STANDARD	MATERIAL	CRITICAL ELEMENTS
ASTM A193	AISI 4140, 4142 OR 4145	C 0.37 - 0.49, Cr 0.75 - 1.20, Mo 0.15 - 0.25
Similar to German 42CrMo4, 1.7225		

B7 - Mechanical Properties

Tensile Strength Min.	Yield Strength Min.	Elongation Min. (%)	Hardness
860 N/mm ² , 125000 psi	720 N/mm ² , 150000psi	16%	HRC 25 - 32 typical

Nuts

2H - Designation and Composition

STANDARD	MATERIAL	CRITICAL ELEMENTS
ASTM A194	AISI 1045	C 0.42 - 0.50, Si 0.40, Mn 0.50 - 0.80

2H - Mechanical Properties

Proof Load	Hardness
1200 N/mm ² , 175000 psi	HRC 24 - 38