

Alloy A-286

Alloy A286 is a precipitation hardenable alloy, which is used extensively in the petro-chemical, aerospace and oil field industries, especially for fasteners, stud-bolts

The mechanical properties detailed are typical of most oil-field equipment companies requirements. The main difference between these figures and the properties of ASTM A638 Grade 660 is

that the 0.2% offset yield strength is increased from 85,000 psi up to 105,000 psi.

To obtain this a secondary precipitation treatment is often necessary. The maximum hardness figure of 35 HRC is from NACE MR-01-75 and differs from ASTM A638 grade 660 which is 248 HBN minimum. Alloy A-286 is also used for extrusion liners and dies.

National Specifications

ASTM	UNS	SAE AMS	British Standard	Werkstoff
A453 A638 Grade 660B Grade 660D	S66286	5731 5732	HR 52/650	1.4943 1.4944

Material may also be released to Customer Specifications, subject to enquiry.

Technical Data

Nominal Composition by Percent

	C	Mn	Si	P	S	Cr	Ni	Mo	Ti	Al	V	B	Cu	Fe	-
Min	-	-	-	-	-	13.0	24.0	1.0	1.9	-	0.1	.001	-	Bal	%
Max	0.08	2.0	1.0	0.40	0.30	16.0	27.0	1.5	2.35	0.35	0.5	.010	0.30	-	%

Typical Mechanical Properties (Oil patch)

Solution Annealed & Precipitation Treated(Aged)	PSI	MPa	%
Tensile Strength, min	145,000	1000	-
Yield Strength (0.2% offset), min	105,000	724	-
Elongation in 2" (or 50mm) or 4D, min	-	-	15
Reduction of Area	-	-	25
Hardness (Rockwell)	24-37	-	-