A286/ASTM A453 Grade 660 ALLOY - UNS S66286 Date Sheet

MATERIAL DESCRIPTION

ASTM A453 grade 660 is an austenitic precipitation-hardenable stainless steel that is generally configured for long-term and high-temperature use, with a service temperature reaching up to 700 °C.
It is considered as an iron-based superalloy due to its high strength and resistance to corrosion at high temperatures.
Used in aviation and power engineering for heavy-duty rotors, gas turbine blades, steam turbines, pressure equipment parts and reactors, jet engines and rockets, exhaust systems. Also used in cryogenics.

APPLICABLE SPECIFICATIONS

ASTM A453/A453M GRADE A & D

ASTM A638/A638M GRADE 660 TYPE 1

API 6A – PSL 3

Wr No 1.4980, UNS S66286

ANSI/NACE MR0175/IS015156-3, ANSI/NACE MR0103

M36101, M36100

PED 2014/68/EU

HEAT TREATMENT

Solution Treatment + Hardening Treatment

CHEMICAL ANALYSIS RANGE

ELEMENT	WEIGHT %	ELEMENT	WEIGHT %
C	0.08 max	Ti	1.9 – 2.35
Mn	2.00 max	Fe	Balance
S	0.025 max	Al	0.35 max
Si	1.0 max	Mo	1.00 - 1.50
Ni	24.0 - 27.0	V	0.10- 0.50
Cr	13.5 - 16.0	B	0.001 – 0.010

TYPICAL MECHANICAL PROPERTIES (Min unless stated)

ASTM A453 Grade	0.2% Yield ksi (MPa)	UTS ksi (MPa)	Ductility		Stress Rupture @ 1200°F (650°C)			Hardness HBW (HRC)
			%El 4D	%RA	Stress ksi (Mpa)	Time to Rupture (h)	Elongation (%)	
A/B/C	85 (585)	130 (895)	15	18	56 (385)	100	5	248–341 (24–37)
D	**≤2" dia** 105 (725) **>2" dia** 95 (655)	**≤2" dia** 130 (895) **>2" dia** 120 (825)	15	18	-	-	-	248-321 (24-35)