

F6NM

F6NM (UNS S41500) is one of super martensitic stainless steels, with the additional of nickel and Molybdenum, which gives it excellent sub-zero notch ductility, superior to other standard 410 & 420 martensitic stainless steels.

As per NACE MR0175 / ISO 15156-3 and NACE MR0103 / ISO 17495-1, its maximum hardness is limited to 23HRC / 255HBW / 275HV10 for the low sensitivity to sulfide stress corrosion cracking and for the applications of oil and gas in environments containing H₂S.

It can be used in a temperature range from -60°C to + 300°C.

Chemical Composition, %

element	Cr	Ni	Fe	Mo	C	Mn	Si	P	S
min.	11.50	3.50	bal.	0.50	0.050	0.50	0.60	0.030	0.030
max.	14.00	5.50		1.00		1.00			

Chemical Composition according to ASTM. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Forgings	Rod and bar	Plate and sheet
ASTM ASME NACE	UNS S41500 F6NM	A959 SA959 MR0175 MR0103	A182 SA182 MR0175 MR0103	A276 SA276 A479 SA479	A240 SA240
DIN	1.4313 X3CrNiMo13-4	DIN 10088-1	DIN 10250-4	DIN 10088-3 DIN 10272	
GB/T	04Cr13Ni5Mo 0Cr13Ni5Mo S41595	GB/T 20878			GB/T 4237 GB/T 3280

Density 7.75g/cm³

Corrosion resistance

- basic resistance to pitting and crevice corrosion
- moderate resistance to sulfide stress corrosion cracking

Applications

Typical applications are:

- components in the oil and gas industry