

ASTM B582 / ASME SB582

Standard Specification for Nickel-Chromium-Iron-Molybdenum-Copper Alloy Plate, Sheet, and Strip

The specification covers plate, sheet, and strip of nickel-chromium-iron-molybdenum-copper alloys (UNS N06007, N06975, N06985, and N06030) as shown in Table 1, for use in general corrosive service.

The following products are covered under this specification:

Sheet and Strip—Hot or cold rolled, solution annealed, and descaled unless solution anneal is performed in an atmosphere yielding a bright finish.

Plate—Hot or cold rolled, solution annealed, and descaled.

A. General Requirements :-

1. Materials furnished to this specification shall conform to the applicable requirements of Specification B906 unless otherwise provided herein.

B. Chemical Composition :-

The material shall conform to the composition limits specified in Table 1.

Table 1

Element	Alloy N06007	Alloy N06975	Alloy N06985	Alloy N06030
Nickel	remainder ^A	47.0-52.0	remainder ^A	remainder ^A
Chromium	21.0-23.5	23.0-26.0	21.0-23.5	28.0-31.5
Iron	18.0-21.0	remainder ^A	18.0-21.0	13.0-17.0
Molybdenum	5.5-7.5	5.0-7.0	6.0-8.0	4.0-6.0
Copper	1.5-2.5	0.70-1.20	1.5-2.5	1.0-2.4
Manganese	1.0-2.0	1.0max	1.0max	1.5max
Cobalt,max	2.5	...	5	5
Carbon,max	0.05	0.03	0.015	0.03
Tungsten	1.0max	...	1.5max	1.5-4.0
Silicon,max	1	1	1	0.8
Phosphorus,max	0.04	0.03	0.04	0.04
Sulfur,max	0.03	0.03	0.03	0.02
Columbium + tantalum	1.75-2.50	...	0.50max	0.30-1.50
Titanium	...	0.70-1.50

^A The composition of the remainder element shall be determined arithmetically by difference.

C. Mechanical Properties and Other Requirements :-

1. Tensile Properties— The material shall conform to the mechanical property requirements prescribed in Table 2.
2. Hardness— The hardness values given in Table 2 are informative only.

Table 2

Alloy	Thickness, in. (mm)	Tensile Strength min, psi (MPa)	Yield Strength (0.2 % Offset), min, psi (MPa)	Elongation in 2 in. or 50.8 mm or 4D ^A min, %	Rockwell Hardness, B max
Annealed Plate					
N06007	3/16 to 3/4 (4.76 to 19.05), incl	90000 (621)	35000 (241)	35	100 HRB
	Over 3/4 to 2 1/2 (19.05 to 63.5), incl	85000 (586)	30000 (207)	30	100 HRB
N06975	3/16 to 2 1/2 (4.76 to 63.5), incl	85000 (586)	32000 (221)	40	100 HRB
N06985	3/16 to 3/4 (4.76 to 19.05), incl	90000 (621)	35000 (241)	45	100 HRB
	Over 3/4 to 2 1/2 (19.05 to 63.5), incl	85000 (586)	30000 (207)	35	100 HRB
N06030	...	85000 (586)	35000 (241)	30	...
Annealed Sheet					
N06985	Over 0.020 (0.51)	90000 (621)	35000 (241)	45	100 HRB
Annealed Sheet and Strip					
N06007	Over 0.020 (0.51)	90000 (621)	35000 (241)	40	100 HRB
N06975	Over 0.020 (0.51)	85000 (586)	32000 (221)	40	100 HRB
N06030	Over 0.020 (0.51)	85000 (586)	35000 (241)	30	...

^A The composition of the remainder element shall be determined arithmetically by difference.

D. Weight :-

For calculation of mass or weight, the following densities shall be used:

Alloy	Density	
	lb/in. ³	g/cm ³
N06007	0.3	8.31
N06975	0.295	8.17
N06985	0.3	8.31
N06030	0.297	8.22

E. Length :-

1. Plate—Permissible variations in the length of rectangular plate shall be as prescribed in Specification B906, Table A2.3.
2. Sheet and Strip—Sheet and strip may be ordered to cut lengths, in which case a variation of 1/8 in. (3.18 mm) over the specified length shall be permitted, with a 0 minus tolerance.

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