



HY 80 / 100 (MIL-S-16216) (Navsea Tech Pub T9074)

Overview

Primarily used in military applications, but also in areas where high strength is required as both grades have elevated yield strengths (HY 80 – 80ksi, HY 100 – 100ksi). In addition these grades are quenched / tempered and are also certified to MIL-S-16216. Navsea Tech Pub T9074

Specifications

Specification	HY-80, MIL-S 16216-K	HY-100, MIL-S 16216-K
Type of Steel	Alloy	Alloy
Requirements for Delivery	A20	A20
Yield Strength (Min. ksi)	80/100 to 3/4" incl.;	100/120 to 3/4" incl.;
(Yield Point if 3/4" designated YP)	80/99.5 over 3/4"	100/115 over 3/4"
Spec. Thickness (Max. in.)	8	6
Chemical Composition% Carbon (Max.)	.12/.18 to 1-1/4" incl.;	.12/.18 to 1-1/4" incl.;
	.13/.18 over 1-1/4"	.14/.20 over 1-1/4"
Manganese	.10/.40	.10/.40
Phosphorus (Max.)	.025	.025
Sulphur (Max.)	.025	.025
Silicon	.15/.38 May be .08 Min. when vacuum carbon deoxidized	.15/.38 May be .08 Min. when vacuum carbon deoxidized
Chromium	1.00/1.80 to 1-1/4" incl.;	1.00/1.80 to 1-1/4" incl.;
	1.40/1.80 over 1-1/4 – 3" incl.;	1.40/1.80 over 1-1/4 – 3" incl.;
	1.50/1.90 over 3"	1.50/1.90 over 3"
Nickel	2.00/3.25 to 1-1/4" incl.;	2.25/3.50 to 1-1/4" incl.;
	2.50/3.50 over 1-1/4 – 3" incl.;	2.75/3.50 over 1-1/4 – 3" incl.;
	3.00/3.50 over 3"	3.00/3.50 over 3"
Molybdenum	.20/.60 to 1-1/4"; .35/.60 over 1-1/4 – 3" incl.;	.20/.60 to 1-1/4"; .35/.60 over 1-1/4 – 3" incl.;
	.50/.65 over 3"	.50/.65 over 3"



Specification	HY-80, MIL-S 16216-K	HY-100, MIL-S 16216-K
Copper	.25	.25
Other Elements	.02 Ti .03 V	.02 Ti .03 V
Heat Treatment Required	Q&T	Q&T