



## Nickel Alloys

Grade	Known as	Heat treat Condition	ASTM	UNS	SEA AMS	British Standard	Werkstoff	Other	Mechanical Properties			
									0.2% PS KSI (MPA)	UTS KSI (MPA)	Hardness	
718 API	Inconel®	Solution annealed & aged	B637 chemistry only	NO7718				API 6A NACE MR-0175/ISO 15156	120 (827)	150 (1034)	40 HRC max	
718 high strength	Inconel®	Solution annealed or solution annealed & aged	B637	NO7718	5662 5663		2.4668		150 (1034)	185 (1275)	331 HB min	
625	Inconel®	Annealed	B564/B446	NO6625	5666	3076 NA21	2.4856	API 6A NACE MR 0175/ISO 15156	≤100mm dia 60 (413) >100mm dia 50 (345)	120 (827) 110 (758)	35 HRC max - typically <30HRC	
925	Inconel®	Solution annealed & aged		NO9925				NACE MR 0175/ISO 15156	110 (758)	140 (965)	30-38 HRC	
725	Inconel®	Solution annealed & aged	B805	NO7725					180 (1241)	131 (903)	36HRC	
825	Incoloy®	Annealed	B425	NO8825		3076 NA16	2.4858		35 (241)	85 (586)	35HRC max	
400	Monel®	Annealed	B164/B564	NO4400		3076 NA13	2.4360	NACE MR 0175/ISO 15156	25 (172)	70 (483)	35 HRC max - typically <30HRC	
K500	Monel®	Aged	B865	NO5500		3076 NA18	2.4375	API 6A	≤25mm dia 90 (620)	130 (900)	Cold worked 37HRC max	
								Hot worked material to NACE MR 0175/ISO 15156	>25≤110mm dia 85 (585)			Hot worked 35 HRC max
								QQ-N-286	>110<300mm 72 (500)			



## Copper Alloys

Grade	Known as	DEF Stan	NES	UNS	British Standard	Mechanical Properties			
						Diameter	0.2% PS MPA	UTS MPA	Hardness
833		02-833 Part 2 Issue 2 Grade 1	833 Part 2 Issue 2 Grade 1		2874 EN12163	>15mm <25mm	325	680	
						25mm <100mm	295	635	170-200 HV
						≥100mm	245	620	
CA104	CW307G BSB 23				2874 CA104		370	650	179-255 HB
780	70/30	02-780 Part 2 Issue 2 Grade 1	780 Part 2 Issue 2 Grade 1	C71500			115	320	Approx. 75 HB

## Specialist Alloys

Grade	Known as	Heat treatment condition	ASTM	UNS	AMS	British Standard	Werkstoff	Other	Mechanical Properties		
									0.2% PS KSI(MPA)	UTS KSI (MPA)	Hardness
286	660B/660D	Solution annealed & aged	A453 Gr 660B/D A638 Type II/IV	S66286	5731 5732		1.4980	NACE MR0175/ ISO15156	85 (725)	130 (895)	35HRC Max
F55	Super Duplex	Annealed	A497/A484	S32760			1.4501	NACE MR0175/ ISO15156 Norsok M630	80 (550)	109 (750)	270HB Max
Titanium 6AL-4V	Grade 5		B348	R56400	49278S	TA11 TA12 TA7252	3.7164		120 (827)	130 (897)	36HRC
Alloy R41				NO7041	5712		2.4973		154 (1065)	206 (1420)	40HRC
Invar®			F1684				1.3912		276	448	
Super Invar®			F1684						276	483	
Kovar®			F15				1.3981		345	517	