

MACHINABILITY RATINGS FOR COLD-DRAWN STEEL BARS

ASM Handbook, Vol. 1 and 16

Indexes of machinability based on a value of 100% for AISI 1212 steel (~ 10S10 n° 1.0711)

+C = cold-drawn +A+C = annealed cold-drawn +C+A = cold-drawn annealed +AC+C = spheroidized annealed cold-drawn

STANDARD COMPARISON			CONDITION	MACHINABILITY RATING %
AISI - SAE	EN	N°		
12L14	11SMnPb30	1.0718	+C	170
1215	11SMn30	1.0715	+C	136
1212	10S10	1.0711	+C	100
1117	10S20	1.0721	+C	91
1137	36SMn14	1,0764	+C	72
1144	44SMn28	1.0762	+C+A	85
			+C	80
1008	DC01	1.0330	+C	55
1010	C10E	1.1121	+C	55
1015	C15E	1.1141	+C	60
1016	C16E	1.1148	+C	70
1020	C22E	1.1151	+C	65
1025	C25E	1.1158	+C	65
1030	C30E	1.1178	+C	70
1035	C35E	1.1181	+C	65
1040	C40E	1.1186	+C	60
1045	C45E	1.1191	+A+C	65
			+C	55
			+C+A	72
1050	C50E	1.1206	+A+C	55
			+C	45
			+C+A	70
1055	C55E	1.1203	+A+C	55
1060	C60E	1.1221	+AC+C	60
1330	28Mn6	1.1170	+A+C	55
1335	36Mn5	1.1167	+A+C	55
4118	20MoCr4	1.7321	+C	60
4130	25CrMo4	1.7214	+A+C	70
4135	34CrMo4	1.7220	+A+C	70
4140	42CrMo4	1.7225	+A+C	65
41L42	42CrMo4Pb		+A+C	77
4150	50CrMo4	1.7228	+A+C	55
4340	40NiCrMo7		+A+C	50
4615	17Cr3	1.7016	+C	65
4820	18CrNiMo7-6	1.6587	+A+C	50
5046	46Cr2	1.7006	+A+C	60
5115	16MnCr5	1.7131	+C	65
5120	20MnCr5	1.7147	+C	70
5132	34Cr4	1.7033	+A+C	70
5140	41Cr4	1.7035	+A+C	65
5150	46Cr2	1.7006	+A+C	60
52100	100Cr6	1.3505	+AC+C	40
6150	51CrV4	1.2241	+A+C	55
8620	20NiCrMo2-2	1.6523	+C	65
9254	54SiCr6	1.7102	+AC+C	45
9260	61SiCr7	1.7108	+AC+C	40
9310	14NiCrMo13-4	1.6657	+A+C	50

The cold work hardened low carbon steels show an increase of the machinability index of about 10% in comparison with the hot rolled ones. This fact is due to the presence of a fragile surface layer that eases the chip fragmentation.