



# EQUIVALENCE, MECHANICAL PROPERTIES AND CHEMICAL COMPOSITION OF DIFFERENT TYPES OF STEEL

UNE	STEEL EQUIVALENTS						MECHANICAL PROP.			CHEMICAL COMPOSITION (%)							
	ISO	ASTM	BS	DIN	AFNOR	JAPAN (JIS)	Re (min) Mpa	Rm(min) Mpa	A%	C	Mn	Si	Cr	Ni	Mo	S	P
<b>Non alloyed steels.</b> General purposes. Standard UNE 36 252 (Tensile Strength <=70kgf/mm2 (666N/mm2). Mechanical properties at room temperature. Service temperature between -10°C y 300°C. With no abrasion or impact resistance requirements. No oxidation resistance. No refractivity																	
AM 38 a				GS-38 (1.0420)	GE200	S15C (SC360)	185	370									
AM 38 b				GS-38 (1.0420)	GE200	S15C (SC360)	185	370	25	0.12-0.18	0.40-0.80	0.30-0.60				max. 0.05	max. 0.05
AM 38 c				GS-38 (1.0420)	GE200	S15C (SC360)	185	370	25								
AM 45 b	3755:91 230-450	A27 65-35	BS 3100 A1	GS-45 (1.0446)	GS200	SC450/S25C	225	440	22	0.18-0.25	0.40-0.80	0.30-0.60				max. 0.05	max. 0.05
AM 45 c	3755:91 230-450W	A27 65-36	BS 3100 A1	GS-45 (1.0446)	GS200	SC450/S25C	225	440	22								
AM 52 b	3755:91 270-480	A27 70-36	BS 3100 A2	GS-52	GE240	SC480/S35C	255	510	18	0.25-0.35	0.40-0.80	0.30-0.60				max. 0.05	max. 0.05
AM 52 c	3755:91 270-480W	A27 70-36	BS 3100 A2	GS-52	GE240	SCW480/S35C	255	510	18								
AM 60 a		A148 80-40	BS 3100 A3	GS-60	GE300	SCC5/S45C	295	590	18								
AM 60 b		A148 80-41	BS 3100 A3	GS-60	GE300	SCC5/S45C	295	590	15	0.35-0.45	0.40-0.80	0.30-0.60				max. 0.05	max. 0.05
AM 60 c		A148 80-42	BS 3100 A3	GS-60	GE300	SCC5/S45C	295	590	15								
AM 70		A148 Gr 80-50					345	690	12	0.45-0.55	0.40-0.80	0.30-0.60				max. 0.05	max. 0.05
<b>Low alloyed steels.</b> General purposes. Wide range of machinery. Standard UNE 36 255 . Mechanical properties in normalized condition.																	
AM 22 Mn 5		A148 Gr 80-50	BS 3100 A4	GS20 Mn5	G20 Mn5	SCW480/SCMn1	295	540	17	0.18-0.25	1.2-1.6	0.3-0.5				max. 0.04	max. 0.04
AM 30 Mn 5			BS 3100 A5/A6	GS30 Mn 5	G28 Mn6		345	590	14	0.25-0.34	1.2-1.6	0.3-0.5				max. 0.04	max. 0.04
AM 35 Cr 4		A148Gr 175-145					390	640	12	0.30-0.40	0.5-0.8	0.3-0.5	0.8-1.2			max. 0.04	max. 0.04
AM 42 Cr Mo 4		A217 WC6		GS42 CrMo 4	G42 CrMo4		490	735	11	0.38-0.45	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 25 Cr Mo 4		A217 WC1	BA 3100 BT1	GS25 CrMo 4	G26 CrMo4		345	640	14	0.22-0.3	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 34 Cr Mo 4			BS 3100 BT2	GS34 CrMo 4	G34 CrMo4		440	685	13	0.3-0.34	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 30 Ni Cr Mo 2			BS 3100 BT1 BT2,BT3		G30 NiCrMo14					0.27-0.34	0.5-0.8	0.3-0.5	0.6-0.9	0.5-0.8	0.2-0.4	max. 0.04	max. 0.04
AM 30 Ni Cr Mo 7							540	735	14	0.27-0.34	0.5-0.8	0.3-0.5	0.6-0.9	1.8-2.0	0.2-0.4	max. 0.04	max. 0.04
AM 35 Ni Cr Mo										0.32-0.36	0.4-0.5	0.3-0.6	1.0-1.2	3.8-4.2	0.35-0.45	max.0.025	max.0.025
		A148.80 GR90.60			G24 Mn6					0.2-0.25	1.3-1.6	0.3-0.5				max. 0.03	max. 0.03
		A148.80 GR105.85								0.2-0.24	1.2-1.4	0.3-0.5	0.3-0.5		0.2-0.3	max. 0.03	max. 0.03
		A148.80 GR115.95								0.28-0.35	0.6-0.8	0.3-0.5	0.7-0.9	0.5-0.6	0.15-0.2	max. 0.03	max. 0.03
<b>Low alloyed steels.</b> General purposes. Standard UNE 36 255 . Mechanical properties in quenched and tempered condition, between 550° y 650° C.																	
AM 22 Mn 5		A148 Gr 80-50	BS 3100 A4		G20 Mn5 G24 Mn6	SCW480/SCMn1	345	540-685	15	0.18-0.25	1.2-1.6	0.3-0.5				max. 0.04	max. 0.04
AM 30 Mn 5			BS 3100 A6	GS30 Mn 5	G28 Mn6		390	640-785	12	0.25-0.34	1.2-1.6	0.3-0.5				max. 0.04	max. 0.04
AM 35 Cr 4		A148 Gr175-145					440	735-880	10	0.30-0.40	0.5-0.8	0.3-0.5	0.8-1.2			max. 0.04	max. 0.04
AM 42 Cr Mo 4		A217 WC6		GS42 CrMo 4	G42 CrMo4		685	930-1030	7	0.38-0.45	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 25 Cr Mo 4		A217 WC1	BS 3100 BT1	GS25 CrMo 4	G26 CrMo4		490	735-880	10	0.22-0.3	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 34 Cr Mo 4				GS25 CrMo 4	G34 CrMo4		590	785-930	9	0.3-0.34	0.5-0.8	0.3-0.5	0.8-1.2		0.15-0.3	max. 0.04	max. 0.04
AM 30 Ni Cr Mo 2			BS 3100 BT1 BT2,BT3		G30 NiCrMo14					0.27-0.34	0.5-0.8	0.3-0.5	0.6-0.9	0.5-0.8	0.2-0.4	max. 0.04	max. 0.04
AM 30 Ni Cr Mo 7					G32 NiCrMo8-5-4		735	930-1030	9	0.27-0.34	0.5-0.8	0.3-0.5	0.6-0.9	1.8-2.0	0.2-0.4	max. 0.04	max. 0.04
		A148.80 GR105.85					585	725	17	0.2-0.24	1.2-1.4	0.3-0.5	0.3-0.5		0.2-0.3	max. 0.03	max. 0.03
		A148.80 GR115.95					655	795	14	0.28-0.35	0.6-0.8	0.3-0.5	0.7-0.9	0.5-0.6	0.15-0.2	max. 0.03	max. 0.03
<b>Abrasion and impact resistant steels.</b> Austenitic manganese steels. Standard UNE 36 253. Use to resist roughing in hardening by impact or pressure conditions.																	
AM-X 120 Mn 12		A128 GR.C								1 - 1.4	11.5 - 14	max. 1				max. 0.06	max. 0.1
AM-X120 Mn Cr 12-2													1.5 - 2.5				

	GOOD TENACITY		WELDABLE				JAWS, HAMMERS, ROTORS ...
	MEDIUM RESISTANCE		WELDABLE WITH CAUTIONS				OIL QUENCHING
	HIGH RESISTANCE		WEAR RESISTANCE				NO DISTORTION IN THE HEAT TREATMENT