



PROPIEDADES QUIMICAS Y MECANICAS DE LAS ESPECIFICACIONES API 5L Y ASTM

API 5L	Grado	Punto de Cedencia Min.		Tensión Ultima Min.		Elongación % mínimo en 2 pulgadas g	Carbon (C) Max. a	Manganeso (Mn) Max. (e)	Fósforo (P) Max.	Azufre (S) Max. 0.015	Titanio	
		PSI	MPa	PSI	MPa							
d, e, g	B (2)	35,000	241	80,000	413	$e = 625,000 \frac{A^{0.2}}{U^{0.9}}$ (7)	0.22	1.20	0.025	0.015	0.04	
c, d, g	X - 42 (3)	42,000	289	80,000	413		0.22	1.30	0.025	0.015	0.04	
c, d, g	X - 46 (3)	46,000	317	83,000	434		0.22	1.40	0.025	0.015	0.04	
c, d, g	X - 52 (3)	52,000	368	96,000	455		0.22	1.40	0.025	0.015	0.04	
c, d, g	X - 55 (3)(4)	56,000	386	71,000	489		0.22	1.40	0.025	0.015	0.04	
c, d, f, g	X - 60 (3)(4)	60,000	413	75,000	517		0.22	1.40	0.025	0.015	0.04	
c, d, f, g	X - 65 (3)(6)	65,000	448	77,000	530		0.22	1.45	0.025	0.015	0.06	
c, d, f, g	X - 70 (4)	70,000	482	82,000	565		0.22	1.65	0.025	0.015	0.06	
c, d, f, g	X - 80	80,000	551	90,000	620		0.22	1.85	0.025	0.015	0.06	
ASTM												
A - 53 A - 134 A - 139	B (Type E) *	35,000 *	240 *	60,000 *	415 *	(7) *	0.30 *	1.20 *	0.050 *	0.045 *		
	B	35,000	240	60,000	415	30	0.30	1.00	0.035	0.035		
	C	42,000	290	60,000	415	25	0.30	1.20	0.035	0.035		
	D	46,000	315	60,000	415	23	0.30	1.30	0.035	0.035		
	E	52,000	360	66,000	455	22	0.30	1.40	0.035	0.035		
A - 252	2	35,000	240	60,000	414	25	-	-	0.050	-		
	3	45,000	310	66,000	415	20	-	-	0.050	-		
El acero del cual el tubo es hecho o fabricado debe ser conforme a las especificaciones.												
ASTM							C Max.	Mn Max.	P Max.	S Max.	Ti Max.	Cu Min. (8)
A - 86	-	36,000	250	58,000	400	23	0.26	0.80	0.040	0.050	0.40	0.20
A - 285	C	30,000	205	55,000	380	25	0.24	0.90	0.035	0.040	0.40	0.20
A - 285	C	30,000	205	55,000	380	27	0.28	0.98	0.035	0.035		

#