

# TUBERIA

TUBERIA REDONDA DE HIERRO NEGRO

ASTM A -53 CEDULA 40

## TUBERIA A STM A53 CON COSTURA Y SIN COSTURA / ASTM A106 SIN COSTURA.

DIAMETRO NOMINAL pulg	CLASE sch No.	CEDULA No.	DIAMETRO EXTERIOR		DIAMETRO INTERIOR		ESPESOR DE PARED		PESO			PRESION PRUEBA				Vol/ m m3	Vol/ pie pie3
			pulg	mm	pulg	mm	pulg	mm	lb/ pie	kg/ m	Kg/ ft	GRADO A Lb/ pulg2 kg/ cm2	GRADO B Lb/ pulg2 kg/ cm2	GRADO A Lb/ pulg2 kg/ cm2	GRADO B Lb/ pulg2 kg/ cm2		
1/4	(STD)	40	0.540	13.70	0.364	9.22	0.088	2.24	0.42	0.36	0.11	700	49	700	49	0.0002	0.002
	(XS)	80			0.302	7.66	0.119	3.02	0.54	0.47	0.14	850	60	850	60		
3/8	(STD)	40	0.675	17.10	0.493	12.48	0.091	2.31	0.57	0.62	0.19	700	49	700	49	0.0003	0.003
	(XS)	80			0.381	10.70	0.147	3.2	0.74	0.79	0.24	850	60	850	60		
1/2	(STD)	40	0.840	21.30	0.622	15.76	0.109	2.77	0.85	1.27	0.39	700	49	700	49	0.0004	0.004
	(XS)	80			0.546	13.84	0.147	3.73	1.09	1.62	0.49	850	60	850	60		
	-	160			0.464	11.74	0.188	4.78	1.31	1.95	0.59	900	63	900	63		
3/4	(STD)	40	1.050	26.70	0.824	20.96	0.113	2.87	1.13	1.69	0.51	700	49	700	49	0.0007	0.007
	(XS)	80			0.742	18.88	0.154	3.91	1.48	2.20	0.67	850	60	850	60		
	-	-			0.612	15.58	0.219	5.56	1.94	2.89	0.88	950	67	950	67		
1	(STD)	40	1.315	33.40	1.049	26.28	0.133	3.56	1.68	2.50	0.76	700	49	700	49	0.0011	0.012
	(XS)	80			0.957	24.30	0.179	4.55	2.17	3.23	0.99	850	60	850	60		
	-	160			0.815	20.70	0.250	6.35	2.84	4.23	1.29	950	67	950	67		
	(XXS)	-			0.599	15.22	0.358	9.09	3.66	5.45	1.66	1000	70	1000	70		
1 1/4	(STD)	40	1.660	42.20	1.380	34.84	0.140	3.68	2.27	3.38	1.03	1200	70	1300	77	0.0018	0.002
	(XS)	80			1.278	32.50	0.191	4.85	3.00	4.47	1.36	1800	105	1900	112		
	-	160			1.160	29.50	0.250	6.35	3.76	5.60	1.71	1900	134	2000	141		
	(XXS)	-			0.896	22.80	0.382	9.7	5.21	7.76	2.37	2200	155	2300	162		
1 1/2	(STD)	40	1.900	48.30	1.610	40.94	0.145	3.68	2.72	4.05	1.23	1200	70	1100	77	0.0023	0.025
	(XS)	80			1.500	38.14	0.200	5.08	3.63	5.41	1.65	1800	105	1600	112		
	-	160			1.338	34.02	0.281	7.14	4.86	7.24	2.21	1950	137	2050	144		
	(XXS)	-			1.100	27.98	0.400	10.16	6.41	9.55	2.92	2200	155	2300	162		
2	(STD)	40	2.375	60.30	2.067	52.48	0.154	3.91	3.65	5.44	1.66	2300	162	2500	176	0.0036	0.039
	(XS)	80			1.939	49.22	0.218	5.54	5.02	7.48	2.28	2500	176	2500	176		
	-	160			1.687	42.82	0.344	8.74	7.46	11.11	3.39	2500	176	2500	176		
	(XXS)	-			1.503	38.16	0.436	11.07	9.03	13.45	4.10	2500	176	2500	176		
2 1/2	(STD)	40	2.875	73.00	2.469	62.68	0.203	5.16	5.79	8.63	2.63	2500	176	2500	176	0.0053	0.057
	(XS)	80			2.323	58.98	0.276	7.01	7.66	11.41	3.48	2500	176	2500	176		
	-	160			2.125	53.94	0.375	9.53	10.01	14.91	4.54	2500	176	2500	176		
	(XXS)	-			1.771	44.96	0.552	14.02	13.70	20.41	6.22	2500	176	2500	176		
3	-	-	3.500	88.90	3.250	82.54	0.125	3.18	4.51	6.72	2.05	1290	91	1500	105	0.0079	0.085
	-	-			3.188	80.98	0.156	3.96	5.57	8.30	2.53	1600	113	1870	132		
	-	-			3.124	79.34	0.188	4.78	6.65	9.91	3.02	1930	136	2260	159		
	(STD)	40			3.068	77.92	0.216	5.49	7.58	11.29	3.44	2220	156	2500	176		
	-	-			3.000	76.20	0.250	6.35	8.68	12.93	3.94	2500	176	2500	176		
	-	-			2.938	74.62	0.281	7.14	9.66	14.39	4.39	2500	176	2500	176		
	(XS)	80			2.900	73.66	0.300	7.62	10.25	15.27	4.65	2500	176	2500	176		
3 1/2	-	-	4.000	101.60	2.624	66.64	0.438	11.13	14.32	21.34	6.50	2500	176	2500	176	0.0103	0.111
	-	-			3.750	95.24	0.125	3.18	5.17	7.70	2.35	1120	79	1310	92		
	-	-			3.688	93.68	0.156	3.96	6.40	9.54	2.91	1400	98	1640	115		
	-	-			3.624	92.04	0.188	4.78	7.65	11.40	3.47	1690	119	1970	139		
	(STD)	40			3.548	90.12	0.226	5.74	9.11	13.57	4.14	2030	143	2370	167		
	-	-			3.500	88.90	0.250	6.35	10.01	14.91	4.54	2250	158	2500	176		
	(XS)	80			3.438	87.32	0.281	7.14	11.16	16.63	5.07	2500	176	2500	176		
-	-	3.364	85.44	0.318	8.08	12.51	18.64	5.68	2800	197	2800	197					

HR SIVA S.A.Sistemas de Vapor. info@hrsiva.com . www.hrsiva.com

Oficina +(506) 2273.2424 / 2273-2929 Fax +(506) 2273-9090

DIAMETRO NOMINAL pulg	CLASE sch No.	CEDULA No.	DIAMETRO EXTERIOR		DIAMETRO INTERIOR		ESPESOR DE PARED		PESO			PRESION PRUEBA				Vol/ m m3	Vol/ pie pie3																		
			pulg	mm	pulg	mm	pulg	mm	lb/ pie	kg/ m	Kg/ ft	GRADO A		GRADO B																					
												Lb/ pulg	kg/ cm2	Lb/ pulg	kg/ cm2																				
4	(STD)	40	4.500	114.30	4.026	102.26	0.237	6.02	10.79	16.08	4.90	1900	134	2210	155	0.0130	0.140																		
																		4.250	107.94	0.125	3.18	5.84	8.70	2.65	1000	70	1170	82							
																		4.188	106.38	0.156	3.96	7.24	10.79	3.29	1250	88	1460	103							
																		4.062	103.18	0.219	5.56	10.01	14.91	4.54	1500	105	1750	123							
																		4.062	103.18	0.219	5.56	10.01	14.91	4.54	1750	123	2040	143							
																		4.000	101.60	0.250	6.35	11.35	16.91	5.15	2000	141	2330	164							
																		3.938	100.02	0.281	7.14	12.66	18.86	5.75	2250	158	2620	184							
																		3.876	98.46	0.312	7.92	13.98	20.83	6.35	2500	176	2800	197							
																		3.826	97.18	0.337	8.56	14.98	22.32	6.80	2700	190	2800	197							
																		3.624	92.04	0.438	11.13	19.00	28.31	8.63	2800	197	2800	197							
																		3.438	87.32	0.531	13.49	22.51	33.54	10.22	2800	197	2800	197							
																		3.152	80.06	0.674	17.12	27.54	41.03	12.50	2800	197	2800	197							
5	(STD)	40	5.563	141.30	5.047	128.20	0.258	6.55	14.62	21.78	6.64	1670	117	1950	137	0.0199	0.214																		
																		5.251	133.38	0.156	3.96	9.01	13.42	4.09	1010	71	1180	83							
																		5.187	131.74	0.188	4.78	10.79	16.08	4.90	1220	86	1420	100							
																		5.125	130.18	0.219	5.56	12.50	18.62	5.68	1420	100	1650	116							
																		5.001	127.02	0.281	7.14	15.85	23.62	7.20	1820	128	2120	149							
																		4.939	125.46	0.312	7.92	17.50	26.07	7.95	2020	142	2360	166							
																		4.875	123.82	0.344	8.74	19.17	28.56	8.70	2230	157	2600	183							
																		4.813	122.24	0.375	9.53	20.78	30.96	9.43	2430	171	2800	197							
																		4.563	115.90	0.500	12.7	27.04	40.29	12.28	2800	197	2800	197							
																		4.313	109.56	0.625	15.87	32.96	49.11	14.96	2800	197	2800	197							
																		6	(STD)	40	6.625	168.30	6.065	154.08	0.280	7.11	18.97	28.26	8.61	1420	100	1780	125	0.0280	0.301
6.187	157.18	0.219	5.56	14.98	22.32	6.80	1190	84	1390	98																									
6.125	155.60	0.250	6.35	17.02	25.36	7.73	1360	96	1580	111																									
6.001	152.46	0.312	7.92	21.04	31.35	9.55	1700	120	1980	139																									
5.937	150.82	0.344	8.74	23.08	34.39	10.48	1870	132	2180	153																									
5.875	149.24	0.375	9.53	25.03	37.29	11.36	2040	143	2380	167																									
5.761	146.36	0.432	10.97	28.57	42.57	12.97	2350	165	2740	193																									
5.501	139.76	0.562	14.27	36.39	54.22	16.52	2800	197	2800	197																									
5.187	131.78	0.719	18.26	45.35	67.57	20.59	2800	197	2800	197																									
8	(STD)	40	8.625	219.10	7.981	202.74	0.322	8.18	28.55	42.54	12.96	1340	94	1570	110	0.0480	0.517																		
																		8.219	208.78	0.203	5.16	18.26	27.21	8.29	850	60	1000	70							
																		8.187	207.98	0.219	5.56	19.66	29.29	8.93	910	64	1070	75							
																		8.125	206.40	0.250	6.35	22.36	33.32	10.15	1040	73	1220	86							
																		8.071	205.02	0.277	7.04	24.70	36.80	11.21	1160	82	1350	95							
																		8.001	203.26	0.312	7.92	27.70	41.27	12.58	1300	92	1520	107							
																		7.937	201.62	0.344	8.74	30.42	45.33	13.81	1440	101	1680	118							
																		7.875	200.04	0.375	9.53	33.04	49.23	15.00	1570	111	1830	129							
																		7.813	198.48	0.406	10.31	35.64	53.10	16.18	1700	120	2000	141							
																		7.749	196.84	0.438	11.13	38.30	57.07	17.39	1830	129	2130	150							
																		7.625	193.70	0.500	12.70	43.39	64.65	19.70	2090	147	2430	171							
7.437	188.92	0.594	15.09	50.95	75.92	23.13	2500	176	2800	197																									
7.187	182.58	0.719	18.26	60.71	90.46	27.56	2800	197	2800	197																									
7.001	197.86	0.812	10.62	67.76	100.96	30.76	2800	197	2800	197																									
6.875	174.64	0.875	22.23	72.42	107.91	32.88	2800	197	2800	197																									
6.813	173.08	0.906	23.01	74.69	111.29	33.91	2800	197	2800	197																									

TUBERIA ASTM A53 CON COSTURA Y SIN COSTURA Y ASTM A106 SIN COSTURA

DIAMETRO NOMINAL pulg	CLASE sch No.	CEDULA No.	DIAMETRO EXTERIOR pulg mm		DIAMETRO INTERIOR pulg mm		ESPESOR DE PARED pulg mm		PESO lb/ pie kg/ m Kg/ ft			PRESION PRUEBA				Vol/ m m3	Vol/ pie pie3	
												GRADO A		GRADO B				
												Lb/ pulg2	kg/ cm2	Lb/ pulg2	kg/ cm2			
10	-	-	10.750	273.0	10.374	263.44	0.188	4.78	21.21	31.60	9.63	630	44	730	51	0.0740	0.797	
	-	-			10.344	262.68	0.203	5.16	22.87	34.08	10.38	680	48	800	56			
	-	-			10.312	261.88	0.219	5.56	24.63	36.70	11.18	730	51	860	60			
	-	20			10.250	260.30	0.250	6.35	28.04	41.78	12.73	840	59	980	69			
	-	-			10.192	258.82	0.279	7.09	31.20	46.49	14.16	930	65	1090	77			
	-	30			10.020	254.46	0.307	7.80	34.24	51.02	15.54	1030	72	1200	84			
	-	-			10.062	255.52	0.344	8.74	38.23	56.96	17.36	1150	81	1340	94			
	-	(STD)			40	<b>10.020</b>	<b>254.46</b>	<b>0.365</b>	<b>9.27</b>	<b>40.48</b>	<b>60.32</b>	<b>18.38</b>	<b>1220</b>	<b>86</b>	<b>1430</b>			<b>101</b>
	-	-			9.874	250.74	0.438	11.13	48.19	71.80	21.88	1470	103	1710	120			
	-	(XS)			60	9.750	247.60	0.500	12.70	54.74	81.56	24.85	1670	117	1950			137
	-	-			80	9.562	242.82	0.594	15.09	64.43	96.00	29.15	1990	140	2320			163
	-	-			100	9.312	236.48	0.719	18.26	77.03	114.77	34.97	2410	169	2800			197
	-	-			120	9.062	230.12	0.844	21.44	89.29	133.04	40.54	2800	197	2800			197
	-	(XXS)			140	8.750	222.20	1.000	25.40	104.13	155.15	47.28	2800	197	2800			197
-	-	160	8.500	215.84	1.125	28.58	115.65	172.32	52.41	2800	197	2800	197					
12	-	-	12.750	323.80	12.344	313.48	0.203	5.16	27.20	40.53	12.35	570	40	670	47	0.1040	1.120	
	-	-			12.312	312.68	0.219	5.56	29.31	43.67	13.31	620	44	720	51			
	-	20			12.250	311.10	0.250	6.35	33.38	49.74	15.15	710	50	820	58			
	-	-			12.188	309.52	0.281	7.14	37.42	55.76	16.99	790	56	930	65			
	-	-			12.126	307.96	0.312	7.92	41.45	61.76	18.82	880	62	1030	72			
	-	30			12.090	307.04	0.330	8.38	43.77	65.22	19.87	930	65	1090	77			
	-	-			12.062	306.32	0.344	8.74	45.58	67.91	20.69	970	68	1130	79			
	-	(STD)			40	<b>12.000</b>	<b>304.76</b>	<b>0.375</b>	<b>9.52</b>	<b>49.56</b>	<b>73.84</b>	<b>22.50</b>	<b>1060</b>	<b>75</b>	<b>1240</b>			<b>87</b>
	-	-			11.938	303.18	0.406	10.31	53.52	79.74	24.30	1150	81	1340	94			
	-	-			11.874	301.54	0.438	11.13	57.59	85.81	26.15	1240	87	140	10			
	-	(XS)			60	11.750	298.40	0.500	12.70	65.42	97.48	29.70	1410	99	1650			116
	-	-			80	11.626	295.26	0.562	14.27	73.15	108.97	33.21	1590	112	1850			130
	-	-			100	11.374	288.84	0.688	17.48	88.63	132.06	40.24	1940	136	2270			160
	-	(XXS)			120	11.062	280.92	0.844	21.44	107.32	159.91	48.72	2390	168	2780			195
-	-	140	10.750	273.00	1.000	25.40	125.49	186.98	56.97	2800	197	2800	197					
-	-	160	10.502	266.64	1.124	28.58	139.68	208.12	63.41	2800	197	2800	197					
-	-	160	10.126	257.16	1.312	33.32	160.27	238.80	72.76	2800	197	2800	197					

Norma	Grado	Punto de Fluencia			Resistencia a la tensión			Composición Química								
		PSI	kg/cm2	Mpa o N/mm2	PSI	kg/cm2	Mpa o N/mm2	Carbon (C)	Manganeso (Mn)	Fosforo (P)	Azufre (S)	Cobre (Cu) <sup>1</sup>	Niquel (Ni) <sup>1</sup>	Cromo (Cr) <sup>1</sup>	Molibdeno (Mo) <sup>1</sup>	Vanadio (V) <sup>1</sup>
A-53	A	48,000	3,374	331	30,000	2,109	207	0.25	0.95	0.05	0.05	0.4	0.4	0.4	0.15	0.08
	B	60,000	4,218	414	35,000	2,461	241	0.30	1.20	0.05	0.05	0.4	0.4	0.4	0.15	0.08
API-5L	A-25	25,000	2,008	172	45,000	3,614	310	0.21	0.30-0.60	0.05	0.06					
	A	30,000	2,409	207	48,000	3,854	331	0.21	0.90	0.04	0.05					
	B	35,000	2,811	241	60,000	4,818	413	0.26	1.15	0.04	0.05					
A-500	A	33,000	2,320	228	45,000	3,164	310	0.30	-	0.045	0.045	0.18				
	B	42,000	2,953	290	58,000	4,077	400	0.30	-	0.045	0.045	0.18				
	C	46,000	3,234	317	62,000	4,359	427	0.27	1.40	0.045	0.045	0.18				
A-120		Esta especificación ha sido anulada en 1988 para en su lugar utilizar la especificación ASTM A-53														

<sup>1</sup> La combinación de los 5 elementos no pueden pasar de 1%