ANNEXE : Tableaux de référence pour le dimensionnement de la conduite

Le premier tableau permet de déterminer, sur base de la température de service et de la pression maximale de service, le schedule à utiliser.

Le second tableau permet ensuite, en connaissant le schedule à utiliser et le diamètre intérieur du tuyau à installer pour avoir la perte de charge requise, de choisir le diamètre nominal de tuyauterie.

Pipe Sizes & Pressure Ratings

Ratings are given for standard seamless pipe sizes at temperatures from 100° F to 750° F. All ratings are in psig and are based on ANSI/ASME B 3 1. 1.

14.5 psig = 1 barg

Temp (°C) = (Temp (°F) – 32) * 5/9

A312-TP316/316L Stainless Steel

Pipe Size	Pipe Schedule	100°F	200°	300°	400°	500°	600°	650°	700°	750°
1″	**40**	3048	2629	2362	2171	2019	1924	1867	1824	1810
1″	**80**	4213	3634	3265	3002	2791	2659	2580	2528	2501
1″	**160**	6140	5296	4759	4375	4068	3876	3761	3684	3646
1.5″	**40**	2257	1947	1750	1608	1496	1425	1383	1354	1340
1.5″	**80**	3182	2744	2466	2267	2108	2009	1949	1909	1889
1.5″	**160**	4619	3984	3580	3291	3060	2916	2829	2772	2743
2″	**40**	1902	1640	1474	1355	1260	1201	1165	1141	1129
2″	**80**	2747	2369	2129	1957	1820	1734	1682	1648	1631
2″	**160**	4499	3880	3486	3205	2980	2840	2755	2699	2671
3″	**40**	1806	1558	1400	1287	1196	1140	1106	1084	1072
3″	**80**	2553	2202	1979	1819	1691	1612	1564	1532	1516
3″	**160**	3840	3312	2976	2736	2544	2424	2352	2304	2280
4″	**40**	1531	1321	1187	1091	1014	967	938	919	909
4″	**80**	2213	1909	1715	1577	1466	1397	1355	1328	1314
4″	**160**	3601	3106	2791	2566	2386	2273	2206	2161	2138
5″	**40**	1342	1158	1040	956	889	847	822	805	797
5″	**80**	1981	1709	1535	1411	1312	1250	1213	1189	1176
5″	**160**	3414	2945	2646	2433	2262	2155	2091	2049	2027
6″	**40**	1219	1052	945	869	808	770	747	732	724

Pipe Size	Pipe Schedule	100°F	200°	300°	400°	500°	600°	650°	700°	750°
6″	**80**	1913	1650	1483	1363	1267	1208	1172	1148	1136
6″	**160**	3289	2836	2549	2343	2179	2076	2014	1973	1953
8″	**40**	1073	926	832	765	711	678	657	644	637
8″	**80**	1692	1459	1311	1205	1121	1068	1036	1015	1005
8″	**160**	3175	2738	2460	2262	2103	2004	1944	1905	1885
10″	**40**	974	840	755	694	945	615	596	584	578
10″	**80**	1609	1388	1247	1147	1066	1016	986	966	956
10″	**160**	3147	2714	2439	2242	2085	1986	1927	1880	1868

Pipe Size

Standard pipe sizes for seamless pipe per ANSI/ASME

Nominal Pipe Size	Pipe Schedule	Outside Diameter	Inside Diameter	Wall Thickness
0.75″	**40**	1.05″	0.824″	0.113″
0.75″	**80**	1.05″	0.742″	0.154″
0.75″	**160**	1.05″	0.612″	0.219″
1″	**40**	1.315″	1.049″	0.133″
1″	**80**	1.315″	0.957″	0.179″
1″	**160**	1.315″	0.815″	0.25″
1.2″5	**40**	1.66″	1.38″	0.14″
1.25″	**80**	1.66″	1.278″	0.191″
1.25″	**160**	1.66″	1.16″	0.25″
1.5″	**40**	1.9″	1.61″	0.145″
1.5″	**80**	1.9″	1.5″	0.2″
1.5″	**160**	1.9″	1.338″	0.281″
2″	**40**	2.37″5	2.067″	0.154″
2″	**80**	2.37″5	1.939″	0.218″
2″	**160**	2.37″5	1.687″	0.344″
2.5″	**40**	2.87″5	2.469″	0.203″
2.5″	**80**	2.87″5	2.323″	0.276″
2.5″	**160**	2.87″5	2.125″	0.375″
3″	**40**	3.5″	3.068″	0.216″
3″	**80**	3.5″	2.9″	0.3″
3″	**160**	3.5″	2.804″	0.438″
3.5″	**40**	4″	3.548″	0.226″
3.5″	**80**	4″	3.364″	0.318″
3.5″	**160**	4″		
4″	**40**	4.5″	4.026″	0.237″
4″	**80**	4.5″	3.826″	0.337″
4″	**160**	4.5″	3.438″	0.531″
5″	**40**	5.563″	5.047″	0.258″

Nominal Pipe Size	Pipe Schedule	Outside Diameter	Inside Diameter	Wall Thickness
5″	**80**	5.563″	4.813″	0.375″
5″	**160**	5.563″	4.313″	0.625″
6″	**40**	6.625″	6.065″	0.28″
6″	**80**	6.625″	5.761″	0.432″
6″	**160**	6.625″	5.187″	0.719″
8″	**40**	8.625″	7.981″	0.322″
8″	**80**	8.625″	7.625″	0.5″
8″	**160**	8.625″	6.813″	0.906″
10″	**40**	10.75″	10.02″	0.365″
10″	**80**	10.75″	9.562″	0.594″
10″	**160**	10.75″	8.5″	1.125″
12″	**40**	12.75″	11.938″	0.406″
12″	**80**	12.75″	11.374″	0.688″
12″	**160**	12.75″	10.126″	1.312″

TABLEAUX COMPLEMENTAIRES

to convert	to	multiply by
megapascals (MPa)	pounds/sq. inch (psi)	145.0
megapascals (MPa)	ksi	0.145
megapascals (MPa)	kilopascals (kPa)	1000
megapascals (MPa)	kilograms/mm² (kgf/mm²)	0.10197
megapascals (MPa)	bar	10.00

Maximum Allowable Operating Pressure *(MPa)*

Nominal Size		Outside Diameter	Schedule		Wall Thickness	Temperature *(°C)*						
(DN)	*(NPS)*	*(mm)*			*(mm)*	-29 to +38	204	260	343	371	399	427
						Maximum Allowable Stress *(MPa)*						
						137.9	137.9	130.3	117.2	113.8	89.6	74.5
15	½	21.3	STD	40	2.77	34.5	34.5	32.6	29.3	28.5	22.4	18.6
20	¾	26.7	STD	40	2.87	28.1	28.1	26.5	23.8	23.1	18.2	15.1
			XS	80	3.91	39.4	39.4	37.2	33.5	32.5	25.6	21.3
25	1	33.4	STD	40	3.38	26.3	26.3	24.8	22.3	21.7	17.1	14.2
			XS	80	4.55	36.3	36.3	34.3	30.9	30.0	23.6	19.6
32	1¼	42.2	STD	40	3.56	21.6	21.6	20.4	18.4	17.8	14.1	11.7
			XS	80	4.85	30.2	30.2	28.5	25.6	24.9	19.6	16.3
				160	6.35	40.6	40.6	38.4	34.5	33.5	26.4	21.9
40	1½	48.3	STD	40	3.68	19.4	19.4	18.4	16.5	16.0	12.6	10.5
			XS	80	5.08	27.4	27.4	25.9	23.3	22.6	17.8	14.8
				160	7.14	39.8	39.8	37.6	33.8	32.8	25.9	21.5
50	2	60.3	STD	40	3.91	16.4	16.4	15.5	13.9	13.5	10.7	8.9
			XS	80	5.54	23.7	23.7	22.4	20.1	19.5	15.4	12.8
				160	8.74	38.9	38.9	36.8	33.1	32.1	25.3	21.0
65	2½	73.0	STD	40	5.16	17.9	17.9	17.0	15.3	14.8	11.7	9.7
			XS	80	7.01	24.8	24.8	23.5	21.1	20.5	16.1	13.4
				160	9.53	34.7	34.7	32.8	29.5	28.6	22.5	18.7
80	3	88.9	STD	40	5.49	15.6	15.6	14.7	13.2	12.8	10.1	8.4
			XS	80	7.62	22.0	22.0	20.8	18.7	18.2	14.3	11.9
				160	11.13	33.1	33.1	31.3	28.1	27.3	21.5	17.9
100	4	114.3	STD	40	6.02	13.2	13.2	12.5	11.2	10.9	8.6	7.1
			XS	80	8.56	19.1	19.1	18.0	16.2	15.7	12.4	10.3
				120	11.13	25.2	25.2	23.8	21.4	20.8	16.4	13.6
				160	13.49	31.0	31.0	29.3	26.4	25.6	20.2	16.8
			XXS		17.12	40.4	40.4	38.2	34.3	33.3	26.2	21.8
125	5	141.3	STD	40	6.55	11.6	11.6	10.9	9.8	9.5	7.5	6.2
			XS	80	9.53	17.1	17.1	16.1	14.5	14.1	11.1	9.2
				120	12.7	23.1	23.1	21.9	19.7	19.1	15.0	12.5
				160	15.88	29.4	29.4	27.8	25.0	24.3	19.1	15.9
			XXS		19.05	35.9	35.9	33.9	30.5	29.6	23.4	19.4
150	6	168.3	STD	40	7.11	10.5	10.5	9.9	8.9	8.7	6.8	5.7
			XS	80	10.97	16.5	16.5	15.6	14.0	13.6	10.7	8.9
				120	14.27	21.8	21.8	20.6	18.5	17.9	14.1	11.7
			XXS	160	18.26	28.3	28.3	26.8	24.1	23.4	18.4	15.3
200	8	219.1		20	6.35	7.1	7.1	6.7	6.1	5.9	4.6	3.9
				30	7.04	7.9	7.9	7.5	6.7	6.5	5.2	4.3
			STD	40	8.18	9.3	9.3	8.7	7.9	7.6	6.0	5.0
				60	10.31	11.7	11.7	11.1	10.0	9.7	7.6	6.3
			XS	80	12.7	14.6	14.6	13.8	12.4	12.0	9.5	7.9
				100	15.09	17.5	17.5	16.5	14.8	14.4	11.4	9.4
				120	18.26	21.4	21.4	20.2	18.2	17.6	13.9	11.5
				140	20.62	24.3	24.3	23.0	20.7	20.1	15.8	13.1
			XXS		22.23	26.4	26.4	24.9	22.4	21.7	17.1	14.2
				160	23.01	27.4	27.4	25.8	23.3	22.6	17.8	14.8

Important - refer to the associated Notes on page 1.

Maximum Allowable Operating Pressure *(MPa)*

Nominal Size		Outside Diameter	Schedule		Wall Thickness	Temperature *(°C)*						
(DN)	*(NPS)*	*(mm)*			*(mm)*	-29 to +38	204	260	343	371	399	427
						Maximum Allowable Stress *(MPa)*						
						137.9	137.9	130.3	117.2	113.8	89.6	74.5
250	10	273.1		20	6.35	5.7	5.7	5.4	4.8	4.7	3.7	3.1
				30	7.8	7.0	7.0	6.6	6.0	5.8	4.6	3.8
			STD	40	9.27	8.4	8.4	7.9	7.1	6.9	5.5	4.5
			XS	60	12.7	11.6	11.6	11.0	9.9	9.6	7.5	6.3
				80	15.09	13.9	13.9	13.1	11.8	11.4	9.0	7.5
				100	18.26	16.9	16.9	16.0	14.4	14.0	11.0	9.1
				120	21.44	20.0	20.0	18.9	17.0	16.5	13.0	10.8
			XXS	140	25.4	24.0	24.0	22.7	20.4	19.8	15.6	13.0
				160	28.58	27.3	27.3	25.8	23.2	22.5	17.7	14.7
300	12	323.9		20	6.35	4.8	4.8	4.5	4.1	4.0	3.1	2.6
				30	8.38	6.4	6.4	6.0	5.4	5.2	4.1	3.4
			STD		9.53	7.2	7.2	6.9	6.2	6.0	4.7	3.9
				40	10.31	7.9	7.9	7.4	6.7	6.5	5.1	4.2
			XS		12.7	9.7	9.7	9.2	8.3	8.0	6.3	5.3
				60	14.27	11.0	11.0	10.4	9.3	9.0	7.1	5.9
				80	17.48	13.5	13.5	12.8	11.5	11.2	8.8	7.3
				100	21.44	16.8	16.8	15.8	14.2	13.8	10.9	9.0
			XXS	120	25.4	20.0	20.0	18.9	17.0	16.5	13.0	10.8
				140	28.58	22.7	22.7	21.4	19.3	18.7	14.8	12.3
				160	33.32	26.8	26.8	25.3	22.7	22.1	17.4	14.4
350	14	355.6		10	6.35	4.4	4.4	4.1	3.7	3.6	2.8	2.4
				20	7.92	5.5	5.5	5.2	4.6	4.5	3.5	2.9
			STD	30	9.53	6.6	6.6	6.2	5.6	5.4	4.3	3.6
				40	11.13	7.7	7.7	7.3	6.6	6.4	5.0	4.2
			XS		12.7	8.8	8.8	8.4	7.5	7.3	5.7	4.8
				60	15.09	10.6	10.6	10.0	9.0	8.7	6.9	5.7
				80	19.05	13.4	13.4	12.7	11.4	11.1	8.7	7.3
				100	23.83	17.0	17.0	16.0	14.4	14.0	11.0	9.2
				120	27.79	20.0	20.0	18.9	17.0	16.5	13.0	10.8
				140	31.75	23.0	23.0	21.7	19.5	19.0	14.9	12.4
				160	35.71	26.1	26.1	24.6	22.2	21.5	16.9	14.1
400	16	406.4		10	6.35	3.8	3.8	3.6	3.2	3.1	2.5	2.1
				20	7.92	4.8	4.8	4.5	4.1	3.9	3.1	2.6
			STD	30	9.53	5.8	5.8	5.4	4.9	4.7	3.7	3.1
			XS	40	12.7	7.7	7.7	7.3	6.6	6.4	5.0	4.2
				60	16.66	10.2	10.2	9.6	8.7	8.4	6.6	5.5
				80	21.44	13.2	13.2	12.5	11.2	10.9	8.6	7.1
				100	26.19	16.3	16.3	15.4	13.8	13.4	10.6	8.8
				120	30.96	19.4	19.4	18.4	16.5	16.0	12.6	10.5
				140	36.53	23.1	23.1	21.9	19.7	19.1	15.0	12.5
				160	40.49	25.8	25.8	24.4	22.0	21.3	16.8	14.0

Important - refer to the associated Notes on page 1.

Maximum Allowable Operating Pressure *(MPa)*

Nominal Size		Outside Diameter	Schedule		Wall Thickness	Temperature *(°C)*						
(DN)	*(NPS)*	*(mm)*			*(mm)*	-29 to +38	204	260	343	371	399	427
						Maximum Allowable Stress *(MPa)*						
						137.9	137.9	130.3	117.2	113.8	89.6	74.5
450	18	457		10	6.35	3.4	3.4	3.2	2.9	2.8	2.2	1.8
				20	7.92	4.2	4.2	4.0	3.6	3.5	2.8	2.3
			STD		9.53	5.1	5.1	4.8	4.3	4.2	3.3	2.8
			XS	30	11.13	6.0	6.0	5.7	5.1	4.9	3.9	3.2
					12.7	6.8	6.8	6.5	5.8	5.6	4.4	3.7
				40	14.27	7.7	7.7	7.3	6.5	6.4	5.0	4.2
				60	19.05	10.4	10.4	9.8	8.8	8.5	6.7	5.6
				80	23.83	13.1	13.1	12.3	11.1	10.8	8.5	7.1
				100	29.36	16.2	16.2	15.3	13.8	13.4	10.6	8.8
				120	34.93	19.5	19.5	18.4	16.6	16.1	12.7	10.5
				140	39.67	22.3	22.3	21.1	19.0	18.4	14.5	12.0
				160	45.24	25.7	25.7	24.3	21.8	21.2	16.7	13.9
500	20	508		10	6.35	3.0	3.0	2.9	2.6	2.5	2.0	1.6
			STD	20	9.53	4.6	4.6	4.3	3.9	3.8	3.0	2.5
			XS	30	12.7	6.1	6.1	5.8	5.2	5.1	4.0	3.3
				40	15.09	7.3	7.3	6.9	6.2	6.0	4.8	4.0
				60	20.62	10.1	10.1	9.5	8.6	8.3	6.6	5.4
				80	26.19	12.9	12.9	12.2	11.0	10.6	8.4	7.0
				100	32.54	16.2	16.2	15.3	13.8	13.4	10.5	8.7
				120	38.1	19.1	19.1	18.1	16.2	15.8	12.4	10.3
				140	44.45	22.5	22.5	21.3	19.1	18.6	14.6	12.1
				160	50.01	25.5	25.5	24.1	21.7	21.0	16.6	13.8
600	24	610		10	6.35	2.5	2.5	2.4	2.2	2.1	1.6	1.4
			STD	20	9.53	3.8	3.8	3.6	3.2	3.1	2.5	2.1
			XS		12.7	5.1	5.1	4.8	4.3	4.2	3.3	2.8
				30	14.27	5.7	5.7	5.4	4.9	4.7	3.7	3.1
				40	17.48	7.1	7.1	6.7	6.0	5.8	4.6	3.8
				60	24.61	10.0	10.0	9.5	8.5	8.3	6.5	5.4
				80	30.96	12.7	12.7	12.0	10.8	10.5	8.3	6.9
				100	38.89	16.1	16.1	15.2	13.7	13.3	10.5	8.7
				120	46.02	19.2	19.2	18.2	16.3	15.9	12.5	10.4
				140	52.37	22.0	22.0	20.8	18.7	18.2	14.3	11.9
				160	59.54	25.3	25.3	23.9	21.5	20.9	16.4	13.7

Important - refer to the associated Notes on page 1.