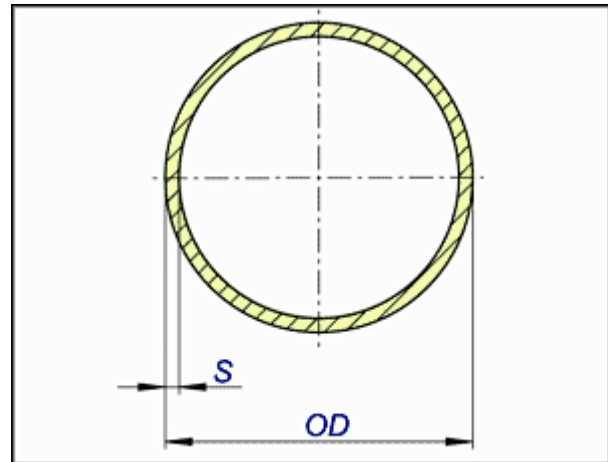


PIPES
 european standards
 10 bar - DIN / BS

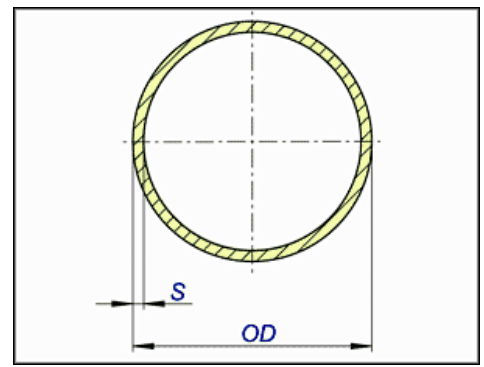


Outside diameter of pipe ØD			10 bar	
nominal		actual	Wall thickness	Theoretical weight
inch	ND	mm	actual mm	Kg/m
0.125		10	1.0	0.26
0.25		12	1.0	0.31
0.38	10	16	1.0	0.42
0.5	15	20	1.0	0.53
0.75	20	25	1.5	0.99
1	25	30	1.5	1.20
1.25	32	38	1.5	1.54
1.5	40	44.5	1.5	1.81
2	50	57	1.5	2.34
2.5	65	76.1	2.0	4.16
3	80	88.9	2.0	4.88
4	100	108	2.5	7.41
5	125	133	2.5	9.16
6	150	159	2.5	10.99
7	175	193.7	2.5	13.43
8	200	219.1	3.0	18.21
10	250	267	3.0	22.24
12	300	323.9	4.0	35.94
14	350	368	4.0	40.89
16	400	419.1	4.0	46.62
18	450	457.2	4.0	50.91
20	500	508	4.5	63.63
24	600	610	5.0	84.96
28	700	711	6.0	118.80
32	800	813	6.0	135.99
36	900	914	8.0	203.57

COPPER NICKEL PIPES

European standards for copper nickel pipes

14 bar - DIN 86019 / BS 2871 CN102 / EN 12449 / EN 1652

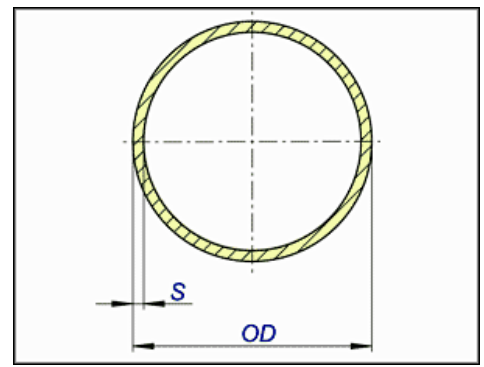


Outside diameter of pipe ØD			14 bar	
nominal		actual	Wall thickness	Theoretical weight
inch	ND	mm	actual mm	Kg/m
0.125		10	1.0	0.26
0.25		12	1.0	0.31
0.375	10	16	1.0	0.42
0.5	15	20	1.0	0.53
0.75	20	25	1.5	0.99
1	25	30	1.5	1.20
1.25	32	38	1.5	1.54
1.5	40	44.5	1.5	1.81
2	50	57	1.5	2.34
2.5	65	76.1	2.0	4.16
3	80	88.9	2.5	6.07
4	100	108	2.5	7.41
5	125	133	3.0	10.95
6	150	159	3.0	13.14
7	175	193.7	3.5	18.70
8	200	219.1	3.5	21.19
10	250	267	4.0	29.55
12	300	323.9	5.0	44.78
14	350	368	5.5	56.00
16	400	419.1	6.0	69.60
18	450	457.2	6.0	76.03
20	500	508	6.5	91.55
24	600	610	8.0	135.26
28	700	711	9.0	177.45
32	800	813	10.0	225.53
36	900	914	11.0	278.98

COPPER NICKEL PIPES

European standards for copper nickel pipes

16 bar - EEMUA 144 UNS 7060X

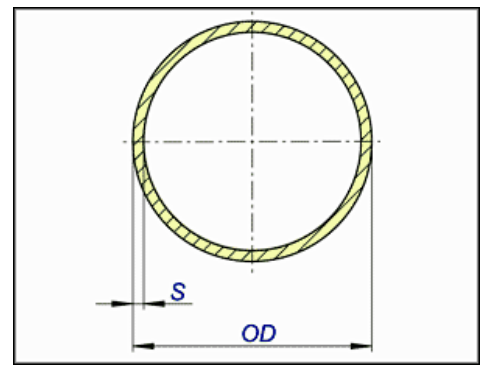


Outside diameter of pipe ØD			16 bar	
nominal			Wall thickness	Theoretical weight
inch	ND	actual mm	actual mm	Kg/m
0.125		10	1.0	0.26
0.25		12	1.0	0.31
0.375	10	16	2.0	0.79
0.5	15	20	2.0	1.01
0.75	20	25	2.0	1.30
1	25	30	2.5	1.93
1.25	32	38	2.5	2.50
1.5	40	44.5	2.5	2.95
2	50	57	2.5	3.83
2.5	65	76.1	2.5	5.17
3	80	88.9	2.5	6.07
4	100	108	3.0	8.85
5	125	133	3.0	10.95
6	150	159	3.0	13.14
7	175	193.7	3.0	16.07
8	200	219.1	4.0	24.17
10	250	267	4.5	33.18
12	300	323.9	5.5	49.18
14	350	368	6.5	65.99
16	400	419.1	7.0	81.00
18	450	457.2	8.0	100.93
20	500	508	8.5	119.24
24	600	610	10.5	176.79
28	700	711	12.0	235.58
32	800	813	13.5	303.14
36	900	914	15.5	391.14

COPPER NICKEL PIPES

European standards for copper nickel pipes

20 bar - EEMUA 144 UNS 7060X

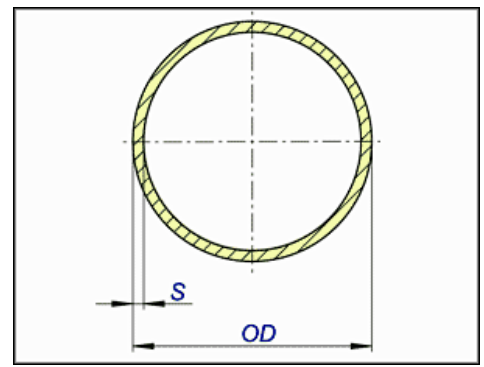


Outside diameter of pipe ØD			20 bar	
nominal			Wall thickness	Theoretical weight
inch	ND	actual mm	actual mm	Kg/m
0.125		10	1.0	0.26
0.25		12	1.0	0.31
0.375	10	16	2.0	0.79
0.5	15	20	2.0	1.01
0.75	20	25	2.0	1.30
1	25	30	2.5	1.93
1.25	32	38	2.5	2.50
1.5	40	44.5	2.5	2.95
2	50	57	2.5	3.83
2.5	65	76.1	2.5	5.17
3	80	88.9	2.5	6.07
4	100	108	3.0	8.85
5	125	133	3.0	10.95
6	150	159	3.5	15.29
7	175	193.7	3.5	18.70
8	200	219.1	4.5	27.12
10	250	267	5.5	40.39
12	300	323.9	7.0	62.30
14	350	368	8.0	80.89
16	400	419.1	9.0	103.64
18	450	457.2	9.5	119.45
20	500	508	11.0	153.54
24	600	610	13.0	217.97
28	700	711	15.0	293.22
32	800	813	17.0	380.06
36	900	914	19.0	477.60

COPPER NICKEL PIPES

us navy standards for copper nickel pipes

class 200 - MIL-T-16420K C706 / C715 Type I or II Grade 1
or 2

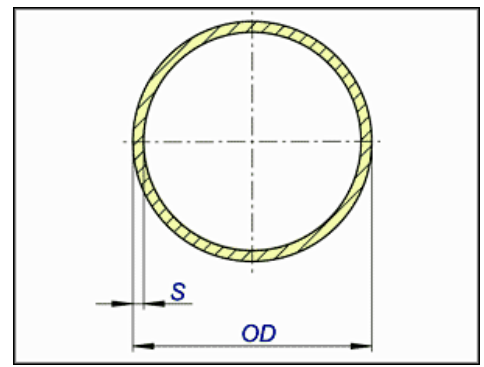


Outside diameter of pipe ØD			Minimum wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
	0.250	6.35	0.035	0.89	0.09	0.14
	0.500	12.70	0.065	0.89	0.20	0.29
0.125	0.540	13.72	0.065	1.65	0.38	0.56
0.375	0.675	17.15	0.065	1.65	0.48	0.72
0.5	0.840	21.34	0.065	1.65	0.61	0.91
0.75	1.050	26.67	0.065	1.65	0.78	1.16
1	1.315	33.40	0.065	1.65	0.99	1.47
1.25	1.660	42.16	0.072	1.83	1.39	2.07
1.5	1.900	48.27	0.072	1.83	1.60	2.39
2	2.375	60.32	0.083	2.11	2.32	3.45
2.5	2.875	73.03	0.083	2.11	2.82	4.20
3	3.500	88.90	0.095	2.41	3.93	5.85
3.5	4.000	101.60	0.095	2.41	4.51	6.71
4	4.500	114.30	0.109	2.77	5.83	8.68
	5.000	127.00	0.120	3.05	7.14	10.62
5	5.563	141.30	0.125	3.18	8.29	12.34
6	6.625	168.30	0.134	3.40	10.58	15.75
	7.625	193.70	0.134	3.40	12.21	18.17
8	8.625	219.10	0.148	3.76	15.28	22.74
	9.625	244.48	0.187	4.75	21.49	31.98
10	10.750	273.05	0.187	4.75	24.05	35.79
12	12.750	323.90	0.250	6.35	38.05	56.63

COPPER NICKEL PIPES

us navy standards for copper nickel pipes

class 50 - MIL-T-16420K C706 / C715 Type I or II Grade 1
or 2

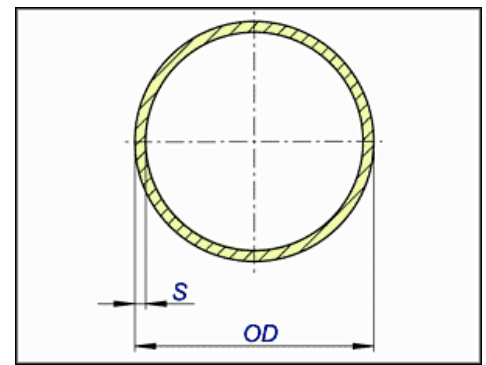


Outside diameter of pipe ØD			Minimum wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
14	14.000	355.60	0.165	4.19	27.78	41.35
16	16.000	406.40	0.165	4.19	31.80	47.32
18	18.000	457.20	0.180	4.57	39.03	58.10
20	20.000	508.20	0.180	4.57	43.41	64.62
22	22.000	558.80	0.180	4.57	47.80	71.12
	22.750	577.85	0.180	4.57	49.50	73.57
30	30.000	762.00	0.250	6.35	90.54	134.77
40	40.000	1016.00	0.312	7.92	150.70	224.19

COPPER NICKEL PIPES

us navy standards for copper nickel pipes

class 700 - MIL-T-16420K C706 / C715 Type I or II Grade 1
or 2

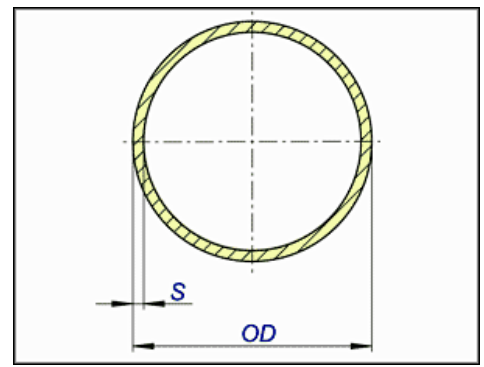


Outside diameter of pipe ØD			Minimum wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
	0.500	12.70	0.065	1.65	0.34	0.51
0.125	0.540	13.72	0.065	1.65	0.38	0.56
0.38	0.675	17.15	0.072	1.83	0.53	0.79
0.5	0.840	21.34	0.072	1.83	0.67	1.00
0.75	1.050	26.67	0.083	2.11	0.98	1.45
1	1.315	33.40	0.095	2.41	1.41	2.10
1.25	1.660	42.16	0.095	2.41	1.81	2.69
1.5	1.900	48.27	0.109	2.77	2.38	3.54
2	2.375	60.32	0.120	3.05	3.30	4.91
2.5	2.875	73.03	0.134	3.40	4.47	6.65
3	3.500	88.90	0.165	4.19	6.70	9.97
3.5	4.000	101.60	0.180	4.57	8.37	12.45
4	4.500	114.30	0.203	5.15	10.61	15.78
	5.000	127.00	0.203	5.15	11.84	17.62
5	5.563	141.30	0.220	5.59	14.32	21.30
6	6.625	168.30	0.259	6.58	20.08	29.89
	7.625	193.70	0.284	7.21	25.38	37.76
8	8.625	219.10	0.340	8.64	34.32	51.07
	9.625	244.48	0.340	8.64	38.46	57.23
10	10.750	273.05	0.380	9.65	47.96	71.37
12	12.750	323.90	0.454	11.53	67.97	101.15
14	14.000	355.60	0.473	12.01	77.90	115.87
	15.000	381.00	0.503	12.77	88.80	132.04
16	16.000	406.40	0.534	13.56	101.00	149.58

COPPER NICKEL PIPES

us standards for copper nickel pipes

us standard - ASTM B466 / B467 UNS C706 / C715

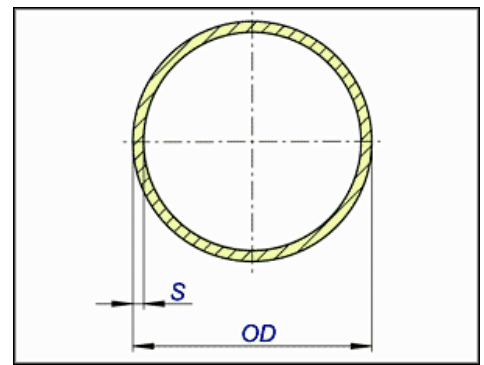


Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
0.125	0.405	10.29	0.058	1.47	0.24	0.36
0.25	0.540	13.72	0.065	1.65	0.38	0.56
0.38	0.675	17.15	0.065	1.65	0.48	0.72
0.5	0.840	21.34	0.065	1.65	0.61	0.91
0.75	1.050	26.67	0.065	1.65	0.78	1.16
1	1.315	33.40	0.065	1.65	0.99	1.47
1.25	1.660	42.16	0.072	1.83	1.39	2.07
1.5	1.900	48.27	0.072	1.83	1.60	2.39
2	2.375	60.32	0.083	2.11	2.32	3.45
2.5	2.375	73.03	0.083	2.11	2.82	4.20
3	3.500	88.90	0.095	2.41	3.93	5.85
3.5	4.000	101.60	0.095	2.41	4.51	6.71
4	4.500	114.30	0.109	2.77	5.83	8.68
5	5.563	141.30	0.125	3.18	8.29	12.34
6	6.625	168.30	0.134	3.40	10.58	15.75
8	8.625	219.10	0.134	3.40	13.83	20.59
10	10.750	273.05	0.134	3.40	17.29	25.74
12	12.750	323.90	0.156	3.96	23.90	35.58
14	14.000	355.60	0.165	4.19	27.78	41.35
16	16.000	406.40	0.165	4.19	31.80	47.33
18	18.000	457.20	0.180	4.57	39.03	58.10
20	20.000	508.00	0.180	4.57	43.41	64.62
24	24.000	609.60	0.180	4.57	52.17	77.66
30	30.000	762.00	0.250	6.35	90.54	134.77

COPPER NICKEL PIPES

us standards for copper nickel pipes

schedule 10S - ANSI / ASME B36.19 UNS C706 / C715

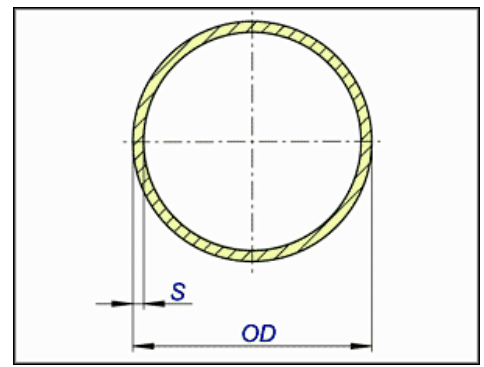


Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
0.125	0.405	10.29	0.049	1.24	0.19	0.28
0.25	0.540	13.72	0.065	1.65	0.33	0.49
0.38	0.675	17.15	0.065	1.65	0.42	0.63
0.5	0.840	21.34	0.083	2.11	0.67	1.00
0.75	1.050	26.67	0.083	2.11	0.86	1.28
1	1.315	33.40	0.109	2.77	1.40	2.09
1.25	1.660	42.16	0.109	2.77	1.81	2.70
1.5	1.900	48.27	0.109	2.77	2.09	3.11
2	2.375	60.32	0.109	2.77	2.64	3.93
2.5	2.875	73.03	0.120	3.05	3.53	5.26
3	3.500	88.90	0.120	3.05	4.33	6.45
3.5	4.000	101.60	0.120	3.05	4.97	7.40
4	4.500	114.30	0.120	3.05	5.61	8.36
5	5.563	141.30	0.134	3.40	7.77	11.57
6	6.625	168.30	0.134	3.40	9.29	13.84
8	8.625	219.10	0.148	3.76	13.40	19.96
10	10.750	273.05	0.165	4.19	18.65	27.78
12	12.750	323.90	0.180	4.57	24.17	36.00

COPPER NICKEL PIPES

us standards for copper nickel pipes

schedule 40S - ANSI / ASME B36.19 UNS C706 / C715

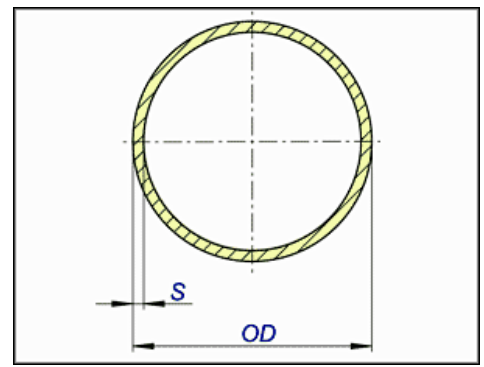


Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
0.125	0.405	10.29	0.068	1.73	0.24	0.37
0.25	0.540	13.72	0.088	2.24	0.42	0.63
0.38	0.675	17.15	0.091	2.31	0.57	0.84
0.5	0.840	21.34	0.109	2.77	0.85	1.27
0.75	1.050	26.67	0.113	2.87	1.13	1.69
1	1.315	33.40	0.133	3.38	1.68	2.50
1.25	1.660	42.16	0.140	3.56	2.27	3.39
1.5	1.900	48.27	0.145	3.68	2.72	4.05
2	2.375	60.32	0.154	3.91	3.65	5.44
2.5	2.875	73.03	0.203	5.16	5.79	8.63
3	3.500	88.90	0.216	5.49	7.58	11.29
3.5	4.000	101.60	0.226	5.74	9.11	13.57
4	4.500	114.30	0.237	6.02	10.79	16.07
5	5.563	141.30	0.258	6.55	14.62	21.77
6	6.625	168.30	0.280	7.11	18.97	28.26
8	8.625	219.10	0.322	8.18	28.55	42.55
10	10.750	273.05	0.365	9.27	40.48	60.31
12	12.750	323.90	0.375	9.53	49.56	73.88

COPPER NICKEL PIPES

us standards for copper nickel pipes

schedule 5S - ANSI / ASME B36.19 UNS C706 / C715

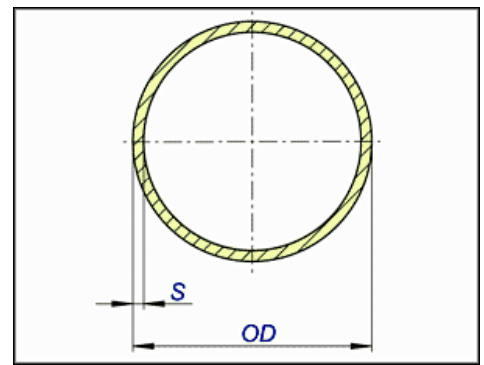


Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
0.5	0.840	21.34	0.065	1.65	0.54	0.80
0.75	1.050	26.67	0.065	1.65	0.69	1.03
1	1.315	33.40	0.065	1.65	0.87	1.30
1.25	1.660	42.16	0.065	1.65	1.11	1.65
1.5	1.900	48.27	0.065	1.65	1.28	1.91
2	2.375	60.32	0.065	1.65	1.61	2.40
2.5	2.875	73.03	0.083	2.11	2.48	3.69
3	3.500	88.90	0.083	2.11	3.03	4.51
3.5	4.000	101.60	0.083	2.11	3.48	5.18
4	4.500	114.30	0.083	2.11	3.92	5.84
5	5.563	141.30	0.109	2.77	6.36	9.47
6	6.625	168.30	0.109	2.77	7.60	11.32
8	8.625	219.10	0.109	2.77	9.93	14.79
10	10.750	273.05	0.134	3.40	15.19	22.63
12	12.750	323.90	0.156	3.96	20.98	31.25

COPPER NICKEL PIPES

us standards for copper nickel pipes

schedule 80S - ANSI / ASME B36.19 UNS C706 / C715



Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb/Ft	Kg/m
0.125	0.405	10.29	0.095	2.41	0.31	0.47
0.25	0.540	13.72	0.119	3.02	0.54	0.80
0.38	0.675	17.15	0.126	3.20	0.74	1.10
0.5	0.840	21.34	0.147	3.73	1.09	1.62
0.75	1.050	26.67	0.154	3.91	1.47	2.20
1	1.315	33.40	0.179	4.55	2.17	3.24
1.25	1.660	42.16	0.191	4.85	3.00	4.47
1.5	1.900	48.27	0.200	5.08	3.63	5.41
2	2.375	60.32	0.218	5.54	5.02	7.48
2.5	2.875	73.03	0.276	7.01	7.66	11.41
3	3.500	88.90	0.300	7.62	10.25	15.27
3.5	4.000	101.60	0.318	8.08	12.51	18.63
4	4.500	114.30	0.337	8.56	14.98	22.32
5	5.563	141.30	0.375	9.53	20.78	30.97
6	6.625	168.30	0.432	10.97	28.57	42.56
8	8.625	219.10	0.500	12.70	43.39	64.64
10	10.750	273.05	0.500	12.70	54.74	96.01
12	12.750	323.90	0.500	12.70	65.42	132.08