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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1127

STAINLESS STEEL TUBES

DIMENSIONS, TOLERANCES AND CONVENTIONAL MASSES PER UNIT LENGTH

1st EDITION

October 1969

For each individual country the only valid standard is the national standard of that country.

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BRIEF HISTORY

The ISO Recommendation R 1127, *Stainless steel tubes – Dimensions, tolerances and conventional masses per unit length,* was drawn up by Technical Committee ISO/TC 5, *Pipes and fittings,* the Secretariat of which is held by the Association Suisse de Normalisation (SNV).

Work on this question led to the adoption of a Draft ISO Recommendation.

In January 1968, this Draft ISO Recommendation (No. 1492) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Germany	South Africa, Rep. of
Belgium	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	Thailand
Chile	Korea, Rep. of	Turkey
Colombia	Netherlands	U.A.R.
Czechoslovakia	Norway	United Kingdom
Denmark	Poland	
France	Portugal	

Two Member Bodies opposed the approval of the Draft :

Hungary
U.S.S.R.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in October 1969, to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1127 | October 1969

STAINLESS STEEL TUBES

DIMENSIONS, TOLERANCES AND CONVENTIONAL MASSES PER UNIT LENGTH

INTRODUCTION

The outside diameters and thicknesses of the tubes are selected from ISO Recommendation R 336, *Plain end steel tubes, welded or seamless – General table of dimensions and masses per unit length.* The diameters 6, 8, 10, 14, 18, 22, 28, 32, 35 and 40 mm have been added from ISO Recommendation R 560, *Cold drawn precision steel tubes – Metric series – Dimensions and masses per metre,* and the diameters 0.250, 0.312, 0.375, 0.500, 0.625 and 0.875 in have been added from ISO Recommendation R . . .*, *Pipe connections for industrial application for plain end steel and other metal tubes.*

The corresponding thicknesses in millimetres and in inches are in accordance with ISO Recommendation R 221, *Steel tubes – Thicknesses.* The thicknesses above 6.3 mm (0.250 in) should be chosen from ISO Recommendation R 221.

1. SCOPE

This ISO Recommendation concerns stainless steel tubes and gives diameters, thicknesses, tolerances and conventional masses per unit length.

2. TOLERANCES

The tolerances permitted on the outside diameter and thickness of the tubes result from the method of manufacture, the steel types, the heat treatment and pickling. The tolerances should be selected from the following :

2.1 Tolerances on outside diameter

D_0 : ± 2 % with a minimum of ± 1.0 mm (0.04 in)
D_1 : ± 1.5 % with a minimum of ± 0.75 mm (0.03 in)
D_2 : ± 1.0 % with a minimum of ± 0.50 mm (0.02 in)
D_3 : ± 0.75 % with a minimum of ± 0.30 mm (0.012 in)
D_4 : ± 0.50 % with a minimum of ± 0.10 mm (0.004 in)

2.2 Tolerances on thickness

T_0 : ± 20 %
T_1 : ± 15 %
T_2 : ± 12.5 %
T_3 : ± 10 %
T_4 : ± 7.5 %

3. CONVENTIONAL MASSES PER UNIT LENGTH

The conventional masses per unit length are those of ISO Recommendation R 336, *Plain end steel tubes, welded or seamless – General table of dimensions and masses per unit length,* modified according to the following coefficients :

austenitic steel (see Table 1) :	1.015
ferritic and martensitic steel (see Table 2) :	0.985

The conventional masses per unit length of tubes of which the outside diameter is contained in ISO Recommendation R64, *Steel tubes – Outside diameters,* have been calculated according to the method given in ISO Recommendation R 336 and modified according to the corresponding coefficients for the kind of steel.

* In preparation.

TABLE 1 – Stainless austenitic steel tubes

Outside diameter		Thicknesses																	
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
6	–	kg/m	0.069	0.104	0.125	0.144	0.176												
–	0.250*	lb/ft	0.050	0.076	0.091	0.105	0.129												
–	0.312*	lb/ft	0.063	0.097	0.118	0.137	0.172												
8	–	kg/m	0.094	0.144	0.175	0.204	0.256												
–	0.375*	lb/ft	0.077	0.119	0.145	0.170	0.216												
10	–	kg/m	0.119	0.184	0.225	0.264	0.336	0.401	0.443										
10.2	0.402	kg/m lb/ft	0.122 0.082	0.190 0.127	0.232 0.156	0.272 0.183	0.347 0.233	0.413 0.278	0.458 0.307										
12	–	kg/m	0.144	0.224	0.275	0.324	0.417	0.501	0.559										
–	0.500*	lb/ft	0.104	0.162	0.199	0.235	0.303	0.364	0.407										
13,5	0.531	kg/m lb/ft	0.164 0.110	0.256 0.172	0.315 0.212	0.372 0.250	0.479 0.322	0.579 0.389	0.648 0.436	0.713 0.479	0.773 0.519								
14	–	kg/m	0.169	0.264	0.325	0.384	0.497	0.601	0.674	0.742	0.806								
–	0.625*	lb/ft	0.131	0.206	0.254	0.300	0.389	0.473	0.532	0.587	0.640								
16	–	kg/m	0.194	0.304	0.376	0.445	0.577	0.701	0.789	0.872	0.951								
17.2	0.677	kg/m lb/ft	0.211 0.142	0.331 0.222	0.408 0.274	0.484 0.325	0.629 0.423	0.766 0.515	0.863 0.580	0.956 0.642	1.04 0.701	1.13 0.758							
18	–	kg/m	0.219	0.344	0.426	0.505	0.657	0.801	0.904	1.00	1.10	1.19							
19	0.750	kg/m lb/ft	0.234 0.157	0.368 0.247	0.454 0.305	0.539 0.362	0.703 0.472	0.858 0.577	0.969 0.651	1.08 0.723	1.18 0.791	1.28 0.857							
20	–	kg/m	0.244	0.385	0.476	0.565	0.737	0.901	1.02	1.13	1.24	1.35	1.48	1.60	1.75	–	1.88	2.02	2.16
21.3	0.840	kg/m lb/ft	0.263 0.176	0.414 0.278	0.512 0.344	0.609 0.409	0.795 0.534	0.974 0.654	1.10 0.741	1.23 0.824	1.35 0.904	1.46 0.981	1.61 1.08	1.74 1.17	1.89 1.27	– 1.35	2.04 –	2.20 1.48	2.37 1.59

* To be maintained only while inch units are still in use.

NOTE. – The 16 mm and 5/8 in (0.625 in) diameters were previously taken as corresponding values for hot-finished tubes but are not sufficiently close corresponding values for certain applications of precision tubes.

TABLE 1 – **Stainless austenitic steel tubes** (*continued*)

Outside diameter		Thicknesses																
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
22	–	kg/m	0.269	0.425	0.526	0.625	0.817	1.00	1.13	1.26	1.39	1.51	1.66	1.80	1.97	–	2.13	2.30	2.48
–	0.875*	lb/ft	0.185	0.292	0.362	0.430	0.563	0.690	0.781	0.869	0.955	1.04	1.14	1.24	1.33	1.42	–	1.56	1.69
25	–	kg/m	0.307	0.485	0.601	0.715	0.937	1.15	1.31	1.46	1.60	1.75	1.93	2.10	2.31	–	2.50	2.72	2.95
25.4	1.000	kg/m	0.314	0.496	0.615	0.732	0.960	1.18	1.34	1.49	1.64	1.79	1.98	2.16	2.35	–	2.55	2.77	3.02
		lb/ft	0.211	0.333	0.413	0.492	0.645	0.793	0.900	1.00	1.10	1.20	1.33	1.45	1.58	1.68	–	1.86	2.03
26.9	1.059	kg/m	0.333	0.527	0.653	0.777	1.02	1.26	1.43	1.59	1.75	1.91	2.11	2.31	2.52	–	2.74	2.98	3.26
		lb/ft	0.224	0.354	0.439	0.522	0.686	0.843	0.958	1.07	1.18	1.28	1.42	1.55	1.69	1.80	–	2.00	2.19
28	–	kg/m	0.344	0.545	0.676	0.805	1.06	1.30	1.48	1.65	1.82	1.99	2.20	2.40	2.65	–	2.88	3.14	3.42
30	–	kg/m	0.369	0.585	0.726	0.865	1.14	1.40	1.59	1.78	1.97	2.15	2.38	2.60	2.87	–	3.13	3.42	3.74
31.8	1.250	kg/m	0.394	0.625	0.776	0.925	1.22	1.50	1.71	1.91	2.11	2.30	2.56	2.80	3.06	–	3.35	3.66	4.03
		lb/ft	0.265	0.420	0.521	0.622	0.818	1.01	1.15	1.28	1.42	1.55	1.72	1.88	2.06	2.20	–	2.46	2.71
32	–	kg/m	0.394	0.625	0.776	0.925	1.22	1.50	1.71	1.91	2.11	2.31	2.56	2.80	3.10	–	3.38	3.70	4.05
33.7	1.327	kg/m	0.419	0.664	0.825	0.983	1.29	1.60	1.82	2.04	2.25	2.46	2.73	2.99	3.28	–	3.59	3.93	4.33
		lb/ft	0.281	0.446	0.554	0.661	0.870	1.07	1.22	1.37	1.51	1.65	1.83	2.01	2.20	2.36	–	2.64	2.91
35	–	kg/m	0.432	0.685	0.851	1.02	1.34	1.65	1.88	2.11	2.33	2.55	2.83	3.10	3.44	–	3.75	4.12	4.53
38	1.500	kg/m	0.473	0.751	0.934	1.11	1.47	1.82	2.07	2.32	2.57	2.81	3.13	3.43	3.77	–	4.13	4.53	5.02
		lb/ft	0.318	0.505	0.628	0.749	0.988	1.22	1.39	1.56	1.73	1.89	2.10	2.31	2.53	2.72	–	3.05	3.37
40	–	kg/m	0.494	0.785	0.976	1.17	1.54	1.90	2.17	2.43	2.69	2.95	3.28	3.60	4.00	–	4.38	4.82	5.31
42.4	1.669	kg/m	0.528	0.839	1.04	1.25	1.65	2.04	2.32	2.61	2.89	3.16	3.52	3.87	4.25	–	4.68	5.14	5.71
		lb/ft	0.355	0.564	0.701	0.838	1.11	1.37	1.56	1.75	1.94	2.12	2.37	2.60	2.86	3.07	–	3.45	3.84
44.5	1.750	kg/m	0.554	0.881	1.10	1.31	1.73	2.14	2.45	2.74	3.04	3.33	3.71	4.08	4.49	–	4.94	5.43	6.04
		lb/ft	0.373	0.592	0.737	0.880	1.16	1.44	1.64	1.84	2.04	2.24	2.49	2.74	3.02	3.24	–	3.65	4.06
48.3	1.900	kg/m	0.603	0.958	1.19	1.42	1.88	2.33	2.67	2.99	3.32	3.64	4.05	4.46	4.91	–	5.42	5.96	6.64
		lb/ft	0.405	0.644	0.801	0.957	1.27	1.57	1.79	2.01	2.23	2.44	2.72	3.00	3.30	3.56	–	4.01	4.46
51	2.000	kg/m				1.50	1.99	2.47	2.82	3.17	3.51	3.85	4.29	4.73	5.21	–	5.76	6.33	7.05
		lb/ft				1.01	1.34	1.66	1.89	2.13	2.36	2.59	2.88	3.18	3.50	3.76	–	4.25	4.74

* To be maintained only while inch units are still in use.

TABLE 1 – Stainless austenitic steel tubes (*continued*)

Outside diameter		Thicknesses																
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
54	2.125	kg/m				1.60	2.11	2.62	3.00	3.37	3.73	4.10	4.57	5.04	5.56	–	6.13	6.76	7.54
		lb/ft				1.07	1.42	1.76	2.01	2.26	2.51	2.75	3.07	3.39	3.73	4.02	–	4.54	5.07
57	2.250	kg/m				1.69	2.24	2.78	3.18	3.57	3.96	4.35	4.85	5.35	5.90	–	6.51	7.19	8.03
		lb/ft				1.14	1.50	1.87	2.13	2.40	2.66	2.92	3.26	3.60	3.97	4.28	–	4.83	5.40
60.3	2.375	kg/m				1.79	2.37	2.94	3.36	3.78	4.20	4.61	5.15	5.68	6.26	–	6.92	7.64	8.54
		lb/ft				1.20	1.59	1.98	2.26	2.54	2.82	3.10	3.46	3.82	4.21	4.54	–	5.14	5.74
63.5	2.500	kg/m					2.50	3.10	3.55	3.99	4.43	4.86	5.44	6.00	6.62	–	7.32	8.09	9.05
		lb/ft					1.68	2.08	2.39	2.68	2.98	3.27	3.65	4.03	4.45	4.80	–	5.43	6.08
70	2.750	kg/m					2.76	3.43	3.92	4.41	4.90	5.38	6.02	6.65	7.34	–	8.14	8.98	10.1
		lb/ft					1.85	2.30	2.64	2.97	3.29	3.62	4.04	4.47	4.93	5.32	–	6.04	6.76
76.1	3.000	kg/m					3.01	3.74	4.28	4.82	5.36	5.89	6.58	7.28	8.04	–	8.90	9.85	11.0
		lb/ft					2.02	2.51	2.88	3.24	3.60	3.95	4.42	4.89	5.40	5.85	–	6.62	7.42
88.9	3.500	kg/m					3.52	4.38	5.02	5.66	6.29	6.91	7.74	8.56	9.47	–	10.5	11.6	13.1
		lb/ft					2.37	2.94	3.37	3.80	4.23	4.65	5.20	5.75	6.37	6.89	–	7.82	8.78
101.6	4.000	kg/m					4.03	5.02	5.76	6.49	7.22	7.94	8.90	9.84	10.9	–	12.1	13.4	15.1
		lb/ft					2.71	3.38	3.87	4.36	4.85	5.33	5.98	6.61	7.32	7.93	–	9.01	10.1
108	4.250	kg/m					4.29	5.34	6.13	6.91	7.68	8.45	9.47	10.5	11.6	–	12.9	14.3	16.1
		lb/ft					2.88	3.59	4.12	4.64	5.16	5.68	6.37	7.05	7.80	8.45	–	9.61	10.8
114.3	4.500	kg/m					4.55	5.66	6.50	7.32	8.15	8.96	10.0	11.1	12.3	–	13.7	15.2	17.1
		lb/ft					3.06	3.81	4.36	4.92	5.47	6.02	6.75	7.47	8.28	8.97	–	10.2	11.5
133	5.250	kg/m					5.31	6.62	7.59	8.56	9.53	10.5	11.8	13.0	14.4	–	16.0	17.8	20.1
		lb/ft					3.57	4.45	5.10	5.75	6.40	7.05	7.90	8.75	9.70	10.5	–	12.0	13.5
139.7	5.500	kg/m					5.57	6.94	7.97	8.99	10.0	11.0	12.4	13.7	15.2	–	16.9	18.7	21.1
		lb/ft					3.74	4.67	5.35	6.04	6.72	7.40	8.30	9.20	10.2	11.0	–	12.6	14.2
159	6.250	kg/m					6.35	7.91	9.08	10.2	11.4	12.6	14.1	15.6	17.3	–	19.3	21.4	24.1
		lb/ft					4.26	5.32	6.10	6.88	7.66	8.44	9.47	10.5	11.6	12.6	–	14.4	16.2
168.3	6.625	kg/m					6.73	8.39	9.63	10.9	12.1	13.3	14.9	16.6	18.4	–	20.4	22.7	25.6
		lb/ft					4.52	5.64	6.47	7.30	8.13	8.95	10.0	11.1	12.4	13.4	–	15.3	17.2
193.7	7.625	kg/m					7.75	9.67	11.1	12.5	14.0	15.4	17.3	19.1	21.2	–	23.6	26.3	29.7
		lb/ft					5.21	6.50	7.46	8.42	9.38	10.3	11.6	12.9	14.3	15.5	–	17.7	20.0

TABLE 1 – Stainless austenitic steel tubes (*concluded*)

Outside diameter		Thicknesses																
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
219.1	8.625	kg/m					8.78	10.9	12.6	14.2	15.8	17.4	19.6	21.7	24.1	–	26.8	29.8	33.7
		lb/ft					5.90	7.36	8.45	9.54	10.6	11.7	13.1	14.6	16.2	17.6	–	20.0	22.6
244.5	9.625	kg/m					9.80	12.2	14.0	15.9	17.7	19.5	21.9	24.3	26.9	–	30.0	33.4	37.7
		lb/ft					6.59	8.22	9.44	10.7	11.9	13.1	14.7	16.3	18.1	19.6	–	22.4	25.3
273	10.750	kg/m					11.0	13.7	15.7	17.7	19.8	21.8	24.5	27.1	30.1	–	33.5	37.3	42.2
		lb/ft					7.36	9.19	10.6	11.9	13.3	14.6	16.4	18.2	20.2	22.0	–	25.1	28.4
323.9	12.750	kg/m					13.0	16.2	18.7	21.1	23.5	25.9	29.1	32.3	35.8	–	39.9	44.4	50.3
		lb/ft					8.74	10.9	12.5	14.2	15.8	17.4	19.5	21.7	24.1	26.1	–	29.9	33.8
355.6	14.000	kg/m					14.3	17.8	20.5	23.1	25.8	28.4	32.0	35.5	39.4	–	43.9	48.9	55.3
		lb/ft					9.60	12.0	13.8	15.6	17.3	19.1	21.5	23.8	26.5	28.7	–	32.8	37.1
406.4	16.000	kg/m						20.4	23.4	26.5	29.5	32.5	36.6	40.6	45.1	–	50.2	56.0	63.3
		lb/ft						13.7	15.7	17.8	19.8	21.9	24.6	27.3	30.3	32.9	–	37.6	42.5
457.2	18.000	kg/m						23.0	26.4	29.8	33.2	36.6	41.2	45.7	50.8	–	56.6	63.1	71.4
		lb/ft						15.4	17.7	20.0	22.3	24.6	27.7	30.7	34.1	37.1	–	42.4	47.9
508	20.000	kg/m						25.5	29.3	33.1	36.9	40.7	45.8	50.8	56.5	–	63.0	70.2	79.4
		lb/ft						17.1	19.7	22.3	24.8	27.4	30.8	34.2	38.0	41.2	–	47.1	53.3
558.8	22.000	kg/m						28.1	32.3	36.5	40.7	44.8	50.4	56.0	62.2	–	69.3	77.3	87.4
		lb/ft						18.9	21.7	24.5	27.3	30.1	33.9	37.6	41.8	45.4	–	51.9	58.7
609.6	24.000	kg/m						30.6	35.2	39.8	44.4	48.9	55.0	61.1	67.9	–	75.7	84.3	95.5
		lb/ft						20.6	23.7	26.7	29.8	32.9	37.0	41.0	45.6	49.6	–	56.7	64.2

TABLE 2 – Stainless ferritic and martensitic steel tubes

Outside diameter		Thicknesses																
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
6	–	kg/m	0.067	0.101	0.125	0.140	0.171												
–	0.250*	lb/ft	0.048	0.073	0.088	0.102	0.125												
–	0.312*	lb/ft	0.061	0.094	0.115	0.133	0.167												
8	–	kg/m	0.091	0.140	0.170	0.198	0.249												
–	0.375*	lb/ft	0.075	0.115	0.141	0.165	0.209												
10	–	kg/m	0.115	0.179	0.219	0.257	0.327	0.389	0.430										
10.2	0.402	kg/m lb/ft	0.119 0.080	0.184 0.124	0.225 0.151	0.264 0.177	0.337 0.226	0.401 0.269	0.444 0.298										
12	–	kg/m	0.140	0.218	0.267	0.315	0.404	0.486	0.542										
–	0.500*	lb/ft	0.101	0.158	0.194	0.228	0.294	0.353	0.395										
13.5	0.531	kg/m lb/ft	0.159 0.107	0.248 0.167	0.306 0.205	0.361 0.242	0.465 0.313	0.562 0.377	0.629 0.423	0.692 0.465	0.750 0.504								
14	–	kg/m	0.164	0.257	0.316	0.373	0.482	0.583	0.654	0.720	0.782								
–	0.625*	lb/ft	0.127	0.200	0.246	0.291	0.378	0.459	0.516	0.570	0.621								
16	–	kg/m	0.188	0.295	0.364	0.431	0.560	0.680	0.765	0.846	0.923								
17.2	0.677	kg/m lb/ft	0.204 0.137	0.321 0.216	0.396 0.266	0.470 0.315	0.610 0.410	0.743 0.499	0.838 0.563	0.928 0.623	1.01 0.681	1.09 0.735							
18	–	kg/m	0.213	0.334	0.413	0.490	0.637	0.777	0.877	0.973	1.06	1.15							
19	0.750	kg/m lb/ft	0.227 0.152	0.357 0.240	0.441 0.296	0.523 0.352	0.682 0.458	0.833 0.559	0.940 0.632	1.04 0.701	1.14 0.768	1.24 0.831							
20	–	kg/m	0.237	0.373	0.461	0.548	0.715	0.875	0.989	1.10	1.20	1.31	1.43	1.55	1.69	–	1.82	1.96	2.10
21.3	0.840	kg/m lb/ft	0.255 0.171	0.402 0.270	0.497 0.334	0.591 0.397	0.772 0.519	0.945 0.635	1.07 0.719	1.19 0.799	1.31 0.877	1.42 0.952	1.56 1.05	1.69 1.14	1.83 1.23	– 1.31	1.98 –	2.13 1.43	2.30 1.55

* To be maintained only while inch units are still in use.

NOTE. – The 16 mm and 5/8 in (0.625 in) diameters were previously taken as corresponding values for hot-finished tubes but are not sufficiently close corresponding values for certain applications of precision tubes.

TABLE 2 – Stainless ferritic and martensitic steel tubes (*continued*)

Outside diameter		Thicknesses																
		mm	0.5	0.8	1.0	1.2	1.6	2	2.3	2.6	2.9	3.2	3.6	4	4.5	–	5	5.6	6.3
		in	0.020	0.032	0.040	0.048	0.064	0.080	0.092	0.104	0.116	0.128	0.144	0.160	0.176	0.192	–	0.219	0.250
mm	in	Conventional masses per unit length																	
22	–	kg/m	0.261	0.412	0.510	0.606	0.793	0.972	1.10	1.22	1.35	1.46	1.61	1.75	1.91	–	2.06	2.23	2.40
–	0.875*	lb/ft	0.180	0.284	0.351	0.418	0.546	0.669	0.758	0.844	0.926	1.01	1.11	1.20	1.29	1.38	–	1.51	1.64
25	–	kg/m	0.298	0.470	0.583	0.694	0.909	1.12	1.27	1.41	1.56	1.69	1.87	2.04	2.24	–	2.43	2.64	2.86
25.4	1.000	kg/m	0.305	0.481	0.597	0.711	0.931	1.14	1.30	1.45	1.60	1.74	1.92	2.09	2.28	–	2.48	2.69	2.93
		lb/ft	0.205	0.324	0.401	0.477	0.626	0.769	0.873	0.974	1.07	1.17	1.29	1.41	1.53	1.63	–	1.80	1.97
26.9	1.059	kg/m	0.323	0.511	0.634	0.755	0.990	1.22	1.38	1.54	1.70	1.85	2.05	2.24	2.44	–	2.66	2.89	3.16
		lb/ft	0.217	0.343	0.426	0.507	0.665	0.818	0.930	1.04	1.14	1.25	1.38	1.50	1.64	1.75	–	1.94	2.12
28	–	kg/m	0.334	0.529	0.656	0.781	1.03	1.26	1.44	1.60	1.77	1.93	2.13	2.33	2.57	–	2.79	3.05	3.32
30	–	kg/m	0.358	0.567	0.705	0.839	1.10	1.36	1.55	1.73	1.91	2.08	2.31	2.53	2.79	–	3.04	3.32	3.63
31.8	1.250	kg/m	0.383	0.606	0.753	0.898	1.18	1.46	1.66	1.86	2.05	2.24	2.48	2.72	2.97	–	3.26	3.55	3.91
		lb/ft	0.257	0.407	0.506	0.603	0.794	0.979	1.11	1.25	1.38	1.50	1.67	1.83	2.00	2.14	–	2.39	2.63
32	–	kg/m	0.383	0.606	0.753	0.898	1.18	1.46	1.66	1.86	2.05	2.24	2.48	2.72	3.01	–	3.28	3.59	3.93
33.7	1.327	kg/m	0.406	0.644	0.800	0.954	1.26	1.55	1.77	1.98	2.18	2.39	2.65	2.90	3.18	–	3.49	3.81	4.20
		lb/ft	0.273	0.433	0.538	0.641	0.844	1.04	1.19	1.33	1.47	1.60	1.78	1.95	2.14	2.29	–	2.56	2.83
35	–	kg/m	0.419	0.665	0.826	0.985	1.30	1.60	1.83	2.05	2.26	2.47	2.75	3.01	3.33	–	3.64	4.00	4.39
38	1.500	kg/m	0.459	0.729	0.907	1.08	1.43	1.76	2.01	2.25	2.49	2.73	3.03	3.33	3.66	–	4.01	4.40	4.87
		lb/ft	0.309	0.490	0.609	0.727	0.959	1.19	1.35	1.51	1.68	1.83	2.04	2.24	2.46	2.64	–	2.96	3.27
40	–	kg/m	0.480	0.762	0.947	1.13	1.49	1.85	2.11	2.36	2.61	2.86	3.18	3.50	3.88	–	4.25	4.68	5.16
42.4	1.669	kg/m	0.513	0.814	1.01	1.21	1.60	1.98	2.26	2.53	2.80	3.07	3.42	3.76	4.13	–	4.54	4.99	5.54
		lb/ft	0.345	0.547	0.681	0.813	1.07	1.33	1.52	1.70	1.88	2.06	2.30	2.52	2.77	2.98	–	3.35	3.72
44.5	1.750	kg/m	0.538	0.855	1.06	1.27	1.68	2.08	2.37	2.66	2.95	3.23	3.60	3.96	4.35	–	4.80	5.27	5.86
		lb/ft	0.362	0.575	0.715	0.854	1.13	1.40	1.59	1.79	1.98	2.17	2.42	2.66	2.93	3.15	–	3.54	3.94
48.3	1.900	kg/m	0.585	0.929	1.16	1.38	1.83	2.26	2.59	2.91	3.22	3.53	3.93	4.33	4.77	–	5.26	5.77	6.44
		lb/ft	0.393	0.625	0.777	0.929	1.23	1.52	1.74	1.95	2.16	2.37	2.64	2.91	3.20	3.45	–	3.89	4.33
51	2.000	kg/m				1.46	1.93	2.39	2.73	3.07	3.41	3.73	4.16	4.59	5.05	–	5.59	6.14	6.85
		lb/ft				0.981	1.30	1.61	1.84	2.06	2.29	2.51	2.80	3.08	3.40	3.65	–	4.13	4.60

* To be maintained only while inch units are still in use.