UDC 621.643.2-181 : 669.14

Ref. No. : ISO/R 65-1971 (E)

Revised.

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

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ISO RECOMMENDATION

R 65

STEEL TUBES

FOR GAS LIST THREADING

2nd EDITION

August 1971

This second edition supersedes the first edition

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 65, *Steel tubes for gas list threading*, 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 Draft ISO Recommendation No. 162, which was circulated to all the ISO Member Bodies for enquiry in April 1957.

The Draft has been approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Germany	Norway
Austria	Greece	Portugal
Belgium	Hungary	South Africa, Rep. of
Canada	India	Spain
Czechoslovakia	Ireland	Sweden
Denmark	Italy	Switzerland
Finland	Netherlands	United Kingdom
France	New Zealand	

No Member Body opposed the approval of the Draft.

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

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BRIEF HISTORY RELATING TO THE SECOND EDITION

A draft revision of this Recommendation was then studied by Technical Committee ISO/TC 5 and, in 1971, the P-Members of the Committee instructed the Secretariat to submit the Draft to the ISO Council under the abbreviated procedure provided for in clause F.7.1 of the Directives for the technical work of ISO.

This draft revision was then submitted by correspondence to the ISO Council which decided to accept it as the second edition of ISO Recommendation R 65.

ISO Recommendation | R 65 | August 1971

STEEL TUBES

FOR GAS LIST THREADING

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1. SCOPE

This ISO Recommendation establishes the dimensions and the characteristics of seamless and welded steel tubes for four separate series, namely :

(1) **heavy series :** for seamless and welded steel tubes.

(2) **medium series :** for seamless and welded steel tubes.

(3) **light series I :** for seamless and welded steel tubes.

(4) **light series II :** for welded steel tubes.

The dimensions in millimetres and in inches, given in the tables, are considered to be "corresponding values", although some of them are not exact equivalents. In all cases, however, the dimensions ensure practical interchangeability.

2. METHOD OF CALCULATION

The values of the masses per unit length, to at least five significant figures, have been calculated by the following formulae :

– for the metric system : $m = (D - a) \cdot a \cdot 0.024\,661\,5^{*}$ kg/m . . .(A)

– for the inch system : $m = (D - a) \cdot a \cdot 10.681\,42^{**}$ lb/ft . . .(B)

where

m is the mass per unit length;

D is the specified outside diameter;

a is the specified wall thickness.

The lb/ft value (B) is then converted to the kg/m value (C) by multiplying it by 1.4882.

The mean value in kg/m (D) $= \dfrac{(A) + (C)}{2}$

If this value does not differ by more than 1.5 % from either (A) or (C), the tube dimensions are considered to be "corresponding" and the value (D) is the agreed value for tubes of the dimensions concerned, whether these dimensions be metric or inch. The mean value in kg/m (D) is rounded to three significant figures.

The equivalent mean lb/ft value (E) is found by dividing the rounded value (D) by 1.4882. This value (E) is then rounded to three significant figures.

The values given in the tables are those of (D) and (E). If value (D) differs by more than 1.5 % from either (A) or (C), the tubes are shown in separate columns.

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* This coefficient takes into account a density equal to 7.85 kg/dm^3.

** This coefficient takes into account a density equal to 489.6 lb/ft^3.

3. HEAVY SERIES

3.1 Dimensions

TABLE 1

Nominal bore		Outside diameter Corresponding values				Wall thickness Corresponding values		Conventional mass			
		max.	min.	max.	min.			Plain-end tubes		Screwed and socketed tubes	
mm	in	mm	mm	in	in	mm	in	kg/m	lb/ft	kg/m	lb/ft
6	$\frac{1}{8}$	10.6	9.8	0.417	0.386	2.65	0.104	0.493	0.331	0.496	0.333
8	$\frac{1}{4}$	14.0	13.2	0.551	0.520	2.9	0.116	0.769	0.517	0.773	0.520
10	$\frac{3}{8}$	17.5	16.7	0.689	0.657	2.9	0.116	1.02	0.686	1.03	0.690
15	$\frac{1}{2}$	21.8	21.0	0.858	0.827	3.25	0.128	1.45	0.977	1.46	0.983
20	$\frac{3}{4}$	27.3	26.5	1.075	1.043	3.25	0.128	1.90	1.27	1.91	1.28
25	1	34.2	33.3	1.346	1.311	4.05	0.160	2.97	2.00	2.99	2.01
32	$1\frac{1}{4}$	42.9	42.0	1.689	1.654	4.05	0.160	3.84	2.58	3.87	2.60
40	$1\frac{1}{2}$	48.8	47.9	1.921	1.886	4.05	0.160	4.43	2.98	4.47	3.01
50	2	60.8	59.7	2.394	2.350	4.5	0.176	6.17	4.14	6.24	4.19
65	$2\frac{1}{2}$	76.6	75.3	3.016	2.965	4.5	0.176	7.90	5.31	8.02	5.39
80	3	89.5	88.0	3.524	3.465	4.85	0.192	10.1	6.76	10.3	6.87
100	4	115.0	113.1	4.528	4.453	5.4	0.212	14.4	9.71	14.7	9.91
125	5	140.8	138.5	5.543	5.453	5.4	0.212	17.8	12.0	18.3	12.3
150	6	166.5	163.9	6.555	6.453	5.4	0.212	21.2	14.3	21.8	14.7

3.2 Thread

In accordance with ISO Recommendation R 7, *Pipe threads for gas list tubes and screwed fittings, where pressure-tight joints are made on the threads (1/8 inch to 6 inches).*

3.3 Socket

Minimum length in accordance with ISO Recommendation R 50, *Steel sockets, screwed in accordance with ISO Recommendation R 7 – Minimum lengths.*

3.4 Tolerances on thickness

+ not limited.
− 12.5 %.
− 15 % on isolated areas, on a length not exceeding twice the outside diameter, provided this reduction in thickness affects only the external surface.

3.5 Tolerances on mass

± 10 % for each tube.
± 7.5 % per load of 10 t minimum.

3.6 Lengths

Unless otherwise specified, 4 to 7 m (corresponding values 13 to 23 ft).

3.7 Steel

To be defined in conjunction with Technical Committee ISO/TC 17, *Steel.*

3.8 Hydraulic test pressure

50 bar (corresponding value 700 lbf/in^2). (1 bar = 10^5 N/m^2.)

3.9 Application

The national Committees may lay down the limits of application for these tubes in accordance with the regulations in force in their country.

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4. MEDIUM SERIES

4.1 Dimensions

TABLE 2

Nominal bore		Outside diameter Corresponding values				Wall thickness Corresponding values		Conventional mass			
		max.	min.	max.	min.			Plain-end tubes		Screwed and socketed tubes	
mm	in	mm	mm	in	in	mm	in	kg/m	lb/ft	kg/m	lb/ft
6	$\frac{1}{8}$	10.6	9.8	0.417	0.386	2.0	0.080	0.407	0.273	0.410	0.275
8	$\frac{1}{4}$	14.0	13.2	0.551	0.520	2.35	0.092	0.650	0.437	0.654	0.440
10	$\frac{3}{8}$	17.5	16.7	0.689	0.657	2.35	0.092	0.852	0.573	0.858	0.577
15	$\frac{1}{2}$	21.8	21.0	0.858	0.827	2.65	0.104	1.22	0.822	1.23	0.828
20	$\frac{3}{4}$	27.3	26.5	1.075	1.043	2.65	0.104	1.58	1.06	1.59	1.07
25	1	34.2	33.3	1.346	1.311	3.25	0.128	2.44	1.64	2.46	1.65
32	$1\frac{1}{4}$	42.9	42.0	1.689	1.654	3.25	0.128	3.14	2.11	3.17	2.13
40	$1\frac{1}{2}$	48.8	47.9	1.921	1.886	3.25	0.128	3.61	2.43	3.65	2.46
50	2	60.8	59.7	2.394	2.350	3.65	0.144	5.10	3.42	5.17	3.47
65	$2\frac{1}{2}$	76.6	75.3	3.016	2.965	3.65	0.144	6.51	4.38	6.63	4.46
80	3	89.5	88.0	3.524	3.465	4.05	0.160	8.47	5.69	8.64	5.80
100	4	115.0	113.1	4.528	4.453	4.5	0.176	12.1	8.14	12.4	8.34
125	5	140.8	138.5	5.543	5.453	4.85	0.192	16.2	10.9	16.7	11.2
150	6	166.5	163.9	6.555	6.453	4.85	0.192	19.2	12.9	19.8	13.3

4.2 Thread

In accordance with ISO Recommendation R 7.

4.3 Socket

Minimum length in accordance with ISO Recommendation R 50.

4.4 Tolerances on thickness

+ not limited.
– 12.5 %.
– 15 % on isolated areas, on a length not exceeding twice the outside diameter, provided this reduction in thickness affects only the external surface.

4.5 Tolerances on mass

± 10 % for each tube.
± 7.5 % per load of 10 t minimum.

4.6 Lengths

Unless otherwise specified, 4 to 7 m (corresponding values 13 to 23 ft).

4.7 Steel

To be defined in conjunction with Technical Committee ISO/TC 17, *Steel.*

4.8 Hydraulic test pressure

50 bar (corresponding value 700 lbf/in^2). (1 bar = 10^5 N/m^2.)

4.9 Application

The national Committees may lay down the limits of application for these tubes in accordance with the regulations in force in their country.

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5. LIGHT SERIES I

5.1 Dimensions

TABLE 3

Nominal bore		Outside diameter Corresponding values				Wall thickness Corresponding values		Conventional mass			
		max.	min.	max.	min.			Plain-end tubes		Screwed and socketed tubes	
mm	in	mm	mm	in	in	mm	in	kg/m	lb/ft	kg/m	lb/ft
6	$\frac{1}{8}$	10.4	9.7	0.409	0.383	1.8	0.072	0.369	0.248	0.372	0.250
8	$\frac{1}{4}$	13.9	13.2	0.547	0.518	2.0	0.080	0.573	0.385	0.577	0.388
10	$\frac{3}{8}$	17.4	16.7	0.685	0.656	2.0	0.080	0.747	0.502	0.753	0.506
15	$\frac{1}{2}$	21.7	21.0	0.854	0.825	2.35	0.092	1.10	0.737	1.11	0.743
20	$\frac{3}{4}$	27.1	26.4	1.067	1.041	2.35	0.092	1.41	0.948	1.42	0.958
25	1	34.0	33.2	1.339	1.309	2.9	0.116	2.21	1.49	2.23	1.50
32	$1\frac{1}{4}$	42.7	41.9	1.681	1.650	2.9	0.116	2.84	1.91	2.87	1.93
40	$1\frac{1}{2}$	48.6	47.8	1.913	1.882	2.9	0.116	3.26	2.19	3.30	2.22
50	2	60.7	59.6	2.390	2.347	3.25	0.128	4.56	3.06	4.63	3.11
65	$2\frac{1}{2}$	76.3	75.2	3.004	2.960	3.25	0.128	5.81	3.90	5.93	3.98
80	3	89.4	87.9	3.520	3.460	3.65	0.144	7.65	5.14	7.82	5.25
100	4	114.9	113.0	4.524	4.450	4.05	0.160	11.0	7.39	11.3	7.59

5.2 Thread

In accordance with ISO Recommendation R 7.

5.3 Socket

Minimum length in accordance with ISO Recommendation R 50.

5.4 Tolerances on thickness

+ not limited.
– 12.5 %.
– 15 % on isolated areas, on a length not exceeding twice the outside diameter, provided this reduction in thickness affects only the external surface.

5.5 Tolerances on mass

± 10 % for each tube.
± 7.5 % per load of 10 t minimum.

5.6 Lengths

Unless otherwise specified, 4 to 7 m (corresponding values 13 to 23 ft).

5.7 Steel

To be defined in conjunction with Technical Committee ISO/TC 17, *Steel*.

5.8 Hydraulic test pressure

50 bar (corresponding value 700 lbf/in^2). (1 bar = 10^5 N/m^2.)

5.9 Application

The national Committees may lay down the limits of application for these tubes in accordance with the regulations in force in their country.

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