USSR STATE STANDARD

SQUARE STEEL PIPES

ASSORTMENT

GOST 8639-82

Official Edition

USSR STATE COMMITTEE USSR FOR STANDARDS
Moscow

UDC 669.14/.15-462 Group B62

USSR STATE STANDARD

SQUARE STEEL PIPES

Assortment

OKP (All-Union Product Classification Code) 13 1900
13 4400
13 5100
13 7300

GOST 8639-82

Term from 01.01.83
to 01.01.93

Failure to comply with this Standard will result in legal proceedings

1. This Standard applies to seamless, electrically welded hot-worked and cold-worked steel pipes, and electrically welded cold-worked steel pipes.

Indicators of technical level established by this Standard have been developed for pipes of premium quality.

(Amended Wording, Amendment No. 1).

2. The shape and dimensions of square pipes shall comply with the values stipulated in the figure and in table 1.

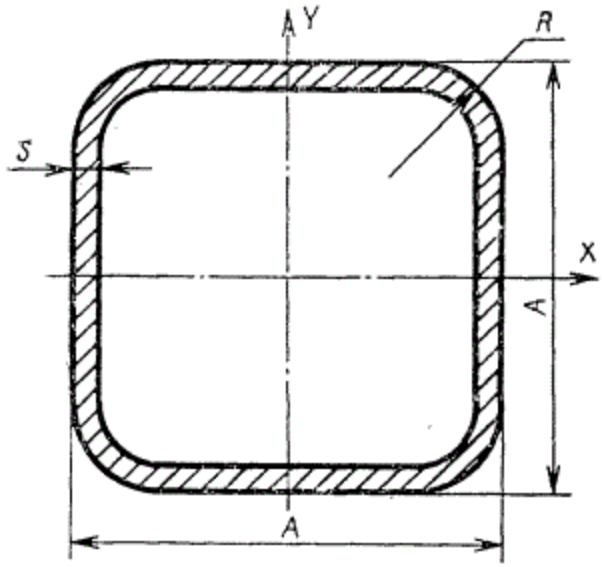

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Table 1

External dimension A, mm	Wall thickness s, mm	Cross-sectional area, cm^2	Weight of 1 m, kg	Moment of inertia, $cm^4 \approx$	Moment of resistance, $cm^3 \approx$
				$I_x = I_y$	$W_x = W_y$
10	1.0	0.343	0.269	0.0452	0.0904
15	1.0	0.543	0.426	0.176	0.233
	1.5	0.771	0.605	0.229	0.305
20	1.0	0.743	0.583	0.442	0.442
	1.5	1.071	0.841	0.600	0.600
	2.0	1.37	1.075	0.723	0.723
25	1.0	0.943	0.740	0.897	0.718
	1.5	1.37	1.07	1.24	0.996
	2.0	1.77	1.39	1.53	1.22
	2.5	2.14	1.68	1.77	1.41
	3.0	2.48	1.95	1.95	1.56
30	2.0	2.17	1.70	2.79	1.86
	2.5	2.64	2.07	3.27	2.18
	3.0	3.08	2.42	3.66	2.44
	3.5	3.50	2.75	3.98	2.65
	4.0	3.88	3.04	4.23	2.82
35	2.0	2.57	2.02	4.61	2.63
	2.5	3.14	2.46	5.44	3.11
	3.0	3.68	2.89	6.17	3.52
	3.5	4.20	3.30	6.78	3.88
	4.0	4.68	3.67	7.80	4.17
	5.0	5.57	4.37	8.05	4.60
40	2.0	2.97	2.33	7.07	3.53
	2.5	3.64	2.85	8.42	4.21
	3.0	4.28	3.36	9.61	4.81
	3.5	4.90	3.85	10.66	5.33
	4.0	5.48	4.30	11.57	5.79
	5.0	6.57	5.16	13.01	6.50
	6.0	7.54	5.92	13.96	6.98
42	3.0	4.52	3.55	11.80	5.38
	3.5	5.18	4.07	12.56	5.98
	4.0	5.80	4.56	13.67	6.51
	5.0	6.97	5.47	15.45	7.36
	6.0	8.02	6.30	16.69	7.95

Table 1 (cont.)

External dimension A, mm	Wall thickness s, mm	Cross-sectional area, cm^2	Weight of 1 m, kg	Moment of inertia, $cm^4 \approx$	Moment of resistance, $cm^3 \approx$
				$I_x=I_y$	$W_x=W_y$
45	3.0	4.88	3.83	14.15	6.29
	3.5	5.60	4.40	15.79	7.02
	4.0	6.28	4.93	17.25	7.67
	5.0	7.57	5.94	19.66	8.38
	6.0	8.74	6.86	21.42	9.52
	7.0	9.80	7.69	22.60	10.04
	8.0	10.74	8.43	23.23	10.33
50	3.0	5.48	4.31	19.93	7.97
	3.5	6.30	4.94	22.35	8.94
	4.0	7.08	5.56	24.54	9.82
	5.0	8.57	6.73	28.26	11.30
	6.0	9.94	7.80	31.15	12.46
	7.0	11.20	8.79	33.28	13.31
	8.0	12.34	9.69	34.70	13.88
60	3.5	7.70	6.04	40.44	13.48
	4.0	8.68	6.82	44.73	14.91
	5.0	10.57	8.30	52.30	17.43
	6.0	12.34	9.69	58.60	19.53
	7.0	14.00	11.00	63.71	21.24
	8.0	15.54	12.20	67.71	22.57
70	4.0	10.28	8.07	73.74	21.07
	5.0	12.57	9.87	87.12	24.89
	6.0	14.74	11.57	98.69	28.20
	7.0	16.80	13.19	108.56	31.02
	8.0	18.74	14.71	116.81	33.37
80	4.0	11.88	9.33	113.17	28.29
	5.0	14.57	11.44	134.73	33.68
	6.0	17.14	13.46	153.84	38.46
	7.0	19.60	15.38	170.63	42.66
	8.0	21.94	17.22	185.20	46.30
90	5.0	16.57	13.00	197.12	43.80
	6.0	19.54	15.34	226.44	50.32
	7.0	22.40	17.58	252.71	56.16
	8.0	25.14	19.73	276.08	61.35
100	6.0	21.94	17.22	318.89	63.78
	7.0	25.20	19.78	357.62	71.52
	8.0	28.34	22.25	392.65	78.53
	9.0	31.37	24.62	424.11	84.82

Table 1 (cont.)

External dimension A, mm	Wall thickness s, mm	Cross-sectional area, cm^2	Weight of 1 m, kg	Moment of inertia, cm^4	Moment of resistance, cm^3
				$I_x=I_y$	$W_x=W_y$
110	6.0	24.34	19.11	433.59	78.83
	7.0	28.00	21.98	488.14	88.75
	8.0	31.54	24.76	538.11	97.84
	9.0	34.97	27.45	583.63	106.11
120	6.0	26.74	20.99	572.94	95.49
	7.0	30.80	24.18	647.09	107.85
	8.0	34.74	27.27	715.66	119.28
	9.0	38.57	30.28	778.82	129.80
140	6.0	31.54	24.76	935.19	133.60
	7.0	36.40	28.57	1 061.44	151.63
	8.0	41.14	32.29	1 179.83	168.55
	9.0	45.77	35.93	1 290.58	184.37
150	7.0	39.20	30.77	1 322.44	176.32
	8.0	44.34	34.81	1 472.85	196.38
	9.0	49.37	38.75	1 614.37	215.25
	10.0	54.28	42.61	1 747.21	232.96
180	8.0	53.94	42.34	2 634.06	292.67
	9.0	60.17	47.23	2 900.49	322.28
	10.0	66.28	52.03	3 153.95	350.44
	12.0	78.17	61.36	3 623.01	402.56
	14.0	89.59	70.33	4 043.41	449.27
Pipes of specific dimensions					
32	4.0	4.20	3.30	5.33	3.33
36	4.0	4.84	3.80	8.05	4.47
40	2.0	2.97	2.33	7.07	3.54
65	6.0	13.54	10.63	76.91	23.66

Notes:
1. Weight has been calculated with a steel density of 7.85 g/cm^3.
2. Static characteristics of the pipes are designed for $R=1.5S$.

(Amended Wording, Amendment No. 1).

Examples of identification numbers

Pipes with an external diameter of 40 mm, wall 3 mm thick, length divisible by 1 250 mm, made from steel of grade 10, group B of GOST 113663-86:

$$\text{Труба}\ \frac{40\times40\times3\times1250кр\ ГОСТ\ 8639-82}{\text{В10}\ ГОСТ\ 13663\text{-}86}$$

As above, standard length of 6 000 mm:

$$Труба\ \frac{40\times40\times3\times6000м\ ГОСТ\ 8639-82}{В\ 10\ ГОСТ13663-82}$$

As above, non-standard length:

$$Труба\ \frac{40\times40\times3\ ГОСТ\ 8639-82}{В\ 10\ ГОСТ\ 13663-86}$$

3. Cold-worked pipes with external diameters from 10 to 120 mm, with walls from 1.0 to 8.0 mm thick, shall be produced. Hot-worked pipes with external diameters from 60 to 180 mm and with walls from 4.0 to 14.0 mm thick shall be produced, and electrically welded pipes with external diameters from 10 to 100 mm and with walls from 1.0 to 5.0 mm thick shall be produced.

(Amended Wording, Amendment No. 1).

4. Radius of rounding *R* shall not exceed 2 *s*.

Radius of rounding *R* shall not exceed 1.5*s* by agreement with the customer, and not exceed 3*s* for electrically welded pipes 60 x 60 x 4 mm in dimensions.

5. The following pipes shall be produced:

Non-standard lengths

Seamless hot-worked - from 4 to 12.5 m,

Seamless cold-worked and electrically-welded - from 1.5 to 9 m;

Standard lengths

Seamless hot-worked - from 4 to 12.5 m,

Seamless cold-worked - from 4.5 to 9 m,

Electrically welded - from 5 to 9 m.

Maximum deviation on general length: +100 mm;

Lengths divisible by the standard lengths

Seamless hot-worked - from 4 to 12.5 m with 5 mm allowance for each cut;

Electrically welded – of any multiple, not exceeding the lower limit established for pipes of standard length.

Table 2

Parameter description	Maximum deviation of pipe dimensions with the following production accuracy	
	standard	high
External dimensions:		
for seamless hot-worked pipes	±1.5 %	±1.25 %
for seamless cold-worked and welded pipes in sizes up to 30 mm	±0.3 mm	±0.25 mm
for seamless cold-worked and welded pipes from 30 to 50 mm	±0.4 mm	±0.3 mm
for seamless cold-worked, and welded pipes over 50 mm	±0.8 %	±0.8 %
Wall thickness:		
for hot-worked pipes	+12.5	+12.5
for cold-worked pipes (seamless and electrically-welded):	-15.0 %	-15.0 %
With wall thickness ≤ 3.5 mm	±12.5 %	±12.5 %
with wall thickness > 3.5 mm	±12.5 %	±10.0 %
for electrically-welded pipes	±10.0 %	±10.0 %
Concavity or convexity of the sides:		
for seamless hot-worked pipes with sides of the following dimensions:		
to 50 mm	0.75 mm	0.5 mm
over 50 to 70 mm	1.0 mm	0.8 mm
over 70 to 100 mm	1.5 mm	1.2 mm
over 100 mm	2.0 mm	1.3 mm
for seamless cold-worked and welded pipes with sides of the following dimensions:		
to 50 mm	0.5 mm	0.5 mm
over 50 to 70 mm	0.75 mm	0.5 mm
over 70 mm	1.0 mm	0.8 mm
Twisting of square and rectangular pipes:		
for electrically-welded and seamless hot-worked pipes, no more than	-	2° on 1 m
for cold-worked pipes	-	By agreement between the customer and manufacturer

The total length of pipes with divisible lengths shall not exceed the upper limit of pipes with a standard length. A 5 mm allowance shall be established for each multiple (if another allowances have not been stipulated in the customer's order) and shall be included in each multiple being ordered.

6. Maximum deviations of external dimensions, wall thickness, and side concavity shall not exceed the values stipulated in table 2.

5.6. **(Amended Wording, Amendment No. 1).**

7. Variations in wall thickness shall not take the wall above the maximum wall thickness deviation.

8. Deviation from a right angle in the pipe cross-section shall not exceed ± 1.5°.

9. Pipe curvature shall not exceed 2 mm for 1 m of length. Pipes may be produced without correction, and curvature standards not regulated at the customer's request.

10. **(Removed. Amendment No. 1).**

11. Technical requirements shall comply with GOST 13663-86.

DETAILS

1. DEVELOPED AND SUBMITTED by the USSR Ministry of Ferrous Metallurgy

DEVELOPERS

V. P. Sokurenko, Cand. Sci (Tech.), (Project Head); A. B. Petrushevskaya

2. APPROVED AND INTRODUCED by Decree No. 1529 of the USSR State Committee for Standards, dated 14.04.82

3. IN PLACE OF GOST 8639-68

4. REFERENCE DOCUMENTATION

Number of reference document referred to	Clause number
GOST 13663-86	2, 11

5. Term is extended until 01.01.93 by Decree No. 2330 of USSR Gosstandart, dated 24.06.87

6. Revised Edition (December 1988) with Amendment No. 1, approved in June 1987. IUS (Standards Information Catalog) 10-87.

Amendment No. 2 GOST 8639-82 Steel Square Pipes. Assortment.

Approved and introduced by Decree No. 3395, dated 17.11.89 of the USSR State Committee for Product Quality Management and Standards

Date of Introduction 01.04.90

Clause 1. Second paragraph shall be removed.

Examples of identification numbers, clause 11. Reference GOST 13663-68 shall be replaced with GOST 13663-86.

(IUS No. 2, 1990)

Group B62

Amendment No. 3 GOST 8639-82 Steel Square Pipes. Assortment.

Approved and introduced by Decree No. 1125, dated 07.09.92 of Gosstandart of Russia

Date of Introduction 01.02.93

Clause 1 shall be reworded as follows: "1. This Standard applies to electrically-welded seamless hot-worked and cold-worked steel pipes, and electrically-welded cold-worked steel pipes."

Clause 5. Values: "from 4.5 to 9 m" shall be replaced with "from 4.5 to 11 m"; "from 1.5 to 9 m" shall be replaced with "from 1.5 to 11 m."

A note shall be added to table 2 of clause 6: "Note. Pipes may be produced with biased allowances for the external dimensions and wall thickness by agreement between the customer and the manufacturer. The field value of the biased allowance shall not exceed the sum of the maximum deviations stipulated in table 2."

(IUS No. 12, 1992)