

STEEL WELDED PIPES FOR MAIN GAS-AND-OIL PIPELINES

STEEL WELDED PIPES FOR MAIN GAS-AND-OIL PIPELINES TECHNICAL DATA

GOST 20295-85

Dimensions, technical requirements, acceptance, testing, marking and packing

PIPE DIMENSIONS

STEEL GRADES

MECHANICAL PROPERTIES

WELD REQUIREMENTS

INSPECTION & TESTING

GOST 20295-85

Technical data navigation

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REFERENCE NOTE

Source dimensional values and footnotes are retained. Confirm the applicable material, grade, schedule and project specification before ordering.

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Group B62

U S S R S T A T E S T A N D A R D

**STEEL WELDED TUBE FOR MAIN
GAS-AND-OIL PIPELINES****GOST
20295-85**

Specifications

**In place of
GOST 20295-74**

OKP (All-Union Product Classification Code) 13 8101

Date of introduction set by Decree No. 3693, dated 25.11.85, of the USSR State Committee for Standards

from 01.01.87

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This Standard applies to steel welded straight-line-seam and spiral-seam pipes of 159 to 820 mm in diameter, used for construction of main gas-and-oil pipelines, oil-products pipelines, technological and field pipelines.

1. BASIC PARAMETERS AND DIMENSIONS

1.1. The pipes shall be manufactured in three types:

1 - straight-line-seam pipes of 159 to 426 mm in diameter, manufactured by resistance welding with aid of high-frequency currents;

2 - spiral-seam pipes of 159 to 820 mm in diameter, manufactured by electric arc welding;

3 - straight-line-seam pipes of 530 to 820 mm in diameter, manufactured by electric arc welding.

1.2. Depending on mechanical properties the pipes shall be manufactured in the following strength classes: K 34, K 38, K 42, K 50, K 52, K 55 and K 60.

1.3. The dimensions of pipes shall correspond to those specified in tab. 1.

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Table 1

Outside diameter, mm	Theoretical mass of 1 m pipe, kg, for wall thickness, mm							
	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
159	11.5	13.42	15.29	17.15	18.99	20.82	22.64	-
168	12.21	14.20	16.18	18.15	20.10	22.04	23.97	-
219	15.98	18.60	21.21	23.81	26.39	28.96	31.52	34.06
245	-	-	23.77	26.69	29.59	32.49	35.37	38.23
273	-	-	26.54	29.80	33.05	36.28	39.51	42.72
325	-	-	31.67	35.57	39.46	43.34	47.20	51.05
377	-	-	-	41.34	45.87	50.39	54.90	59.39
426	-	-	-	-	51.91	57.04	62.15	67.25
530	-	-	-	-	64.74	71.14	77.54	83.92
630	-	-	-	-	77.07	84.71	92.33	99.95
720	-	-	-	-	88.17	96.91	105.65	114.37
820	-	-	-	-	100.50	110.48	120.45	130.40

Table 1 (cont.)

Outside diameter, mm	Theoretical mass of 1 m pipe, kg, for wall thickness, mm							
	7.0	7.5	8.0	8.5	9.6	10	11	12
159	-	-	-	-	-	-	-	-
168	-	-	-	-	-	-	-	-
219	36.60	39.12	41.63	-	-	-	-	-
245	41.09	43.93	46.76	-	-	-	-	-
273	45.92	49.11	52.28	-	-	-	-	-
325	54.90	58.73	62.54	66.35	70.14	-	-	-
377	63.87	68.34	72.80	77.25	81.68	-	-	-
426	72.33	77.41	82.47	87.52	92.56	102.59	-	-
530	90.29	90.64	102.99	109.32	115.84	128.24	140.79	153.30
630	107.55	115.14	122.72	130.28	137.83	152.90	167.92	182.89
720	123.09	131.79	140.47	149.15	157.81	175.10	192.34	209.52
820	140.35	150.28	160.20	170.11	180.00	199.76	219.46	239.12

Notes:

1. The theoretical mass is determined by nominal dimensions (without taking into account the seam reinforcement) for steel density of 7.85 g/cm³.

2. As a result of the seam reinforcement the theoretical mass increases by 1.5 % when manufacturing the pipes of type 2, and increases by 1 % when manufacturing the pipes of type 3.

3. At the customer's request it is allowed to manufacture the pipes with intermediate wall thickness within the limits of tab. 1 with an interval of 0.1 mm.

1.4. The pipes shall be manufactured of 10.6 to 11.6 m long. Until January, 1, 1989 it is allowed to manufacture up to 15 % (by mass) of pipes of type 3 (hot-straightened) and up to 3 % (by mass) of pipes of type 1 no less than 5 m long. For pipes of types 1, 2 and expanded pipes of type 3 it is allowed to manufacture up to 10 % (by mass) of pipes no less than 8 m long.

1.5. The maximum deviations of outside pipe diameters shall correspond to those specified in tab. 2.

Table 2

mm	
Outside diameter	Maximum deviations
159 and 168	±1.5
Over 168 to 325 inclusive	±2.0
» 325 » 426 »	±2.2
» 426 » 630 »	±3.0
» 630 » 820 »	±4.0

At the customer's request the maximum deviations of an outside diameter for the pipes of type 2 of 159 to 377 mm in diameter shall correspond to those specified in tab. 3.

Table 3

mm	
Outside diameter	Maximum deviations
159 and 168	±1.2
Over 168 to 325 inclusive	±1.5
377	±2.0

1.6. The maximum deviations of an outside diameter for edges of pipes of type 1 shall correspond to those specified in table 2, and maximum deviations of an outside diameter for edges of pipes of type 2 with the diameter from 159 to 377 mm shall correspond to those specified in tables 2 and 3.

1.7. The maximum deviations of an outside diameter for edges of pipes of type 2 with the diameter of 530 mm and more and for edges of pipes of type 3 (expanded) shall not exceed ±2.0 mm for ordinary manufacturing accuracy and ±1.6 mm for heightened manufacturing accuracy.

Until January, 1, 1990 the maximum deviations of an outside diameter for edges of pipes of type 3 (hot-straightened) shall not exceed ±2.5 mm.

1.8. The maximum thickness deviations of pipe walls shall meet the tolerances for metal thickness, stipulated by GOST 19903-74 for maximum width of sheet and coiled steel.

1.9. The ovality of pipe edges shall not deviate their dimensions over the maximum deviations, specified in table 2 - for pipes of type 1, and specified in tables 2 and 3 - for pipes of type 2 with the diameter from 159 to 377 mm.

The ovality of edges for pipes of type 2 with the diameter of 530 mm and more and for pipes of type 3 shall not exceed 1 % from nominal outside diameter.

1.10. The curvature of pipes of type 1, except for the cross seam site, shall not exceed 1.5 mm per 1 m of length, and shall not exceed 1 mm per 1 m of length – at the customer's request.

The general curvature of pipes of all types shall not exceed 0.2 % of the pipe length. At the customer's request the general curvature of pipes of type 2 with the diameter of 530 mm and more shall not exceed 0.1 %, and for all other pipes it shall not exceed 0.15% of the pipe length.

1.11. The reinforcement height of all outer seams for pipes of types 2 and 3 shall be:
from 0.5 to 2.5 mm - for pipes with wall thickness less than 10 mm,
from 0.5 to 3.0 mm - for pipes with wall thickness of 10 mm and more.

The reinforcement height of inner seams shall be of no less than 0.5 mm. The saddle or separate deepenings to a level of the parent metal are allowed on the inner seam.

The inner seam reinforcement on the ends of expanded pipes of type 3, and also of thermally hardened pipes of type 2, shall be removed to the height of no more than 0.5 mm on the length of no less than 150 mm (without taking into account the displacement of edges). And in this case it is allowed to manufacture up to 7 % of pipes from a batch (from which the samples for mechanical tests are selected) with not removed weld seam reinforcement.

1.12. The height of an outside barb remainder on pipes of type 1 shall not exceed 1 mm. The inner barb shall not be removed.

1.13. In a welded joint of pipes of type 2 there shall be allowed the relative height displacement of edges up to 15 % of nominal wall thickness, and up to 10 % for the pipes of types 1 and 3.

At the customer's request, for pipes of type 2 with the diameter of 530 mm and more the deviation from theoretical circumference in the zone of a spiral seam at the pipe edges on a circular arc of no less than 100 mm long shall not exceed 1.5 mm.

1.14. The pipe ends shall be cut at the right angle. The maximum deviations from the right angle (cut obliquity) shall correspond to those specified in tab. 4.

1.15. The ends of pipes with wall thickness of 5 mm and more shall have a facet at an angle of 25 to 30°. And in this case the edge ring (blunting) of 1.0 to 3.0 mm wide shall be left.

Table 4

mm		
Outside diameter		Maximum deviations of cut obliquity
From 159	to 325 inclusive	1.0
Over 325	» 426 »	1.5
» 426	» 820 »	2.0

The edge ring increase by value of the seam reinforcement or inner barb height at a distance up to 40 mm on both sides of a seam is allowed.

At the customer's request it is allowed to manufacture the pipes with facets at another angle.

The value of the burr remainder shall not exceed 0.5 mm.

Examples of conventional designations

Pipe of type 3, 530 mm in diameter, with wall thickness of 8 mm, of strength class K 52, without heat treatment:

Труба mun 3-530×8-K 52 ГОСТ 20295-85

Pipe of type 2, 820 mm in diameter, with wall thickness of 12 mm, of strength class K 60, with thermal hardening:

Труба mun 2-Y 820×12-K 60 ГОСТ 20295-85

Pipe of type 1, 325 mm in diameter, with wall thickness of 7 mm, of strength class K 38, with volumetric heat treatment:

Труба mun 1-T 325×7-K 38 ГОСТ 20295-85

As above, but with local heat treatment of a seam:

Труба mun 1-ЛТ 325×7-K 38 ГОСТ 20295-85

2. TECHNICAL REQUIREMENTS

2.1. The pipes shall be manufactured pursuant to the requirements of this Standard under the technical regulations approved in accordance with the established procedure.

The pipes shall be made from hot-rolled or heat treated killed and semikilled carbon steel in accordance with GOST 380-88 and GOST 1050-88 with limitation of carbon mass fraction to no more than 0.24 % and from low alloyed steel pursuant to the requirements of tab. 5.

2.2. The steel grade shall be selected by the manufacturer of pipes taking into account the requirements for the norms of mechanical properties and limitations for maximum content of elements for carbon steel pursuant to GOST 380-71 and GOST 1050-74, and for low alloyed steel pursuant to GOST 19281-89.

2.3. The carbon equivalent for every tap of low-alloy steel shall not exceed 0.46 %.

Table 5

Table							
Type of pipe	Carbon steel			Low alloyed steel			
	strength class						
	K 34	K 38	K 42	K 50	K 52	K 55	K 60
1	+	-	+	-	-	-	-
2							
from 159 to 377 mm in diameter	+	+	+	-	-	-	-
from 530 to 820 mm in diameter	-	-	-	+	+	+	+
3	-	-	-	+	+	-	-

Notes:

1. The pipes of strength class K 60 shall be only thermally hardened.
2. Signs «+» and «-» mean the manufacturing and not manufacturing of pipes.

2.4. The pipes may be both heat treated (in their whole bulk or along the welded joint) and not heat treated pursuant to tab. 6.

Table 6

Type of pipe	Heat treated		Not heat treated
	in whole bulk	along welded joint	
1	+	+	—
2			+
from 159 to 377 mm in diameter	—	—	+
from 530 to 820 mm in diameter	+	+	+
3	+	—	+

Notes:

1. The expanded pipes of type 3 shall not be subjected to heat treatment.
2. Signs "+" and "-" mean the manufacturing and not manufacturing of pipes.

2.5. The mechanical properties of a parent metal of pipes depending on their strength class shall correspond to those specified in tab. 7.

2.6. The pipes of 219 mm and more in diameter with wall thickness of 6 mm and more shall pass the impact bending test.

2.6.1. The toughness of a parent metal of pipes shall be of no less than the norms specified in tab. 8.

2.6.2. For pipes of type 2 with the diameter of 820 mm of strength class K 60 and pipes of type 3 with the diameters of 720 and 820 mm the value of viscous component fraction of a parent metal of pipes at test temperature of -5°C shall be of no less than 50%. For pipes of type 3 the requirement shall be optional until January, 1, 1990.

Table 7

Strength class	Maximum load point, σ_B , N/mm ² (kgf/mm ²)	Yield strength σ_T , N/mm ² (kgf/mm ²)	Relative elongation δ_5 , %
	no less than		
K 34	333 (34)	206 (21)	24
K 38	372 (38)	235 (24)	22
K 42	412 (42)	245 (25)	21
K 50	485 (50)	343 (35)	20
K 52	510 (52)	353 (36)	20
K 55	539 (55)	372 (38)	20
K 60	588 (60)	412 (42)	16

Note. For pipes of types 2 and 3 of strength group from K 50 to K 55 inclusive the ceiling of maximum load point shall not exceed the minimum value more than by 118 N/mm^2 (12 kgf/mm^2), and for pipes of type 2 of strength class K 60 the same shall not exceed more than by 147 N/mm^2 (15 kgf/mm^2).

Table 8

Name of pipes	Toughness, J/cm ² (kgf·m/cm ²), no less than			
	KCU		KCV	
	at test temperature, °C			
	-40	-60	-5	-10
Pipes with diameter from 219 to 426 mm	29.4 (3)	-	-	-
Not heat treated pipes with diameter from 530 to 820 mm	29.4 (3)	-	-	-
Thermally hardened pipes of type 2 with diameter from 530 to 820 mm	39.2 (4)	39.2 (4)	-	-
Pipes of type 2 of strength class K 60 with diameter from 530 to 820 mm	39.2 (4)	39.2 (4)	29.4 (3)	29.4 (3)

2.7. The maximum load point of longitudinal and spiral welded joints shall be of no less than the norms specified in tab. 7.

2.8. The toughness of longitudinal and spiral welded pipe joints with the diameter from 530 to 820 mm shall be of no less than:

19.6 J/cm^2 ($2 \text{ kgf}\cdot\text{m/cm}^2$) - at test temperature -40°C for pipes of type 3;

29.4 J/cm^2 ($3 \text{ kgf}\cdot\text{m/cm}^2$) - at test temperature -40°C and -60°C for pipes of type 2.

2.9. The cracks, scabs, fissures, stratification and folds on the surface of a parent metal of pipes are not allowed.

Small dents, cratering and slag are allowed, if they do not deviate the wall thickness over the limits of minus deviations.

2.10. The redress of surface blemishes of a parent metal with aid of a welding is not allowed. It is allowed to redress the surface blemishes with aid of a scraping. But in this case the scraping traces shall not deviate the wall thickness of a pipe over the limits of minus deviations.

2.11. On pipes of all types there shall be allowed one transversal seam of the joint of rolls (butt seam except for pipes of type 1 with the diameters of 159 and 168 mm) and one circular seam (except for pipes of type 2 with the diameter of 159 to 377 mm) under condition of their check by non-destructive methods.

On pipes of type 2 the butt seam of two adjoining rolls shall be posed at a distance of no less than 300 mm from the pipe edge.

The arrangement of the butt seam on the pipe edge is allowed on condition of removal of the internal reinforcing bead on the pipe length of no less than 150 mm. The distance from the pipe end to a place of intersection of the roll butt seam and the pipe spiral seam shall be of no less than 300 mm.

2.12. In weld seams of pipes of types 2 and 3 there shall not be allowed the poor penetrations, flaws, cracks, slag inclusions and the pores, outcropping on the seam surface. There shall be allowed the cutting out or smelting out of a defective site with consequent patching, and also the redress with aid of scraping or welding.

For pipes of types 2 and 3 the overall length of sites, redressed by cutting out or smelting out with consequent patching, shall not exceed 10 % of a welded joint length. At the customer's request the overall length of the redressed sites for pipes of type 3 shall make no more than 8 % of the welded joint length.

The length of seam sites, redressed by welding, for the pipes subjected to posterior thermal hardening, shall not exceed 15 % of overall length of welded seams. The end sites of the seams, welded with application of a supplementary arch, shall not be considered as the sites that have passed the redressing.

The repeated redress by welding of the given site and redress on both sides of the welded seam in one cross-section are not allowed.

The sites of welded joints of pipes after their redress shall be subjected to non-destructive check and to repeated

hydrotest, if the redressing is carried out after hydraulic pressure test.

2.13. In welded joints of pipes of types 2 and 3 there shall be a gradient junction from a seam to a parent metal.

The undercuts up to 0.5 mm deep, undercuts from 0.5 to 0.8 mm deep up to 50 mm long, traces of metal shrinkage along the seam axis (sinks), and also other surface defects, which are not deviating the reinforcement height over the limits of minimum seam height, are allowed without redressing. The coincidence of undercuts in one pipe cross-section along the outside and inside seams is not allowed.

For pipes of type 3 the starting sites of seams and end craters shall be removed. There shall be allowed the rewelding of craters, arising after termination and renewal of welding. The termination of welding of seams with application of a supplementary arch is allowed.

The welding redress of no more than three cracks with overall length of no more than 500 mm is allowed. The length of a separate site redressed by welding shall be of no less than 50 mm. The welding redress of seam defects on pipes after their expanding and thermostrengthening is not allowed.

2.14. The welded seams (longitudinal, spiral, and also transversal and circular) shall withstand the non-destructive checks. And in this case the norms of allowed defects shall be stipulated by specifications and technical documentation.

2.15. At butt ends of pipes of type 2 of strength classes K 55 and K 60 there shall be allowed the axial chemical heterogeneity (segregation zone) within the limits of norms, stipulated by specifications and technical documentation.

2.16. The pipes shall withstand the test hydraulic pressure, determined in accordance with GOST 3845-75, taking into account the axial backwater. And in this case the permissible stress shall be accepted equal to 0.95 of the normative value of metal yield strength indicated in tab. 7. Until January, 1, 1988 the permissible stress shall be taken equal to 0.90 of the normative yield strength; for the pipes of 273 mm and less in diameter the value of hydraulic test pressure shall not exceed 12 N/mm^2 (120 kgf/cm^2).

3. ACCEPTANCE PROCEDURES

3.1. The pipes shall be accepted batchwise. The batch shall consist of pipes of one dimension, one steel grade, one strength class, one kind of heat treatment and be accompanied by one quality certificate containing:

- name of the manufacturer and brand mark;
- type of a pipe;
- nominal dimensions of pipes;
- strength class and steel grade;
- number of a pipe (for pipes of 530 mm and more in diameter made from low-alloyed steel grades) and number of a batch;
- results of mechanical tests of a parent metal and welded joint;
- number of a tap, chemical composition and carbon equivalent according to data of manufacturer of metal for the pipes of 530 mm and more in diameter made from low-alloyed steel grades;
- steel grade and number of the standard for steel for pipes made from carbon steels;
- equivalent actual value of hydraulic pressure without taking into account the axial backwater;
- state of pipes' metal (heat treated in the whole bulk or along the welded seam, or without heat treatment);
- note about conducting of non-destructive check;
- number of this Standard;
- State Quality Symbol for premium pipes.

The batch quantity of pipes with the diameter of 530 mm and more shall not exceed 100 pcs; and the same with the diameter of less than 530 mm shall not exceed 200 pcs.

3.2. One pipe from a batch shall be taken for testing where disputes arise over the evaluation of chemical composition of low-alloyed steel grades.

3.3. Each pipe from a batch shall be subjected to the control of its surface and dimensions, to hydraulic pressure testing and to non-destructive check of welded seams.

3.4. The following quantity of pipes shall be selected for quality control of parent metal:

- two pipes from a batch of pipes of types 1 and 2 of 159 to 426 mm in diameter;

two pipes from each tap, included in a batch of pipes of types 2 and 3 of 530 to 820 mm in diameter (except for the taps tested earlier).

The quality control of a welded joint shall be carried out on two pipes from a batch from among selected for testing of a parent metal.

3.5. The toughness of a parent metal and welded joint at test temperature of -60°C and -10°C , and also the viscous component fraction shall be determined at the customer's request.

3.6. The control of axial chemical heterogeneity (segregation zone) of pipes of type 2 shall be carried out on two pipes from a tap.

3.7. If unsatisfactory test results are obtained for even one of the parameters, a re-testing shall be performed on double the number of samples taken from the same batch or tap.

The results of the re-testing shall be assigned to the entire batch or tap.

4. TEST METHODS

4.1. From each pipe, selected for quality control of a parent metal, there shall be cut: one template of a parent metal for making of one tensile-test sample and three samples for impact bending test for each test temperature;

one template of a parent metal for making of two samples for testing the viscous component fraction.

From each pipe, selected for testing of a welded joint, there shall be cut one template of the welded joint for making of one tensile-test sample and three samples for impact bending test.

There shall be allowed the straightening of billets intended for samples with application of a static load.

On samples, intended for impact bending test of a parent metal, there shall be allowed the residues of blackness from rolling on both surfaces, perpendicular to a cut axis.

The test portions for analysis of steel chemical composition shall be selected in accordance with GOST 7565-81 from one of templates of a parent metal.

4.2. The chemical composition of steel shall be checked up in accordance with GOST 22536.0-87, GOST 22536.14-88 or GOST 12344-88, GOST 12345-88, GOST 12346-78, GOST 12347-77, GOST 12348-78, GOST 12349-83, GOST 12350-78, GOST 12353-78, GOST 12354-81, GOST 12355-78, GOST 12356-81, GOST 12357-84, GOST 12358-82, GOST 12359-81, GOST 12360-82, GOST 12361-82, GOST 12362-79, GOST 12363-79, GOST 12364-84 and GOST 12365-84.

4.3. The outside diameter of pipes (D), in mm, shall be determined by measuring of a perimeter with subsequent recalculation using the formula

$$D = \frac{P}{3.1416} - 2\Delta p - 0.2$$

Where P – is the girth, in mm;

Δp – is the measuring tape thickness, in mm.

It is allowed to check the pipes of 426 mm and less in diameter by direct measuring of diameter.

4.4. The ovality of butt ends of pipes shall be determined as the ratio of a difference of the greatest and least diameters in one cross-section to nominal outside diameter.

The ovality measuring shall not be carried out in the welded seam zone.

4.5. The carbon equivalent of each tap (Θ), in %, shall be calculated using the formula

$$\Theta = C + \frac{Mn}{6} + \frac{V + Cr}{5}$$

Where C , Mn , V , Cr – are the mass fractions of carbon, manganese, vanadium and chromium, which are included in steel grade designation, in %.

4.6. The inspection of pipes surface shall be carried out visually. The depth of defects shall be checked up by notching or in another way. The wall thickness in a place of scraping shall be determined by a method of measuring of wall thickness on pipe ends with subsequent subtraction of the defect depth.

4.7. The following tools and methods shall be used for conducting measurements of a pipe:

perimeter shall be measured by a measuring tape in accordance with GOST 7502-89;

diameter shall be measured by a clamp in accordance with GOST 18360-93, GOST 18365-93, GOST 2216-84 or by a caliper in accordance with GOST 166-89;

ovality shall be measured by a clamp in accordance with GOST 18360-93, GOST 18365-93, GOST 2216-84 or by a caliper in accordance with GOST 166-89, or by a measuring tape in accordance with GOST 7502-80;

length shall be measured by a measuring tape in accordance with GOST 7502-89 or by automated means of measurement in accordance with specifications and technical documentation;

wall thickness shall be measured by a micrometer in accordance with GOST 6507-90, by a wall-meter in accordance with GOST 11358-89, by a thickness meter in accordance with GOST 11358-89;

curvature per 1 m of length shall be measured by a ruler in accordance with GOST 8026-92 and by a probe in accordance with specifications and technical documentation;

total curvature shall be measured in accordance with specifications and technical documentation;

displacement of edges shall be measured by the device in accordance with specifications and technical documentation or by a slide depth gage in accordance with GOST 162-90;

cut obliquity shall be provided by design of the equipment for facing of pipes;

deviation from the circumference shall be measured by a template in accordance with specifications and technical documentation;

defect depth in a place of scraping shall be measured by a slide depth gage in accordance with GOST 162-90;

end ring on pipe ends (blunting) shall be measured by a ruler in accordance with GOST 427-75;

chamfer angle of a facet shall be measured by an angle meter in accordance with GOST 5378-88.

4.8. The tensile test of a parent metal for pipes of type 1, and also type 2 of 159 to 377 mm in diameter shall be carried out on longitudinal, in relation to the pipe axis, fivefold samples in accordance with GOST 10006-80, selected on the perimeter site, located at an angle of 90° to a welded seam.

The tensile test of a parent metal for pipes of types 2 and 3 of 530 mm and more in diameter shall be carried out in accordance with GOST 10006-80 on flat transversal fivefold samples. The sampling shall be carried out in accordance with GOST 7564-73.

The samples for testing of pipes of type 2 shall be selected perpendicularly to the pipe axis.

4.9. The impact bending test of a parent metal of pipes shall be carried out in accordance with GOST 9454-78 on samples, cut out perpendicularly to the pipe axis.

The tests shall be carried out on samples of types 1 and 11 for wall thickness more than 10 mm, on samples of types 2 and 12 or 3 and 13 for wall thickness 10 mm and less.

The toughness shall be determined as the arithmetical mean value of tests results of three samples. On one of the samples there shall be allowed the lowering of toughness by 9.8 J/cm^2 ($1 \text{ kgf}\cdot\text{m/cm}^2$).

4.10. The tensile test of a welded joint of pipes shall be conducted in accordance with GOST 6996-66 on transversal flat samples of type XII with removed reinforcement.

For pipes of type I it is allowed to conduct the tensile test of a welded joint on ring samples in accordance with specifications and technical documentation;

The samples for welded joint testing shall be selected perpendicularly to a seam.

4.11. The samples of type VI in accordance with GOST 6996-66 for wall thickness of 11 mm and more and samples of type VII for wall thickness from 6 to 11 mm shall be selected perpendicularly to a seam for impact bending test of welded joint metal.

The notch on impact samples for pipes of types 2 and 3 shall be executed along the seam fusion line, welded latest, perpendicularly to rolling surface of metal.

4.12. The test for determination of viscous component fraction shall be carried out in accordance with specifications and technical documentation on samples of type DWTT with a milled notch.

The viscous component fraction shall be determined as arithmetic mean value of test results of two samples. On one of the samples there shall be allowed the lowering of toughness by 10 %.

4.13. The control of pipe welded seams shall be carried out by non-destructive methods in accordance with specifications and technical documentation.

4.14. The control of axial chemical heterogeneity (segregation zone) shall be carried out in accordance with specifications and technical documentation.

4.15. The hydraulic pressure test shall be carried out in accordance with GOST 3845-75 with keeping under pressure for no less than 10 seconds for pipes with the diameter less than 530 mm and 20 seconds for pipes with the diameter of 530 mm and more. The pipes manufactured by a docking of two pipes, which had passed earlier the pressure test, shall not be subjected to hydraulic pressure test.

5. MARKING, PACKING, TRANSPORTATION AND STORAGE

5.1. On each pipe at a distance of 100 to 1 500 mm from one of its end there shall be the stamped mark with indication of:

brand mark or name of the manufacturer and its brand mark; it is allowed to indicate a conventional designation instead of the brand mark;

steel grade or its conventional designation;

number of a pipe or number of a batch, or number of a pipe in a batch;

mark of technical control;

year of manufacture.

The stamping site shall be legibly marked with a paint.

The affixing of marking with indelible paint is allowed for pipes of type 1 instead of stamping.

On inside surface of pipes with the diameter of 530 mm and more there shall be legibly affixed with a paint: steel grade, number of a batch, number of a pipe, nominal dimensions for diameter, wall thickness and pipe length. It is allowed to affix other data by agreement between the manufacturer and the customer.

5.2. The packing, transportation and storage of pipes shall be carried out pursuant to the requirements of GOST 10692-80.

Send your requirement

Send a drawing, product list, size, material grade, standard, schedule or wall thickness, testing and project document requirements.

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RESPONSE AND DOCUMENT COORDINATION

Initial enquiries are answered within 24 hours, including weekends, by email or WhatsApp. Drawing review, material/standard matching and project document requirements can be discussed and organized with the buyer. Third-party inspection can be buyer-nominated or coordinated on request.

ADDRESS

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