

ΟΔΟΑΥ ΑΑΝΘΥ ΑΙ ΟΑ ΑΕΒ ΕΤ ΟΕΤ Α Ε ΟΔΟΑΥ Ι ΔΥ ΑΤ ΑΤ Α Ι Τ ΟΟ 14-3-460-03
 è ΟΟ 14-3ð-55-2001
 Seamless pipes for boilers and pipelines made to TU 14-3-460-2003 and TU 14-3r-55-2001

Οδοαυ τ δετ αι γρονυ αεγ ι αδι αυο ετ δετ α ε οδοαυ ι δι αι α τ, ονοαι ι αι ε η αυνι εετ ε ε ηααοοεθεοε-αηεετ ε ι αδατ αοδατ ε ι αδα εç εαοατ ι ε, ετ ααι ι ε, ι δι οτ -αι ι τ ε ε ηααοεαι ι τ ε çαατ οτ αεε εç οαεαδι αενοου ε εααεοτ ααι ι ουο ι αδι ε ηοαεε.
 The pipes are used for steam boilers and pipelines, installations with high and supercritical steam parameters made of rolled, forged, turned, and bored half-finished products of carbon and alloyed steel.

Οετ ε-αηεεε ηι ηοαα
 Chemical composition

Steel grade	Steel chemical composition, pct										
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Άδοαεά Another
	fá aifeáá / not more										
20	0,17-0,24	0,17-0,37	0,35-0,65	0,030	0,025	0,30	0,25	<0,25	-	-	-
15ΑΝ	0,12-0,18	0,70-1,00	0,90-1,30	0,035	0,025	0,30	0,30	<0,30	-	-	-
150I	0,10-0,15	0,17-0,37	0,40-0,70	0,035	0,025	0,20	0,25	0,80-1,10	0,40-0,55	-	-
1201I O	0,10-0,15	0,17-0,37	0,40-0,70	0,025	0,025	0,20	0,25	0,90-1,20	0,25-0,35	0,15-0,30	-
1501I 1O	0,10-0,15	0,17-0,37	0,40-0,70	0,025	0,025	0,25	0,25	1,10-1,40	0,90-1,10	0,20-0,35	-
1202I ONB	0,08-0,15	0,40-0,70	0,40-0,70	0,025	0,025	0,25	0,25	1,60-1,90	0,50-0,70	0,20-0,35	B 0,002-0,005
12011A2I O	0,09-0,14	0,50	0,50-0,80	0,025	0,025	0,30	0,60	10,00-12,00	0,60-0,90	0,15-0,30	W 1,7-2,2

Αεετ α αι δυ-αααοτ δι εδι ααι ι ουο οδοα τ ο 4 αι 12 ι .
 Αεετ α οτ ετ αι τ ααοτ δι εδι ααι ι ουο οδοα αι 9 ι .
 Εα-αηοαι οδοα ετ ι οδι εεδοαοηυ ι δεαι δαι ε ΟÇΕ.
 Length of hot-worked pipes is from 4 to 12 m.
 Length of cold-worked pipes is up to 9 m.
 Ultrasonic control is used to assure quality pipes.

Νι οδοαι αι ο ααδτ ι δι ι ουο οτ ετ αι τ ααοτ δι εδι ααι ι ουο οδοα ι τ ΟΟ 14-3-460-2003 (ΟΟ 14-3ð-55-2001)
 Assortment of high-temperature cold-worked pipes according to TU 14-3-460-2003 (OU 14-3R-55-2001)

External diameter, mm	Wall thickness, mm																			
	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	8,5	9,0	9,5	10,0	11,0	12,0	13,0
	f á aña 1 i áoða, éa / Weight of 1 meter, kg																			
12	0,493	0,586	0,666																	
16	0,691	0,832	0,962	1,079	1,184															
20	0,888	1,079	1,258	1,424	1,578															
22	0,986	1,202	1,406	1,597	1,776															
25	1,134	1,387	1,628	1,856	2,072	2,275	2,466													
28	1,282	1,572	1,850	2,115	2,368	2,608	2,836													
30	1,381	1,695	1,998	2,287	2,565	2,830	3,083	3,323	3,551											
32	1,480	1,819	2,146	2,460	2,762	3,052	3,329	3,594	3,847	4,088	4,316	4,532	4,735							
36	1,677	2,065	2,441	2,805	3,157	3,496	3,823	4,137	4,439	4,729	5,006	5,271	5,524							
38	1,776	2,189	2,589	2,978	3,354	3,718	4,069	4,408	4,735	5,049	5,352	5,641	5,919	6,184	6,437					
40		2,312	2,737	3,151	3,551	3,940	4,316	4,680	5,031	5,370	5,697	6,011	6,313	6,603	6,881	7,146	7,398			
42		2,435	2,885	3,323	3,749	4,162	4,562	4,951	5,327	5,691	6,042	6,381	6,708	7,022	7,324	7,614	7,892			
45		2,620	3,107	3,582	4,044	4,495	4,932	5,358	5,771	6,172	6,560	6,936	7,300	7,651	7,990	8,317	8,632			
48		2,805	3,329	3,841	4,340	4,827	5,302	5,765	6,215	6,652	7,078	7,491	7,892	8,280	8,656	9,020	9,371			
50		2,929	3,477	4,014	4,538	5,049	5,549	6,036	6,511	6,973	7,423	7,861	8,286	8,699	9,100	9,489	9,865	10,580		
51		2,990	3,551	4,100	4,636	5,160	5,672	6,172	6,659	7,133	7,596	8,046	8,484	8,909	9,322	9,723	10,111	10,851	11,542	
54		3,175	3,773	4,359	4,932	5,493	6,042	6,578	7,103	7,614	8,114	8,601	9,075	9,538	9,988	10,426	10,851	11,665	12,429	
55		3,237	3,847	4,445	5,031	5,604	6,165	6,714	7,250	7,775	8,286	8,786	9,273	9,747	10,210	10,660	11,098	11,936	12,725	
57		3,360	3,995	4,618	5,228	5,826	6,412	6,985	7,546	8,095	8,632	9,156	9,667	10,167	10,654	11,129	11,591	12,479	13,317	
60		3,545	4,217	4,877	5,524	6,159	6,782	7,392	7,990	8,576	9,149	9,710	10,259	10,796	11,320	11,831	12,331	13,293	14,205	
63			4,439	5,136	5,820	6,492	7,152	7,799	8,434	9,057	9,667	10,265	10,851	11,424	11,985	12,534	13,071	14,106	15,093	
70			4,957	5,740	6,511	7,269	8,015	8,749	9,470	10,179	10,876	11,560	12,232	12,892	13,539	14,174	14,797	16,005	17,164	18,274
76									10,358	11,141	11,912	12,670	13,416	14,150	14,871	15,580	16,277	17,633	18,940	20,198

Ι αοαι ε-αηεεα ηαι εηοαα
 Mechanical properties

Steel grade	Ultimate rupture strength, MPa	Yield strength, MPa	Elongation, pct	Contraction, pct	Impact elasticity, MJ/m ²
20	412-549	216	24	45	0,5
15ΑΝ	f á i áf áá 490 / not less 490	294	18	45	0,6
150I	441-637	235	21	50	0,6
1201I O	441-637	274	21	55	0,6
1501I 1O	490-686	314	18	50	0,5
12X2I ONB	f á i áf áá 470 / not less 470	274	21	-	-
12011A2I O	f á i áf áá 588 / not less 588	392	18	-	-

Ατ ι οηεααι οα ι οεετ ι ατ εγ ι τ δαçι αδατ
 Permissible deviations in dimensions

	f á i áf áá / By external diameter		Deviation by wall thickness, %
	áeai áoð, i i / diameter, mm	τ οεετ ι ατ εγ ι τ / deviation	
cold-worked pipes	áτ 30 / up to 30 τ ο 30 áτ 50 / from 30 to 50 ηάουα 50 / over 50	±0,3 i i ±0,4 i i ±1%	±10
hot-worked pipes	áτ áeai áoða 108 áeé. up to diameter 108 incl.	±1,0%	+15 -10
	τ ο 114 ε áτ εάα over 114		+20 -5

Νι οδοαι αι ο αι δυ-αααοτ δι εδι ααι ι ουο οδοα ι τ ΟΟ 14-3-460-2003 (ΟΟ 14-3ð-55-2001)
 Assortment hot-worked pipes according to TU 14-3-460-2003 (OU 14-3R-55-2001)

External diameter, mm	Wall thickness, mm										
	6,0	6,5	7,0	7,5	8,0	8,5	9,0	9,5	10,0	11,0	12,0
	f á aña 1 i áoða, éa / Weight of 1 meter, kg										
83	11,394	12,263	13,120	13,965	14,797	15,617	16,425	17,220	18,003	19,532	21,012
89	12,281	13,225	14,156	15,074	15,981	16,875	17,756	18,626	19,483	21,160	22,787
102	14,205	15,309	16,400	17,479	18,545	19,600	20,642	21,671	22,689	24,686	26,634
108	15,093	16,270	17,436	18,589	19,729	20,857	21,973	23,077	24,168	26,314	28,410
114	15,981	17,232	18,471	19,698	20,913	22,115	23,305	24,483	25,648	27,941	30,186
133	18,792	20,278	21,751	23,213	24,662	26,098	27,522	28,934	30,334	33,096	35,809
140	19,828	21,400	22,960	24,507	26,043	27,565	29,076	30,574	32,060	34,995	37,880
159	22,639	24,446	26,240	28,022	29,791	31,548	33,293	35,025	36,746	40,149	43,503

External diameter, mm	Wall thickness, mm									
	13,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0	21,0	22,0
	f á aña 1 i áoða, éa / Weight of 1 meter, kg									
83	22,442	23,823								
89	24,366	25,895								
102	28,533	30,383	32,183	33,934						
108	30,457	32,455	34,403	36,302						
114	32,381	34,526	36,622	38,669	40,667	42,615				
133	38,472	41,086	43,651	46,166	48,632	51,049	53,417	55,735	58,004	60,223
140	40,716	43,503	46,240	48,928	51,567	54,157	56,697	59,188	61,629	64,021