



SEAMLESS PRECISION STEEL TUBES

1. Standards

EN10305-1

DIN 2391 (has been replaced with EN 10305-1)

STAS 530/1

2. Used

In mechanical and automotive industries.

3. Dimensions, Tolerances

- Precision steel tubes DIN 2391 and EN 10305-1 according Tab.1;
- Precision steel tubes for honing according Tab.2.

4. Chemical Composition (%)

Steel Group	C	Si	Mn	P max	S max	V
St35, E235, OLT35	max 0.17	max 0.35	min 0.40	0.025	0.025	
St45, OLT45	max 0.21	max 0.35	min 0.40	0.025	0.025	
St52, E355, OL52.3k	max 0.22	max 0.55	max 1.60	0.025	0.025	
E410, STE460	0.16±0.22	0.10±0.50	1.30±1.70	0.030	0.035	0.08±0.15

5. Mechanical Properties

Steel Group	delivery cond.	Tensile Strength	Yield Limit	Elongation
		N/mm ²	N/mm ²	%
St35, E235, OLT35	BK (+C)	min 480	-	min 6
	BKS(+SR)	min 420	min 350	min 16
	NBK (+N)	340±480	min 235	min 25
St45, OLT45	BK (+C)	min 580	-	min 5
	BKS(+SR)	min 520	min 375	min 12
	NBK (+N)	440±570	min 255	min 21
St52, E355, OL52.3k	BK (+C)	min 640	-	min 4
	BKS(+SR)	min 580	min 450	min 10
	NBK (+N)	490±630	min 355	min 22
E410, STE460	BKS	min 690	min 590	min 12
	+N	550±700	min 410	min 22

6. Lengths

- Random lengths: 6±9 m or 8±11 m;
- Fixed lengths within the random lengths range;
- Tolerances: +100/-0 mm.

7. Protection

- Unprotected;
- External varnished with black or clear lacquer;
- If required, the tubes can be delivered with plastic caps at both ends;
- Oiled.

8. Marking

The tubes will have technical details marked on tags attached to every bundle.
According to standard or per customer request.

9. Delivery

Bundles up to 2000 kg.

Quantity tolerances: $\pm 5\%$ per size or / and per total.

10. Mill test report

Mill test reports are issued to customer requirements. Usually they comply with EN 10204, type 3.1.

12. Quality certified:

LR, MLPTL.

Tab.1 Dimensions and Tolerances - Precision tubes acc. DIN 2391 & EN 10305

WT		mm	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5
		in	0.059	0.071	0.079	0.087	0.098	0.110	0.118	0.138	0.157	0.177
OD			ID									
mm	in	mm										
16	0.787	±0.08	13±0.08	12.4±0.15	12±0.15	11.6±0.15	11±0.15					
18	0.787	±0.08	15±0.08	14.4±0.08	14±0.08	13.6±0.15	13±0.15					
20	0.787	±0.08	17±0.08	16.4±0.08	16±0.08	15.6±0.15	15±0.15	14.4±0.15	14±0.15	13±0.15	12±0.15	11±0.15
22	0.866	±0.08	19±0.08	18.4±0.08	18±0.08	17.6±0.08	17±0.15	16.4±0.15	16±0.15	15±0.15	14±0.15	13±0.15
25	0.984	±0.08	22±0.08	21.4±0.08	21±0.08	20.6±0.08	20±0.08	19.4±0.15	19±0.15	18±0.15	17±0.15	16±0.15
26	1.024	±0.08	23±0.08	22.4±0.08	22±0.08	21.6±0.08	21±0.08	20.4±0.15	20±0.15	19±0.15	18±0.15	17±0.15
28	1.102	±0.08	25±0.08	24.4±0.08	24±0.08	23.6±0.08	23±0.08	22.4±0.08	22±0.15	21±0.15	20±0.15	19±0.15
30	1.181	±0.08	27±0.08	26.4±0.08	26±0.08	25.6±0.08	25±0.08	24.4±0.08	24±0.15	23±0.15	22±0.15	21±0.15
32	1.260	±0.15		28.4±0.15	28±0.15	27.6±0.15	27±0.15	26.4±0.15	26±0.15	25±0.15	24±0.15	23±0.15
35	1.378	±0.15			31±0.15	30.6±0.15	30±0.15	29.4±0.15	29±0.15	28±0.15	27±0.15	26±0.15
38	1.496	±0.15					33±0.15	32.4±0.15	32±0.15	31±0.15	30±0.15	29±0.15
40	1.575	±0.15					35±0.15	34.4±0.15	34±0.15	33±0.15	32±0.15	31±0.15
42	1.654	±0.20					37±0.20	36.4±0.20	36±0.20	35±0.20	34±0.20	33±0.20
45	1.772	±0.20					40±0.20	39.4±0.20	39±0.20	38±0.20	37±0.20	36±0.20
48	1.890	±0.20					43±0.20	42.4±0.20	42±0.20	41±0.20	40±0.20	39±0.20
50	1.969	±0.20							44±0.20	43±0.20	42±0.20	41±0.20
55	2.165	±0.25							49±0.25	48±0.25	47±0.25	46±0.25
60	2.362	±0.25									52±0.25	51±0.25
65	2.559	±0.30									57±0.30	56±0.30
70	2.756	±0.30									62±0.30	61±0.30

WT		mm	5	5.5	6	7	8	9	10	12	14
		in	0.197	0.217	0.236	0.276	0.315	0.354	0.394	0.472	0.551
OD			ID								
mm	in	toler.									
20	0.787	±0.08	10±0.15								
22	0.866	±0.08	12±0.15								
25	0.984	±0.08	15±0.15	14±0.15	13±0.15	11±0.15					
26	1.024	±0.08	16±0.15	15±0.15	14±0.15	12±0.15					
28	1.102	±0.08	18±0.15	17±0.15	16±0.15	14±0.15	12±0.15				
30	1.181	±0.08	20±0.15	19±0.15	18±0.15	16±0.15	14±0.15				
32	1.260	±0.15	22±0.15	21±0.15	20±0.15	18±0.15	16±0.15				
35	1.378	±0.15	25±0.15	24±0.15	23±0.15	21±0.15	19±0.15	17±0.15	15±0.15		
38	1.496	±0.15	28±0.15	27±0.15	26±0.15	24±0.15	22±0.15	20±0.15	18±0.15		
40	1.575	±0.15	30±0.15	29±0.15	28±0.15	26±0.15	24±0.15	22±0.15	20±0.15		
42	1.654	±0.20	32±0.20	31±0.20	30±0.20	28±0.20	26±0.20	24±0.20	22±0.20	20±0.20	
45	1.772	±0.20	35±0.20	34±0.20	33±0.20	31±0.20	29±0.20	27±0.20	25±0.20	23±0.20	
48	1.890	±0.20	38±0.20	37±0.20	36±0.20	34±0.20	32±0.20	30±0.20	28±0.20	26±0.20	24±0.20
50	1.969	±0.20	40±0.20	39±0.20	38±0.20	36±0.20	34±0.20	32±0.20	30±0.20	28±0.20	26±0.20
55	2.165	±0.25	45±0.25	44±0.25	43±0.25	41±0.25	39±0.25	37±0.25	35±0.25	33±0.25	31±0.30
60	2.362	±0.25	50±0.25	49±0.25	48±0.25	46±0.25	44±0.25	42±0.25	40±0.25	38±0.25	36±0.30
65	2.559	±0.30	55±0.30	54±0.30	53±0.30	51±0.30	49±0.30	47±0.30	45±0.30	43±0.30	41±0.30
70	2.756	±0.30	60±0.30	59±0.30	58±0.30	56±0.30	54±0.30	52±0.30	50±0.30	48±0.30	46±0.30
75	2.953	±0.35	65±0.35	64±0.35	63±0.35	61±0.35	59±0.35	57±0.35	55±0.35	53±0.35	51±0.35
80	3.150	±0.35	70±0.35	69±0.35	68±0.35	66±0.35	64±0.35	62±0.35	60±0.35	58±0.35	56±0.35
85	3.346	±0.40	75±0.40	74±0.40	73±0.40	71±0.40	69±0.40	67±0.40	65±0.40	63±0.40	61±0.40
90	3.543	±0.40	80±0.40	79±0.40	78±0.40	76±0.40	74±0.40	72±0.40	70±0.40	68±0.40	66±0.40
95	3.740	±0.45			83±0.45	81±0.45	79±0.45	77±0.45	75±0.45	73±0.45	71±0.45
100	3.937	±0.45			88±0.45	86±0.45	84±0.45	82±0.45	80±0.45	78±0.45	76±0.45
110	4.331	±0.50			98±0.50	96±0.50	94±0.50	92±0.50	90±0.50	88±0.50	86±0.50

WT		mm	7	8	9	10	12	14	16	18	20
		in	.079	.087	.098	.110	.118	.138	.157	.177	.197
OD			ID								
mm	in	toler.									
120	4.724	±.50	106±.50	104±.50	102±.50	100±.50	96±.50	92±.50	90±0.50	88±.50	84±.50
130	5.118	±0.70	116±0.70	114±0.70	112±0.70	110±0.70	106±0.70	102±0.70	100±0.70	98±0.70	94±0.70
140	5.512	±0.70	126±0.70	124±0.70	122±0.70	120±0.70	116±0.70	112±0.70	110±0.70	108±0.70	104±0.70
150	5.906	±.80		134±.80	132±.80	130±.80	126±.80	122±.80	120±0.80	118±.80	114±.80
160	6.299	±.80				140±.80	136±.80	132±.80	130±0.80	128±.80	124±.80
170	6.693	±.90				150±.90	146±.90	142±.90	140±0.90	138±.90	134±.90
180	7.087	±.90				160±.90	156±.90	152±.90	150±0.90	148±.90	144±.90
190	7.480	±1.0				170±1.0	166±1.0	162±1.0	160±1.0	158±1.0	154±1.0
200	7.874	±1.0				180±1.0	176±1.0	172±1.0	170±1.0	168±1.0	164±1.0
210	8.268	±1.2							180±1.2		

Notes:

1. Tolerances from above table are available on by in BK, BK+S condition.
2. Intermediate sizes can be produced subject of agreement before ordering.

Tab. 2 Dimensions and Tolerances - Precision steel tubes for honing

WT		mm	5	6	7.5	10	12.5	15	17.5	20
		in	.071	.079	.087	.098	.110	.118	.138	.157
OD	ID									
mm	in	toler.								
30	1.181	±0.08	20 -0.15/-0.35							
32	1.260	±0.15	22 -0.15/-0.35	20 -0.15/-0.35						
35	1.378	±0.15	25 -0.15/-0.35	23 -0.15/-0.35	20 -0.20/-0.40					
37	1.457	±0.15	27 -0.15/-0.35	25 -0.15/-0.35	22 -0.20/-0.40					
40	1.575	±0.15	30 -0.15/-0.35	28 -0.15/-0.35	25 -0.20/-0.40	20 -0.20/-0.40				
42	1.654	±0.20	32 -0.15/-0.35	30 -0.15/-0.35	27 -0.20/-0.40	22 -0.20/-0.40				
44	1.732	±0.20	34 -0.15/-0.35	32 -0.15/-0.35	29 -0.20/-0.40	24 -0.20/-0.40				
45	1.772	±0.20	35 -0.15/-0.35	33 -0.15/-0.35	30 -0.20/-0.40	25 -0.20/-0.40				
47	1.850	±0.20	37 -0.15/-0.35	35 -0.15/-0.35	32 -0.20/-0.40	27 -0.20/-0.40				
50	1.969	±0.20	40 -0.15/-0.35	38 -0.15/-0.35	35 -0.20/-0.40	30 -0.20/-0.40				
52	2.047	±0.25	42 -0.15/-0.35	40 -0.15/-0.35	37 -0.20/-0.40	32 -0.20/-0.40				
55	2.165	±0.25	45 -0.15/-0.35	43 -0.15/-0.35	40 -0.20/-0.40	35 -0.20/-0.40				
57	2.244	±0.25	47 -0.20/-0.45	45 -0.15/-0.35	42 -0.20/-0.40	37 -0.20/-0.40				
60	2.362	±0.25	50 -0.20/-0.45	48 -0.20/-0.45	45 -0.20/-0.40	40 -0.20/-0.40				
62	2.441	±0.30	52 -0.20/-0.45	50 -0.20/-0.45	47 -0.20/-0.45	42 -0.20/-0.40				
65	2.559	±0.30	55 -0.20/-0.45	53 -0.20/-0.45	50 -0.20/-0.45	45 -0.20/-0.40				
67	2.638	±0.30	57 -0.20/-0.45	55 -0.20/-0.45	52 -0.20/-0.45	47 -0.20/-0.45				
70	2.756	±0.30	60 -0.20/-0.45	58 -0.20/-0.45	55 -0.20/-0.45	50 -0.20/-0.45				
72	2.835	±0.35	62 -0.20/-0.45	60 -0.20/-0.45	57 -0.20/-0.45	52 -0.20/-0.45				
75	2.953	±0.35	65 -0.20/-0.45	63 -0.20/-0.45	60 -0.20/-0.45	55 -0.20/-0.45	50 -0.40/-0.70			
77	3.031	±0.35	67 -0.20/-0.45	65 -0.20/-0.45	62 -0.20/-0.45	57 -0.20/-0.45	52 -0.40/-0.70			
78	3.071	±0.35	68 -0.20/-0.45	66 -0.20/-0.45	63 -0.20/-0.45	58 -0.20/-0.45	53 -0.40/-0.70			
80	3.150	±0.35	70 -0.35/-0.65	68 -0.35/-0.65	65 -0.20/-0.45	60 -0.20/-0.45	55 -0.40/-0.70			
82	3.228	±0.40	72 -0.35/-0.65	70 -0.35/-0.65	67 -0.35/-0.65	62 -0.20/-0.45	57 -0.40/-0.70			
83	3.268	±0.40	73 -0.35/-0.65	71 -0.35/-0.65	68 -0.35/-0.65	63 -0.20/-0.45	58 -0.40/-0.70			
85	3.346	±0.40	75 -0.35/-0.65	73 -0.35/-0.65	70 -0.35/-0.65	65 -0.20/-0.45	60 -0.40/-0.70			
87	3.425	±0.40	77 -0.35/-0.65	75 -0.35/-0.65	72 -0.35/-0.65	67 -0.35/-0.65	62 -0.40/-0.70			
88	3.465	±0.40	78 -0.35/-0.65	76 -0.35/-0.65	73 -0.35/-0.65	68 -0.35/-0.65	63 -0.40/-0.70			
90	3.543	±0.40	80 -0.35/-0.65	78 -0.35/-0.65	75 -0.35/-0.65	70 -0.35/-0.65	65 -0.40/-0.70	60 -0.40/-0.70		
92	3.622	±0.45	82 -0.35/-0.65	80 -0.35/-0.65	77 -0.35/-0.65	72 -0.35/-0.65	67 -0.40/-0.70	62 -0.40/-0.70		
95	3.740	±0.45	85 -0.35/-0.65	83 -0.35/-0.65	80 -0.35/-0.65	75 -0.35/-0.65	70 -0.40/-0.70	65 -0.40/-0.70		
100	3.937	±0.45	90 -0.35/-0.65	88 -0.35/-0.65	85 -0.35/-0.65	80 -0.35/-0.65	75 -0.40/-0.70	70 -0.40/-0.70		
105	4.134	±0.50	95 -0.35/-0.65	93 -0.35/-0.65	90 -0.35/-0.65	85 -0.35/-0.65	80 -0.40/-0.70	75 -0.40/-0.70		
110	4.331	±0.50	100 -0.35/-0.65	98 -0.40/-0.80	95 -0.35/-0.65	90 -0.35/-0.65	85 -0.40/-0.70	80 -0.40/-0.70		
115	4.528	±0.50			100 -0.40/-0.80	95 -0.35/-0.65	90 -0.40/-0.70	85 -0.40/-0.70		
120	4.724	±0.50			105 -0.40/-0.80	100 -0.40/-0.80	95 -0.60/-1.0	90 -0.40/-0.70		
125	4.921	±0.70			110 -0.40/-0.80	105 -0.60/-1.0	100 -0.60/-1.0	95 -0.60/-1.0		
130	5.118	±0.70			115 -0.60/-1.0	110 -0.60/-1.0	105 -0.60/-1.0	100 -0.60/-1.0		
135	5.315	±0.70			120 -0.60/-1.0	115 -0.60/-1.0	110 -0.60/-1.0	105 -0.60/-1.0		

Tab. 2 Dimensions and Tolerances - Precision steel tubes for honing (continuation)

WT		mm	5	6	7.5	10	12.5	15	17.5	20
		in	.071	.079	.087	.098	.110	.118	.138	.157
OD										
mm	in	toler.	<i>ID</i>							
140	5.512	±0.70			125 -0.60/-1.0	120 -0.60/-1.0	115 -0.60/-1.0	110 -0.60/-1.0	105 -0.60/-1.1	100 -0.60/-1.0
145	5.709	±0.80			130 -0.60/-1.0	125 -0.60/-1.0	120 -0.60/-1.0	115 -0.60/-1.0	110 -0.60/-1.0	105 -0.6/-1.0
150	5.906	±0.80			135 -0.60/-1.1	130 -0.60/-1.0	125 -0.60/-1.0	12 -0.60/-1.0	115 -0.60/-1.0	110 -0.60/-1.0
155	6.102	±0.80			140 -0.60/-1.1	135 -0.60/-1.1	130 -0.60/-1.0	125 -0.60/-1.0	120 -0.60/-1.0	115 -0.60/-1.0
160	6.299	±0.80			145 -0.60/-1.1	140 -0.60/-1.1	135 -0.60/-1.1	130 -0.60/-1.0	125 -0.60/-1.0	120 -0.60/-1.0
165	6.496	±0.90			150 -0.60/-1.1	145 -0.60/-1.1	140 -0.60/-1.1	135 -0.60/-1.1	130 -0.60/-1.0	125 -0.60/-1.0
170	6.693	±0.90				150 -0.60/-1.1	145 -0.60/-1.1	140 -0.60/-1.1	135 -0.60/-1.1	130 -0.60/-1.0
175	6.890	±0.90				155 -0.60/-1.1	150 -0.60/-1.1	145 -0.60/-1.1	140 -0.60/-1.1	135 -0.60/-1.1
180	7.087	±0.90				160 -0.60/-1.1	155 -0.60/-1.1	150 -0.60/-1.1	145 -0.60/-1.1	140 -0.60/-1.1
185	7.283	±1.0				165 -0.70/-1.2	160 -0.60/-1.1	155 -0.60/-1.1	150 -0.60/-1.1	145 -0.60/-1.1
190	7.480	±1.0				170 -0.70/-1.2	165 -0.70/-1.2	160 -0.60/-1.1	155 -0.60/-1.1	150 -0.60/-1.1
195	7.677	±1.0				175 -0.70/1.2	170 -0.70/-1.2	165 -0.70/-1.2	160 -0.60/-1.1	155 -0.60/-1.1
200	7.874	±1.0				180 -0.70/-1.2	175 -0.70/1.2	170 -0.70/-1.2	165 -0.70/-1.2	160 -0.60/-1.1
205	8.071	±1.2					180 -0.70/-1.2	175 -0.70/-1.2	170 -0.70/-1.2	165 -0.70/-1.2
210	8.268	±1.2						180 -0.70/-1.2		

- Notes:
1. Tolerances from above table are available on by in BK, BK+S condition.
 2. Intermediate sizes can be produced subject of agreement before ordering.