

TOLERANCES AND SIZES

OD: see dimensional table for tubes suitable for shafts.

ID: standard stock material is according to EN 10305-1. In case of tubes suitable for telescopic cylinders, that can be supplied on request, the tolerance allowing the machining also on the ID has to be agreed at the time of the order.

W.T.: $\pm 10\%$ with a minimum of $\pm 0.1\text{ mm}$

ECCENTRICITY: $\frac{\text{Max w.t.} - \text{min w.t.}}{\text{Max w.t.} + \text{min. w.t.}} \times 100 \leq 10\%$

STRAIGHTNESS:

for OD $\leq 260\text{ mm}$
if ReH $\leq 500\text{ Mpa}$ 0.0015 L ;
if ReH $> 500\text{ Mpa}$ 0.002 L ;

for OD $> 260\text{ mm}$
se ReH $\leq 500\text{ Mpa}$ 0.0025 L ;
se ReH $> 500\text{ Mpa}$ 0.003 L ;

L = total length of the tubes, the max. values are to be checked on the total tube length.





DIMENSIONAL TABLES

SIZES SUITABLE FOR SHAFTS

O.D.		W.T. mm $\pm 10\%$								
Nominal value (mm)	Tolerance (mm)	3	4	5	6	7.50	8	10	12.50	15
		Mass (Kg/m)*								
30	+0.20 +0.40	2.11	2.68	3.19	3.66					
32		2.26	2.88	3.45	3.97					
35		2.50	3.19	3.83	4.42					
40				3.70	4.46	5.18	6.16			
45				4.21	5.10	5.94	7.10			
50	+0.25 +0.45			5.77	6.73	8.08	8.50	10.08		
55				6.40	7.49	9.02	9.51	11.34		
56				6.53	7.64	9.21	9.71	11.59		
60				7.04	8.25	9.97	10.52	12.59		
63				7.42	8.71	10.54	11.12	13.34		
65	+0.25 +0.50			7.70	9.03	10.94	11.55	13.86		
70				8.34	9.79	11.88	12.56	15.12		
75				8.98	10.56	12.83	13.57	16.38		
80	+0.30 +0.60			9.69	11.39	13.85	14.65	17.71		
82				9.95	11.70	14.24	15.05	18.21		
85				10.34	12.16	14.81	15.66	18.97		
90				10.98	12.93	15.76	16.68	20.23	24.39	
92				11.24	13.24	16.14	17.08	20.73	25.02	
95				11.63	13.70	16.71	17.69	21.49	25.96	
100	+0.35 +0.70			12.36	14.56	17.76	18.80	22.84	27.62	32.09
105				13.01	15.33	18.71	19.82	24.11	29.19	33.97
110				13.66	16.10	19.67	20.84	25.37	30.77	35.85
115				14.31	16.87	20.63	21.86	26.64	32.34	37.74
120	+0.40 +0.80			15.07	17.76	21.70	22.99	28.02	34.03	39.73
125				15.72	18.53	22.66	24.01	29.29	35.61	41.62
130				16.38	19.31	23.62	25.03	30.56	37.18	43.50
135	+0.45 +0.90			17.16	20.21	24.71	26.18	31.95	38.89	45.51
140				17.81	20.99	25.67	27.21	33.23	40.47	47.41
145					21.78	26.64	28.24	34.50	42.05	49.30
150					22.56	27.61	29.26	35.78	43.64	51.19
155					23.34	28.57	30.29	37.05	45.22	53.08
160	+0.50 +1.00				24.27	29.69	31.47	38.47	46.95	55.12
165					25.05	30.66	32.50	39.75	48.54	57.01
170					25.84	31.63	33.53	41.03	50.12	58.91
175						32.60	34.57	42.31	51.71	60.81
180						33.57	35.60	43.59	53.30	62.70
185						34.54	36.63	44.87	54.89	64.60
190	+0.60 +1.20					35.87	38.02	46.50	56.83	66.85
195							39.06	47.79	58.42	68.75
200							40.10	49.08	60.02	70.66
205								50.37	61.62	72.56
210								51.66	63.21	74.47
215									64.80	76.37
220								54.23	66.41	78.28

* By mass calculation, the average values of the OD with the necessary tolerances have been taken into consideration.

Note: the tolerances on the OD, thanks to whom the tube is suitable for shafts, are not ruled by any norm but are subject to special agreements with each manufacturer, therefore the deviations are only approximate.