

★ Chemical Composition % max

	Material grade	C	Si	Mn	P	S	Al
★	E355 (St52)	0.22	0.55	1.60	0.025	0.025	0.02 min
★	STKM13C	0.25	0.35	0.30 - 0.90	0.040	0.040	-

★ Mechanical Properties

Material grade	Condition	Yield Strength (ReH)	Tensile Strength (Rm)	Elongation (A)	Impact Toughness
E355 (St52)	+SR	450 Mpa min* - *420 N/mm ² min for OD > 160mm and wall thickness >16mm	580 Mpa min	10% min	-
	+N	355 Mpa min	490-630 Mpa min	22% min	27J min @ -20°C - (based on standard 10*10 specimen)
STKM13C	-	380 N/mm ² min	510 N/mm ² min	15% min	-

* Mpa=N/mm²

* JIS STKM13C similar to AISI 1020

★ Tolerances

Outside Diameter	Inside Diameter		Straightness	Eccentricity
	Suitable for Honing/ *Skiving	Honed/*Skived		
According to Specification	With honing/skiving allowance (see size chart)	Surface roughness Ra 0.4µm max	0.8:1000mm or better	Cold drawn seamless tubes : 7.5% max Cold drawn welded tube : 5% max According to the formula $(T_{max} - T_{min} / T_{max} + T_{min}) \times 100$

* Skived and Roller Burnished

★ Available Size Range

Metric	Imperial
I.D. 25-250mm	I.D. 1"~9.5"

★ We are also able to supply

- ★ E355 (St52.3) to EN10305 part2
- ★ Honed tube suitable for centerless grinding
- ★ Chrome plated honed tube
- ★ Chrome & Nickel plated honed tube
- ★ Tube suitable for centerless grinding
- ★ Chrome plated tube
- ★ Chrome & Nicked plated tube

★ Metric Stock Size Range

ID mm	OD mm	TH mm	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
20	26.00	3.00	1.70	-0/+0.052 (H9)	-0/+0.052 (H9)	
	30.00	5.00	3.08	-0/+0.052 (H9)	-0/+0.052 (H9)	
25	32.00	3.50	2.46	-0/+0.052 (H9)	-0/+0.052 (H9)	
	35.00	5.00	3.70	-0/+0.052 (H9)	-0/+0.052 (H9)	
30	36.00	3.00	2.44	-0/+0.052 (H9)	-0/+0.052 (H9)	
	40.00	5.00	4.32	-0/+0.052 (H9)	-0/+0.052 (H9)	
	50.00	10.00	9.86	-0/+0.033 (H8)	-0/+0.033 (H8)	
32	42.00	5.00	4.56	-0/+0.039 (H8)	-0/+0.039 (H8)	
35	41.00	3.00	2.81	-0/+0.062 (H9)	-0/+0.062 (H9)	
	42.00	3.50	3.32	-0/+0.062 (H9)	-0/+0.062 (H9)	
	45.00	5.00	4.93	-0/+0.039 (H8)	-0/+0.039 (H8)	
	50.00	7.50	7.86	-0/+0.039 (H8)	-0/+0.039 (H8)	
38	47.60	4.80	5.07	-0/+0.039 (H8)	-0/+0.039 (H8)	
38.1	47.75	4.80	5.11	-0/+0.039 (H8)	-0/+0.039 (H8)	
40	45.00	2.50	2.62	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	46.00	3.00	3.18	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	48.00	4.00	4.34	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	50.00	5.00	5.55	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	55.00	7.50	8.79	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	60.00	10.00	12.33	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
44.45	54.10	4.80	5.86	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
45	53.00	4.00	4.83	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	55.00	5.00	6.17	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	60.00	7.50	9.17	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
50	55.00	2.50	3.24	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	57.00	3.50	4.62	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	57.50	3.80	4.97	-0/+0.062 (H9)	-0/+0.062 (H9)	-0.20/-0.35
	58.00	4.00	5.33	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	60.00	5.00	6.78	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	60.30	5.15	7.00	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	65.00	7.50	10.63	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	70.00	10.00	14.80	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
	71.00	10.50	15.67	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35

★ Metric Stock Size Range

ID mm	OD mm	TH mm	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
50.8	60.45	4.80	6.62	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
55	65.00	5.00	7.40	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
	70.00	7.50	11.56	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
60	70.00	5.00	8.01	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
	72.00	6.00	9.77	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
	75.00	7.50	12.48	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
	80.00	10.00	17.26	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.35
63	69.00	3.00	4.88	-0/+0.074 (H9)	-0/+0.074 (H9)	-0.30/-0.60
	71.00	4.00	6.61	-0/+0.074 (H9)	-0/+0.074 (H9)	-0.30/-0.60
	72.00	4.50	7.49	-0/+0.074 (H9)	-0/+0.074 (H9)	-0.30/-0.60
	73.00	5.00	8.38	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	76.00	6.50	11.14	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	80.00	8.50	14.99	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
65	75.00	5.00	8.63	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	80.00	7.50	13.41	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	85.00	10.00	18.50	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
70	80.00	5.00	9.25	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	82.00	6.00	11.24	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	85.00	7.50	14.33	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	90.00	10.00	19.73	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
75	85.00	5.00	9.86	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	85.50	5.25	10.39	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	90.00	7.00	15.26	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	95.00	10.00	20.96	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
80	87.00	3.50	7.21	-0/+0.074 (H9)	-0/+0.074 (H9)	-0.30/-0.60
	90.00	5.00	10.48	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	95.00	7.50	16.18	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	100.00	10.00	22.19	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
	102.00	11.00	24.68	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.30/-0.60
85	95.00	5.00	11.10	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	100.00	7.50	17.11	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	102.00	8.50	19.60	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	105.00	10.00	23.43	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60

★ Metric Stock Size Range

ID mm	OD mm	TH mm	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
90	100.00	5.00	11.71	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	105.00	7.50	18.03	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	110.00	10.00	24.66	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	114.00	12.00	30.18	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
95	110.00	7.50	18.96	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	115.00	10.00	25.89	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
100	107.00	3.50	8.93	-0/+0.087 (H9)	-0/+0.087 (H9)	-0.30/-0.60
	110.00	5.00	12.95	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	114.00	7.00	18.47	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	116.00	8.00	21.31	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	120.00	10.00	27.13	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	125.00	12.50	34.68	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
105	120.00	7.50	20.81	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	125.00	10.00	28.36	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
110	120.00	5.00	14.18	-0/+0.087 (H9)	-0/+0.087 (H9)	-0.30/-0.60
	125.00	7.50	21.73	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	130.00	10.00	29.59	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	135.00	12.50	37.76	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
115	130.00	7.50	22.66	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	135.00	10.00	30.83	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	140.00	12.50	39.30	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	145.00	15.00	48.09	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
120	132.00	6.00	18.64	-0/+0.087 (H9)	-0/+0.087 (H9)	-0.30/-0.60
	135.00	7.50	23.58	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	140.00	10.00	32.06	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
	150.00	15.00	49.94	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.30/-0.60
125	135.00	5.00	16.03	-0/+0.100 (H9)	-0/+0.100 (H9)	-0.30/-0.60
	137.00	6.00	19.38	-0/+0.100 (H9)	-0/+0.100 (H9)	-0.30/-0.60
	140.00	7.50	24.51	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	145.00	10.00	33.29	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	152.00	13.50	46.11	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	155.00	15.00	51.79	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60

★ Metric Stock Size Range

ID mm	OD mm	TH mm	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
130	142.00	6.00	20.12	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	142.50	6.25	21.00	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	150.00	10.00	34.52	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	155.00	12.50	43.93	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	156.00	13.00	45.84	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
135	160.00	12.50	45.47	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
140	153.00	6.50	23.48	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	160.00	10.00	36.99	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	165.00	12.50	47.01	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	175.00	17.50	67.97	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
145	165.00	10.00	38.22	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	170.00	12.50	48.55	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
150	160.00	5.00	19.11	-0/+0.250 (H11)	-0/+0.250 (H11)	-0.30/-0.60
	163.00	6.50	25.09	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	168.00	9.00	35.29	-0/+0.100 (H9)	-0/+0.100 (H9)	-0.30/-0.60
	170.00	10.00	39.46	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	175.00	12.50	50.09	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	180.00	15.00	61.03	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
160	172.00	6.00	24.56	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	180.00	10.00	41.92	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	185.00	12.00	53.17	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	190.00	15.00	64.73	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
165	190.00	12.50	54.71	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	195.00	15.00	66.58	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
170	190.00	10.00	44.39	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	195.00	12.50	56.26	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	203.00	16.50	75.88	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
180	194.00	7.00	32.28	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.30/-0.60
	196.00	8.00	37.09	-0/+0.100 (H9)	-0/+0.100 (H9)	-0.30/-0.60
	202.00	11.00	51.81	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	212.00	16.00	77.33	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	216.00	18.00	87.89	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
	219.00	19.50	95.93	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.30/-0.60
190	220.00	15.00	75.83	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60

★ Metric Stock Size Range

ID mm	OD mm	TH mm	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
200	216.00	8.00	41.03	-0/+0.115 (H9)	-0/+0.115 (H9)	-0.30/-0.60
	232.00	16.00	85.22	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
	235.00	17.50	93.86	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
	242.00	21.00	114.45	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
220	250.00	15.00	86.93	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
	260.00	20.00	118.37	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
250	267.00	8.50	54.18	-0/+0.290 (H11)	-0/+0.290 (H11)	-0.30/-0.60
	298.00	24.00	162.16	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60
	299.00	24.50	165.84	-0/+0.072 (H8)	-0/+0.072 (H8)	-0.30/-0.60

★ Imperial Stock Size Range

ID inch	OD inch	TH inch	Weight kg/m	Bore Tolerances (mm)		
				Honed (ISO)	Skived (ISO)	Suitable For Honing
1.000	1.313	0.1565	2.88	-0/+0.052 (H9)	-0/+0.052 (H9)	
1.250	1.625	0.1875	4.29	-0/+0.062 (H9)	-0/+0.062 (H9)	
1.500	1.875	0.1875	5.03	-0/+0.039 (H8)	-0/+0.039 (H8)	
1.750	2.125	0.1875	5.78	-0/+0.039 (H8)	-0/+0.039 (H8)	
	2.250	0.2500	7.95	-0/+0.039 (H8)	-0/+0.039 (H8)	-0.20/-0.35
2.000	2.375	0.1875	6.52	-0/+0.046 (H8)	-0/+0.046 (H8)	
	2.500	0.2500	8.95	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.40
2.500	2.875	0.1875	8.02	-0/+0.074 (H9)	-0/+0.074 (H9)	
	3.000	0.2500	10.94	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.45
3.000	3.375	0.1875	9.51	-0/+0.046 (H8)	-0/+0.046 (H8)	
	3.500	0.2500	12.93	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.55
	3.750	0.3750	20.15	-0/+0.046 (H8)	-0/+0.046 (H8)	-0.20/-0.55
3.500	4.000	0.2500	14.92	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.20/-0.55
4.000	4.500	0.2500	16.90	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.25/-0.55
	4.625	0.3125	21.45	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.25/-0.55
	4.750	0.3750	26.12	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.25/-0.55
4.500	5.000	0.2500	18.90	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.25/-0.65
	5.250	0.3750	29.08	-0/+0.054 (H8)	-0/+0.054 (H8)	-0.25/-0.65
5.000	5.000	0.2500	20.89	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.25/-0.65
	5.625	0.3125	26.43	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.25/-0.65
	5.750	0.3750	32.09	-0/+0.063 (H8)	-0/+0.063 (H8)	-0.25/-0.65
5.500	6.000	0.2500	22.88	-0/+0.160 (H10)	-0/+0.160 (H10)	-0.25/-0.65

★ The weights shown are applicable for Honed and skived sizes

★ Suitable to Skive/Hone sizes would be heavier due to the stock in the Bore