



COLD DRAWN SEAMLESS CARBON & ALLOY TUBING TOLERANCES

O.D. SIZE RANGE (IN.)	WALL: PERCENT OF O.D.	UNANNEALED OR STRESS RELIEF ANNEALED				SOFT ANNEALED OR NORMALIZED				OIL QUENCHED & TEMPERED
		O.D. (IN.)		I.D. (IN.)		O.D. (IN.)		I.D. (IN.)		O.D. & I.D.
		PLUS	MINUS	PLUS	MINUS	PLUS	MINUS	PLUS	MINUS	PLUS/MINUS
Up to 0.499"	All	0.004"	0.000"			0.005"	0.002"			0.005"
0.500" to 1.699"	All	0.005"	0.000"	0.000"	0.005"	0.007"	0.002"	0.002"	0.007"	0.005"
1.700" to 2.099"	All	0.006"	0.000"	0.000"	0.006"	0.006"	0.005"	0.005"	0.006"	0.008"
2.100" to 2.499"		0.007"	0.000"	0.000"	0.007"	0.008"	0.005"	0.005"	0.008"	0.009"
2.500" to 2.899"	All	0.008"	0.000"	0.000"	0.008"	0.009"	0.005"	0.005"	0.009"	0.010"
2.900" to 3.299"	All	0.009"	0.000"	0.000"	0.009"	0.011"	0.005"	0.005"	0.011"	0.012"
3.300" to 3.699"	All	0.010"	0.000"	0.000"	0.010"	0.013"	0.005"	0.005"	0.013"	0.013"
3.700" to 4.099"	All	0.011"	0.000"	0.000"	0.011"	0.013"	0.007"	0.010"	0.010"	0.014"
4.100" to 4.499"	All	0.012"	0.000"	0.000"	0.012"	0.014"	0.007"	0.011"	0.011"	0.015"
4.500" to 4.899"	All	0.013"	0.000"	0.000"	0.013"	0.016"	0.007"	0.012"	0.012"	0.017"
4.900" to 5.299"	All	0.014"	0.000"	0.000"	0.014"	0.018"	0.007"	0.013"	0.013"	0.018"
5.300" to 5.549"	All	0.015"	0.000"	0.000"	0.015"	0.020"	0.007"	0.014"	0.014"	0.019"
5.550" to 5.999"	Under 6	0.010"	0.010"	0.010"	0.010"	0.018"	0.018"	0.018"	0.018"	0.025"
	6 to 7 1/2	0.009"	0.009"	0.009"	0.009"	0.016"	0.016"	0.016"	0.016"	0.023"
	Over 7 1/2	0.018"	0.000"	0.009"	0.009"	0.017"	0.015"	0.016"	0.016"	0.023"
6.000" to 6.499"	Under 6	0.013"	0.013"	0.013"	0.013"	0.023"	0.023"	0.023"	0.023"	0.033"
	6 to 7 1/2	0.010"	0.010"	0.010"	0.010"	0.018"	0.018"	0.018"	0.018"	0.025"
	Over 7 1/2	0.020"	0.000"	0.010"	0.010"	0.020"	0.015"	0.018"	0.018"	0.025"
6.500" to 6.999"	Under 6	0.015"	0.015"	0.015"	0.015"	0.027"	0.027"	0.027"	0.027"	0.038"
	6 to 7 1/2	0.012"	0.012"	0.012"	0.012"	0.021"	0.021"	0.021"	0.021"	0.029"
	Over 7 1/2	0.023"	0.000"	0.012"	0.012"	0.026"	0.015"	0.021"	0.021"	0.029"
7.000" to 7.499"	Under 6	0.018"	0.018"	0.018"	0.018"	0.032"	0.032"	0.032"	0.032"	0.045"
	6 to 7 1/2	0.013"	0.013"	0.013"	0.013"	0.023"	0.023"	0.023"	0.023"	0.033"
	Over 7 1/2	0.026"	0.000"	0.013"	0.013"	0.031"	0.015"	0.023"	0.023"	0.023"

chart continued on next page ►

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O.D. SIZE RANGE (IN.)	WALL: PERCENT OF O.D.	UNANNEALED OR STRESS RELIEF ANNEALED				SOFT ANNEALED OR NORMALIZED				OIL QUENCHED & TEMPERED
		O.D. (IN.)		I.D. (IN.)		O.D. (IN.)		I.D. (IN.)		O.D. & I.D.
		PLUS	MINUS	PLUS	MINUS	PLUS	MINUS	PLUS	MINUS	PLUS/MINUS
7.500" to 7.999"	Under 6	0.020"	0.020"	0.020"	0.020"	0.035"	0.035"	0.035"	0.035"	0.050"
	6 to 7 1/2	0.015"	0.015"	0.015"	0.015"	0.026"	0.026"	0.026"	0.026"	0.037"
	Over 7 1/2	0.029"	0.000"	0.015"	0.015"	0.036"	0.015"	0.026"	0.026"	0.037"
8.000" to 8.499"	Under 6	0.023"	0.023"	0.023"	0.023"	0.041"	0.041"	0.041"	0.041"	0.058"
	6 to 7 1/2	0.016"	0.016"	0.016"	0.016"	0.028"	0.028"	0.028"	0.028"	0.040"
	Over 7 1/2	0.031"	0.000"	0.015"	0.016"	0.033"	0.022"	0.028"	0.028"	0.040"
8.500" to 8.999"	Under 6	0.025"	0.025"	0.025"	0.025"	0.044"	0.044"	0.044"	0.044"	0.063"
	6 to 7 1/2	0.017"	0.017"	0.017"	0.017"	0.030"	0.030"	0.030"	0.030"	0.043"
	Over 7 1/2	0.034"	0.000"	0.015"	0.019"	0.038"	0.022"	0.030"	0.030"	0.043"
9.000" to 9.499"	Under 6	0.028"	0.028"	0.028"	0.028"	0.045"	0.045"	0.045"	0.045"	0.070"
	6 to 7 1/2	0.019"	0.019"	0.019"	0.019"	0.033"	0.033"	0.033"	0.033"	0.047"
	Over 7 1/2	0.037"	0.000"	0.015"	0.022"	0.043"	0.022"	0.033"	0.033"	0.047"
9.500" to 9.999"	Under 6	0.030"	0.030"	0.030"	0.030"	0.045"	0.045"	0.053"	0.053"	0.075"
	6 to 7 1/2	0.020"	0.020"	0.020"	0.020"	0.035"	0.035"	0.035"	0.035"	0.050"
	Over 7 1/2	0.040"	0.000"	0.150"	0.025"	0.048"	0.022"	0.035"	0.035"	0.050"
10.000" to 10.999"	Under 6	0.034"	0.034"	0.034"	0.034"	0.045"	0.045"	0.060"	0.060"	0.080"
	6 to 7 1/2	0.022"	0.022"	0.022"	0.022"	0.039"	0.039"	0.039"	0.039"	0.055"
	Over 7 1/2	0.044"	0.000"	0.015"	0.029"	0.055"	0.022"	0.039"	0.039"	0.055"
11.000" to 12.000"	Under 6	0.035"	0.035"	0.035"	0.035"	0.050"	0.050"	0.065"	0.065"	
	6 to 7 1/2	0.025"	0.025"	0.025"	0.025"	0.045"	0.045"	0.045"	0.045"	
	Over 7 1/2	0.045"	0.000"	0.015"	0.035"	0.060"	0.022"	0.045"	0.045"	

WALL TOLERANCES MAX % OVER AND UNDER NOMINAL WALL

WALL % OF O.D.	I.D. UNDER .500"	I.D. .500" & OVER
Under 10%	+/- 10.0%	+/- 7.5%
10 to 25%	+/- 10.0%	+/- 6.0%
Over 25%	+/- 12.5%	+/- 7.5%

STRAIGHTNESS TOLERANCES

O.D. SIZE RANGE (IN.)	WALL % OF O.D.	TOTAL CAMBER IN ANY 3 FT.
Up to 5.000"	3% O.D. & Over	0.030"
5.001" / 8.000"	4% O.D. & Over	0.045"
8.001" / 10.750"	4% O.D. & Over	0.060"

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