



SQUARE AND RECTANGULAR TUBING

Structural tubing is relatively low in cost, has a high strength-to-weight ratio, and is easily welded, formed, punched and drilled. The tubing's hollow shape protects and conceals wires, pipe and moving parts. It also can be left exposed.

ASTM A500 GRADES B AND C
Steel Cities Steels, Inc. stocks all popular sizes and can obtain special sizes upon request.

SQUARE TUBING MECHANICAL AND STRUCTURAL

ERW = ELECTRIC RESISTANCE WELDED, A-513

STR = STRUCTURAL, A-500 GRADE B

HY = HIGH YIELD WELDED

HR = HOT ROLLED, A-618-3

Outside Diameter (OD) & Gage Inches	Wall Dec-In	Inside Diameter (ID)	Weight Lbs/Ft	ERW	HY	STR	HR
3/8 x 3/8							
20 GA	0.035	0.305	0.1618	X	-	-	-
18 GA	0.049	0.277	0.2172	X	-	-	-
1/2 x 1/2							
20 GA	0.035	0.430	0.2213	X	-	-	-
18 GA	0.049	0.402	0.3005	X	-	-	-
16 GA	0.065	0.370	0.3845	X	-	-	-
5/8 x 5/8							
20 GA	0.035	0.555	0.2808	X	-	-	-
18 GA	0.049	0.527	0.3838	X	-	-	-
16 GA	0.065	0.495	0.4950	X	-	-	-
3/4 x 3/4							
20 GA	0.035	0.680	0.3403	X	-	-	-
18 GA	0.049	0.652	0.4671	X	-	-	-
16 GA	0.065	0.620	0.6055	X	-	-	-
15 GA	0.072	0.606	0.6638	-	X	-	-
14 GA	0.083	0.584	0.7528	X	X	-	-
11 GA	0.120	0.510	1.0280	X	-	-	-
7/8 x 7/8							
18 GA	0.049	0.777	0.5504	X	-	-	-
16 GA	0.065	0.745	0.7160	X	-	-	-

GA = GAGE

NOTE: A-500 Grade B square and rectangular tubing is stocked in 20', 24', 40' lengths. If you do not see a size listed, please ask.

SQUARE TUBING MECHANICAL AND STRUCTURAL - Continued

Outside Diameter (OD) & Gage Inches	Wall Dec-In	Inside Diameter (ID)	Weight Lbs/Ft	ERW	HY	STR	HR
1 x 1							
18 GA	0.049	0.902	0.633	X	-	-	-
16 GA	0.065	0.870	0.826	X	-	-	-
15 GA	0.072	0.856	0.908	X	X	-	-
14 GA	0.083	0.834	1.035	X	X	-	-
13 GA	0.095	0.810	1.169	X	X	-	-
12 GA	0.109	0.782	1.321	X	-	-	-
11 GA	0.125	0.750	1.440	X	-	X	-
1-1/4 x 1-1/4							
16 GA	0.065	1.120	1.048	X	-	-	-
15 GA	0.072	1.106	1.153	-	X	-	-
14 GA	0.083	1.084	1.317	X	X	-	-
13 GA	0.095	1.060	1.492	X	X	-	-
12 GA	0.109	1.032	1.328	X	-	-	-
11 GA	0.120	1.010	1.844	X	-	-	-
10 GA	0.135	0.980	1.890	X	-	-	-
3/16	0.188	0.875	2.400	-	-	-	X
1-1/2 x 1-1/2							
18 GA	0.049	1.402	0.967	X	-	-	-
16 GA	0.065	1.370	1.269	X	-	-	-
15 GA	0.072	1.356	1.398	-	X	-	-
14 GA	0.083	1.334	1.600	X	X	-	-
13 GA	0.095	1.310	1.815	X	X	-	-
12 GA	0.109	1.282	2.062	X	-	-	-
11 GA	0.120	1.260	2.252	X	-	-	-
9 GA	0.145	1.220	2.570	-	-	-	X
3/16	0.188	1.126	3.050	-	-	X	X
1/4	0.250	1.00	3.700	-	-	X	X
1-3/4 x 1-3/4							
16 GA	0.065	1.620	1.490	X	-	-	-
14 GA	0.083	1.584	1.882	X	-	-	-
11 GA	0.120	1.510	2.660	X	-	-	-
3/16	0.188	1.374	3.994	-	-	X	-

SQUARE TUBING MECHANICAL AND STRUCTURAL - Continued

Outside Diameter (OD) & Gage Inches	Wall Dec-In	Inside Diameter (ID)	Weight Lbs/Ft	ERW	HY	STR	HR
2 x 2							
18 GA	0.049	1.902	1.300	X	-	-	-
16 GA	0.065	1.870	1.711	X	-	-	-
14 GA	0.083	1.834	2.164	X	-	-	-
13 GA	0.095	1.810	2.461	X	-	-	-
1/8	0.125	1.750	3.050	-	-	X	-
3/16	0.188	1.625	4.320	-	-	X	-
1/4	0.250	1.500	5.410	-	-	X	-
2-1/2 x 2-1/2							
14 GA	0.083	2.334	2.728	X	-	-	-
1/8	0.125	2.250	3.900	-	-	X	-
3/16	0.188	2.124	5.590	-	-	X	-
1/4	0.250	2.000	7.110	-	-	X	-
3 x 3							
14 GA	0.083	2.834	3.293	X	-	-	-
1/8	0.120	2.760	4.750	-	-	X	-
3/16	0.188	2.625	6.870	-	-	X	-
1/4	0.250	2.500	8.810	-	-	X	-
5/16	0.313	2.374	10.580	-	-	X	-
3/8	0.375	2.250	12.160	-	-	X	-
3-1/2 x 3-1/2							
1/8	0.125	3.250	5.610	-	-	X	-
3/16	0.188	3.125	8.150	-	-	X	-
1/4	0.250	3.000	10.510	-	-	X	-
5/16	0.313	2.874	12.700	-	-	X	-

If you do not see a size listed, please ask. GA = GAGE

SQUARE TUBING MECHANICAL AND STRUCTURAL - Continued

Outside Diameter (OD) & Gage Inches	Wall Dec-In	Inside Diameter (ID)	Weight Lbs/Ft	STR
4 x 4				
1/8	0.125	3.760	6.460	X
3/16	0.188	3.625	9.420	X
1/4	0.250	3.500	12.210	X
5/16	0.313	3.374	14.830	X
3/8	0.375	3.250	17.270	X
1/2	0.500	3.000	21.630	X
5 x 5				
3/16	0.188	4.625	11.970	X
1/4	0.250	4.500	15.620	X
5/16	0.313	4.374	19.080	X
3/8	0.375	4.250	22.370	X
1/2	0.500	4.000	28.430	X
6 x 6				
3/16	0.188	5.625	14.530	X
1/4	0.250	5.500	19.020	X
5/16	0.313	5.375	23.340	X
3/8	0.375	5.250	27.480	X
1/2	0.500	5.000	35.240	X
7 x 7				
3/16	0.188	6.625	17.080	X
1/4	0.250	6.500	22.420	X
3/8	0.375	6.250	32.580	X
1/2	0.500	6.000	42.050	X
8 x 8				
3/16	0.188	7.625	19.630	X
1/4	0.250	7.500	25.820	X
5/16	0.313	7.384	31.840	X
3/8	0.375	7.250	37.690	X
1/2	0.500	7.000	48.850	X
5/8	0.625	6.750	59.320	X

If you do not see a size listed, please ask.

SQUARE TUBING STRUCTURAL - Continued

Outside Diameter (OD) & Gage Inches	Wall Dec-In	Inside Diameter (ID)	Weight Lbs/Ft	STR
10 x 10				
1/4	0.250	9.500	32.630	X
3/8	0.375	9.250	47.900	X
1/2	0.500	9.000	62.460	X
5/8	0.625	8.750	76.330	X
12 x 12				
1/4	0.250	11.500	39.440	X
5/16	0.313	11.384	48.950	X
3/8	0.375	11.250	58.100	X
1/2	0.500	11.000	76.070	X
14 x 14				
3/8	0.375	13.250	68.670	X
1/2	0.500	13.000	89.680	X
16 x 16				
3/8	0.375	15.250	78.520	X
1/2	0.500	15.000	103.300	X

If you do not see a size listed, please ask.

RECTANGULAR TUBING - MECHANICAL AND STRUCTURAL

ERW = ELECTRIC RESISTANCE WELDED, A-513

STR = STRUCTURAL, A-500 GRADE B

HY = HIGH YIELD WELDED

HR = HOT ROLLED, A-618-3

BW Gage or Wall, Inches	Wall Dec-In	Weight	ERW	HY	STR	HR
1 x 1/2						
16 GA	0.065	.606	X	-	-	-
1-1/2 x 3/4						
14 GA	0.083	1.176	X	X	-	-
1-1/2 x 1						
16 GA	0.065	1.048	X	-	-	-
14 GA	0.083	1.317	X	-	-	-
11 GA	0.120	1.844	X	-	-	-
2 x 1						
16 GA	0.065	1.269	X	-	-	-
14 GA	0.083	1.599	X	X	-	-
11 GA	0.120	2.252	X	-	-	-
2 x 1-1/4						
14 GA	0.083	1.741	X	X	-	-
2 x 1-1/2						
14 GA	0.083	1.881	X	-	-	-
11 GA	0.120	2.660	X	-	-	-
2-1/2 x 1						
14 GA	0.083	1.882	X	-	-	-
2-1/2 x 1-1/4						
14 GA	0.083	2.023	X	-	-	-
2-1/2 x 1-1/2						
14 GA	0.083	2.164	X	-	-	-
11 GA	0.120	3.068	X	-	-	-
9 GA	0.148	3.728	-	-	X	-
3/16	0.188	4.320	-	-	X	-
1/4	0.250	5.410	-	-	X	-

If you do not see a size listed, please ask. GA = GAGE

RECTANGULAR TUBING MECHANICAL AND STRUCTURAL - Continued

BW Gage or Wall, Inches	Wall Dec-In	Weight	ERW	HY	STR	HR
3 x 1						
16 GA	0.065	1.711	X	-	-	-
14 GA	0.083	2.164	X	-	-	-
1/8	0.125	3.050	-	-	X	-
3 x 1-1/2						
14 GA	0.083	2.446	X	-	-	-
1/8	0.125	3.550	-	-	X	-
3/16	0.188	4.970	-	-	X	-
3 x 2						
14 GA	0.083	2.728	X	-	-	-
1/8	0.125	3.900	-	-	X	-
3/16	0.188	5.590	-	-	X	-
1/4	0.250	7.110	-	-	X	-
5/16	0.313	8.640	-	-	X	-
3-1/2 x 2-1/2						
3/16	0.188	6.870	-	-	X	-
4 x 2						
14 GA	0.083	3.293	X	-	-	-
1/8	0.125	4.750	-	-	X	-
3/16	0.188	6.870	-	-	X	-
1/4	0.250	8.810	-	-	X	-
5/16	0.313	10.580	-	-	X	-
4 x 2-1/2						
11 GA	0.120	5.110	X	-	-	-
4 x 3						
1/8	0.125	5.610	-	-	X	-
3/16	0.188	8.150	-	-	X	-
1/4	0.250	10.510	-	-	X	-
5/16	0.313	12.700	-	-	X	-

If you do not see a size listed, please ask. GA = GAGE

RECTANGULAR TUBING STRUCTURAL Continued

BW Gage or Wall, Inches	Wall Dec-In	Weight	STR	BW Gage or Wall, Inches	Wall Dec-In	Weight	STR
5 x 2				7 x 4			
1/8	0.125	5.680	X	1/4	0.250	17.320	X
3/16	0.188	8.150	X	3/8	0.375	24.930	X
1/4	0.250	10.510	X	7 x 5			
5 x 2-1/2				3/16	0.188	14.530	X
7 GA	0.180	8.880	X	1/4	0.250	19.020	X
5 x 3				5/16	0.313	23.210	X
3/16	0.188	9.420	X	3/8	0.375	27.480	X
1/4	0.250	12.210	X	1/2	0.500	35.240	X
5/16	0.313	14.830	X	8 x 2			
3/8	0.375	17.270	X	3/16	0.188	11.970	X
1/2	0.500	21.630	X	1/4	0.250	15.620	X
6 x 2				8 x 3			
3/16	0.188	9.420	X	3/16	0.188	13.250	X
1/4	0.250	12.210	X	1/4	0.250	17.320	X
6 x 3				3/8	0.375	24.930	X
3/16	0.188	10.700	X	8 x 4			
1/4	0.250	13.910	X	3/16	0.188	14.530	X
5/16	0.313	16.960	X	1/4	0.250	19.020	X
3/8	0.375	19.820	X	5/16	0.313	23.340	X
1/2	0.500	25.030	X	3/8	0.375	27.480	X
6 x 4				1/2	0.500	35.240	X
3/16	0.188	11.970	X	8 x 6			
1/4	0.250	15.620	X	3/16	0.188	17.080	X
5/16	0.313	19.080	X	1/4	0.250	22.420	X
3/8	0.375	22.370	X	3/8	0.375	32.580	X
1/2	0.500	28.430	X	1/2	0.500	42.050	X
7 x 3							
1/4	0.250	15.620	X				

If you do not see a size listed, please ask. GA = GAGE

RECTANGULAR TUBING STRUCTURAL

Continued

BW Gage or Wall, Inches	Wall Dec-In	Weight	STR	BW Gage or Wall, Inches	Wall Dec-In	Weight	STR
10 x 2				12 x 6			
3/16	0.188	14.530	X	1/4	0.250	29.230	X
1/4	0.250	19.020	X	3/8	0.375	42.790	X
10 x 3				1/2	0.500	55.600	X
1/4	0.250	20.720	X	12 x 8			
10 x 4				3/8	0.375	47.900	X
3/16	0.188	17.080	X	1/2	0.500	62.460	X
1/4	0.250	22.400	X	12 x 10			
5/16	0.313	27.590	X	1/4	0.250	36.030	X
3/8	0.375	32.580	X	14 x 4			
1/2	0.500	42.050	X	1/4	0.250	29.230	X
10 x 6				14 x 6			
1/4"	0.250	25.820	X	3/8	0.375	47.900	X
3/8	0.375	37.690	X	1/2	0.500	62.450	X
1/2	0.500	48.850	X	14 x 10			
10 x 8				5/16	0.313	48.860	X
1/4	0.250	29.230	X	3/8	0.375	58.100	X
3/8	0.375	42.790	X	1/2	0.500	76.070	X
1/2	0.500	55.660	X	16 x 8			
12 x 2				5/16	0.313	48.860	X
3/16	0.188	17.080	X	3/8	0.375	58.100	X
1/4	0.250	22.420	X	1/2	0.500	76.070	X
12 x 3				16 x 12			
3/16	0.188	17.910	X	3/8	0.375	68.310	X
5/16	0.313	29.520	X	1/2	0.500	89.680	X
3/8	0.375	33.800	X	20 x 12			
12 x 4				1/2	0.500	103.300	X
3/16	0.188	19.630	X				
1/4	0.250	25.820	X				
5/16	0.313	31.840	X				
3/8	0.375	37.690	X				

If you do not see a size listed, please ask. GA = GAGE

STRUCTURAL SQUARE AND RECTANGULAR TUBING ASTM A-500 GRADES B AND C

ASTM A-500 is a cold formed electric weld product. Advantages include material strength, ability to resist stress from any direction, and ease of connection to other structural shapes.

CHEMICAL COMPOSITION CHECK ANALYSIS		
Max Percent	ASTM A-500 Grade B	ASTM A-500 Grade C
Carbon	0.30	0.27
Phosphorus	0.045	0.045
Sulphur	0.045	0.045

WORKABILITY AND WELDABILITY

Can be subjected to most of the usual fabricating operations. Its ductility is good, bends well, flattens, cuts, punches, flares, and flanges easily. Can also be welded by commonly employed techniques and practices.

COEFFICIENT OF THERMAL EXPANSION

Per degree fahrenheit 70 degrees to 200 degrees 0.0000063

MECHANICAL PROPERTIES (After Final Processing)		
ASTM		
	A-500 Grade B	Grade C
Tensile Strength, psi	58,000	62,000
Yield Strength, min, psi	46,000	50,000
Elongation in 2 inch, min, percent	23	21

COLD BEND PROPERTIES

The bend test specimens shall stand being bent cold through 180 degrees without cracking on the outside of the bent portion to an inside diameter which shall have a relation to the thickness of the specimen as prescribed:

Thickness of Material	Ratio of Bend Diameter to Thickness of Specimen
3/4 inch and under	1/2
Over 3/4 inch to 1 inch incl	1

Cut lengths of stock material can normally be held within 1/8 inch or closer if desired.

STRUCTURAL SQUARE AND RECTANGULAR TUBING TOLERANCES

MAXIMUM OUTSIDE CORNER RADII			
Wall Thickness Inches	Maximum Outside Corner Radii, Inches		
	Perimeters 14" & Under	Perimeters Over 14" to 24" Incl.	Perimeters Over 24"
Over 0.083 to 0.095 incl.	0.190	-	-
Over 0.095 to 0.109 incl.	0.218	-	-
Over 0.109 to 0.134 incl.	0.268	-	-
Over 0.134 to 0.156 incl.	0.312	-	-
Over 0.156 to 0.188 incl.	0.375	0.470	0.565
Over 0.188 to 0.250 incl.	0.500	0.625	0.750
Over 0.250 to 0.313 incl.	0.625	0.785	0.940
Over 0.313 to 0.375 incl.	-	0.938	1.125
Over 0.375 to 0.500 incl.	-	1.250	1.500
Over 0.500 to 0.625 incl.	-	-	1.875

OUTSIDE DIMENSIONS AND WALL THICKNESS		
Largest Outside Dimension Across Flats, Inches	Tolerance for Outside Dimensions Including Convexity or Concavity	Wall Thickness Tolerance
1 to 2-1/2 incl.	Plus or minus 0.020"	Plus or minus 10% Exclusive of weld area
Over 2-1/2 to 3-1/2 incl.	Plus or minus 0.025"	Plus or minus 10% Exclusive of weld area
Over 3-1/2 to 5-1/2 incl.	Plus or minus 0.030"	Plus or minus 12-1/2% Exclusive of weld area
Over 5-1/2	Plus or minus 1%	Plus or minus 12-1/2% Exclusive of weld area

NOTE: The allowable variation in wall thickness does not apply at corners.

TOLERANCES - Continued

SQUARENESS OF SIDES

Adjacent sides of structural hollows may deviate from 90° by plus or minus two degrees maximum.

VARIATIONS FROM EXACT STRAIGHTNESS

$$\text{Permissible Variations, In. (Includes Camber and Sweep) } \frac{1}{8}'' \times \frac{\text{Number of Feet of Total Length}}{5}$$

MAXIMUM TWIST

Longer Outside Dimensions, Inches	Maximum Twist Per 3 Feet of Length, Inches
1 to 1-1/2 incl.	0.050
Over 1-1/2 to 2-1/2 incl.	0.062
Over 2-1/2 to 4 incl.	0.075
Over 4 to 5-1/2 incl.	0.087
Over 5-1/2 to 8 incl.	0.100
Over 8	0.012

Twist is measured by holding down the edge of one end of a square or rectangular structural hollow on a surface plate with the bottom side of the tube parallel to the surface plate and noting the height that either corner on the opposite end of the bottom side is above the surface plate.

PERMISSIBLE VARIATION - MILL LENGTHS

Specified Cut Length	Tolerances for Specified Cut Length			
	To 22' incl.		Over 22'	
	Over	Under	Over	Under
42' max and under	1/2"	1/4"	3/4"	1/4"

Cut lengths of stock material can normally be held within 1/8 in. or closer if desired.

ELECTRIC RESISTANCE WELDED TUBING

Square and Rectangular Tolerances

ASTM A-513

Largest Nominal Outside Dimensions, Inches	Wall Thickness, Inch	Outside Tolerance at All Sides at Corners, Inch Plus and Minus"
3/16 to 5/8 incl.	0.020 to 0.083 incl.	0.004
Over 5/8 to 1-1/8 incl.	0.025 to 0.156 incl.	0.005
Over 1-1/8 to 1-1/2 incl.	0.025 to 0.192 incl.	0.006
Over 1-1/2 to 2 incl.	0.032 to 0.192 incl.	0.008
Over 2 to 3 incl.	0.035 to 0.259 incl.	0.010
Over 3 to 4 incl.	0.049 to 0.259 incl.	0.020
Over 4 to 6 incl.	0.065 to 0.259 incl.	0.020
Over 6 to 8 incl.	0.185 to 0.259 incl.	0.025

NOTE: Measurements should be taken at 2 inches from either end of tube.

CONVEXITY and CONCAVITY: Tubes having two parallel sides are also measured in the center of the flat sides for convexity and concavity. This tolerance applies to the specific size determined at the corners and is measured on the following basis:

Largest Nominal Outside Dimension, Inches	Tolerance Plus and Minus, Inches
2-1/2 and under	0.010
Over 2-1/2 to 4	0.015
Over 4 to 8	0.025

Wall Tolerance

Wall thickness tolerance on square and rectangular tubing is normally plus or minus 10 percent of the nominal wall. This tolerance exceeds the round tubing wall tolerance since stresses involved in forming round tubing into required square or rectangular sections cause wall deformation.

RADI OF CORNERS

The standard radius is established in accordance with the following table. Special radii may be obtained by arrangement between purchaser and producer. The slight flattening of the radius is more pronounced in heavier wall tubing.

Squares and Rectangles Made From Tubes Whose Diameters Range From Inches	Wall Thickness BW. Gage and Dec. Inches	Radius, Inches
1/2 to 1-1/2 incl.	22 (0.028)	1/32 to 1/16
1/2 to 2-1/2 incl.	20 (0.035)	1/32 to 1/16
1/2 to 4 incl.	18 (0.049)	3/64 to 5/64
1/2 to 4-1/8 incl.	16 (0.065)	1/16 to 7/64
3/4 to 4-1/8 incl.	14 (0.083)	5/64 to 1/8
Over 4-1/8 to 6 incl.	14(0.083)	3/16 to 5/16
1 to 4-1/8 incl.	13 (0.095)	3/32 to 5/32
Over 4-1/8 to 6 incl.	13(0.095)	3/16 to 5/16
1-1/4 to 4 incl.	12 (0.109)	1/8 to 13/64
Over 4 to 6 incl.	12 (0.109)	3/16 to 5/16
1-1/4 to 4 incl.	11 (0.120)	1/8 to 7/32
Over 4 to 6 incl.	11 (0.120)	7/32 to 7/16
2 to 4 incl.	10 (0.134)	5/32 to 9/32
Over 4 to 6 incl.	10 (0.134)	7/32 to 7/16
2 to 4 incl.	9 (0.148)	3/16 to 5/16
Over 4 to 8 incl.	9 (0.148)	7/32 to 7/16
2 to 8 incl.	8 (0.165)	1/4 to 1/2
2 to 8 incl.	7 (0.180)	1/4 to 1/2
2-1/2 to 4 incl.	6 (0.203)	5/16 to 9/16
Over 4 to 8 incl.	6 (0.203)	5/16 to 9/16
2-1/2 to 8 incl.	5 (0.220)	3/8 to 5/8
2-1/2 to 8 incl.	4 (0.238)	3/8 to 5/8
2-1/2 to 8 incl.	3 (0.259)	3/8 to 5/8

The above tolerances apply to grade C 1010 and grade C 1020 steel only. Tolerances in other grades are subject to arrangement between purchaser and producer.

SQUARENESS OF SIDES

The squareness tolerance of square and rectangular tubes varies in accordance with the following formula:

$$\pm b = c \times 0.006 \text{ inch}$$

b = Tolerance for out-of-square

c = Length of longest size

Example:

Rectangular tubes 2 inch x 1 inch

c = 2 inch

$$\pm b = 2 \times 0.006 \text{ inch} = 0.012 \text{ inch}$$

Thus a 2 inch x 1 inch rectangular tube may have its sides failing to be 90 degrees to each other by + 0.012 inch.

TWIST

The twist permissible in square and rectangular tubes is shown below.

Twist is measured by holding down the edge of one end of a square or rectangular tube on a surface plate, and noting the height that either corner on the opposite end of the bottom side is above the surface plate.

Longest Side, Inches	Twist Permissible in 3 Ft, in Inch.
Under 1/2	0.032
Over 1/2 to 1-1/2 incl.	0.050
Over 1-1/2 to 2-1/2 incl.	0.062
Over 2-1/2 to 4 incl.	0.075
Over 4 to 6 incl.	0.087
Over 6 to 8 incl.	0.100

ELECTRIC RESISTANCE WELDING TUBING - Tolerances Straightness

Commercial tolerance for straightness is 1/16 inch in three feet.

Length Tolerances - Square and Rectangular

Lengths, Feet	Tolerances, Inches
1 to 3 incl.	± 1/16
Over 3 to 12 incl.	± 3/32
Over 12 to 20 incl.	± 1/8
Over 20 to 30 incl.	± 3/16