

## Mechanical Properties

CONDITION	YIELD	TENSILE	ELONGATION
	Re min	Rm min	
	N/mm <sup>2</sup>	% min	
KM as welded+CR2	220	310	23

## Tolerances

OUTSIDE DIAMETER				
Over	Up to and Including	KM Condition D/a ≤ 40 "GKM, NKM" D/a ≤ 20	GKM, NKM 20 < D/a ≤ 40	All Conditions D/a > 40
mm	mm	mm +/-	mm +/-	mm +/-
	20	0.12	0.18	1.24
20	30	0.15	0.22	0.30
30	50	0.20	0.30	0.40
50	70	0.25	0.37	0.50
70	90	0.30	0.45	0.60
90	110	0.35	0.52	0.70
110	130	0.45	0.68	0.90
130	150	0.55	0.82	1.10

n.b The tolerance on outside diameter includes ovality

### Wall Thickness

The tolerance including eccentricity but excluding the weld, shall be:

- a) thickness less 3mm: +/- 10%
- b) thickness 3mm and over: +/- 8%

### Concavity/Convexity

The maximum concave or convex deflection of a flat side of a square or rectangular section of tube shall not exceed 0.5% of the nominal length of that side.

### Weld Height

The maximum height of the internal weld shall not exceed 60% of the specified thickness.

### Straightness

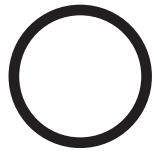
Tubes shall not depart from straightness by more than 1.5 in 1000.

## Chemical Composition - Ladle Analysis

BS EN 10305: 2010 Part 3 & 5 E220

	SI	MN	P	S
max %	max %	max %	max %	max %
0.14	0.35	0.70	0.025	0.025

## Size Chart - Round



Also Available in BS EN 10305-3: 2010

O.D (MM)	WALL	0.71	0.81	0.91	1.00	1.22	1.50	1.63	2.00	2.03	2.50	2.64	2.95	3.25	3.50	4.06	4.88
9.53	-			•		•											
10.00	-				•	•	•										
12.00	-				•	•	•		•								
12.70	-			•		•	•	•									
13.50	-						•										
14.00	-				•		•										
15.00	-				•		•		•								
15.88	-	•	•	•		•	•	•	•	•							
16.00	-				•		•	•	•								
17.20	-					•											
18.00	-	•			•	•	•		•								
19.05	-	•		•	•	•	•	•		•							
20.00	-				•		•		•								
21.30	-										•						
22.00	-						•		•								
22.22	-			•	•	•	•	•		•		•					
25.00	-	•			•	•	•	•	•		•						
25.40	-			•		•	•	•		•	•	•		•			
26.98	-						•		•								
28.00	-						•		•								
28.58	-			•		•	•	•		•		•					
30.00	-						•		•								
31.75	-			•		•	•	•		•		•		•			

### Size Chart - Round

O.D (MM)	WALL	0.71	0.81	0.91	1.00	1.22	1.50	1.63	2.00	2.03	2.50	2.64	2.95	3.25	3.50	4.06	4.88
33.70	-											•					
34.93	-					•	•	•		•		•					
35.00	-					•	•										
38.10	-					•	•	•		•		•		•			•
40.00	-						•		•								
41.28	-					•	•	•		•							
44.45	-					•	•	•		•		•		•			
45.00	-					•		•									
47.63	-					•	•	•		•		•					
50.00	-						•		•								
50.80	-				•	•	•	•		•		•		•			
53.98	-					•	•			•							
57.15	-					•	•	•		•							
60.00	-					•	•		•								
60.33	-							•					•			•	
63.50	-					•	•	•		•		•		•			
66.68	-					•											
69.85	-							•		•		•		•			
76.10	-					•	•	•		•		•		•			
80.00	-						•		•								
88.90	-						•	•		•				•			
101.60	-						•	•		•				•	•	•	
108.00	-							•									
114.30	-						•			•				•			
127.00	-						•			•				•			
133.00	-										•						
139.70	-													•			
152.40	-										•			•			

## Size Chart - Rectangular

Also Available in BS EN 10305-5: 2010



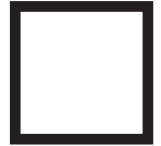
	WALL	0.91	1.00	1.22	1.50	1.63	2.00	2.03	2.34	2.50	2.64	3.00
20.00 x 10.00	-			•	•							
20.00 x 15.00	-			•	•		•					
25.00 x 10.00	-				•							
25.00 x 12.00	-				•							
25.00 x 15.00	-			•	•		•					
25.00 x 20.00	-			•	•		•			•		
25.40 x 12.70	-			•	•	•						
30.00 x 10.00	-		•	•	•							
30.00 x 15.00	-			•	•		•					
30.00 x 20.00	-	•	•	•	•		•					
30.00 x 25.00	-				•		•					
31.75 x 15.88	-			•	•	•		•				
31.75 x 19.05	-			•	•	•						
34.93 x 15.88	-			•	•	•		•				
35.00 x 15.00	-				•		•					
35.00 x 16.00	-				•		•					
35.00 x 20.00	-				•		•					
38.10 x 12.70	-				•							
38.10 x 19.05	-			•	•	•		•				
38.10 x 25.40	-				•	•		•				
40.00 x 10.00	-				•							
40.00 x 15.00	-				•		•					
40.00 x 20.00	-		•	•	•		•					
40.00 x 25.00	-				•		•					•
40.00 x 30.00	-				•		•					
45.00 x 20.00	-				•		•					
45.00 x 25.00	-				•		•			•		
45.00 x 30.00	-				•		•					
47.63 x 23.81	-				•			•				
50.00 x 10.00	-				•							
50.00 x 15.00	-				•							

## Size Chart - Rectangular

	WALL	0.91	1.00	1.22	1.50	1.63	2.00	2.03	2.34	2.50	2.64	3.00
50.00 x 20.00	-				•		•					
50.00 x 25.00	-				•		•			•		•
50.00 x 30.00	-				•		•					
50.00 x 34.00	-						•					
50.00 x 40.00	-				•		•					•
50.80 x 25.40	-			•	•	•		•			•	
50.80 x 38.10	-					•		•				
60.00 x 20.00	-				•	•	•					
60.00 x 25.00	-				•		•					
60.00 x 30.00	-				•		•			•		
60.00 x 40.00	-				•		•					
63.50 x 25.40	-				•		•					
63.50 x 38.10	-				•	•	•					
70.00 x 20.00	-				•		•					
70.00 x 25.00	-						•					
70.00 x 30.00	-					•						
70.00 x 40.00	-						•					
70.00 x 50.00	-						•					
75.00 x 25.00	-				•		•					•
80.00 x 20.00	-				•		•					
80.00 x 30.00	-						•			•		
80.00 x 40.00	-				•		•					
100.00 x 25.00	-						•					
100.00 x 30.00	-						•					
100.00 x 34.00	-						•					
100.00 x 40.00	-						•					
100.00 x 50.00	-						•					
120.00 x 60.00	-									•		•

## Size Chart - Square

Also Available in BS EN 10305-5: 2010



	WALL	0.91	1.00	1.22	1.50	1.63	2.00	2.03	2.34	2.50	2.64	3.00	3.25
10.00 x 10.00	-		•		•								
12.00 x 12.00	-				•								
12.70 x 12.70	-	•		•	•	•							
15.88 x 15.88	-	•		•	•	•		•					
16.00 x 16.00	-		•		•			•					
18.00 x 18.00	-				•								
19.05 x 19.05	-	•		•	•	•		•					
20.00 x 20.00	-		•	•	•		•						
22.22 x 22.22	-	•		•	•	•		•					
25.00 x 25.00	-	•		•	•		•	•					
25.40 x 25.40	-	•		•	•	•		•		•	•		
28.58 x 28.58	-			•	•	•		•					
30.00 x 30.00	-			•	•		•		•	•			
31.75 x 31.75	-			•	•	•		•			•		
34.93 x 34.93	-			•	•	•		•					
35.00 x 35.00	-			•	•		•						
38.10 x 38.10	-			•	•	•		•			•		•
40.00 x 40.00	-			•	•		•			•		•	
45.00 x 45.00	-			•	•		•						
50.00 x 50.00	-				•		•			•		•	
50.80 x 50.80	-				•	•		•			•		•
60.00 x 60.00	-				•		•					•	
80.00 x 80.00	-						•						
90.00 x 90.00	-						•						
100.00 x 100.00	-						•						

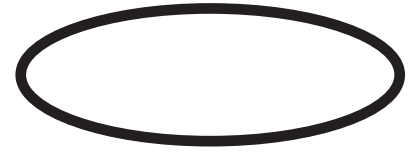
## Size Chart - Flat Sided Oval



Also Available in BS EN 10305-3: 2010

	WALL	1.00	1.22	1.50	1.63	2.00	2.03	2.64	2.95
20.00 x 10.00	-			•					
25.00 x 12.00	-			•					
30.00 x 15.00	-			•		•			
30.00 x 16.00	-			•					
31.75 x 15.88	-		•	•	•		•	•	
35.00 x 15.00	-			•					
35.00 x 20.00	-			•		•			
38.10 x 25.40	-		•	•	•		•		
40.00 x 20.00	-		•	•	•		•		
41.28 x 22.22	-		•	•	•		•		
41.70 x 22.61	-		•	•	•		•		
44.45 x 19.05	-	•							
45.00 x 17.00	-			•					
45.00 x 20.00	-		•	•	•		•		
50.00 x 20.00	-					•			
50.00 x 25.00	-			•		•			
60.00 x 20.00	-					•			
60.00 x 30.00	-			•		•			
66.68 x 33.34	-							•	•
70.00 x 20.00	-			•	•		•		

## Size Chart - Elliptical Oval



	WALL	1.00	1.22	1.50	1.63	2.00	2.03	2.64	2.95
18.72 x 12.62	-			•					
22.22 x 12.70	-		•	•	•		•		
23.50 x 13.34	-		•	•	•		•		
26.29 x 16.21	-		•	•	•		•		
32.00 x 17.50	-		•	•	•		•		
38.10 x 25.40	-		•	•	•		•		

## Sculptured Tube

Sculptured tube has an embossed outside diameter making it suitable for practical and decorative applications. The embossed surface also increases its strength by up to 50%. Sculptured tube is produced in a series of standard patterns.

### Typical Applications

- Transport hand rail systems
- Furniture
- Ladder rungs
- Shop fittings
- Exhibition stands
- Grip rails

Various sections are available ex stock in a wide range of gauges and sizes.

## Size Chart - 'D' & Trapezoidal

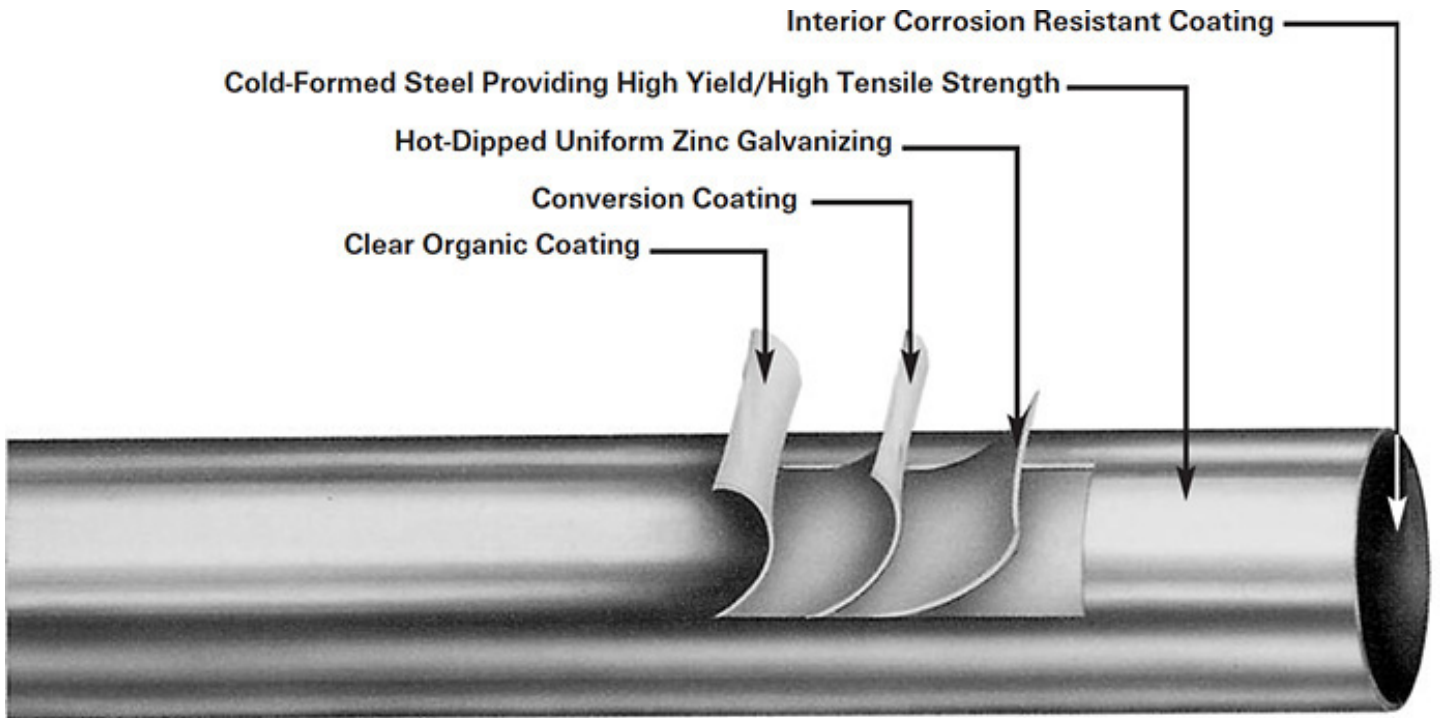


		WALL	1.00	1.22	1.50	1.63	2.00	2.03	2.64	2.95
<b>D' Section</b>	40.00 x 20.00	-		•	•	•		•		
<b>Trapezoidal</b>	60.00 x 30.00	-		•	•	•		•		



## Flo Coat Tube

The manufacturing of Flo-Coat is accomplished automatically 'in-line', quite unlike any other galvanized tube. The galvanizing and other coating operations all take place sequentially as the tube travels along from the welding stage of the production line. In this way the consistency of coating is controlled to tolerances unequalled by any other process. The combination of cold forming, heating and rapid cooling inherent in the Flo-Coat process enhances the mechanical properties of the tube, resulting in higher tensile strength.

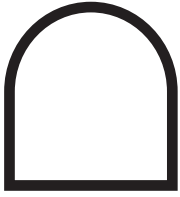


## Pre-Galvanised

When finished products require internal galvanising we can supply tube manufactured from pre-galvanised strip. The weld zone area is spray repaired after the removal of the external fin.

BS 2982	EN 10142
Z2	DX5 1D+Z/+ZF
Z28	S280GD+Z/+ZF
Z35	S350GD+Z/+ZF

### Size Chart - Tunnel



	WALL	1.00	1.22	1.50	1.63	2.00	2.03	2.64	2.95
35.00 x 30.00	-			•		•			
60.00 x 25.00	-			•		•			
60.00 x 30.00	-			•		•			