


Cold Drawn Seamless Mechanical Tube				
BS 6323 Part 4 : 1982 CFS 3				
Chemical Composition - Ladle Analysis				
C	Si	Mn	P	S
max %	max %	max %	max %	max %
0.20	0.35	0.90	0.05	0.05
Mechanical Properties				
Condition	Yield	Tensile	Elongation	
	Re min N/mm ²	Rm min N/mm ²	min %	
BK as drawn	360	450	6	
GBK annealed	170	340	26	
NBK normalized	215	360	24	
Tolerances				
Outside diameter				
Over	Up to and Including	Tolerance		
mm	mm	mm +/-		
	30	0.10		
30	50	0.15		
50	70	0.20		
70	90	0.25		
90	110	0.30		
110	130	0.35		
130	160	0.45	Ovality	
The tolerance for outside diameter includes ovality.				
Wall thickness			Straightness	
The tolerance including eccentricity, shall be +/- 10% with a minimum of +/- 0.1mm.			Tubes shall not depart from straightness by more than 1.5 in 1000	

Cold Drawn Seamless Mechanical Tube				
BS 6323 Part 4 : 1982				
Chemical Composition				
GRADE	C %	Si %	Mn %	P & S %
CFS 3A	0.20 max	0.10 - 0.35	0.60 - 1.00	0.050 max
CFS 4	0.25 max	0.35 max	1.20 max	0.050 max
CFS 5	0.23 max	0.50 max	1.50 max	0.050 max
CFS 6	0.30 - 0.40	0.35 max	0.50 - 0.90	0.050 max

Cold Drawn Seamless Mechanical Tube

BS 6323 Part 4 : 1982

Bright-as-Drawn - CFS 3 BK

Annealed - CFS 3 GBK

	Wall	0.71	0.81	0.91	1.22	1.42	1.63	2.03	2.34	2.64	2.95	3.25	4.06	4.76	4.88	6.35	7.94	9.53	12.70
O.D.																			
4.76																			
6.35				●	●		●												
7.94				●	●		●	●											
9.53				●	●	●	●	●		●		●							
11.11				●	●	●	●	●											
12.70				●	●	●	●	●		●		●							
14.29	●			●	●		●	●		●	●	●							
15.88				●	●		●	●		●	●	●	●		●				
17.46				●			●	●				●							
19.05					●		●	●		●	●	●	●		●	●			
20.64							●	●				●							
22.22					●	●	●	●		●	●	●	●		●	●			
25.40					●	●	●	●	●	●	●	●	●		●	●			
26.99							●	●				●	●		●				
28.58					●	●	●	●		●		●	●		●	●			
30.16							●	●		●									
31.75					●		●	●		●			●	●	●	●	●		
33.34							●						●						
34.93					●		●	●		●		●	●		●	●	●	●	●
38.10							●	●		●		●	●		●	●	●	●	●
39.69												●			●				
41.28							●	●		●		●	●		●	●	●	●	●
42.86										●		●							
44.45							●	●		●		●	●		●	●	●	●	●
47.63										●		●	●		●	●	●	●	●
50.80				●			●	●		●		●	●		●	●	●	●	●
53.98												●			●	●	●	●	●
57.15								●		●		●	●		●	●	●	●	●
60.33							●					●	●		●	●	●	●	●
63.50								●		●		●	●		●	●	●	●	●
66.68												●			●	●			
69.85												●	●		●	●		●	●
73.02							●												●
76.20							●	●		●		●			●	●	●	●	●
79.38							●												
82.55							●			●		●				●		●	●
88.90												●			●	●	●	●	●
95.25												●			●				
101.60												●	●		●				
107.95												●			●				
114.30												●			●				
127.00												●							●

ALSO AVAILABLE IN
BS EN 10305-1: 2002

Cold Drawn Seamless for Hydraulic & Pneumatic Lines

BS 3602 Part 1 CFS Cat 2 Alternatively Din 2391 ST 35.4 NBK

Chemical Composition - Ladle Analysis

C	Si		Mn		P	S	Al
	min%	max%	min%	max%	max%	max%	max%
0.17	0.10	0.35	0.30	0.80	0.035	0.035	0.06

Mechanical Properties

Condition	Tensile		Elongation	Yield				
	Rm N/mm2		A %	Re min.for thickness (in mm) N/mm2				
	min	max	min	<16	>16	<40	>40	<65
NBK normalized	360	500	25	235		225		215

Tolerances

Outside Diameter

Over	Up to and Including	Tolerance
mm	mm	mm+/-
	30	0.08
30	40	0.15
40	50	0.20
50	60	0.25
60	70	0.30
70	80	0.35
80	90	0.40

Test Pressure

The test pressure can be calculated using the following equation

$$P = \frac{20 S_a}{D}$$

- D Outside Diameter in mm
a Thickness in mm
S Stress in N/mm² (80% of minimum yield strength)

Wall thickness

Tolerance +/- 7.50%

Straightness

1 in 600 measured at centre of the length



ALSO AVAILABLE IN
BS EN 10305-4: 2003

Cold Drawn Seamless Hydraulic

BS 3602 Part 1 CFS Cat 2 Alternatively Din 2391 ST 35.4 NBK

	Wall	0.91	1.00	1.22	1.42	1.50	1.63	2.00	2.03	2.50	2.64	2.95	3.00	3.25	3.66	4.00	4.06	4.88	5.00	6.00	
O.D.																					
6.00			•			•		•													
6.35		•		•			•														
7.94		•		•			•														
8.00			•			•		•													
9.52		•		•	•		•		•												
10.00			•			•		•													
12.00			•			•		•		•				•							
12.70		•		•			•		•		•										
13.50															•						
14.00			•			•		•		•											
15.00			•			•		•		•				•							
15.88		•		•			•		•		•			•							
16.00			•			•		•					•								
17.46												•									
18.00			•			•		•													
19.05				•			•		•		•			•							
20.00						•		•		•			•			•					
21.43											•			•							
22.00						•		•		•			•								
22.22				•			•		•		•			•							
25.00						•		•		•			•			•					
25.40				•			•		•		•			•							
26.99															•						
28.00						•		•		•						•					
30.00								•		•			•			•				•	
31.75							•		•		•			•			•				
34.13																	•				
34.93									•												
35.00						•		•					•			•					
38.00								•		•			•			•				•	•
38.10							•				•			•						•	•
42.00								•					•								
44.45							•							•							
48.42																		•			
50.00													•								
50.80							•		•		•			•			•				

ALSO AVAILABLE IN
BS EN 10305-4: 2003