

STEEL TUBES FOR MECHANICAL & GENERAL ENGINEERING PURPOSES
SPECIFICATION IS:3601:2006

| NB (mm) | OUTSIDE DIAMETER | WALL THICKNESS | NOMINAL WEIGHT OF BLACK TUBES | | NB (mm) | OUTSIDE DIAMETER | WALL THICKNESS | NOMINAL WEIGHT OF BLACK TUBES | |
|------------|---------------------|-------------------|----------------------------------|----------|------------|---------------------|-------------------|----------------------------------|----------|
| | | | PLAIN END | | | | | PLAIN END | |
| | MIN. (mm) | mm | Kg/Mtr | Mtrs/Ton | | MIN. (mm) | mm | Kg/Mtr | Mtrs/Ton |
| 15 | 21.3 | 1.8 | 0.866 | 1155 | 100 | 114.3 | 3.2 | 8.77 | 114 |
| | | 2.0 | 0.952 | 1050 | | | 3.6 | 9.75 | 103 |
| | | 2.6 | 1.21 | 826 | | | 4.5 | 12.20 | 82 |
| | | 3.2 | 1.43 | 699 | | | 5.4 | 14.50 | 69 |
| | | 4.0 | 1.71 | 585 | | | 6.3 | 16.80 | 60 |
| 20 | 26.9 | 1.8 | 1.11 | 901 | 110 | 127.0 | 4.5 | 13.60 | 74 |
| | | 2.0 | 1.23 | 813 | | | 5.0 | 15.00 | 67 |
| | | 2.3 | 1.38 | 725 | | | 5.4 | 16.20 | 62 |
| | | 2.6 | 1.56 | 641 | 125 | 139.7 | 3.6 | 12.10 | 83 |
| | | 3.2 | 1.87 | 535 | | | 4.0 | 13.40 | 75 |
| | | 4.0 | 2.26 | 442 | | | 4.5 | 15.00 | 67 |
| 25 | 33.7 | 2.0 | 1.56 | 641 | 150 | 165.1 | 5.0 | 15.90 | 63 |
| | | 2.3 | 1.78 | 562 | | | 5.4 | 17.90 | 56 |
| | | 2.6 | 1.99 | 503 | | | 6.3 | 20.70 | 48 |
| | | 3.2 | 2.41 | 415 | | | 4.5 | 17.80 | 56 |
| 32 | 42.4 | 4.0 | 2.93 | 341 | 150 | 168.3 | 5.0 | 19.70 | 51 |
| | | 2.3 | 2.27 | 441 | | | 5.4 | 21.20 | 47 |
| | | 2.6 | 2.54 | 394 | | | 6.3 | 24.80 | 40 |
| | | 3.2 | 3.10 | 323 | | | 4.0 | 16.20 | 62 |
| | | 3.6 | 3.44 | 291 | | | 4.5 | 18.20 | 55 |
| 40 | 48.3 | 4.0 | 3.79 | 264 | 175 | 193.7 | 5.0 | 19.40 | 52 |
| | | 2.3 | 2.27 | 441 | | | 5.4 | 21.70 | 46 |
| | | 2.6 | 2.55 | 392 | | | 6.3 | 25.20 | 40 |
| | | 2.9 | 3.23 | 310 | | | 7.1 | 28.20 | 35 |
| | | 3.2 | 3.56 | 281 | | | 5.0 | 23.30 | 43 |
| | | 4.0 | 4.37 | 229 | | | 5.4 | 25.10 | 40 |
| 50 | 60.3 | 2.3 | 3.29 | 304 | 200 | 219.1 | 5.9 | 27.30 | 37 |
| | | 2.6 | 3.70 | 270 | | | 6.3 | 29.10 | 34 |
| | | 2.9 | 4.08 | 245 | | | 4.5 | 23.80 | 42 |
| | | 3.6 | 5.03 | 199 | | | 5.0 | 26.40 | 38 |
| | | 4.0 | 5.55 | 180 | | | 5.6 | 29.50 | 34 |
| | | 4.5 | 6.19 | 162 | | | 6.3 | 33.10 | 30 |
| 65 | 76.1 | 2.6 | 5.24 | 191 | 250 | 273.0 | 8.0 | 41.60 | 24 |
| | | 2.9 | 5.75 | 174 | | | 5.0 | 33.00 | 30 |
| | | 3.2 | 5.71 | 175 | | | 6.3 | 41.40 | 24 |
| | | 3.6 | 6.42 | 156 | | | 7.1 | 46.60 | 21 |
| | | 4.5 | 7.93 | 126 | | | 10.0 | 64.90 | 15 |
| 80 | 88.9 | 2.9 | 6.15 | 163 | 300 | 323.9 | 5.6 | 44.00 | 23 |
| | | 3.2 | 6.72 | 149 | | | 7.1 | 55.50 | 18 |
| | | 4.0 | 8.38 | 119 | | | 8.0 | 62.30 | 16 |
| | | 5.0 | 10.30 | 97 | | | 10.0 | 77.40 | 13 |

MECHANICAL PROPERTIES

| Tube Designation | T. S. (Min.) Mpa | Y.S. (Min) MPA | Elongation % age | |
|---------------------|---------------------|----------------|---------------------|-----|
| | | | <1" | >1" |
| WT 160 | 310 | 160 | 15 | 22 |
| WT 210 | 330 | 210 | 12 | 20 |
| WT 240 | 410 | 240 | 10 | 15 |
| WT 310 | 450 | 310 | 6 | 10 |

NOTE:

These are preferred OD & Thickness. Other Sizes not included may be supplied as per Customer Specification

**ERW STEEL TUBES FOR WATER AND SEWAGE PURPOSES
CONFORMING TO IS 3589:2001
(GRADE FE 330 FE 410 AND FE 450)**

| N.B. SIZE | OUTSIDE DIAMETER | WALL THICKNESS | WEIGHT (PLAIN END) | |
|-----------|------------------|----------------|--------------------|---------|
| | | | KG/M | M/TONNE |
| 150 | 168.3 | 2.6 | 10.6 | 94 |
| | | 3.2 | 13.0 | 77 |
| | | 4.0 | 16.2 | 62 |
| | | 4.5 | 18.2 | 55 |
| 200 | 219.1 | 2.6 | 13.9 | 72 |
| | | 3.6 | 19.1 | 52 |
| | | 4.5 | 23.8 | 42 |
| | | 6.3 | 33.1 | 30 |
| 250 | 273 | 3.6 | 23.9 | 42 |
| | | 4.0 | 26.5 | 38 |
| | | 5.0 | 33 | 30 |
| | | 6.3 | 41.4 | 24 |
| 300 | 323.9 | 4.0 | 31.6 | 31 |
| | | 4.5 | 35.4 | 28 |
| | | 5.6 | 44 | 23 |
| | | 7.1 | 55.5 | 18 |
| 350 | 355.6 | 4.0 | 34.7 | 29 |
| | | 5.0 | 43.2 | 23 |
| | | 5.6 | 48.3 | 21 |
| | | 8.0 | 68.6 | 15 |
| 400 | 406.4 | 4.0 | 39.7 | 25 |
| | | 5.0 | 49.5 | 20 |
| | | 6.3 | 62.2 | 16 |
| | | 8.8 | 86.3 | 12 |

A - PHYSICAL PROPERTIES

| Grade | Y.S. MPa (min) | T.S. MPa (min) | % age Elongation (min) |
|--------|-------------------|-------------------|---------------------------|
| FE 330 | 195 | 330 | 20 |
| FE 410 | 235 | 410 | 18 |
| FE 450 | 275 | 450 | 15 |

B - TOLERANCES

- i) Outside diameter of ERW pipe \pm 0.75%
- ii) Thickness \pm 10%
- iii) Unless otherwise specified, lengths are in single random lengths from 4 to 7 meters and double random lengths from 7 to 14 meters.

**ERW STEEL TUBES FOR WATER WELLS (CASING PIPES)
CONFORMING TO IS 4270:2001
FE 410 AND FE 450**

| N.B. AND SERIES | OUTSIDE DIAMETER | THICKNESS | NOMINAL WEIGHT BLACK TUBES PLAIN END |
|-----------------|------------------|-----------|--------------------------------------|
| | | | KG/M |
| 100 | 114.3 | 5.0 | 13.48 |
| 125 | 141.3 | 5.0 | 16.80 |
| 150 | 168.3 | 5.0 | 20.13 |
| 175 | 193.7 | 5.4 | 25.10 |
| 200 | 219.1 | 5.4 | 28.46 |
| 225 | 244.5 | 6.0 | 35.29 |
| 250 | 273.1 | 7.1 | 46.57 |
| 300 | 323.9 | 7.1 | 55.47 |
| 350 | 355.6 | 8.0 | 68.57 |
| 350 | 355.6 | 10.0 | 85.22 |
| 350 | 355.6 | 12.0 | 101.67 |
| 400 | 406.4 | 8.0 | 78.60 |
| 400 | 406.4 | 10.0 | 97.75 |
| 400 | 406.4 | 12.0 | 116.71 |

A - PHYSICAL PROPERTIES

| Grade | Y.S. MPa (min) | T.S. min MPa (min) | % age Elongation (Min) |
|--------|-------------------|-----------------------|---------------------------|
| FE 410 | 235 | 410 | 15 |
| FE 450 | 275 | 450 | 13 |

B - TOLERANCES

- i) Outside diameter of pipe \pm 1.0%
- ii) Thickness \pm 15%
upto 406.4mm OD - 12.5%
- iii) Weight \pm 10%
Single Tube - 8%
- iv) Length unless otherwise specified 4 to 7 mtrs