



## A. PHYSICAL PROPERTIES

| GRADE   | Y.S (min)<br>Mpa(kg/mm <sup>2</sup> ) | T. S. (min)<br>MPa(kg/mm <sup>2</sup> ) | %age<br>Elongation |
|---------|---------------------------------------|---|--------------------|
| YST-210 | 210 (21.42)                           | 330 (33.66)                             | 20                 |
| YST-240 | 240 (24.48)                           | 410 (41.82)                             | 17                 |
| YST-310 | 310 (31.62)                           | 540 (55.08)                             | 14                 |

Note : For tube size upto and including 25mm NB, elongation of 12% shall be permissible.

## B TOLERANCES

- |   |  |                         |
|---|--|-------------------------|
| (i) Outside diameter :                            |  |                         |
| Upto & including 48.3 mm                          |  | +0.4 mm<br>- 0.8 mm     |
| Over 48.3mm                                       |  | ± 1%                    |
| (ii) Thickness                                    |  | + Not limited<br>- 10 % |
| (iii) Weight                                      |  |                         |
| - Single Tube                                     |  | +10%<br>- 8%            |
| - For quantities less than 150 meters of one size |  | +10%<br>- 8%            |
| - For quantities 150 meters and over of one size  |  | ± 4%                    |

## STEEL TUBES CONFORMING TO IS : 3589-1981

| N. B. Size mm | O. D. mm | Wall Thickness mm | Plain End |         |
|---------------|----------|-------------------|-----------|---------|
|               |          |                   | Kg/m      | m/Tonne |
| 150           | 168.3    | 4.0               | 16.2      | 61.5    |
|               |          | 4.5               | 18.2      | 55.0    |
|               |          | 4.8               | 19.4      | 52.0    |
|               |          | 5.0               | 20.1      | 50.0    |
|               |          | 5.4               | 21.7      | 46.0    |
|               |          | 6.0               | 24.0      | 41.5    |
|               |          | 7.0               | 27.8      | 36.0    |
| 200           | 219.1    | 4.0               | 21.2      | 47.0    |
|               |          | 4.5               | 23.8      | 42.0    |
|               |          | 4.8               | 25.4      | 39.0    |
|               |          | 5.0               | 26.4      | 38.0    |
|               |          | 5.4               | 28.5      | 33.0    |
|               |          | 6.0               | 31.5      | 31.75   |
|               |          | 7.0               | 36.6      | 27.0    |

### TOLERANCES :

- |                     |                           |
|---------------------|---------------------------|
| a. Outside diameter |                           |
| Pipe body           | : ± 0.75 %                |
| Pipe end            | : + 1.60 mm<br>: -0.40 mm |
| b. Thickness :      | ±10%                      |
| c. Lengths          |                           |

Unless otherwise specified, lengths are in single lengths of 4 to 7 meters or double random lengths of ± 7 to 13 meters.



## STEEL TUBES FOR ORDINARY USES IN WATER, GAS, STEAM AND AIR LINES CONFORMING TO IS : 1239 (PART-I) 1990

| N.B and series | Outside Diameter |       | Wall Thickness |      | Nominal weight Black & Galvanised Tubes |       |            |       | Sockets   |                  | TOLERANCES:        |  |  |  |                       |
|----------------|------------------|-------|----------------|------|---|-------|------------|-------|-----------|------------------|--------------------|--|--|--|-----------------------|
|                | mm               | min   | max.           | mm   | SWG                                     | Kg/m  | Mtrs. /Ton | Kg/m  | Mtrs /Ton | Mini-mum O.D. mm | Mini-mum Length mm | (a) Thickness  |  |  |                       |
| 15L            | 21.0             | 21.4  | 2.00           | 14   | 0.95                                    | 1053  | 0.96       | 1042  |           |                  |                    | 1 Light Tubes  | + not limited<br>-8%                   |  |                       |
|                | M                | 21.0  | 21.8           | 2.60 | 12                                      | 1.21  | 826        | 1.22  | 820       | 27.0             | 37.0               |  |  | 2 Medium & heavy tubes                 | + not limited<br>-10% |
|                | H                | 21.0  | 21.8           | 3.20 | 10                                      | 1.44  | 694        | 1.45  | 690       |                  |                    |  |  |  |                       |
| 20L            | 26.4             | 26.9  | 2.30           | 13   | 1.38                                    | 725   | 1.39       | 719   |           |                  |                    | (b) Weight   |  |  |                       |
|                | M                | 26.5  | 27.3           | 2.60 | 12                                      | 1.56  | 641        | 1.57  | 637       | 32.5             | 39.0               |  |  |  |                       |
|                | H                | 26.5  | 27.3           | 3.20 | 10                                      | 1.87  | 535        | 1.88  | 532       |                  |                    |  |  |  |                       |
| 25L            | 33.2             | 33.8  | 2.60           | 12   | 1.98                                    | 505   | 2.00       | 500   |           |                  |                    | 1. Single Tube (Light Series)  | +10%<br>-8%                            |  |                       |
|                | M                | 33.3  | 34.2           | 3.20 | 10                                      | 2.41  | 415        | 2.43  | 412       | 39.5             | 46.0               |  |  | 2. Single Tube (Medium & Heavy Series) | +10%<br>-10%          |
|                | H                | 33.3  | 34.2           | 4.00 | 8                                       | 2.93  | 341        | 2.95  | 339       |                  |                    |  |  |  |                       |
| 32L            | 41.9             | 42.5  | 2.60           | 12   | 2.54                                    | 394   | 2.57       | 389   |           |                  |                    | 3. For quantities per load of 10 tonnes min. (Light series)          | +5%<br>-5%                             |  |                       |
|                | M                | 42.0  | 42.9           | 3.20 | 10                                      | 3.10  | 323        | 3.13  | 319       | 49.0             | 51.0               |  |  |  |                       |
|                | H                | 42.0  | 42.9           | 4.00 | 8                                       | 3.79  | 264        | 3.82  | 262       |                  |                    |  |  |  |                       |
| 40L            | 47.8             | 48.4  | 2.90           | 11   | 3.23                                    | 310   | 3.27       | 306   |           |                  |                    | 4. For quantities per load of 10 tonnes min. (Medium & Light Series) | +7.5%<br>-7.5%                         |  |                       |
|                | M                | 47.9  | 48.8           | 3.20 | 10                                      | 3.56  | 281        | 3.60  | 278       | 56.0             | 51.0               |  |  |  |                       |
|                | H                | 47.9  | 48.8           | 4.00 | 8                                       | 4.37  | 229        | 4.41  | 227       |                  |                    |  |  |  |                       |
| 50L            | 59.6             | 60.2  | 2.90           | 11   | 4.08                                    | 245   | 4.15       | 241   |           |                  |                    | (c) Length   | Unless otherwise specified 4 to 7 mtr. |  |                       |
|                | M                | 59.7  | 60.8           | 3.60 | 9                                       | 5.03  | 199        | 5.10  | 196       | 68.0             | 60.0               |  |  |  |                       |
|                | H                | 59.7  | 60.8           | 4.50 | 7                                       | 6.19  | 162        | 6.26  | 160       |                  |                    |  |  |  |                       |
| 80L            | 75.2             | 76.0  | 3.20           | 10   | 5.71                                    | 175   | 5.83       | 172   |           |                  |                    |  |  |  |                       |
|                | M                | 75.3  | 76.6           | 3.60 | 9                                       | 6.42  | 156        | 6.54  | 153       | 84.0             | 69.0               |  |  |  |                       |
|                | H                | 75.3  | 76.6           | 4.50 | 7                                       | 7.93  | 126        | 8.05  | 124       |                  |                    |  |  |  |                       |
| 100L           | 87.9             | 88.7  | 3.20           | 10   | 6.72                                    | 149   | 6.89       | 145   |           |                  |                    |  |  |  |                       |
|                | M                | 88.0  | 89.5           | 4.00 | 8                                       | 8.36  | 120        | 8.53  | 117       | 98.0             | 75.0               |  |  |  |                       |
|                | H                | 88.0  | 89.5           | 4.80 | 6                                       | 9.90  | 101        | 10.40 | 96        |                  |                    |  |  |  |                       |
| 125            | 113.0            | 113.9 | 3.60           | 9    | 9.75                                    | 103   | 10.00      | 100   |           |                  |                    |  |  |  |                       |
|                | M                | 113.1 | 115.0          | 4.50 | 7                                       | 12.20 | 82         | 12.50 | 80        | 124.0            | 87.0               |  |  |  |                       |
|                | H                | 113.1 | 115.0          | 5.40 | 5                                       | 14.50 | 69         | 14.80 | 68        |                  |                    |  |  |  |                       |
| 150            | 138.5            | 140.8 | 4.80           | 6    | 15.90                                   | 63    | 16.40      | 61    |           |                  |                    |  |  |  |                       |
|                | M                | 138.5 | 140.8          | 5.40 | 5                                       | 17.90 | 56         | 18.40 | 54        | 151.0            | 96.0               |  |  |  |                       |
|                | H                | 138.5 | 140.8          | 5.40 | 5                                       | 17.90 | 56         | 18.40 | 54        | 151.0            | 96.0               |  |  |  |                       |
| 150            | 163.9            | 166.5 | 4.80           | 6    | 18.90                                   | 53    | 19.50      | 51    |           |                  |                    |  |  |  |                       |
|                | M                | 163.9 | 166.5          | 4.80 | 6                                       | 18.90 | 53         | 19.50 | 51        |                  |                    |  |  |  |                       |
|                | H                | 163.9 | 166.5          | 5.40 | 5                                       | 21.30 | 47         | 21.90 | 46        | 178.0            | 96.0               |  |  |  |                       |



## STEEL TUBES FOR STRUCTURAL PURPOSE CONFORMING TO IS : 1161-1979

| N.B<br>and<br>series | Outside<br>Diameter | Thickness | Nominal weight                      |          | Calculated<br>Nominal weight  |         |
|----------------------|---------------------|-----------|-------------------------------------|----------|-------------------------------|---------|
|                      |                     |           | Black/Galvanised Tubes<br>Plain End |          | Galvanised Tubes<br>Plain End |         |
|                      |                     | mm        | Kg/m                                | m/Tonnes | Kg/m                          | m/Tonne |
| 15L                  | 21.3                | 2.00      | 0.96                                | 1042     | 1.00                          | 1000    |
| M                    |                     | 2.65      | 1.22                                | 820      | 1.27                          | 787     |
| H                    |                     | 3.25      | 1.45                                | 690      | 1.50                          | 667     |
| 20 L                 | 26.9                | 2.35      | 1.42                                | 704      | 1.47                          | 680     |
| M                    |                     | 2.65      | 1.58                                | 633      | 1.64                          | 610     |
| H                    |                     | 3.25      | 1.90                                | 526      | 1.96                          | 510     |
| 25L                  | 33.7                | 2.65      | 2.04                                | 490      | 2.09                          | 478     |
| M                    |                     | 3.25      | 2.46                                | 407      | 2.52                          | 397     |
| H                    |                     | 4.05      | 2.99                                | 334      | 3.05                          | 328     |
| 32L                  | 42.4                | 2.65      | 2.61                                | 383      | 2.69                          | 372     |
| M                    |                     | 3.25      | 3.15                                | 317      | 3.24                          | 309     |
| H                    |                     | 4.05      | 3.86                                | 259      | 3.94                          | 254     |
| 40L                  | 48.3                | 2.90      | 3.27                                | 306      | 3.37                          | 297     |
| M                    |                     | 3.25      | 3.61                                | 277      | 3.73                          | 268     |
| H                    |                     | 4.05      | 4.43                                | 226      | 4.55                          | 220     |
| 50 L1                | 60.3                | 2.90      | 4.14                                | 242      | 4.26                          | 235     |
| L2                   |                     | 3.25      | 4.57                                | 219      | 4.71                          | 212     |
| M                    |                     | 3.65      | 5.10                                | 196      | 5.25                          | 190     |
| H                    |                     | 4.50      | 6.17                                | 162      | 6.32                          | 158     |
| 65L                  | 76.1                | 3.25      | 5.84                                | 171      | 5.99                          | 167     |
| M                    |                     | 3.65      | 6.53                                | 153      | 6.70                          | 149     |
| H                    |                     | 4.50      | 7.92                                | 126      | 8.09                          | 124     |
| 80L                  | 88.9                | 3.25      | 6.86                                | 146      | 7.04                          | 142     |
| M                    |                     | 4.05      | 8.48                                | 118      | 8.70                          | 115     |
| H                    |                     | 4.85      | 10.10                               | 99       | 10.32                         | 97      |
| 100L                 | 114.3               | 3.65      | 9.97                                | 100      | 10.18                         | 98      |
| M                    |                     | 4.50      | 12.10                               | 83       | 12.39                         | 81      |
| H                    |                     | 5.40      | 14.50                               | 69       | 14.69                         | 68      |
| 110L                 | 127.0               | 4.50      | 13.60                               | 74       | 13.90                         | 72      |
| M                    |                     | 4.85      | 14.60                               | 68       | 14.90                         | 67      |
| H                    |                     | 5.40      | 16.20                               | 62       | 16.50                         | 61      |
| 125L                 | 139.7               | 4.50      | 14.90                               | 67       | 15.24                         | 66      |
| M                    |                     | 4.85      | 16.20                               | 62       | 16.56                         | 60      |
| H                    |                     | 5.40      | 17.90                               | 56       | 18.16                         | 55      |
| 135L                 | 152.4               | 4.50      | 16.40                               | 61       | 16.77                         | 60      |
| M                    |                     | 4.85      | 17.70                               | 57       | 18.07                         | 55      |
| H                    |                     | 5.40      | 19.50                               | 51       | 19.87                         | 50      |
| 150L                 | 165.1               | 4.50      | 17.80                               | 56       | 18.20                         | 55      |
| M                    |                     | 4.85      | 19.20                               | 52       | 19.63                         | 51      |
| H                    |                     | 5.40      | 21.20                               | 47       | 21.62                         | 46      |
| 150L                 | 168.3               | 4.50      | 18.10                               | 55       | 18.50                         | 54      |
| M                    |                     | 4.85      | 19.60                               | 51       | 20.00                         | 50      |
| H1                   |                     | 5.40      | 21.70                               | 46       | 22.10                         | 45      |
| H2                   |                     | 6.30      | 25.30                               | 40       | 25.70                         | 39      |
| 200L                 |                     | 219.1     | 4.85                                | 25.70    | 39                            | 26.24   |
| M                    | 5.60                |           | 29.40                               | 34       | 29.94                         | 33      |
| H                    | 5.90                |           | 31.00                               | 32       | 31.54                         | 32      |