



ERW Black/Painted  
Galvanized Pipes & Tubes  
(Rounds & Sections)  
Pre- Galvanized Tubes  
Galvanized Coils

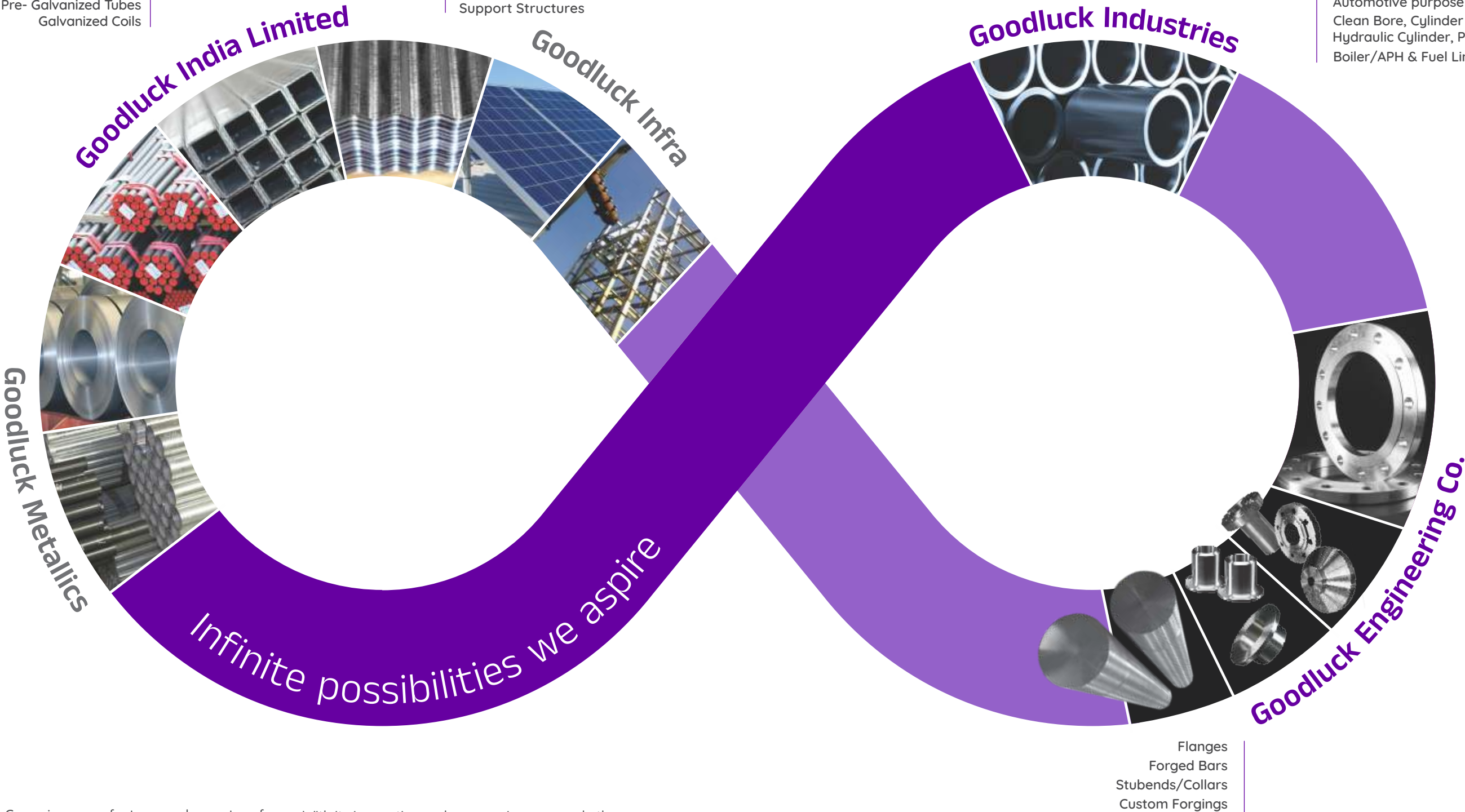
**GOODLUCK**  
Goodluck India Limited

# A versatile business group with strong foundation

ERW Black/Painted  
Galvanized Pipes & Tubes  
(Rounds & Sections)  
Pre- Galvanized Tubes  
Galvanized Coils

Transmission & Telecom Towers  
Fabricated Steel Structures  
Railway/Road Bridges  
Support Structures

ERW - Round, Square  
& Section Tubes  
CDW - Tubes specially for  
Automotive purpose  
Clean Bore, Cylinder Bore,  
Hydraulic Cylinder, Profiles Tubes  
Boiler/APH & Fuel Line Tubes.

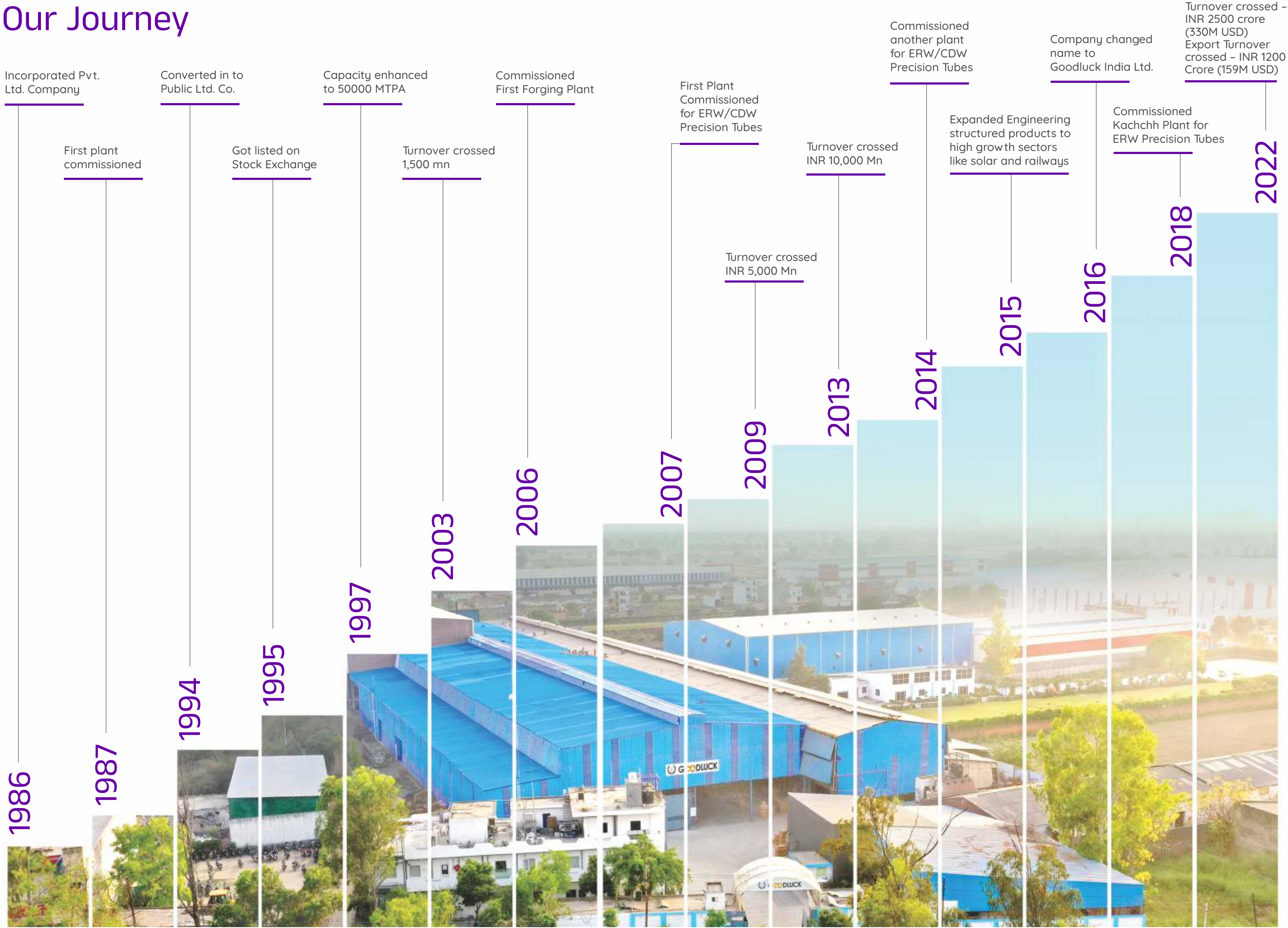


Goodluck India Group is a manufacturer and exporter of wide range of ERW Hot Dip Galvanized Pipes, Black Pipes, Black & GI Hollow Sections, CR Coils, CRCA, Galvanized Plain & Corrugated Sheets, ERW Precision & CDW Tubes, Power & Telecom Towers, Solar Structures, Forged Flanges and Custom Forgings. The company was established three decades ago.

With its innovative and progressive approach, the group today is one of the leading and fastest business groups in the Steel Industry. An ISO-9001, AS 9100D, IATF-16949, ISO-14001 & OH&SMS-45001 & CE certified organization, Goodluck India Group operates under five verticals; Goodluck India Limited, Goodluck Industries, Goodluck Engineering Co., Goodluck Metallica & Goodluck Infra.

Flanges  
Forged Bars  
Stubends/Collars  
Custom Forgings

# Our Journey



## Achieve the extraordinary

Life is too short to settle for the ordinary. So we commit to doing something singular, something unexpected, something no one else has done or dared to do.

## Make it fun

We work hard and we play hard. Life is short, so we might as well make it a fun ride.

## Show up curious

Curiosity can take you places! Thinking differently is in our DNA. We work to challenge one another to push boundaries and think beyond the box.

## Change lives

We have one chance to make a difference — for our customers, our teammates, our partners, our neighbours, ourselves — and we are here to seize it.

## Focus on focus

Even when things get hectic, we never lose sight of our goals. We execute on the details. We take pride in our work.

# State-of-the-art pipe & section making technology

It's all about in-time delivery

## Goodluck India Limited

Established in the year 1986 Goodluck India Ltd. is an ISO 9001:2015, TS-16949, EMS 14001, OH&SMS 45001, CE certified & UL approved.

Goodluck India Ltd. engaged in manufacturing and exporting of a wide range of ERW Hot Dip Galvanized Pipes, Black Pipes, Black & GI hollow sections, CR coils, CRCA, Galvanized & Plain Corrugated Sheets. We also specialize in providing telecommunication, solar mounting and railway structures. These are acclaimed for high tensile strength, long service life and higher efficiency.

Our plant is situated at Sikandarabad industrial area, just 45 km. from Delhi. It has the state-of-the-art tube mills, galvanizing units, cold rolling mills galvanized coil unit and corrugation machines. Pipe and lattice type structures are also fabricated and galvanized here.

We are the First Pipe company in India to work towards sustainable environment and our Unit Goodluck Metallica has received an EPD from International reputed agency.

## Goodluck Metallica (Unit of Goodluck India Ltd.)

In order to meet the growing demand of Steel Tubes & Pipes in both domestic as well as international market and to be more competitive internationally, the group has set up a new Export focused facility under its subsidiary name Goodluck Metallica at Kachchh, (west coast of India) in State of Gujarat, close to India's premium international sea ports - Mundra and Kandla. The new ISO 9001 certified facility have added 1,20,000 MT per annum to our existing capacities and its strategic location; close to the port; will help the company to overcome global competition. We can proudly say that today Goodluck Metallica is one of the best ERW mills in India and is exporting to over 100 destinations across the Globe every month .

## Manufacturing Tubes & Sheet according to Specifications

|                           |                    |                |
|---------------------------|--------------------|----------------|
| IS : 1239 (Part - 1) 2004 | ISO : 65-1981      | BS : 1387/1992 |
| IS : 1161/2014            | EN : 10219         | BS : 534/1990  |
| IS : 3589/2001            | EN : 10217         | BS : 1139/EN39 |
| IS : 3601/2006            | EN : 10255         | BS: 3059       |
| IS : 9295/1983            | AS : 1074          | BS : 6323      |
| IS : 4270/2001            | AS/NZS : 1163      | DIN : 2458     |
| IS : 2713/1980            | SLS : 829          | DIN : 2439     |
|                           | IS/ISO : 3183/2007 | DIN : 2440     |
| ASTM : A 500              | IS : 277/2018      | DIN : 2441     |
| ASTM : A-423              | IS : 4923 : 2017   | DIN : 1626     |
| ASTM : A-120              |                    | JIS : G-3452   |
| ASTM : A-53               |                    |                |
| ASTM : A 135 & 795        |                    |                |

ISO 9001:2015, EMS 14001, OH&SMS 45001  
TS-16949, CE Certified, UL,  
Activ fire approved Company



# Conforming to the highest standards

Delivering high quality

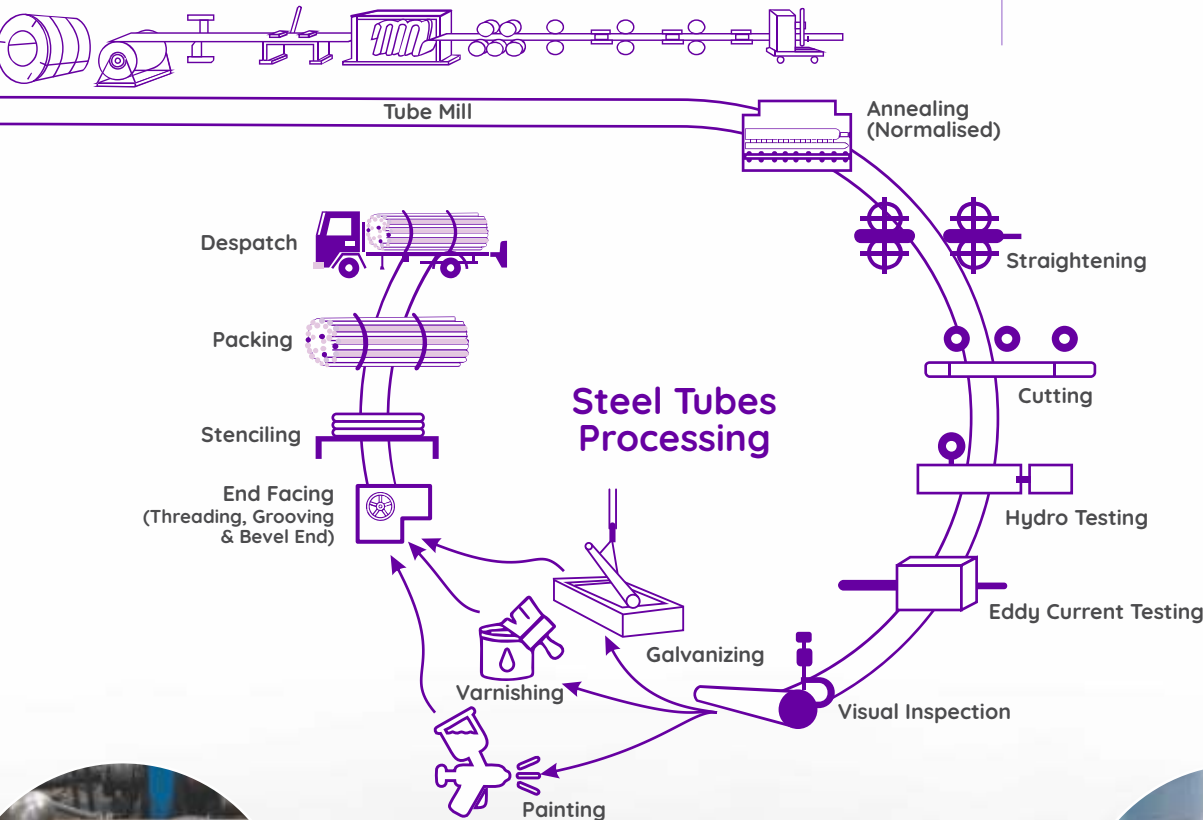
## Equivalent Standards of Tubes with Applications

| S.No. | Standard End Use                  | Indian      | British/European                   | American   | Japanese   | German                   | Australian |
|-------|-----------------------------------|-------------|------------------------------------|------------|------------|--------------------------|------------|
| 1.    | Water, Gas, Steam                 | IS-1239     | BS-1387<br>EN-10255                | ASTM A-53  | -          | DIN-2439,<br>2440 & 2441 | AS 1074    |
| 2.    | Water, Sewage                     | IS-3589     | BS-5534                            | -          | -          | -                        | -          |
| 3.    | Structural, Scaffolding           | IS-1161     | BS-1139, 6323<br>EN-39<br>EN-10219 | ASTM A-500 | JIS G 3444 | -                        | AS 1163    |
| 4.    | Idlers, Belt Conveyers            | IS-9295     | BS-6323                            | ASTM A-513 | -          | -                        | -          |
| 5.    | Water Wells, Casing               | IS-4270     | BS-879                             | -          | -          | -                        | -          |
| 6.    | Sectional Tubes (Sq. & Rect.)     | IS-4923     | --                                 | ASTM A-500 | JIS G 3466 | DIN-2395                 | AS 1163    |
| 7.    | Furniture Tube                    | IS-7138     | -                                  | -          | JIS G 3445 | -                        | -          |
| 8.    | Oil Pipes / Pressure              | IS\ISO-3183 | EN-10217                           | API5L      | JIS G 3452 | DIN-17177                |            |
| 9.    | Mechanical Application            | IS-3601     | BS-6323                            | -          | JIS G 3445 | DIN-2393                 |            |
| 10.   | Hydro Carbon & Process Industries | IS-6286     | -                                  | -          | -          | -                        | -          |
| 11.   | Boiler & APH Tubes                | -           | BS: 3059, 6323                     | -          | -          | -                        | -          |



# Manufacturing process

Process flow that works with precision



# Quality - our mantra to win clients

Recognized by experts

Quality Assurance begins at the raw material stage itself. Material is inspected for chemical composition and tested for other parameters like mechanical properties, gauge variation etc. for total evaluation of raw material to ascertain its suitability for the intended end-use-applications. At the surface-pickling operations, the material is checked for surface finish before it is fed into the tube mills. At the tube mills, each product for the customer is processed according to the norms sequenced by the process control engineers based on stringent international standards and monitored through uncompromising quality control tests at every stage.

The engineers are guided by the latest equipment at the R&D centre. Parent materials & soundness is checked by conducting various tests such as yield, tensile, drift expansion, flattening, bend, impact test, etc. that include Leco Carbon apparatus, scanning electron microscope, atomic absorption emission spectrophotometer, universal microscope and micro hardness tester. This facilitates all the required metallurgical tests on the materials.



Flattening Test



Tensile Test



Hardness Testing Machine



Impact Testing



Bend Test



Microscope Test



Polishing Machine



Profile Projector



UTM Testing Machine



# Steel tubes for uses in water, gas, air & steam

Conforming to IS:1239 (part-1) 2004/BS:1387/85

| N.B. and Series | Outside Diameter |          | Wall Thickness |     | Nominal Weight Black Tubes |         |                  |         | Nominal Weight Galvanized Tubes |         |                  |         | Sockets    |                |
|-----------------|------------------|----------|----------------|-----|----------------------------|---------|------------------|---------|---------------------------------|---------|------------------|---------|------------|----------------|
| mm              | Min (mm)         | Max (mm) | mm             | SWG | Plain End                  |         | Screwed & Socked |         | Plain End                       |         | Screwed & Socked |         | Minimum OD | Maximum Length |
|                 |                  |          |                |     | Kg/m                       | m/tonne | Kg/m             | m/tonne | Kg/m                            | m/tonne | Kg/m             | m/tonne | mm         | mm             |
| 15 L            | 21.0             | 21.4     | 2.00           | 14  | 0.947                      | 1056    | 0.956            | 1046    | 0.947                           | 1056    | 0.956            | 1046    | 27.0       | 37.0           |
| M               | 21.0             | 21.8     | 2.60           | 12  | 1.21                       | 826     | 1.22             | 819     | 1.21                            | 826     | 1.22             | 819     |            |                |
| H               | 21.0             | 21.8     | 3.20           | 10  | 1.44                       | 694     | 1.45             | 689     | 1.44                            | 689     | 1.45             | 689     |            |                |
| 20 L            | 26.4             | 26.9     | 2.30           | 13  | 1.38                       | 724     | 1.39             | 719     | 1.38                            | 719     | 1.39             | 719     | 32.5       | 39.0           |
| M               | 26.5             | 27.3     | 2.60           | 12  | 1.56                       | 641     | 1.57             | 637     | 1.56                            | 637     | 1.57             | 637     |            |                |
| H               | 26.5             | 27.3     | 3.20           | 10  | 1.87                       | 534     | 1.88             | 532     | 1.87                            | 532     | 1.88             | 532     |            |                |
| 25 L            | 33.2             | 33.8     | 2.60           | 12  | 1.98                       | 505     | 2.0              | 500     | 1.98                            | 500     | 2.0              | 500     | 39.5       | 46.0           |
| M               | 33.3             | 34.2     | 3.20           | 10  | 2.41                       | 415     | 2.43             | 411     | 2.41                            | 411     | 2.43             | 411     |            |                |
| H               | 33.3             | 34.2     | 4.00           | 8   | 2.93                       | 341     | 2.95             | 339     | 2.93                            | 339     | 2.95             | 339     |            |                |
| 32 L            | 41.9             | 42.5     | 2.60           | 12  | 2.54                       | 393     | 2.57             | 389     | 2.54                            | 389     | 2.57             | 389     | 49.0       | 51.0           |
| M               | 42.0             | 42.9     | 3.20           | 10  | 3.10                       | 322     | 3.13             | 319     | 3.10                            | 319     | 3.13             | 319     |            |                |
| H               | 42.0             | 42.9     | 4.00           | 8   | 3.79                       | 264     | 3.82             | 261     | 3.79                            | 261     | 3.82             | 261     |            |                |
| 40 L            | 47.8             | 48.4     | 2.90           | 11  | 3.23                       | 309     | 3.27             | 306     | 3.23                            | 306     | 3.27             | 306     | 56.0       | 51.0           |
| M               | 47.9             | 48.8     | 3.20           | 10  | 3.56                       | 281     | 3.60             | 227     | 3.56                            | 227     | 3.60             | 277     |            |                |
| H               | 47.9             | 48.8     | 4.00           | 8   | 4.37                       | 229     | 4.41             | 226     | 4.37                            | 226     | 4.41             | 226     |            |                |
| 50 L            | 59.6             | 60.2     | 2.90           | 11  | 4.08                       | 245     | 4.15             | 241     | 4.08                            | 241     | 4.15             | 241     | 68.0       | 60.0           |
| M               | 59.7             | 60.8     | 3.60           | 9   | 5.03                       | 199     | 5.10             | 196     | 5.03                            | 196     | 5.10             | 196     |            |                |
| H               | 59.7             | 60.8     | 4.50           | 7   | 6.19                       | 161     | 6.26             | 159     | 6.19                            | 159     | 6.26             | 159     |            |                |
| 65 L            | 75.2             | 76.0     | 3.20           | 10  | 5.71                       | 175     | 5.83             | 171     | 5.71                            | 171     | 5.83             | 171     | 84.0       | 69.0           |
| M               | 75.3             | 76.6     | 3.60           | 9   | 6.42                       | 155     | 6.54             | 153     | 6.42                            | 153     | 6.54             | 153     |            |                |
| H               | 75.3             | 76.6     | 4.50           | 7   | 7.93                       | 126     | 8.05             | 124     | 7.93                            | 124     | 8.05             | 124     |            |                |
| 80 L            | 87.9             | 88.7     | 3.20           | 10  | 6.72                       | 149     | 6.89             | 145     | 6.72                            | 145     | 6.89             | 145     | 98.0       | 75.0           |
| M               | 88.0             | 89.5     | 4.00           | 8   | 8.36                       | 119     | 8.53             | 117     | 8.36                            | 117     | 8.53             | 117     |            |                |
| H               | 88.0             | 89.5     | 4.80           | 6   | 9.90                       | 101     | 10.10            | 96      | 9.90                            | 96      | 10.40            | 96      |            |                |
| 100 L           | 113.0            | 113.9    | 3.60           | 9   | 9.75                       | 102     | 10.0             | 100     | 9.75                            | 100     | 10.0             | 100     | 124.0      | 87.0           |
| M               | 113.1            | 115.0    | 4.50           | 7   | 12.20                      | 82      | 12.50            | 80      | 12.20                           | 80      | 12.50            | 80      |            |                |
| H               | 113.1            | 115.0    | 5.40           | 5   | 14.50                      | 69      | 14.80            | 67      | 14.50                           | 67      | 14.80            | 67      |            |                |
| 125 M           | 138.5            | 140.8    | 4.80           | 6   | 15.90                      | 63      | 16.40            | 61      | 15.90                           | 61      | 16.40            | 61      | 151.0      | 96.0           |
| H               | 138.5            | 140.8    | 5.40           | 5   | 17.90                      | 56      | 18.4             | 54      | 17.9                            | 54      | 18.4             | 54      |            |                |
| 150 M           | 163.9            | 166.5    | 4.80           | 6   | 18.90                      | 53      | 19.50            | 51      | 18.90                           | 51      | 19.50            | 51      | 178.0      | 96.0           |
| H               | 163.9            | 166.5    | 5.40           | 5   | 21.30                      | 47      | 21.9             | 45      | 21.30                           | 45      | 21.9             | 45      |            |                |

### Tolerances

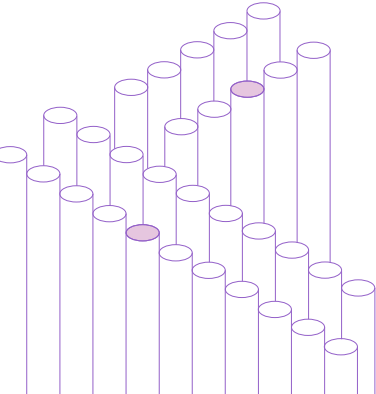
|                           |                      |                                                                              |            |
|---------------------------|----------------------|------------------------------------------------------------------------------|------------|
| (a) Thickness             | + Not limited<br>-8% | 2. Single Tube<br>(Medium And Heavy Series)                                  | +/- 10%    |
| 1. Light Tube             |                      |                                                                              |            |
| 2. Medium and Heavy Tubes |                      |                                                                              |            |
| (b) Weight                | +10%<br>-8%          | 3. For Light Series                                                          | -5%, +7.5% |
| 1. Single Tube            |                      |                                                                              |            |
| (Light Series)            |                      |                                                                              |            |
|                           |                      | 4. For Quantities per load of 10 tonnes<br>minimum (Medium and heavy Series) | +/- 7.5%   |

### Mechanical Properties

| TS (MPa) | % EL (Minimum)                                    |
|----------|---------------------------------------------------|
| 320 Min. | 12 Upto & Including 25 mm NB<br>20 Above 25 mm NB |

### Chemical Composition

As per IS: 10748



# Steel tubes for water, gas and sewerage purposes

Conforming to IS:3589/2001 (grade FE 330 and FE 410)

| Outside Diameter mm | Thickness mm | Weight (Plain End) |           |
|---------------------|--------------|--------------------|-----------|
|                     |              | Kg / M             | M / Tonne |
| 168.3               | 2.6          | 10.6               | 94        |
|                     | 3.2          | 13.02              | 77        |
|                     | 4.0          | 16.20              | 62        |
| 219.1               | 4.5          | 18.2               | 55        |
|                     | 2.6          | 13.9               | 72        |
|                     | 3.6          | 19.1               | 52        |
|                     | 4.5          | 23.8               | 42        |
|                     | 6.3          | 33.1               | 30        |
| 273.0               | 7.0          | 36.61              | 27        |
|                     | 8.0          | 41.64              | 24        |
|                     | 3.6          | 23.9               | 42        |
|                     | 4.0          | 26.5               | 38        |
|                     | 5.0          | 33.0               | 30        |
| 323.9               | 6.3          | 41.4               | 24        |
|                     | 7.0          | 45.92              | 22        |
|                     | 8.0          | 52.28              | 19        |
|                     | 4.0          | 31.6               | 31        |
|                     | 4.5          | 35.4               | 28        |
| 355.6               | 5.6          | 44.0               | 23        |
|                     | 7.1          | 55.5               | 18        |
|                     | 4.0          | 34.7               | 29        |
|                     | 5.0          | 43.2               | 23        |
|                     | 5.6          | 48.3               | 21        |
| 406.4               | 8.0          | 68.6               | 15        |
|                     | 4.0          | 39.7               | 25        |
|                     | 5.0          | 49.5               | 20        |
|                     | 6.3          | 62.2               | 16        |
|                     | 8.8          | 86.3               | 12        |

### Tolerances

a. Outside Diameter +/- 0.75%

b. Thickness +/- 10%

c. Length  
Unless otherwise specified, length are in single random Length of 4 to 7 meters or double random Length of 7 to 14 meters

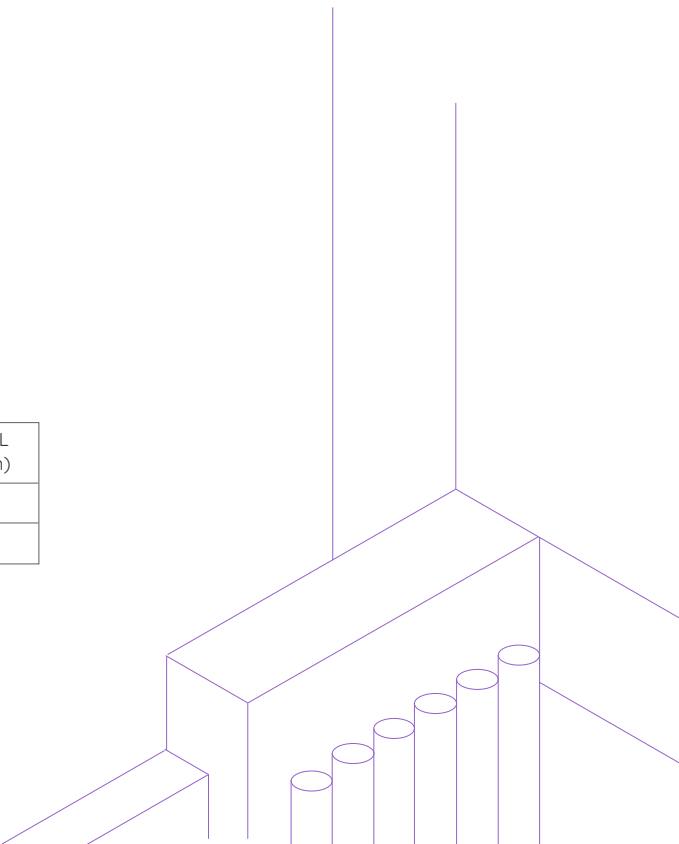
Also Available:  
Internal Bead Free & Screwed & Socketed  
Black & Galvanized Pipes

### Chemical Composition

| Steel Grade | % C (Max) | % Mn (Max) | % P (Max) | % S (Max) | CE (Max) |
|-------------|-----------|------------|-----------|-----------|----------|
| Fe 330      | 0.16      | 1.20       | 0.040     | 0.040     | -        |
| Fe 410      | 0.20      | 1.30       | 0.040     | 0.040     | 0.45     |

### Mechanical Properties

| YST (MPa) Min | TS (MPa) Min | % EL (Min) |
|---------------|--------------|------------|
| 195           | 330          | 20         |
| 235           | 410          | 18         |



# Steel tubes for structural purposes

Conforming to IS: 1161:2014

| N.B. and Series | Outside Diameter | Thickness | Nominal Weight Black Tubes Plain End |         | Calculated Nominal Weight Galvanized Tubes Plain End |         | N.B. and Series | Outside Diameter | Thickness | Nominal Weight Black Tubes Plain End |         | Calculated Nominal Weight Galvanized Tubes Plain End |         |
|-----------------|------------------|-----------|--------------------------------------|---------|------------------------------------------------------|---------|-----------------|------------------|-----------|--------------------------------------|---------|------------------------------------------------------|---------|
|                 |                  |           | Kg/m                                 | m/tonne | Kg/m                                                 | m/tonne |                 |                  |           | Kg/m                                 | m/tonne | Kg/m                                                 | m/tonne |
| 15              | 21.3             | 2.0       | 0.947                                | 1058    | 1.00                                                 | 1003    | 110             | 127.0            | 4.5       | 13.60                                | 74      | 13.90                                                | 72      |
|                 |                  | 2.6       | 1.21                                 | 826     | 1.26                                                 | 794     |                 |                  | 4.8       | 14.50                                | 69      | 14.80                                                | 68      |
|                 |                  | 3.2       | 1.44                                 | 694     | 1.49                                                 | 671     |                 |                  | 5.4       | 16.20                                | 62      | 14.80                                                | 61      |
| 20              | 26.9             | 2.3       | 1.38                                 | 725     | 1.43                                                 | 699     | 125             | 139.7            | 4.5       | 15.00                                | 67      | 15.25                                                | 66      |
|                 |                  | 2.6       | 1.56                                 | 641     | 1.61                                                 | 621     |                 |                  | 4.8       | 15.90                                | 63      | 16.15                                                | 62      |
|                 |                  | 3.2       | 1.87                                 | 535     | 1.92                                                 | 521     |                 |                  | 5.4       | 17.90                                | 56      | 18.15                                                | 55      |
| 25              | 33.7             | 2.6       | 1.98                                 | 505     | 2.03                                                 | 493     | 135             | 152.4            | 4.5       | 16.40                                | 61      | 16.78                                                | 60      |
|                 |                  | 3.2       | 2.41                                 | 415     | 2.46                                                 | 407     |                 |                  | 4.8       | 17.50                                | 57      | 17.88                                                | 56      |
|                 |                  | 4.0       | 2.93                                 | 341     | 2.98                                                 | 336     |                 |                  | 5.4       | 19.60                                | 51      | 19.98                                                | 55      |
| 32              | 42.4             | 2.6       | 2.54                                 | 394     | 2.62                                                 | 382     | 150             | 165.1            | 4.5       | 17.80                                | 56      | 18.20                                                | 55      |
|                 |                  | 3.2       | 3.10                                 | 323     | 3.18                                                 | 314     |                 |                  | 4.8       | 18.90                                | 52      | 19.80                                                | 51      |
|                 |                  | 4.0       | 3.79                                 | 264     | 3.87                                                 | 258     |                 |                  | 5.4       | 21.30                                | 47      | 21.70                                                | 46      |
| 40              | 48.3             | 2.9       | 3.23                                 | 310     | 3.34                                                 | 299     | 150             | 168.3            | 4.5       | 18.2                                 | 55      | 18.66                                                | 54      |
|                 |                  | 3.2       | 3.56                                 | 281     | 3.67                                                 | 272     |                 |                  | 4.8       | 19.4                                 | 52      | 19.88                                                | 50      |
|                 |                  | 4.0       | 4.37                                 | 229     | 4.48                                                 | 223     |                 |                  | 5.4       | 21.7                                 | 46      | 22.24                                                | 45      |
| 50              | 60.3             | 2.9       | 4.08                                 | 245     | 4.20                                                 | 238     | 175             | 193.7            | 6.3       | 25.2                                 | 40      | 41.00                                                | 24      |
|                 |                  | 3.6       | 5.03                                 | 199     | 5.15                                                 | 194     |                 |                  | 4.8       | 22.40                                | 45      | 22.94                                                | 44      |
|                 |                  | 4.5       | 6.19                                 | 162     | 6.31                                                 | 158     |                 |                  | 5.4       | 25.10                                | 40      | 25.64                                                | 39      |
| 65              | 76.1             | 2.9       | 5.24                                 | 192     | 5.37                                                 | 186     | 200             | 219.1            | 5.9       | 27.30                                | 37      | 27.84                                                | 36      |
|                 |                  | 3.6       | 6.42                                 | 156     | 6.57                                                 | 152     |                 |                  | 4.8       | 25.40                                | 39      | 25.95                                                | 39      |
|                 |                  | 4.5       | 7.93                                 | 126     | 8.10                                                 | 123     |                 |                  | 5.6       | 29.50                                | 34      | 30.05                                                | 33      |
| 80              | 88.9             | 3.2       | 6.72                                 | 149     | 6.90                                                 | 145     | 225             | 244.5            | 5.9       | 31.00                                | 32      | 31.55                                                | 32      |
|                 |                  | 4.0       | 8.63                                 | 120     | 8.54                                                 | 117     |                 |                  | 5.9       | 34.70                                | 29      | 35.36                                                | 28      |
|                 |                  | 4.8       | 9.90                                 | 101     | 10.08                                                | 99      |                 |                  | 5.9       | 38.90                                | 26      | 39.68                                                | 25      |
| 90              | 101.6            | 3.6       | 8.70                                 | 115     | 8.97                                                 | 111     | 300             | 323.9            | 6.3       | 49.30                                | 20      | 50.28                                                | 20      |
|                 |                  | 4.0       | 9.63                                 | 144     | 7.20                                                 | 139     |                 |                  | 8.0       | 68.60                                | 15      | 69.58                                                | 14      |
|                 |                  | 4.8       | 11.50                                | 87      | 11.77                                                | 85      |                 |                  |           |                                      |         |                                                      |         |
| 100             | 114.3            | 3.6       | 9.75                                 | 103     | 9.97                                                 | 100     |                 |                  |           |                                      |         |                                                      |         |
|                 |                  | 4.5       | 12.20                                | 82      | 12.42                                                | 81      |                 |                  |           |                                      |         |                                                      |         |
|                 |                  | 5.4       | 14.50                                | 69      | 14.72                                                | 68      |                 |                  |           |                                      |         |                                                      |         |

### A. Chemical Composition as per IS : 10748

| B. Tensile Properties |                         |                         |                 |
|-----------------------|-------------------------|-------------------------|-----------------|
| Grade                 | Y.S. (MIN) Mpa (Kg/mm2) | T.S. (MIN) Mpa (Kg/mm2) | %age Elongation |
| YST-210               | 210 (21.42)             | 330 (33.66)             | 20              |
| YST-240               | 240 (24.48)             | 410 (41.82)             | 17              |
| YST-310               | 310 (31.62)             | 450 (45.9)              | 14              |

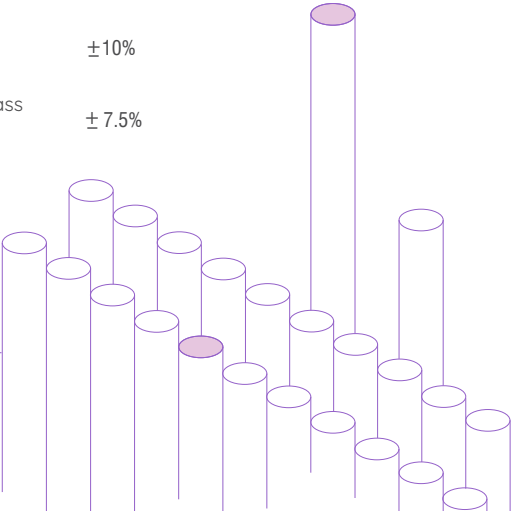
NOTE: For tube size upto and including 25 mm NB, elongation of 12% shall be permissible

### D. Thickness

For all sizes  
Welded Tubes ± 10%

E. Weight  
Single tube (Light Class) ±10%

For medium & Heavy Class  
10 Tonne Light, Medium & Heavy ± 7.5%



# Steel tubes for line pipes used in oil & petroleum industries

Conforming to IS/ISO:3183:2007 (E)

| NB (mm) | OD (mm) | Wall Thickness (mm) | Plain End Weight (Kg/m) | Test Pressure (Min)     |                         | NB (mm) | OD (mm) | Wall Thickness (mm) | Plain End Weight (Kg/m) | Test Pressure (Min)     |                         |
|---------|---------|---------------------|-------------------------|-------------------------|-------------------------|---------|---------|---------------------|-------------------------|-------------------------|-------------------------|
|         |         |                     |                         | Grade L 210 STD 100 kpa | Grade L 245 STD 100 kpa |         |         |                     |                         | Grade L 210 STD 100 kpa | Grade L 245 STD 100 kpa |
| 80      | 88.90   | 3.20                | 676                     | 89                      | 104                     | 200     | 219.10  | 4.80                | 25.37                   | 54                      | 63                      |
|         |         | 3.60                | 7.57                    | 101                     | 117                     |         |         | 5.60                | 29.48                   | 63                      | 74                      |
|         |         | 4.00                | 8.37                    | 112                     | 130                     |         |         | 6.40                | 33.57                   | 73                      | 84                      |
|         |         | 4.40                | 9.17                    | 123                     | 143                     |         |         | 7.00                | 36.61                   | 79                      | 92                      |
|         |         | 4.80                | 9.95                    | 134                     | 156                     |         |         |                     |                         |                         |                         |
| 90      | 101.60  | 5.50                | 11.31                   | 154                     | 172                     | 250     | 273.10  | 4.80                | 31.76                   | 44                      | 51                      |
|         |         | 3.60                | 8.70                    | 88                      | 102                     |         |         | 5.60                | 36.94                   | 51                      | 59                      |
|         |         | 4.00                | 9.63                    | 98                      | 114                     |         |         | 6.40                | 42.09                   | 58                      | 68                      |
|         |         | 4.40                | 10.55                   | 108                     | 125                     |         |         | 7.10                | 46.57                   | 65                      | 75                      |
|         |         | 4.80                | 11.46                   | 117                     | 137                     |         |         | 7.80                | 51.03                   | 71                      | 83                      |
| 100     | 114.30  | 5.70                | 13.48                   | 139                     | 162                     | 300     | 323.90  | 8.70                | 56.72                   | 79                      | 92                      |
|         |         | 6.40                | 15.02                   | 156                     | 182                     |         |         | 9.30                | 60.50                   | 85                      | 98                      |
|         |         | 7.10                | 16.55                   | 174                     | 193                     |         |         | 4.80                | 37.77                   | 37                      | 43                      |
|         |         | 3.60                | 9.83                    | 78                      | 91                      |         |         | 5.60                | 43.96                   | 43                      | 50                      |
|         |         | 4.00                | 10.88                   | 87                      | 101                     |         |         | 6.40                | 50.11                   | 49                      | 57                      |
| 125     | 141.30  | 4.80                | 12.96                   | 104                     | 121                     | 350     | 355.60  | 7.10                | 55.47                   | 54                      | 63                      |
|         |         | 5.20                | 13.99                   | 113                     | 132                     |         |         | 7.90                | 61.56                   | 61                      | 71                      |
|         |         | 5.60                | 15.01                   | 122                     | 142                     |         |         | 8.40                | 65.35                   | 64                      | 75                      |
|         |         | 6.00                | 16.02                   | 130                     | 152                     |         |         | 8.70                | 67.62                   | 67                      | 78                      |
|         |         | 6.40                | 17.03                   | 139                     | 162                     |         |         | 9.50                | 73.65                   | 73                      | 85                      |
| 150     | 168.30  | 7.10                | 18.77                   | 154                     | 180                     | 400     | 406.40  | 4.80                | 41.52                   | 34                      | 39                      |
|         |         | 3.20                | 10.90                   | 56                      | 65                      |         |         | 5.20                | 44.93                   | 36                      | 42                      |
|         |         | 4.00                | 13.54                   | 70                      | 82                      |         |         | 6.40                | 55.11                   | 45                      | 52                      |
|         |         | 4.80                | 16.16                   | 84                      | 98                      |         |         | 7.10                | 61.02                   | 50                      | 58                      |
|         |         | 5.60                | 18.74                   | 98                      | 115                     |         |         | 7.90                | 67.74                   | 55                      | 64                      |
| 150     | 168.30  | 6.60                | 21.92                   | 116                     | 135                     | 400     | 406.40  | 8.70                | 74.42                   | 61                      | 71                      |
|         |         | 7.10                | 23.50                   | 125                     | 145                     |         |         | 9.50                | 81.08                   | 66                      | 77                      |
|         |         | 3.60                | 14.62                   | 53                      | 62                      |         |         | 4.80                | 47.54                   | 29                      | 34                      |
|         |         | 4.00                | 16.21                   | 59                      | 76                      |         |         | 5.20                | 51.45                   | 32                      | 37                      |
|         |         | 4.80                | 19.35                   | 71                      | 81                      |         |         | 5.60                | 55.35                   | 34                      | 40                      |
| 150     | 168.30  | 5.20                | 20.91                   | 77                      | 89                      | 400     | 406.40  | 6.40                | 63.13                   | 39                      | 46                      |
|         |         | 5.60                | 22.47                   | 83                      | 96                      |         |         | 7.10                | 69.91                   | 43                      | 51                      |
|         |         | 6.40                | 25.55                   | 94                      | 110                     |         |         | 7.90                | 77.63                   | 48                      | 56                      |
|         |         | 7.10                | 28.22                   | 105                     | 122                     |         |         | 8.70                | 85.32                   | 53                      | 62                      |
|         |         |                     |                         |                         |                         |         |         | 9.50                | 92.98                   | 58                      | 68                      |

### A. Outside Diameter - The Outside diameter

tolerance shall be as follows,  
Pipe Body Tolerance  
For Size + 0.40 mm  
60.3 mm and less - 0.80 mm  
  
60.3 mm and above +/- 0.75%

### B. Wall thickness - The Tolerance on the wall thickness of line pipes shall be as follows:

Type For Tolerance  
Welded Pipes =/< 5.0 mm thick +/- 0.5 mm  
> 5.00 mm to < 15.0 mm +/- 0.1 t

### C. Weight -

The Tolerance shall be as follows:  
Grade L - 210 & L - 245 + 10.0%  
- 3.5%  
Grade L - 175 + 10.0%  
- 5.0%  
Special Plain End Pipes - All Grades + 10.0%  
- 5.0%

Car loads lots for min 18000 Kg or more  
Grade L 210 & L 245 - 1.75%  
Grade L 175 - 2.5%

# Hollow steel sections for structural use

Conforming to IS : 4923 2017  
(Hot Dip/Black, Galvanized & Pre Galvanized)

Square Hollow Sections (SHS)

| Section SHS (mm) | Depth D (mm)      | Width B (mm)      | Thickness T (mm) | Weight W (Kg/m) | Mtr. / Tonne |
|------------------|-------------------|-------------------|------------------|-----------------|--------------|
| 20 x 20          | 20.00             | 20.00             | 1.80             | 0.964           | 1037         |
|                  | 20.00             | 20.00             | 2.00             | 1.05            | 952          |
|                  | 20.00             | 20.00             | 2.40             | 1.21            | 826          |
|                  | 20.00             | 20.00             | 2.60             | 1.28            | 779          |
| 25 x 25          | 25.00             | 25.00             | 2.60             | 1.69            | 591          |
|                  | 25.00             | 25.00             | 3.20             | 1.98            | 504          |
| 30 x 30          | 30.00             | 30.00             | 2.60             | 2.10            | 476          |
|                  | 30.00             | 30.00             | 3.20             | 2.49            | 402          |
|                  | 30.00             | 30.00             | 4.00             | 2.94            | 340          |
| 32 x 32          | 32.00             | 32.00             | 2.00             | 1.80            | 555          |
|                  | 32.00             | 32.00             | 2.40             | 2.11            | 473          |
|                  | 32.00             | 32.00             | 2.60             | 2.26            | 442          |
|                  | 32.00             | 32.00             | 2.90             | 2.48            | 403          |
|                  | 32.00             | 32.00             | 3.20             | 2.69            | 372          |
| 35 x 35          | 35.00             | 35.00             | 1.60             | 1.63            | 615          |
|                  | 35.00             | 35.00             | 1.80             | 1.81            | 552          |
|                  | 35.00             | 35.00             | 2.00             | 1.99            | 502          |
|                  | 35.00             | 35.00             | 2.60             | 2.51            | 399          |
|                  | 35.00             | 35.00             | 3.20             | 2.99            | 335          |
| 38 x 38          | 38.00             | 38.00             | 2.00             | 2.80            | 459          |
|                  | 38.00             | 38.00             | 2.40             | 2.57            | 390          |
|                  | 38.00             | 38.00             | 2.60             | 2.75            | 363          |
|                  | 38.00             | 38.00             | 2.90             | 3.03            | 330          |
|                  | 38.00             | 38.00             | 3.20             | 3.29            | 304          |
|                  | 38.00             | 38.00             | 3.60             | 3.63            | 276          |
| 40 x 40          | 40.00             | 40.00             | 2.60             | 2.92            | 343          |
|                  | 40.00             | 40.00             | 3.20             | 3.49            | 286          |
|                  | 40.00             | 40.00             | 3.60             | 3.85            | 260          |
|                  | 40.00             | 40.00             | 4.00             | 4.20            | 238          |
| 49.5 x 49.5      | 49.5              | 49.5              | 2.00             | 2.90            | 345          |
|                  | 49.5              | 49.5              | 2.40             | 3.43            | 291          |
|                  | 49.5              | 49.5              | 2.60             | 3.69            | 271          |
|                  | 49.5              | 49.5              | 2.90             | 4.07            | 245          |
|                  | 49.5              | 49.5              | 3.20             | 4.45            | 225          |
|                  | 49.5              | 49.5              | 3.60             | 4.93            | 203          |
|                  | 49.5              | 49.5              | 4.00             | 5.39            | 185          |
|                  | 49.5              | 49.5              | 4.50             | 5.95            | 168          |
| 60 x 60          | 60.00             | 60.00             | 2.00             | 3.56            | 281          |
|                  | 60.00             | 60.00             | 2.40             | 4.22            | 237          |
|                  | 60.00             | 60.00             | 2.60             | 4.55            | 220          |
|                  | 60.00             | 60.00             | 2.90             | 5.03            | 199          |
|                  | 60.00             | 60.00             | 3.20             | 5.50            | 182          |
|                  | 60.00             | 60.00             | 3.60             | 6.11            | 164          |
|                  | 60.00             | 60.00             | 4.00             | 6.71            | 149          |
|                  | 70 x 70           | 70.00             | 70.00            | 2.40            | 4.98         |
| 70.00            |                   | 70.00             | 2.60             | 5.37            | 186          |
| 70.00            |                   | 70.00             | 2.90             | 5.94            | 168          |
| 70.00            |                   | 70.00             | 3.20             | 6.51            | 154          |
| 70.00            |                   | 70.00             | 3.60             | 7.24            | 138          |
| 70.00            |                   | 70.00             | 4.00             | 7.97            | 126          |
| 70.00            |                   | 70.00             | 4.50             | 8.85            | 113          |
| 72 x 72          | 72.00             | 72.00             | 3.20             | 6.71            | 149          |
|                  | 72.00             | 72.00             | 4.00             | 8.22            | 122          |
|                  | 72.00             | 72.00             | 4.80             | 9.66            | 103          |
| 80 x 80          | 80.00             | 80.00             | 2.40             | 5.73            | 174          |
|                  | 80.00             | 80.00             | 2.60             | 6.18            | 162          |
|                  | 80.00             | 80.00             | 2.90             | 6.85            | 146          |
|                  | 80.00             | 80.00             | 3.20             | 7.51            | 133          |
|                  | 80.00             | 80.00             | 3.60             | 8.37            | 119          |
|                  | 80.00             | 80.00             | 4.00             | 9.22            | 108          |
|                  | 80.00             | 80.00             | 4.50             | 10.26           | 97           |
|                  | 91.5 x 91.5       | 91.5              | 91.5             | 3.6             | 9.67         |
| 91.5             |                   | 91.5              | 4.5              | 11.88           | 84           |
| 91.5             |                   | 91.5              | 5.4              | 14.01           | 71           |
| 100 x 100        | 100.00            | 100.00            | 3.20             | 9.52            | 105          |
|                  | 100.00            | 100.00            | 3.60             | 10.64           | 94           |
|                  | 100.00            | 100.00            | 4.00             | 11.73           | 85           |
|                  | 100.00            | 100.00            | 4.50             | 13.09           | 76           |
|                  | 100.00            | 100.00            | 4.80             | 13.88           | 72           |
|                  | 100.00            | 100.00            | 5.00             | 14.41           | 69           |
| 132 x 132        | 132.00            | 132.00            | 4.80             | 18.71           | 53           |
|                  | 132.00            | 132.00            | 5.40             | 20.88           | 48           |
| 150 x 150        | 150.00            | 150.00            | 5.0              | 22.26           | 45           |
|                  | 150.00            | 150.00            | 6.0              | 26.40           | 38           |
| Grade            | T.S. (min)<br>Mpa | Y.S. (min)<br>Mpa | Elongation       |                 |              |
|                  |                   |                   | 25.4 mm & under  | Over 25.4 mm    |              |
| Yst - 210        | 330               | 210               | 12               | 20              |              |
| Yst - 240        | 410               | 240               | 10               | 15              |              |
| Yst - 310        | 450               | 310               | 8                | 10              |              |
| Yst - 355        | 490               | 355               | 8                | 10              |              |

Rectangular Hollow Sections (RHS)

| Section SHS (mm) | Depth D (mm) | Width B (mm) | Thickness T (mm) | Weight W (Kg/m) | Mtr. / Tonne |
|------------------|--------------|--------------|------------------|-----------------|--------------|
| 30 x 30          | 30.00        | 20.00        | 2.00             | 1.36            | 733          |
| 40 x 20          | 40.00        | 20.00        | 2.00             | 1.68            | 596          |
| 40 x 30          | 40.00        | 30.00        | 2.00             | 1.99            | 502          |
| 50 x 25          | 40.00        | 30.00        | 2.40             | 2.34            | 427          |
|                  | 40.00        | 30.00        | 2.60             | 2.51            | 399          |
|                  | 40.00        | 30.00        | 2.90             | 2.75            | 363          |
|                  | 40.00        | 30.00        | 3.20             | 2.99            | 335          |
| 50 x 30          | 40.00        | 30.00        | 4.00             | 3.57            | 280          |
|                  | 50.00        | 25.00        | 2.90             | 2.98            | 335          |
|                  | 50.00        | 25.00        | 3.20             | 3.24            | 309          |
|                  | 50.00        | 30.00        | 2.00             | 2.31            | 434          |
| 50 x 40          | 50.00        | 30.00        | 2.40             | 2.72            | 368          |
|                  | 50.00        | 30.00        | 2.60             | 2.92            | 343          |
|                  | 50.00        | 30.00        | 2.90             | 3.21            | 312          |
|                  | 50.00        | 30.00        | 3.20             | 3.49            | 286          |
| 60 x 30          | 50.00        | 30.00        | 4.00             | 4.20            | 238          |
|                  | 50.00        | 40.00        | 2.00             | 2.62            | 382          |
|                  | 50.00        | 40.00        | 2.40             | 3.09            | 323          |
|                  | 50.00        | 40.00        | 2.60             | 3.33            | 301          |
| 60 x 40          | 50.00        | 40.00        | 2.90             | 3.66            | 273          |
|                  | 50.00        | 40.00        | 3.20             | 3.99            | 250          |
|                  | 50.00        | 40.00        | 4.00             | 4.83            | 207          |
|                  | 60.00        | 30.00        | 1.60             | 2.13            | 471          |
| 66 x 33          | 60.00        | 30.00        | 1.80             | 2.38            | 421          |
|                  | 60.00        | 30.00        | 2.00             | 2.62            | 382          |
|                  | 60.00        | 30.00        | 2.60             | 3.33            | 301          |
|                  | 60.00        | 30.00        | 3.20             | 3.99            | 250          |
| 70 x 30          | 66.00        | 33.00        | 2.90             | 4.07            | 245          |
|                  | 66.00        | 33.00        | 3.60             | 4.93            | 203          |
|                  | 66.00        | 33.00        | 4.50             | 5.95            | 168          |
|                  | 60.00        | 40.00        | 2.00             | 2.93            | 341          |
| 75 x 50          | 60.00        | 40.00        | 2.40             | 3.47            | 288          |
|                  | 60.00        | 40.00        | 2.60             | 3.73            | 268          |
|                  | 60.00        | 40.00        | 3.20             | 4.50            | 222          |
|                  | 60.00        | 40.00        | 4.00             | 5.45            | 183          |
| 80 x 40          | 70.00        | 30.00        | 2.90             | 4.12            | 243          |
|                  | 70.00        | 30.00        | 3.20             | 4.50            | 222          |
|                  | 70.00        | 30.00        | 4.00             | 5.45            | 183          |
|                  | 75.00        | 50.00        | 1.60             | 3.01            | 332          |
| 80 x 50          | 75.00        | 50.00        | 1.80             | 3.37            | 297          |
|                  | 75.00        | 50.00        | 2.00             | 3.72            | 269          |
|                  | 75.00        | 50.00        | 2.60             | 4.75            | 210          |
|                  | 75.00        | 50.00        | 3.20             | 5.75            | 174          |
| 96 x 48          | 76.00        | 38.00        | 2.90             | 4.76            | 210          |
|                  | 76.00        | 38.00        | 3.20             | 5.20            | 192          |
|                  | 76.00        | 38.00        | 3.60             | 5.77            | 173          |
|                  | 76.00        | 38.00        | 4.00             | 6.33            | 158          |
| 100 x 50         | 80.00        | 40.00        | 2.90             | 5.03            | 199          |
|                  | 80.00        | 40.00        | 3.20             | 5.50            | 182          |
|                  | 80.00        | 40.00        | 4.00             | 6.71            | 149          |
|                  | 80.00        | 50.00        | 2.90             | 5.49            | 182          |
| 115 x 60         | 80.00        | 50.00        | 3.20             | 6.00            | 167          |
|                  | 80.00        | 50.00        | 3.60             | 6.68            | 150          |
|                  | 80.00        | 50.00        | 4.00             | 7.34            | 136          |
|                  | 96.00        | 48.00        | 3.20             | 6.71            | 149          |
| 122 x 61         | 96.00        | 48.00        | 4.00             | 8.22            | 122          |
|                  | 96.00        | 48.00        | 4.80             | 9.66            | 103          |
|                  | 100.00       | 50.00        | 3.20             | 7.01            | 143          |
|                  | 100.00       | 50.00        | 3.60             | 7.81            | 128          |
| 145 x 82         | 100.00       | 50.00        | 4.00             | 8.59            | 116          |
|                  | 100.00       | 50.00        | 4.50             | 9.55            | 105          |
|                  | 115.00       | 60.00        | 3.20             | 8.26            | 121          |
|                  | 115.00       | 60.00        | 3.60             | 9.22            | 108          |
| 160 x 80         | 115.00       | 60.00        | 4.00             | 10.16           | 98           |
|                  | 115.00       | 60.00        | 4.50             | 11.32           | 88           |
|                  | 115.00       | 60.00        | 4.80             | 12.00           | 83           |
|                  | 115.00       | 60.00        | 5.00             | 12.45           | 80           |
| 172 x 92         | 122.00       | 61.00        | 3.6              | 9.67            | 103          |
|                  | 122.00       | 61.00        | 4.5              | 11.88           | 84           |
|                  | 122.00       | 61.00        | 5.4              | 14.01           | 71           |
|                  | 145.00       | 82.00        | 4.8              | 15.92           | 63           |
| 196 x 100        | 145.00       | 82.00        | 5.4              | 17.74           | 56           |
|                  | 160.00       | 80.00        | 4.00             | 14.25           | 70           |
|                  | 160.00       | 80.00        | 5.00             | 17.55           | 57           |
|                  | 172.00       | 92.00        | 4.8              | 18.71           | 56           |
| 219 x 100        | 172.00       | 92.00        | 5.4              | 20.88           | 48           |
|                  | 219.00       | 100.00       | 5.4              | 20.88           | 48           |

Tolerance

O.D. : 1% With Minimum +/- 0.5 mm, Thickness: +/-10% Weight : - 8% + 10%

Single Pipe : - 8% + 10%, On lots of 10 Tonne : +/- 7.5%



# ERW steel tubes for idlers for belt conveyors

Conforming to IS : 9295 - 1983 dimensions & nominal masses

| Outside Diameter mm | Thickness mm | Mass kg / Mtr | Mtr / tone |
|---------------------|--------------|---------------|------------|
| 63.50               | 3.65         | 5.39          | 186        |
|                     | 4.05         | 5.87          | 170        |
|                     | 4.50         | 6.55          | 153        |
|                     | 4.85         | 7.01          | 143        |
|                     | 5.40         | 7.74          | 129        |
|                     | 6.30         | 8.89          | 112        |
| 76.10               | 3.65         | 6.52          | 153        |
|                     | 4.05         | 7.20          | 139        |
|                     | 4.50         | 7.95          | 126        |
|                     | 4.85         | 8.52          | 117        |
|                     | 5.40         | 9.41          | 106        |
|                     | 6.30         | 10.84         | 92         |
| 88.90               | 4.05         | 8.47          | 118        |
|                     | 4.50         | 9.36          | 107        |
|                     | 4.85         | 10.05         | 99         |
|                     | 5.40         | 11.12         | 90         |
|                     | 6.30         | 12.83         | 78         |
|                     | 4.05         | 9.74          | 103        |
| 101.60              | 4.50         | 10.78         | 93         |
|                     | 4.85         | 11.57         | 86         |
|                     | 5.40         | 12.81         | 78         |
|                     | 6.30         | 14.81         | 68         |
| 108.0               | 4.05         | 10.38         | 96         |
|                     | 4.85         | 12.34         | 81         |
|                     | 6.30         | 15.80         | 63         |
| 114.30              | 4.50         | 12.19         | 82         |
|                     | 4.85         | 13.09         | 76         |
|                     | 5.40         | 14.50         | 69         |
|                     | 6.30         | 16.78         | 60         |
| 127.0               | 4.50         | 13.60         | 74         |
|                     | 4.85         | 14.61         | 68         |
|                     | 5.40         | 16.19         | 62         |
|                     | 6.30         | 18.75         | 53         |

| Outside Diameter mm | Thickness mm | Mass kg / Mtr | Mtr / tone |
|---------------------|--------------|---------------|------------|
| 133.0               | 4.50         | 14.30         | 70         |
|                     | 5.40         | 16.99         | 59         |
|                     | 6.30         | 19.69         | 51         |
|                     | 4.50         | 15.00         | 67         |
| 139.70              | 4.85         | 16.13         | 62         |
|                     | 5.40         | 17.90         | 56         |
|                     | 6.30         | 20.73         | 48         |
|                     | 4.50         | 16.40         | 61         |
|                     | 4.85         | 17.65         | 57         |
|                     | 5.40         | 19.50         | 51         |
|                     | 6.30         | 22.70         | 44         |
| 159.00              | 4.50         | 17.10         | 58         |
|                     | 4.85         | 18.44         | 54         |
|                     | 5.40         | 20.46         | 49         |
|                     | 6.30         | 23.72         | 42         |
| 165.10              | 4.50         | 17.80         | 56         |
|                     | 4.85         | 19.17         | 52         |
|                     | 5.40         | 21.27         | 47         |
|                     | 6.30         | 24.67         | 41         |
| 168.30              | 4.50         | 18.20         | 55         |
|                     | 4.85         | 19.55         | 51         |
|                     | 5.40         | 21.69         | 46         |
|                     | 6.30         | 25.17         | 40         |
| 193.70              | 5.40         | 25.10         | 40         |
|                     | 6.30         | 29.12         | 34         |
| 219.10              | 5.40         | 28.50         | 35         |
|                     | 6.30         | 33.06         | 30         |

Tolerances  
\* Outside Diameter + / - 0.8%  
\* Ovality below 168.3mm OD 0.5 mm  
\* Ovality including 168.3mm and above 1.0 mm  
\* Weight Kg / Mtr : Single tube +/- 10%  
For truck load of ten tonne +/- 7.5%  
\* Thickness +/- 10%



# Carbon steel tubes suitable for screwing

Conforming to ISO : 65

| DN  | DN Designator | Outside Diameter1<br>D mm | Thicknesses (T) and masses per unit length (M) according to the series |                  |                         |               |                  |                         |                |                  |                         |                |                  |                         |
|-----|---------------|---------------------------|------------------------------------------------------------------------|------------------|-------------------------|---------------|------------------|-------------------------|----------------|------------------|-------------------------|----------------|------------------|-------------------------|
|     |               |                           | Heavy Series                                                           |                  |                         | Medium Series |                  |                         | Light Series 1 |                  |                         | Light Series 2 |                  |                         |
|     |               |                           | T mm                                                                   | Plain end M kg/m | Screwed Socketed M kg/m | T mm          | Plain end M kg/m | Screwed Socketed M kg/m | T mm           | Plain end M kg/m | Screwed Socketed M kg/m | T mm           | Plain end M kg/m | Screwed Socketed M kg/m |
| 15  | 1/2           | 21.3                      | 3.2                                                                    | 1.44             | 1.45                    | 2.6           | 1.21             | 1.22                    | 2.3            | 1.09             | 1.09                    | 2.0            | 0.947            | 0.956                   |
| 20  | 3/4           | 26.9                      | 3.2                                                                    | 1.87             | 1.88                    | 2.6           | 1.56             | 1.57                    | 2.3            | 1.39             | 1.40                    | 2.3            | 1.38             | 1.39                    |
| 25  | 1             | 33.7                      | 4.0                                                                    | 2.93             | 2.95                    | 3.2           | 2.41             | 2.43                    | 2.9            | 2.20             | 2.22                    | 2.6            | 1.98             | 2.00                    |
| 32  | 1 1/4         | 42.4                      | 4.0                                                                    | 3.97             | 3.82                    | 3.2           | 3.10             | 3.13                    | 2.9            | 2.82             | 2.85                    | 2.6            | 2.54             | 2.57                    |
| 40  | 1 1/2         | 48.3                      | 4.0                                                                    | 4.37             | 4.41                    | 3.2           | 3.56             | 3.60                    | 2.9            | 3.24             | 3.28                    | 2.9            | 3.23             | 3.27                    |
| 50  | 2             | 60.3                      | 4.5                                                                    | 6.19             | 6.26                    | 3.6           | 5.03             | 5.10                    | 3.2            | 4.49             | 4.56                    | 2.9            | 4.08             | 4.15                    |
| 65  | 2 1/2         | 76.1                      | 4.5                                                                    | 7.93             | 8.05                    | 3.6           | 6.42             | 6.54                    | 3.2            | 5.73             | 5.85                    | 3.2            | 5.71             | 5.83                    |
| 80  | 3             | 88.9                      | 5.0                                                                    | 10.3             | 10.5                    | 4.0           | 8.36             | 8.53                    | 3.6            | 7.55             | 7.72                    | 3.2            | 6.72             | 6.89                    |
| 100 | 4             | 114.3                     | 5.4                                                                    | 14.5             | 14.8                    | 4.5           | 12.2             | 12.5                    | 4.0            | 10.8             | 11.1                    | 3.6            | 9.75             | 10.0                    |
| 125 | 5             | 139.7                     | 5.4                                                                    | 17.9             | 18.4                    | 5.0           | 16.6             | 17.1                    | -              | -                | -                       | -              | -                | -                       |
| 150 | 6             | 165.12                    | 5.4                                                                    | 21.3             | 21.9                    | 5.0           | 19.8             | 20.4                    | -              | -                | -                       | -              | -                | -                       |

### Tolerances

Outer Diameter as per above table Thickness

| Light Series 1 |        | Light Series 1 |     |
|----------------|--------|----------------|-----|
| + Not Limited  | -12.5% | + Not Limited  | -8% |

### Weight

| Light Series 1 |              | Light Series 1 |              |
|----------------|--------------|----------------|--------------|
| Single Tube    | 10 Tonn Load | Single Tube    | 10 Tonn Load |
| + / - 10%      | + / - 7.5%   | +10% -8%       | + / - 5%     |

### Steel tubes for water wells (casing pipes)

Conforming to IS : 4270 / 2001

| N.B. of Pipe MM | Outside Diameter | Thickness | Nominal Weight Black Tubes Plain End |         |
|-----------------|------------------|-----------|--------------------------------------|---------|
|                 |                  |           | kg/m                                 | m/tonne |
| 100             | 114.3            | 5.4       | 14.5                                 | 69      |
| 125             | 141.3            | 5.4       | 18.1                                 | 55      |
|                 |                  | 7.1       | 23.5                                 | 43      |
| 150             | 168.3            | 5.4       | 21.6                                 | 46      |
|                 |                  | 7.1       | 28.2                                 | 35      |
| 175             | 193.7            | 6.4       | 29.6                                 | 34      |
|                 |                  | 8.0       | 36.6                                 | 27      |
| 200             | 219.1            | 6.4       | 33.6                                 | 30      |
|                 |                  | 8.0       | 41.6                                 | 24      |
| 225             | 244.5            | 7.1       | 41.6                                 | 24      |
|                 |                  | 9.0       | 52.3                                 | 19      |
| 250             | 273.1            | 8.0       | 52.3                                 | 19      |
|                 |                  | 10.0      | 64.9                                 | 15      |
| 300             | 323.9            | 8.0       | 62.3                                 | 16      |
|                 |                  | 10.0      | 77.4                                 | 13      |
| 350             | 355.6            | 9.52      | 81.25                                | 12      |
| 400             | 406.4            | 9.52      | 93.17                                | 11      |

### A. PHYSICAL PROPERTIES

| Grade | Y. S. (min) MPa (kg/mm2) | T. S. (min) MPa (kg/mm2) | % age Elongation |
|-------|--------------------------|--------------------------|------------------|
| Fe410 | 235                      | 410                      | 15               |
| Fe450 | 275                      | 450                      | 13               |

### B. Tolerance

|                                          |                    |
|------------------------------------------|--------------------|
| 1. Outside Diameter                      | 1%                 |
| 2. Thickness                             |                    |
| Welded tube Up to And including 406.4 MM | +15% }<br>-12.5% } |
| Over 406.4 MM outside Diameter           | +15% }<br>- 10% }  |
| 3. Weight Single Tube                    | - 8%<br>+ 10%      |



# Technical data of pipes

## Pipes Conforming to ASTM A795 / ASTM A135



This specification covers Black and Zinc-Coated (Hot-Dipped Galvanized) welded steel pipe in use for fire protection systems.

Dimensions, Weights, and Test Pressure For Light-Weight Fire Protection Pipe—Schedule 10

| NPS Designator | Outside Diameter | Diameter Tolerance |        | Standard Thickness |        | Schedule | Weight   |         | Test Pressure |       |
|----------------|------------------|--------------------|--------|--------------------|--------|----------|----------|---------|---------------|-------|
|                | (mm)             | (Min)              | (Max)  | (mm)               | (inch) |          | (Kg/mtr) | (lb/ft) | (psi)         | (kPa) |
| 3/4            | 26.7             | 26.30              | 27.10  | 2.11               | 0.083  | 10       | 1.28     | 0.86    | 700           | 4800  |
| 1              | 33.4             | 33.00              | 33.80  | 2.77               | 0.109  | 10       | 2.09     | 1.41    | 700           | 4800  |
| 1¼             | 42.2             | 41.80              | 42.60  | 2.77               | 0.109  | 10       | 2.69     | 1.81    | 1000          | 6900  |
| 1½             | 48.3             | 47.90              | 48.70  | 2.77               | 0.109  | 10       | 3.11     | 2.09    | 1000          | 6900  |
| 2              | 60.3             | 59.70              | 60.90  | 2.77               | 0.109  | 10       | 3.93     | 2.64    | 1000          | 6900  |
| 2½             | 73.0             | 72.27              | 73.73  | 3.05               | 0.120  | 10       | 5.26     | 3.53    | 1000          | 6900  |
| 3              | 88.9             | 88.01              | 89.79  | 3.05               | 0.120  | 10       | 6.46     | 4.34    | 1000          | 6900  |
| 3½             | 101.6            | 100.58             | 102.62 | 3.05               | 0.120  | 10       | 7.41     | 4.98    | 1200          | 8300  |
| 4              | 114.3            | 113.16             | 115.44 | 3.05               | 0.120  | 10       | 8.37     | 5.62    | 1200          | 8300  |
| 5              | 141.3            | 139.89             | 142.71 | 3.40               | 0.134  | 10       | 11.58    | 7.78    | 1200          | 8300  |
| 6              | 168.3            | 166.62             | 169.98 | 3.40               | 0.134  | 10       | 13.85    | 9.30    | 1000          | 6900  |
| 8              | 219.1            | 216.91             | 221.29 | 4.78               | 0.188  | 10       | 25.26    | 16.96   | 800           | 5500  |
| 10             | 273.0            | 270.27             | 275.73 | 4.78               | 0.188  | 10       | 31.62    | 21.23   | 700           | 4800  |

### Chemical Composition

| Grade | Chemical Composition ( Maximum) |       |       |       |
|-------|---------------------------------|-------|-------|-------|
|       | C %                             | Mn %  | P %   | S %   |
| A     | 0.250                           | 0.950 | 0.035 | 0.035 |
| B     | 0.300                           | 1.200 | 0.035 | 0.035 |

### Mechanical Properties

|                  | Grade A       | Grade B       |
|------------------|---------------|---------------|
| Yield Strength   | 205 Mpa (Min) | 240 Mpa (Min) |
| Tensile Strength | 330 Mpa (Min) | 415 Mpa (Min) |

### Technical Details

|                       |                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Characteristics       | Tolerances & Technical details                                                                                                                                                                                                                                                                                                                                                                  |
| Outside Diameter      | NPS 11/2 [DN 40] and under ± 0.016 inch [0.41 mm] & NPS 2 [DN 50] and over ± 1 % of OD.                                                                                                                                                                                                                                                                                                         |
| Thickness             | -12.5% of specific wall thickness.                                                                                                                                                                                                                                                                                                                                                              |
| Weight                | For each tube ± 5% of standard weight.                                                                                                                                                                                                                                                                                                                                                          |
| Heat Treatment        | The weld seam of pipe in Grade B shall be heat treated after welding to a minimum of 1000 °F [540 °C] so that no untempered martensite remains.                                                                                                                                                                                                                                                 |
| Flatteing Test        | Keep the weld at 0° or 90° from the line of direction of force and flatten upto 66% of OD, No cracks or breaks are allowed on the weld. Further flatten upto 33% of OD, No cracks or breaks are allowed in the material and during third step, Evidence of laminated or unsound material or of incomplete weld that is revealed during the entire flattening test shall be cause for rejection. |
| Hydro Test            | Each length of pipe shall be tested by hydrostatic test without leakage through the pipe wall.                                                                                                                                                                                                                                                                                                  |
| Nondestructive Test   | Each length of pipe, size 2NPS (50DN) and larger shall be tested by Eddy-Current Test.                                                                                                                                                                                                                                                                                                          |
| Mass of Zinc Coating  | Average of two specimens 460 gm/mtr² & Individual specimen not less than 400 gm/mtr².                                                                                                                                                                                                                                                                                                           |
| Surface Protection    | Black & Galvanized coating as per Customer requirement.                                                                                                                                                                                                                                                                                                                                         |
| End                   | Pipe shall be finished with Square cut (plain End), Beval End (30° -0/+5°), Roll Groove & Threading.                                                                                                                                                                                                                                                                                            |
| Threading             | All threads shall be in accordance with the gaging practice and tolerances of ASME B1.20.1.                                                                                                                                                                                                                                                                                                     |
| Marking (Stencilling) | ”Goodluck, Specification designation, Grade, Outside diameter, Thickness, Process of manufacturing & Heat No.” on pipe and any thing specific as per customer requirement.                                                                                                                                                                                                                      |

# Technical data of pipes

## Pipes Conforming to ASTM A500

(Cold-formed welded carbon steel round, square & rectangular shape structural tubing for welded, riveted, or

bolted construction of bridges and buildings, and for general structural purposes.)

| Square Hollow Sections |                      | Rectangular Hollow Sections |                      | Round Hollow Tubes |                     | Rectangular Hollow Sections |                      |
|------------------------|----------------------|-----------------------------|----------------------|--------------------|---------------------|-----------------------------|----------------------|
| Nominal Size (MM)      | Thickness Range (MM) | Nominal Size (MM)           | Thickness Range (MM) | Nominal Size (MM)  | Wall Thickness (MM) | Nominal Size (MM)           | Thickness Range (MM) |
| 30x20                  | 1.2 mm ~ 2.5 mm      | 20x20                       | 1 mm ~ 2.5 mm        | 21.3               | 1 mm ~ 2.5 mm       | 48.3                        | 1.2 mm ~ 4.5 mm      |
| 40x20                  | 1.2 mm ~ 2.9 mm      | 25x25                       | 1.2 mm ~ 3.0 mm      | 22.2               | 1 mm ~ 2.5 mm       | 50.8                        | 1.2 mm ~ 4.5 mm      |
| 40x25                  | 1.2 mm ~ 3.0 mm      | 30x30                       | 1.2 mm ~ 3.5 mm      | 25.4               | 1 mm ~ 3.5 mm       | 60.3                        | 1.6 mm ~ 5.0 mm      |
| 40x30                  | 1.2 mm ~ 2.5 mm      | 31.75x31.75                 | 1.2 mm ~ 3.5 mm      | 26.9               | 1 mm ~ 3.5 mm       | 63.5                        | 1.6 mm ~ 5.0 mm      |
| 50x25                  | 1.2 mm ~ 3.2 mm      | 40x40                       | 1.2 mm ~ 3.5 mm      | 28.6               | 1 mm ~ 3.5 mm       | 69.9                        | 1.8 mm ~ 5.0 mm      |
| 50x30                  | 1.2 mm ~ 3.5 mm      | 50x50                       | 1.6 mm ~ 4.0 mm      | 31.8               | 1 mm ~ 3.5 mm       | 73.0                        | 1.8 mm ~ 5.0 mm      |
| 60x30                  | 1.6 mm ~ 3.5 mm      | 60x60                       | 1.6 mm ~ 4.0 mm      | 33.7               | 1.2 mm ~ 4.0 mm     | 76.1                        | 1.8 mm ~ 5.0 mm      |
| 50x40                  | 1.6 mm ~ 3.5 mm      | 70x70                       | 2.0 mm ~ 3.8 mm      | 38.1               | 1.2 mm ~ 4.0 mm     | 88.9                        | 1.8 mm ~ 5.0 mm      |
| 60x40                  | 1.6 mm ~ 4.0 mm      | 80x80                       | 2.3 mm ~ 4.0 mm      | 40.0               | 1.2 mm ~ 4.0 mm     | 101.6                       | 2.0 mm ~ 5.0 mm      |
| 75x25                  | 1.6 mm ~ 2.5 mm      | 90x90                       | 2.3 mm ~ 5.0 mm      | 42.4               | 1.2 mm ~ 4.0 mm     | 114.3                       | 2.3 mm ~ 5.0 mm      |
| 80x40                  | 1.6 mm ~ 4.0 mm      | 101.6x101.6                 | 2.5 mm ~ 3.0 mm      | 44.5               | 1.2 mm ~ 4.0 mm     |                             |                      |
| 80x50                  | 1.8 mm ~ 4.0 mm      |                             |                      |                    |                     |                             |                      |
| 90x50                  | 2.0 mm ~ 3.8 mm      |                             |                      |                    |                     |                             |                      |
| 96x48                  | 2.0 mm ~ 3.8 mm      |                             |                      |                    |                     |                             |                      |
| 100x50                 | 2.0 mm ~ 3.8 mm      |                             |                      |                    |                     |                             |                      |
| 120x60                 | 2.3 mm ~ 5.0 mm      |                             |                      |                    |                     |                             |                      |

### Chemical Compositions (%)

| Elements             | Grade A & B   |                  | Grade C       |                  |
|----------------------|---------------|------------------|---------------|------------------|
|                      | Heat Analysis | Product Analysis | Heat Analysis | Product Analysis |
| Carbon (Maximum)     | 0.260         | 0.300            | 0.230         | 0.270            |
| Manganese (Maximum)  | 1.350         | 1.400            | 1.350         | 1.400            |
| Phosphorus (Maximum) | 0.035         | 0.045            | 0.035         | 0.045            |
| Sulfur (Maximum)     | 0.035         | 0.045            | 0.035         | 0.045            |
| Copper (Minimum)     | 0.200         | 0.180            | 0.200         | 0.180            |

For each reduction of 0.01 percentage point below the specified maximum for carbon, an increase of 0.06 percentage point above the specified maximum for manganese is permitted, up to a maximum of 1.50 % by heat analysis and 1.60 % by product analysis.

### Mechanical Properties

| Elements                       | Round Structural Tubing |         |         | Shaped Structural Tubing |         |         |
|--------------------------------|-------------------------|---------|---------|--------------------------|---------|---------|
|                                | Grade A                 | Grade B | Grade C | Grade A                  | Grade B | Grade C |
| Tensile Strength (Mpa) minimum | 310                     | 400     | 425     | 310                      | 400     | 425     |
| Yield Strength (Mpa) minimum   | 230                     | 290     | 315     | 270                      | 315     | 345     |
| %Elongation in (50mm) minimum  | 25                      | 23      | 21      | 25                       | 23      | 21      |

|                                   |                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Details</b>          |                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Characteristics</b>            | <b>Tolerances &amp; Technical details</b>                                                                                                                                                                                                                                                                                                   | Twist                 | For Square & Rectangular Section<br>1½ Inch [40mm] and under = 0.050 Inch [1.3mm]<br>Over 1½ to 2½ Inch [40mm to 65mm] = 0.062 Inch [1.6mm]<br>Over 2½ to 4 Inch [65mm to 100mm] = 0.075 Inch [1.9mm]<br>Over 4 to 6 Inch [100mm to 150mm] = 0.087 Inch [2.2mm]<br>Over 6 to 8 Inch [150mm to 200mm] = 0.100 Inch [2.5mm]<br>Over 8 Inch [200mm] = 0.112 Inch [2.8mm] |
| Outside Diameter (OD)             | For Round Pipes, OD 1.90 Inch (48.3mm) and smaller ± 0.50 % & OD 2.00 Inch (60.3mm) and larger ± 0.75 %<br>For Square & Rectangular Section<br>2½ Inch [65mm] or under ± 0.020 Inch (0.50 mm)<br>Over 2½ to 3½ [65mm to 90mm] ± 0.025 Inch (0.60mm)<br>Over 3½ to 5½ [90mm to 140mm] ± 0.030 Inch (0.80mm)<br>Over 5½ [140mm] ± 1.0 % of OD | Flattening Test       | Keep the weld at 90° and flatten upto 66% of OD, No cracks or breaks are allowed on the weld. Further flatten upto 50% of OD, No cracks or breaks are allowed in the material and during third step full flatten for soundness or lamination.                                                                                                                         |
| Thickness                         | ± 10% of specific wall thickness.                                                                                                                                                                                                                                                                                                           |                       |                                                                                                                                                                                                                                                                                                                                                                       |
| Length                            | Pipe shall be furnished in single random length, double random length or in uniform length as per the customer requirement.                                                                                                                                                                                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                       |
| Straightness                      | 2 mm/mtr                                                                                                                                                                                                                                                                                                                                    | Surface Protection    | Black & Galvanized coating as per Customer requirement.                                                                                                                                                                                                                                                                                                               |
| Squareness (Square & rectangular) | 90° ± 2° max.                                                                                                                                                                                                                                                                                                                               |                       |                                                                                                                                                                                                                                                                                                                                                                       |
| Radius                            | 3 times of thickness maximum                                                                                                                                                                                                                                                                                                                | Marking (Stencilling) | Goodluck, Specification designation and Grade” on pipe and any thing specific as per customer requirement.                                                                                                                                                                                                                                                            |

# European standard for steel tubes and pipes for ordinary services

Pipes Conforming to EN : 10255

| Nominal Size |       | Class | Outside Diameter (mm) |       | Thick. (mm) | Weight (Plain End) (Kg/mtr.) | Weight (Socketed) (Kg/mtr.) | Pcs per Bundle |
|--------------|-------|-------|-----------------------|-------|-------------|------------------------------|-----------------------------|----------------|
| MM           | Inch  |       | Min                   | Max   |             |                              |                             |                |
| 15mm         | 1/2   | L1    | 21.0                  | 21.7  | 2.30        | 1.08                         | 1.09                        | 169            |
| 20mm         | 3/4   | L1    | 26.4                  | 27.1  | 2.30        | 1.39                         | 1.40                        | 127            |
| 25mm         | 1     | L1    | 33.2                  | 34.0  | 2.90        | 2.20                         | 2.22                        | 91             |
| 32mm         | 1 1/4 | L1    | 41.9                  | 42.7  | 2.90        | 2.82                         | 2.85                        | 61             |
| 40mm         | 1 1/2 | L1    | 47.8                  | 48.6  | 2.90        | 3.24                         | 3.28                        | 61             |
| 50mm         | 2     | L1    | 59.6                  | 60.7  | 3.20        | 4.49                         | 4.56                        | 37             |
| 65mm         | 2 1/2 | L1    | 75.2                  | 76.3  | 3.20        | 5.73                         | 5.85                        | 24             |
| 80mm         | 3     | L1    | 87.9                  | 89.4  | 3.60        | 7.55                         | 7.72                        | 19             |
| 100mm        | 4     | L1    | 113.0                 | 114.9 | 4.00        | 10.80                        | 11.10                       | 14             |
| 15mm         | 1/2   | L2    | 21.0                  | 21.4  | 2.00        | 0.947                        | 0.956                       | 169            |
| 20mm         | 3/4   | L2    | 26.4                  | 26.9  | 2.30        | 1.380                        | 1.390                       | 127            |
| 25mm         | 1     | L2    | 33.2                  | 33.8  | 2.60        | 1.98                         | 2.00                        | 91             |
| 32mm         | 1 1/4 | L2    | 41.9                  | 42.5  | 2.60        | 2.540                        | 2.570                       | 61             |
| 40mm         | 1 1/2 | L2    | 47.8                  | 48.4  | 2.90        | 3.230                        | 3.270                       | 61             |
| 50mm         | 2     | L2    | 59.6                  | 60.2  | 2.90        | 4.08                         | 4.15                        | 37             |
| 65mm         | 2 1/2 | L2    | 75.2                  | 76.0  | 3.20        | 5.710                        | 5.830                       | 24             |
| 80mm         | 3     | L2    | 87.9                  | 88.7  | 3.20        | 6.720                        | 6.890                       | 19             |
| 100mm        | 4     | L2    | 113.0                 | 113.9 | 3.60        | 9.75                         | 10.00                       | 14             |
| 15mm         | 1/2   | L     | 21.0                  | 21.7  | 2.30        | 1.08                         | 1.09                        | 169            |
| 20mm         | 3/4   | L     | 26.4                  | 27.1  | 2.30        | 1.40                         | 1.41                        | 127            |
| 25mm         | 1     | L     | 33.2                  | 34.0  | 2.90        | 2.20                         | 2.22                        | 91             |
| 32mm         | 1 1/4 | L     | 41.9                  | 42.7  | 2.90        | 2.82                         | 2.85                        | 61             |
| 40mm         | 1 1/2 | L     | 47.8                  | 48.6  | 2.90        | 3.25                         | 3.29                        | 61             |
| 50mm         | 2     | L     | 59.6                  | 60.7  | 3.20        | 4.51                         | 4.58                        | 37             |
| 65mm         | 2 1/2 | L     | 75.2                  | 76.0  | 3.20        | 5.75                         | 5.87                        | 24             |
| 80mm         | 3     | L     | 87.9                  | 88.7  | 3.20        | 6.76                         | 6.93                        | 19             |
| 100mm        | 4     | L     | 113.0                 | 113.9 | 3.60        | 9.83                         | 10.10                       | 14             |
| 125mm        | 5     | L     | 138.5                 | 140.8 | 4.50        | 15.00                        | 15.50                       | 7              |
| 150mm        | 6     | L     | 163.9                 | 166.5 | 4.50        | 17.80                        | 18.40                       | 7              |
| 15mm         | 1/2   | M     | 21.0                  | 21.8  | 2.60        | 1.21                         | 1.22                        | 169            |
| 20mm         | 3/4   | M     | 26.5                  | 27.3  | 2.60        | 1.56                         | 1.57                        | 127            |
| 25mm         | 1     | M     | 33.3                  | 34.2  | 3.20        | 2.41                         | 2.43                        | 91             |
| 32mm         | 1 1/4 | M     | 42.0                  | 42.9  | 3.20        | 3.10                         | 3.13                        | 61             |
| 40mm         | 1 1/2 | M     | 47.9                  | 48.8  | 3.20        | 3.56                         | 3.60                        | 61             |
| 50mm         | 2     | M     | 59.7                  | 60.8  | 3.60        | 5.03                         | 5.10                        | 37             |
| 65mm         | 2 1/2 | M     | 75.3                  | 76.6  | 3.60        | 6.42                         | 6.54                        | 24             |
| 80mm         | 3     | M     | 88.0                  | 89.5  | 4.00        | 8.36                         | 8.53                        | 19             |
| 100mm        | 4     | M     | 113.1                 | 115.0 | 4.50        | 12.20                        | 12.50                       | 14             |
| 125mm        | 5     | M     | 138.5                 | 140.8 | 5.00        | 16.60                        | 17.10                       | 7              |
| 150mm        | 6     | M     | 163.9                 | 166.5 | 5.00        | 19.80                        | 20.40                       | 7              |
| 15mm         | 1/2   | H     | 21.0                  | 21.8  | 3.20        | 1.44                         | 1.45                        | 169            |
| 20mm         | 3/4   | H     | 26.5                  | 27.3  | 3.20        | 1.87                         | 1.88                        | 127            |
| 25mm         | 1     | H     | 33.3                  | 34.2  | 4.00        | 2.93                         | 2.95                        | 91             |
| 32mm         | 1 1/4 | H     | 42.0                  | 42.9  | 4.00        | 3.79                         | 3.82                        | 61             |
| 40mm         | 1 1/2 | H     | 47.9                  | 48.8  | 4.00        | 4.37                         | 4.41                        | 61             |
| 50mm         | 2     | H     | 59.7                  | 60.8  | 4.50        | 6.19                         | 6.26                        | 37             |
| 65mm         | 2 1/2 | H     | 75.3                  | 76.6  | 4.50        | 7.93                         | 8.05                        | 24             |
| 80mm         | 3     | H     | 88.0                  | 89.5  | 5.00        | 10.30                        | 10.50                       | 19             |
| 100mm        | 4     | H     | 113.1                 | 115.0 | 5.40        | 14.50                        | 14.80                       | 10             |
| 125mm        | 5     | H     | 138.5                 | 140.8 | 5.40        | 17.90                        | 18.40                       | 7              |
| 150mm        | 6     | H     | 163.9                 | 166.5 | 5.40        | 21.30                        | 21.90                       | 7              |

### Tolerances

(Outside Diameter as per above table)

| Thickness | Medium | Heavy | Light L | Light L1 | Light L2 |
|-----------|--------|-------|---------|----------|----------|
|           | ±10%   | ±10%  | ±10%    | -8%      | -8%      |

Weight : ±7.5% for M, H & L series (on lot) and +10%/-8% for L1 & L2 series

### Mechanical Properties

|                  |                   |
|------------------|-------------------|
| Yield Strength   | 195 MPa (Minimum) |
| Tensile Strength | 320 to 520 Mpa    |
| %Elongation      | 20% Minimum       |

### Chemical Composition

|             |             |
|-------------|-------------|
| Carbon      | 0.20 % Max  |
| Manganese   | 1.40 % Max  |
| Phosphorous | 0.035 % Max |
| Sulphur     | 0.030 % Max |

Bend Test

Black Tube

For Tubes upto & including 2"

Bending angle 90°

Bending radius As per EN 10255

Weld Position outside of the bend

Galvanized Tube

Bending angle 90°

Bending radius 8 times to the OD of Tube

Weld Position outside of the bend

Flattening Test

For Tubes above 2"

1. Flatten upto 75% of tube dia for weld test (Weld at 12 or 3 O'clock position)

2. Flatten upto 60% of tube dia for raw material test

Leak Tightness Test

100% Hydrotesting at 50 bar or online eddy current testing

Galvanizing Test

As per EN 10240 / EN ISO 1461

Threading

As per EN 10226-1

# European standard for steel tubes and pipes for structural purposes

Pipes Conforming to EN : 10219-1&2 Circular Hollow Section

| SIZE OD (mm) | WALL THICKNESS (mm)           |      |       |       |       |       |       |       |       |       |       |
|--------------|-------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | 2                             | 2.5  | 3     | 4     | 5     | 6     | 6.3   | 8     | 10    | 12    | 12.5  |
|              | Mass per unit length (Kg/mtr) |      |       |       |       |       |       |       |       |       |       |
| 21.3         | 0.95                          | 1.16 | 1.35  |       |       |       |       |       |       |       |       |
| 26.9         | 1.23                          | 1.50 | 1.77  |       |       |       |       |       |       |       |       |
| 33.7         | 1.56                          | 1.92 | 2.27  |       |       |       |       |       |       |       |       |
| 42.4         | 1.99                          | 2.46 | 2.91  | 3.79  |       |       |       |       |       |       |       |
| 48.3         | 2.28                          | 2.82 | 3.35  | 4.37  | 5.34  |       |       |       |       |       |       |
| 60.3         | 2.88                          | 3.56 | 4.24  | 5.55  | 6.82  |       |       |       |       |       |       |
| 76.1         | 3.65                          | 4.54 | 5.41  | 7.11  | 8.77  | 10.40 | 10.80 |       |       |       |       |
| 88.9         | 4.29                          | 5.33 | 6.36  | 8.38  | 10.30 | 12.30 | 12.80 |       |       |       |       |
| 101.6        | 4.91                          | 6.11 | 7.29  | 9.63  | 11.90 | 14.10 | 14.80 |       |       |       |       |
| 114.3        |                               | 6.89 | 8.23  | 10.90 | 13.50 | 16.00 | 16.80 | 21.00 |       |       |       |
| 139.7        |                               |      | 10.10 | 13.40 | 16.60 | 19.80 | 20.70 | 26.00 | 32.00 |       |       |
| 168.3        |                               |      | 12.20 | 16.20 | 20.10 | 24.00 | 25.20 | 31.60 | 39.00 |       |       |
| 219.1        |                               |      |       | 21.20 | 26.40 | 31.50 | 33.10 | 41.60 | 51.60 | 61.30 | 63.70 |
| 244.5        |                               |      |       |       | 29.50 | 35.30 | 37.00 | 46.70 | 57.80 | 68.80 | 71.50 |
| 273.0        |                               |      |       |       | 33.00 | 39.50 | 41.40 | 52.30 | 64.90 | 77.20 | 80.30 |

### Tolerances on dimensions

Characteristics

Tolerances

External Dimensions

±1%, with a minimum of ±0.5 mm and a maximum of ±10 mm

Thickness

For do ≤ 406.4 mm, T ≤ 5mm : ±10%, T > 5mm ± 0.5mm;  
For do > 406.4 mm: ±10% with a max of ±2 mm

Out-of-roundness

2% for hollow sections having a diameter to thickness ratio not exceeding 100

Straightness

0.20% of total length

Mass per unit length

± 6% on individual delivered lengths

### Mechanical Properties

| Grade    | YS Min MPa | TS Min MPa |          | % EL (Min) | Minimum impact energy J |      |       |
|----------|------------|------------|----------|------------|-------------------------|------|-------|
|          |            | < 3        | ≥ 3 ≤ 40 |            | -20° C                  | 0° C | 20° C |
| S235 JRH | 235        | 360-510    | 360-510  | 24         | -                       | -    | 27    |
| S275 J0H | 275        | 430-580    | 410-560  | 20         | -                       | 27   | -     |
| S275 J2H |            |            |          |            | 27                      | -    | -     |
| S355 J0H |            |            |          |            | -                       | 27   | -     |
| S355 J2H | 235        | 510-680    | 470-630  | 20         | 27                      | -    | -     |
| S355 K2H |            |            |          |            | 40                      | -    | -     |

### Chemical Composition (%) max.

| Grade    | C     | Si    | Mn    | P     | S     | N     | CEV   |
|----------|-------|-------|-------|-------|-------|-------|-------|
| S235 JRH | 0.170 | -     | 1.400 | 0.040 | 0.040 | 0.009 | 0.350 |
| S275 J0H | 0.200 | -     | 1.500 | 0.035 | 0.035 | 0.009 | 0.400 |
| S275 J2H | 0.200 | -     | 1.500 | 0.030 | 0.030 | -     | 0.400 |
| S355 J0H | 0.220 | 0.550 | 1.600 | 0.035 | 0.035 | 0.009 | 0.450 |
| S355 J2H | 0.220 | 0.550 | 1.600 | 0.030 | 0.030 | -     | 0.450 |
| S355 K2H | 0.220 | 0.550 | 1.600 | 0.030 | 0.030 | -     | 0.450 |



# European standard for steel tubes and pipes for pressure purposes

Pipes Conforming to EN : 10217-1

| SIZE<br>OD (mm) | WALL THICKNESS (mm) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-----------------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                 | 1.8                 | 2.0 | 2.3 | 2.6 | 2.9 | 3.2 | 3.6 | 4.0 | 4.5 | 5.0 | 5.6 | 6.3 | 7.1 | 8.0 | 8.8 | 10.0 |
| 21.3            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 26.9            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 33.7            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 42.4            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 48.3            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 60.3            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 76.1            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 88.9            |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 114.3           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 139.7           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 168.3           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 219.1           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 244.5           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 273.0           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 323.9           |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |

\*Preferred thickness are as per shaded area with blue color

### Tolerances on dimensions

|                     |                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------|
| Outside Diameter    | For ≤ 2191: ±1% or ±0.5 mm whichever is greater; For > 2191: ±0.75% or ± 6 mm whichever is smaller       |
| Thickness           | For T ≤ 5mm: ±10% or ± 0.3mm whichever is greater; for 5< T ≤ 40 mm: ± 8% or ± 2 mm whichever is smaller |
| Height of weld seam | Outside trimmed and inside 1.5 mm for Quality TR1 & 0.5+0.05t mm for Quality TR2                         |
| Straightness        | 0.15% of total length and 3 mm over any 1 m length                                                       |

### Mechanical Properties

| Grade   | YS Min MPa |           | TS Min MPa | % EL (Min) |        | Minimum impact energy J |       |        |
|---------|------------|-----------|------------|------------|--------|-------------------------|-------|--------|
|         |            |           |            |            |        | 0°C                     | -10°C | 0°C    |
|         | T ≤ 16     | 16 <T≤ 40 |            | long.      | trans. | long.                   |       | trans. |
| P195TR1 | 195        | 185       | 320-440    | 27         | 25     | -                       | -     | -      |
| P195TR2 | 195        | 185       | 320-440    | 27         | 25     | 40                      | 28    | 27     |
| P235TR1 | 235        | 225       | 360-500    | 25         | 23     | --                      | --    | --     |
| P235TR2 | 235        | 225       | 360-500    | 25         | 23     | 40                      | 28    | 27     |
| P265TR1 | 265        | 255       | 410-570    | 21         | 19     | --                      | --    | --     |
| P265TR2 | 265        | 255       | 410-570    | 21         | 19     | 40                      | 28    | 27     |

### Chemical Composition (%) Max.

| Grade   | C     | Si    | Mn    | P     | S     | Cr    | Mo    | Ni    | Al    | Cu    | Nb    | Ti    | V     | Cr+Cu+Mo+Ni |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| P195TR1 | 0.130 | 0.350 | 0.700 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | –     | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |
| P195TR2 | 0.130 | 0.350 | 0.700 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | 0.020 | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |
| P235TR1 | 0.160 | 0.350 | 1.200 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | --    | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |
| P235TR2 | 0.160 | 0.350 | 1.200 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | 0.020 | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |
| P265TR1 | 0.200 | 0.400 | 1.400 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | --    | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |
| P265TR2 | 0.200 | 0.400 | 1.400 | 0.025 | 0.020 | 0.300 | 0.080 | 0.300 | 0.020 | 0.300 | 0.010 | 0.040 | 0.020 | 0.700       |

Drift Expanding Test: For sizes D≤150mm & T≤10mm

| Grade | P195 TR1&2 | P235 TR1&2 | P265 TR1&2 |
|-------|------------|------------|------------|
|-------|------------|------------|------------|

### % increase in diameter

|             |    |    |    |
|-------------|----|----|----|
| For d/D≤0.8 | 10 | 10 | 8  |
| For d/D>0.8 | 12 | 12 | 10 |

|                      |                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------|
| Leak Tightness Test  | : 100% Hydrotesting at 70 bar or Electromagnetic testing                                                                |
| Non Destructive Test | : Full length of weld seam shall be subjected to non destructively test for the detection of longitudinal imperfections |

# Australian standard for steel tubes and tubulars for ordinary services

Pipes Conforming to AS : 1074

| Nominal Size |      | Class | Outside Diameter (mm) |       | Thick. (mm) | Weight (Plain End) (Kg/mtr.) | Weight (Socketed) (Kg/mtr.) | Pcs per Bundle |
|--------------|------|-------|-----------------------|-------|-------------|------------------------------|-----------------------------|----------------|
| MM           | Inch |       | Min                   | Max   |             |                              |                             |                |
| 15           | ½"   | L     | 21.0                  | 21.4  | 2.00        | 0.947                        | 0.956                       | 217            |
| 20           | ¾"   | L     | 26.4                  | 26.9  | 2.30        | 1.380                        | 1.390                       | 127            |
| 25           | 1"   | L     | 33.2                  | 33.8  | 2.60        | 1.980                        | 2.000                       | 91             |
| 32           | 1¼"  | L     | 41.9                  | 42.5  | 2.60        | 2.540                        | 2.570                       | 61             |
| 40           | 1½"  | L     | 47.8                  | 48.4  | 2.90        | 3.230                        | 3.270                       | 61             |
| 50           | 2"   | L     | 59.6                  | 60.2  | 2.90        | 4.080                        | 4.150                       | 37             |
| 65           | 2½"  | L     | 75.2                  | 76.0  | 3.20        | 5.710                        | 5.830                       | 37             |
| 80           | 3"   | L     | 87.9                  | 88.7  | 3.20        | 6.720                        | 6.890                       | 19             |
| 100          | 4"   | L     | 113.0                 | 113.9 | 3.60        | 9.750                        | 10.000                      | 19             |
| 15           | ½"   | M     | 21.1                  | 21.7  | 2.60        | 1.210                        | 1.220                       | 217            |
| 20           | ¾"   | M     | 26.6                  | 27.2  | 2.60        | 1.560                        | 1.570                       | 127            |
| 25           | 1"   | M     | 33.4                  | 34.2  | 3.20        | 2.410                        | 2.430                       | 91             |
| 32           | 1¼"  | M     | 42.1                  | 42.9  | 3.20        | 3.100                        | 3.130                       | 61             |
| 40           | 1½"  | M     | 48.0                  | 48.8  | 3.20        | 3.570                        | 3.610                       | 61             |
| 50           | 2"   | M     | 59.8                  | 60.8  | 3.60        | 5.030                        | 5.100                       | 37             |
| 65           | 2½"  | M     | 75.4                  | 76.6  | 3.60        | 6.430                        | 6.550                       | 37             |
| 80           | 3"   | M     | 88.1                  | 89.5  | 4.00        | 8.370                        | 8.540                       | 19             |
| 100          | 4"   | M     | 113.3                 | 114.9 | 4.50        | 12.200                       | 12.500                      | 19             |
| 125          | 5"   | M     | 138.7                 | 140.6 | 5.00        | 16.600                       | 17.100                      | 13             |
| 150          | 6"   | M     | 164.1                 | 166.1 | 5.00        | 19.700                       | 20.300                      | 10             |
| 15           | ½"   | H     | 21.1                  | 21.7  | 3.20        | 1.440                        | 1.450                       | 217            |
| 20           | ¾"   | H     | 26.6                  | 27.2  | 3.20        | 1.870                        | 1.880                       | 127            |
| 25           | 1"   | H     | 33.4                  | 34.2  | 4.00        | 2.940                        | 2.960                       | 91             |
| 32           | 1¼"  | H     | 42.1                  | 42.9  | 4.00        | 3.800                        | 3.830                       | 61             |
| 40           | 1½"  | H     | 48.0                  | 48.8  | 4.00        | 4.380                        | 4.420                       | 61             |
| 50           | 2"   | H     | 59.8                  | 60.8  | 4.50        | 6.190                        | 6.260                       | 37             |
| 65           | 2½"  | H     | 75.4                  | 76.6  | 4.50        | 7.930                        | 8.050                       | 37             |
| 80           | 3"   | H     | 88.1                  | 89.5  | 5.00        | 10.300                       | 10.500                      | 19             |
| 100          | 4"   | H     | 113.3                 | 114.9 | 5.40        | 14.500                       | 14.800                      | 19             |
| 125          | 5"   | H     | 138.7                 | 140.6 | 5.40        | 17.900                       | 18.400                      | 13             |
| 150          | 6"   | H     | 164.1                 | 166.1 | 5.40        | 21.300                       | 21.900                      | 10             |

### Tolerances

(Outside Diameter as per above table)

| Thickness | Light      | Medium     | Heavy      |
|-----------|------------|------------|------------|
|           | -8%        | -10%       | -10%       |
|           | +unlimited | +unlimited | +unlimited |

Weight : -8% & +10% (for single tube)

### Mechanical Properties

|                  |                   |
|------------------|-------------------|
| Yield Strength   | 195 MPa (Minimum) |
| Tensile Strength | 320 to 460 Mpa    |
| %Elongation      | 20% Minimum       |

### Chemical Composition

|                        |             |
|------------------------|-------------|
| Phosphorous (P)        | 0.045 % Max |
| Sulphur (S)            | 0.045 % Max |
| Carbon Equivalent (CE) | 0.040 Max   |

|                     |                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ductility Test      | For Tubes upto & including 2"                                                                                                                             |
| Black Tube          | Bending angle 180°<br>Bending radius 6 times to the OD of Tube<br>Weld Position 3 O'clock                                                                 |
| Galvanized Tube     | Bending angle 90°<br>Bending radius 8 times to the OD of Tube<br>Weld Position 3 O'clock                                                                  |
| Ductility Test      | For Tubes above 2"<br>1. Flatten upto 75% of tube dia for weld test (Weld at 3 O'clock position)<br>2. Flatten upto 60% of tube dia for raw material test |
| Leak Tightness Test | 100% Hydrotesting at 5 MPa or online eddy current testing or ultrasonic testing                                                                           |
| Galvanizing Test    | As per AS / NZS 4792                                                                                                                                      |
| Threading           | As per AS 1722-1                                                                                                                                          |



# Circular hollow section

Pipes Conforming to AS/NZS : 1163

| SIZE   | WALL THICKNESS (mm)           |      |       |      |       |      |      |       |       |      |       |       |       |       |       |       |       |       |       |       |        |  |
|--------|-------------------------------|------|-------|------|-------|------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--|
| CHS OD | 2.30                          | 2.60 | 3.00  | 3.20 | 3.50  | 3.60 | 4.00 | 4.50  | 4.80  | 4.90 | 5.00  | 5.40  | 5.50  | 5.90  | 6.00  | 6.40  | 7.10  | 8.20  | 9.30  | 9.50  | 12.70  |  |
| mm     | Mass per unit length (Kg/mtr) |      |       |      |       |      |      |       |       |      |       |       |       |       |       |       |       |       |       |       |        |  |
| 21.3   |                               | 1.20 |       | 1.43 |       | 1.57 |      |       |       |      |       |       |       |       |       |       |       |       |       |       |        |  |
| 26.9   |                               | 1.56 |       | 1.87 |       |      | 2.26 |       |       |      |       |       |       |       |       |       |       |       |       |       |        |  |
| 33.7   |                               |      |       | 2.41 |       |      | 2.93 | 3.24  |       |      |       |       |       |       |       |       |       |       |       |       |        |  |
| 42.4   |                               |      |       | 3.09 |       |      | 3.79 |       |       | 4.53 |       |       |       |       |       |       |       |       |       |       |        |  |
| 48.3   |                               |      |       | 3.56 |       |      | 4.37 |       |       |      |       | 5.71  |       |       |       |       |       |       |       |       |        |  |
| 60.3   |                               |      |       |      |       | 5.03 |      | 6.19  |       |      |       | 7.31  |       |       |       |       |       |       |       |       |        |  |
| 76.1   | 4.19                          |      |       | 5.75 |       | 6.44 |      | 7.95  |       |      |       |       |       | 10.20 |       |       |       |       |       |       |        |  |
| 88.9   |                               | 5.53 |       | 6.76 |       |      | 8.38 |       | 9.96  |      | 10.30 |       | 11.30 | 12.10 |       |       |       |       |       |       |        |  |
| 101.6  |                               | 6.35 |       | 7.77 |       |      | 9.63 |       |       |      | 11.90 |       |       |       |       |       |       |       |       |       |        |  |
| 114.3  |                               |      |       | 8.77 |       | 9.83 |      | 12.20 | 13.00 |      |       | 14.50 |       |       | 16.00 |       |       |       |       |       |        |  |
| 139.7  |                               |      | 10.10 |      | 11.80 |      |      |       |       |      | 16.60 | 17.90 |       |       |       |       |       |       |       |       |        |  |
| 165.1  |                               |      | 12.00 |      | 13.90 |      |      |       |       |      | 19.70 | 21.30 |       |       |       |       |       |       |       |       |        |  |
| 168.3  |                               |      |       |      |       |      |      |       | 19.40 |      |       |       |       |       |       | 25.60 | 28.20 |       |       |       |        |  |
| 219.1  |                               |      |       |      |       |      |      |       | 25.40 |      |       |       |       |       |       | 33.60 |       | 42.60 |       |       |        |  |
| 273.1  |                               |      |       |      |       |      |      |       | 31.80 |      |       |       |       |       |       | 42.10 |       |       | 60.50 |       |        |  |
| 323.9  |                               |      |       |      |       |      |      |       |       |      |       |       |       |       |       | 50.10 |       |       |       | 73.70 | 97.50  |  |
| 355.6  |                               |      |       |      |       |      |      |       |       |      |       |       |       |       |       | 55.10 |       |       |       | 81.10 | 107.00 |  |
| 406.4  |                               |      |       |      |       |      |      |       |       |      |       |       |       |       |       | 63.10 |       |       |       | 93.00 | 123.00 |  |

### Tolerances on dimensions

|                      |                                                                               |
|----------------------|-------------------------------------------------------------------------------|
| Characteristics      | Tolerances                                                                    |
| External Dimensions  | ±1%, with a minimum of ±0.5 mm and a maximum of ±10 mm                        |
| Thickness            | For do ≤ 406.4 mm: ±10%; For do > 406.4 mm: ±10% with a max of ±2 mm          |
| Out-of-roundness     | 2% for hollow sections having a diameter to thickness ratio not exceeding 100 |
| Straightness         | 0.20% of total length                                                         |
| Mass per unit length | Not less than 0.96 times the specified mass on individual lengths             |

### Mechanical Properties

| Grade        | YS Min | TS Min | % EL (Min) |        |     | Minimum Absorbed Energy, Joules |        |        |                  |        |        |
|--------------|--------|--------|------------|--------|-----|---------------------------------|--------|--------|------------------|--------|--------|
|              | MPa    | MPa    | do/t       |        |     | Avg. of 3 tests                 |        |        | Individual tests |        |        |
|              |        |        | ≤15        | >15≤30 | >30 | 10x10                           | 10x7.5 | 10x5.0 | 10x10            | 10x7.5 | 10x5.0 |
| C250, C250L0 | 250    | 320    | 18         | 20     | 22  | 27                              | 22     | 18     | 20               | 16     | 13     |
| C350, C350L0 | 350    | 430    | 16         | 18     | 20  | 27                              | 22     | 18     | 20               | 16     | 13     |
| C450, C450L0 | 450    | 500    | 12         | 14     | 16  | 27                              | 22     | 18     | 20               | 16     | 13     |

### Chemical Composition (%) Max.

| Grade        | C     | Si   | Mn   | P    | S    | Cu   | Ni   | Cr   | Mo   | V    | Nb   | Ti   | Ai   | V+Nb | CE   |
|--------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| C250, C250L0 | 0.120 | 0.05 | 0.50 | 0.03 | 0.03 | 0.25 | 0.25 | 0.15 | 0.10 | 0.02 | 0.01 | 0.04 | 0.10 | 0.03 | 0.25 |
| C350, C350L0 | 0.200 | 0.45 | 1.60 | 0.03 | 0.03 | 0.25 | 0.25 | 0.30 | 0.10 | 0.10 | 0.01 | 0.04 | 0.10 | 0.11 | 0.43 |
| C450, C450L0 | 0.200 | 0.45 | 1.70 | 0.03 | 0.03 | 0.25 | 0.25 | 0.50 | 0.35 | 0.10 | 0.01 | 0.04 | 0.10 | 0.11 | 0.43 |

|                          |                                                                                                                                                                      |                           |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Manipulation (Bend Test) | For Galvanized Tubes upto & including 60.3 mm                                                                                                                        |                           |
|                          | Bending angle                                                                                                                                                        | 90°                       |
|                          | Bending radius                                                                                                                                                       | 6 times to the OD of Tube |
| Flattening Test          | 1. Flatten upto 75% of tube dia for weld test (Weld at 45° position for do≤60mm)<br>2. Flatten upto 75% of tube dia for weld test (Weld at 90° position for do>60mm) |                           |

# Sri-Lankan standard for galvanized steel pipes

Pipes Conforming to SLS - 829 : 2009

| Nominal Size (DN) | Thread Size Designation | Class/ Series | Outside Diameter (mm) |       | Thick. (mm) | Weight (Kg/mtr.) | Socket Dimension (mm) |                |
|-------------------|-------------------------|---------------|-----------------------|-------|-------------|------------------|-----------------------|----------------|
|                   |                         |               | Min                   | Max   |             |                  | Minimum O.D.          | Minimum Length |
| 15mm              | 1/2                     | L1            | 21.0                  | 21.4  | 1.80        | 0.866            | 26.4                  | 34             |
| 20mm              | 3/4                     | L1            | 26.4                  | 26.9  | 1.80        | 1.110            | 31.8                  | 36             |
| 25mm              | 1                       | L1            | 33.2                  | 33.8  | 2.00        | 1.560            | 39.5                  | 43             |
| 32mm              | 1 1/4                   | L1            | 41.9                  | 42.5  | 2.30        | 2.270            | 48.3                  | 48             |
| 40mm              | 1 1/2                   | L1            | 47.8                  | 48.4  | 2.30        | 2.610            | 54.5                  | 48             |
| 50mm              | 2                       | L1            | 59.6                  | 60.2  | 2.30        | 3.290            | 66.3                  | 56             |
| 65mm              | 2 1/2                   | L1            | 75.2                  | 76.0  | 2.60        | 4.710            | 82                    | 65             |
| 65mm              | 3                       | L1            | 87.9                  | 88.7  | 2.90        | 6.150            | 95                    | 71             |
| 100mm             | 4                       | L1            | 113.0                 | 113.9 | 3.20        | 8.770            | 122                   | 83             |
| 15mm              | 1/2                     | L             | 21.0                  | 21.4  | 2.00        | 0.947            | 26.4                  | 34             |
| 20mm              | 3/4                     | L             | 26.4                  | 26.9  | 2.30        | 1.380            | 31.8                  | 36             |
| 25mm              | 1                       | L             | 33.2                  | 33.8  | 2.60        | 1.980            | 39.5                  | 43             |
| 32mm              | 1 1/4                   | L             | 41.9                  | 42.5  | 2.60        | 2.540            | 48.3                  | 48             |
| 40mm              | 1 1/2                   | L             | 47.8                  | 48.4  | 2.90        | 3.230            | 54.5                  | 48             |
| 50mm              | 2                       | L             | 59.6                  | 60.2  | 2.90        | 4.080            | 66.3                  | 56             |
| 65mm              | 2 1/2                   | L             | 75.2                  | 76.0  | 3.20        | 5.710            | 82                    | 65             |
| 65mm              | 3                       | L             | 87.9                  | 88.7  | 3.20        | 6.720            | 95                    | 71             |
| 100mm             | 4                       | L             | 113.0                 | 113.9 | 3.60        | 9.750            | 122                   | 83             |
| 15mm              | 1/2                     | M             | 21.0                  | 21.8  | 2.60        | 1.21             | 26.4                  | 34             |
| 20mm              | 3/4                     | M             | 26.5                  | 27.3  | 2.60        | 1.56             | 31.8                  | 36             |
| 25mm              | 1                       | M             | 33.3                  | 34.2  | 3.20        | 2.41             | 39.5                  | 43             |
| 32mm              | 1 1/4                   | M             | 42.0                  | 42.9  | 3.20        | 3.10             | 48.3                  | 48             |
| 40mm              | 1 1/2                   | M             | 47.9                  | 48.8  | 3.20        | 3.56             | 54.5                  | 48             |
| 50mm              | 2                       | M             | 59.7                  | 60.8  | 3.60        | 5.03             | 66.3                  | 56             |
| 65mm              | 2 1/2                   | M             | 75.3                  | 76.6  | 3.60        | 6.42             | 82                    | 65             |
| 65mm              | 3                       | M             | 88.0                  | 89.5  | 4.00        | 8.36             | 95                    | 71             |
| 100mm             | 4                       | M             | 113.1                 | 115.0 | 4.50        | 12.20            | 122                   | 83             |
| 125mm             | 5                       | M             | 138.5                 | 140.8 | 5.00        | 16.60            | 147                   | 92             |
| 150mm             | 6                       | M             | 163.9                 | 166.5 | 5.00        | 19.80            | 174                   | 92             |
| 15mm              | 1/2                     | H             | 21.0                  | 21.8  | 3.20        | 1.44             | 26.4                  | 34             |
| 20mm              | 3/4                     | H             | 26.5                  | 27.3  | 3.20        | 1.87             | 31.8                  | 36             |
| 25mm              | 1                       | H             | 33.3                  | 34.2  | 4.00        | 2.93             | 39.5                  | 43             |
| 32mm              | 1 1/4                   | H             | 42.0                  | 42.9  | 4.00        | 3.79             | 48.3                  | 48             |
| 40mm              | 1 1/2                   | H             | 47.9                  | 48.8  | 4.00        | 4.37             | 54.5                  | 48             |
| 50mm              | 2                       | H             | 59.7                  | 60.8  | 4.50        | 6.19             | 66.3                  | 56             |
| 65mm              | 2 1/2                   | H             | 75.3                  | 76.6  | 4.50        | 7.93             | 82                    | 65             |
| 65mm              | 3                       | H             | 88.0                  | 89.5  | 5.00        | 10.30            | 95                    | 71             |
| 100mm             | 4                       | H             | 113.1                 | 115.0 | 5.40        | 14.50            | 122                   | 83             |
| 125mm             | 5                       | H             | 138.5                 | 140.8 | 5.40        | 17.90            | 147                   | 92             |
| 150mm             | 6                       | H             | 163.9                 | 166.5 | 5.40        | 21.30            | 174                   | 92             |

### Tolerances

(Outside Diameter as per above table)

| Thickness | Medium | Heavy | Light L | Light L1 |
|-----------|--------|-------|---------|----------|
|           | ±10%   | ±10%  | -8%     | -8%      |

Weight : For M & H Series ±10% on each pipe & ±7.5% on lot  
For L1 & L Series +10/-8% on each pipe & ±5% on lot

### Mechanical Properties

|                  |                   |             |             |
|------------------|-------------------|-------------|-------------|
| Yield Strength   | 195 MPa (Minimum) | Carbon      | 0.20 % Max  |
| Tensile Strength | 320 Mpa (Minimum) | Manganese   | 1.40 % Max  |
| %Elongation      | 20% Minimum       | Phosphorous | 0.040 % Max |
|                  |                   | Sulphur     | 0.040 % Max |

### Chemical Composition

|                     |                                                                      |                           |
|---------------------|----------------------------------------------------------------------|---------------------------|
| Bend Test           | For Tubes upto & including 2"                                        |                           |
| Black Tube          | Bending angle                                                        | 90°                       |
|                     | Bending radius                                                       | 8 times to the OD of Tube |
| Flattening Test     | For Tubes above 2"                                                   |                           |
|                     | 1. Flatten upto 75% of tube dia for weld test (Weld at 90° position) |                           |
|                     | 2. Flatten upto 60% of tube dia for raw material test                |                           |
| Leak Tightness Test | 100% Hydrotesting at 5 MPa or online eddy current testing            |                           |
| Galvanizing Test    | Zinc Coating for M & H Series 400 g/m² & for L1 & L Series 360 g/m²  |                           |
|                     | Uniformity Test                                                      |                           |
|                     | Free Bore test (for tubes upto 1")                                   |                           |
| Threading           | As per ISO 7-1                                                       |                           |

# Electrical conduits

## UL 6 – Galvanized Rigid Metal Conduits

Goodluck RIGID CONDUITS are hot dipped galvanized both inside and outside. The rigid conduits are threaded both ends with state-of-the-art Automatic threading machines and supplied with UL approved couplings on one end and other end protected with color coded plastic thread protection caps. The external and internal surface of the conduits is hot dipped galvanized and then a clear anti-corrosion coating is done for higher protection against corrosion giving the rigid conduits long life. Rigid conduits

are for the job that requires physical protection that only thickest walls can provide and rigid conduits are known for their thick walls and heaviest weights. Goodluck RMC is tough enough for use in outdoor applications, energy and manufacturing plants and corrosive environments.

Goodluck rigid conduits have prestigious UL6 certification. (File No. E510369). We also make rigid conduits as per American national Standard for electrical rigid conduit (ANSI C80.1)

| Trade Size | Metric Designator | Outside Diameter* |        | Nominal Wall Thickness** |      | Min. Acceptable Weight of Ten Pcs of Conduits With Couplings | Qty In Master Bundle | Qty In Inner Bundle | End Caps Color |
|------------|-------------------|-------------------|--------|--------------------------|------|--------------------------------------------------------------|----------------------|---------------------|----------------|
|            |                   | in                | mm     | in                       | mm   |                                                              |                      |                     |                |
| 1/2"       | 16                | 0.840             | 21.34  | 0.104                    | 2.64 | 35.8                                                         | 250                  | 10                  | Black          |
| 3/4"       | 21                | 1.050             | 26.67  | 0.107                    | 2.72 | 47.6                                                         | 200                  | 5                   | Red            |
| 1"         | 27                | 1.315             | 33.40  | 0.126                    | 3.20 | 69.4                                                         | 125                  | 5                   | Blue           |
| 1 1/4"     | 35                | 1.660             | 42.16  | 0.133                    | 3.38 | 91.2                                                         | 90                   |                     | Red            |
| 1 1/2"     | 41                | 1.900             | 48.26  | 0.138                    | 3.51 | 112.9                                                        | 80                   |                     | Black          |
| 2"         | 53                | 2.375             | 60.33  | 0.146                    | 3.71 | 150.6                                                        | 60                   |                     | Blue           |
| 2.5"       | 63                | 2.875             | 73.03  | 0.193                    | 4.90 | 239.0                                                        | 37                   |                     | Black          |
| 3"         | 78                | 3.500             | 88.90  | 0.205                    | 5.21 | 309.6                                                        | 30                   |                     | Blue           |
| 3 1/2"     | 91                | 4.000             | 101.60 | 0.215                    | 5.46 | 376.9                                                        | 25                   |                     | Black          |
| 4"         | 103               | 4.500             | 114.30 | 0.225                    | 5.72 | 441.0                                                        | 20                   |                     | Blue           |
| 5"         | 129               | 5.563             | 141.30 | 0.245                    | 6.22 | 535.8                                                        | 15                   |                     | Blue           |
| 6"         | 155               | 6.625             | 168.28 | 0.266                    | 6.76 | 791.7                                                        | 10                   |                     | Blue           |

### Applicable Tolerances -

Length: 10 Feet (3.05 Meters) +/- 0.25 inch (6.35 mm)  
Outside Diameter: **TRADE SIZE ½" TO 1-1/2": ±0.015" (±0.38MM)**  
**; TRADE SIZE 2" – 6" : ±1%**

\*\*Wall thickness mentioned are just for information only and not a requirement of UL standard.

We also produce rigid conduits in **20 feet (6 Meters) length**. 20 Feet conduit provide quick and easy installation and also fewer fittings.

### Features of Goodluck Rigid Conduits –

1. Higher corrosion resistance with superior & uniform galvanizing quality.
2. Accurate dimensions and uniform wall thickness.
3. Clean and smooth internal surface.
4. Easy coupling and fast installation.
5. Easy wire pushing and pulling.
6. Easy & good fabrication properties like smooth cutting, bending & welding.
7. Uniform and consistent quality.
8. Meets the underwriters laboratories specifications UI6.
9. Tested and certified for safety.



# Light wall metal conduits

## UL 797 – Electrical Metallic Tubing (EMT)

Goodluck EMT is a steel raceway of circular hollow sections which is non-threaded i.e. plain ends and is produced by high quality mild steel hot rolled coils. The exterior and interior of the EMT is protected by superior quality zinc coating done by in-line hot dipped galvanizing process. Additionally the exterior surface of EMT is coated by clear anti-corrosion coating or a zinc chromate coating for higher protection against corrosion giving the EMT long life and good smooth finish. The internal surface of the EMT is further coated with an organic zinc lubricants or higher grade organic epoxy resin by a state of art patented on – line automatic machine. This coating gives EMT a smooth internal surface which makes wire pushing and pulling easy and also protects against the corrosion.

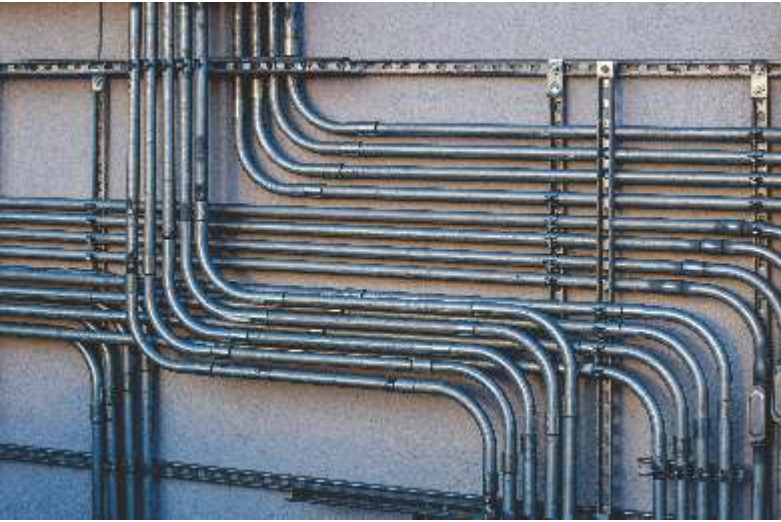
| Trade Size | Metric | Outside Diameter* |       | Nominal Wall Thickness** |      | Approx Weight/100 ft (30.5m) |       | Inner Budle Qty | Master Budle Qty |
|------------|--------|-------------------|-------|--------------------------|------|------------------------------|-------|-----------------|------------------|
|            |        | in                | mm    | in                       | mm   | lb                           | kg    | Pcs             | Pcs              |
| 1/2"       | 16     | 0.706             | 17.93 | 0.042                    | 1.07 | 30                           | 13.6  | 10.0            | 700              |
| 3/4"       | 21     | 0.922             | 23.42 | 0.049                    | 1.24 | 46                           | 20.9  | 10.0            | 500              |
| 1"         | 27     | 1.163             | 29.54 | 0.057                    | 1.45 | 67                           | 30.4  | 10.0            | 300              |
| 1 1/4"     | 35     | 1.51              | 38.35 | 0.065                    | 1.65 | 101                          | 45.8  | 5.0             | 200              |
| 1 1/2"     | 41     | 1.74              | 44.2  | 0.065                    | 1.65 | 116                          | 52.6  | 5.0             | 150              |
| 2"         | 53     | 2.197             | 55.8  | 0.065                    | 1.65 | 148                          | 67.1  |                 | 120              |
| 2 1/2"     | 63     | 2.875             | 73.03 | 0.072                    | 1.83 | 216                          | 98    |                 | 61               |
| 3"         | 78     | 3.5               | 88.9  | 0.072                    | 1.83 | 263                          | 119.3 |                 | 51               |
| 3 1/2"     | 91     | 4                 | 101.6 | 0.083                    | 2.11 | 349                          | 158.3 |                 | 37               |
| 4"         | 103    | 4.5               | 114.3 | 0.083                    | 2.11 | 393                          | 178.3 |                 | 30               |

### Applicable Tolerances -

Length: 10 Feet (3.05 Meters) +/- 0.25 inch (6.35 mm)

Outside Diameter:

- **TRADE SIZE ½" TO 2" (16 to 53) : ± 0.005" (±0.13 mm)**
- **TRADE SIZE 2 ½" (63) : ± 0.010" (0.25 mm)**
- **TRADE SIZE 3" (78) : ± 0.050" (0.38 mm)**
- **TRADE SIZE 3½" TO 4" (91 to 103 ) : ± 0.020" (±0.51 mm)**



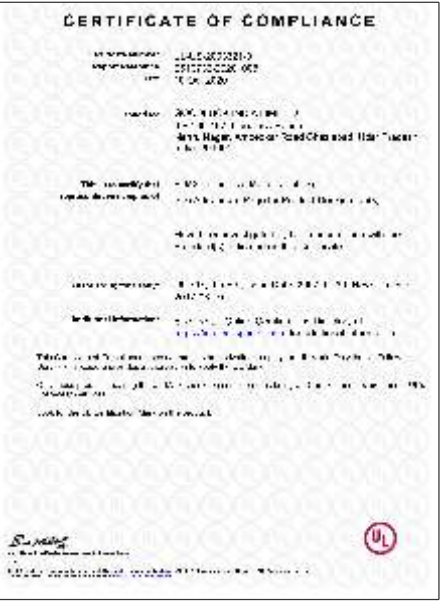
The EMT is supplied in plain ends with bundling done as per the standards/market practice or as per specific requirements of customer. Goodluck EMT can be installed either inside or outside and in all conditions and are produced from trade size ½" to 4" and in standard lengths of 10 feet each. However, we also produce and supply EMT in 20 feet (6.10 Meters) length. 20 Feet EMT provide quick and easy installation and also fewer fittings.

Each length of Goodluck EMT has label affixed containing UL listing information, sizes and a bar code.

Goodluck EMT has prestigious UL 797 certification. (File No. UL-US-2003321-0 & UL-CA-2002260-0). We also produce EMT as per American national Standard for electrical rigid conduit (ANSI C80.3)

### Features of Goodluck EMT-

1. Higher Corrosion resistance with superior and uniform galvanizing quality.
2. Accurate dimensions and uniform wall thickness.
3. High quality internal coating with high grade organic epoxy resins/zinc
4. Clean, smooth and defect-free interior surface.
5. Easy and fast installation.
6. Easy wire pushing and pulling.
7. Easy & good fabrication properties like smooth cutting, bending & welding.
8. Uniform and consistent quality.
9. Meets the Underwriters Laboratories specifications UL797.
10. Tested and certified for Safety.



# Electrical conduits

## UL 1242 - Electrical Intermediate Metal Conduit

Goodluck IMC CONDUITS are produced of high quality steel using an electric resistance welding process and hot dipped galvanized both inside and outside.

Goodluck Intermediate metal conduit (IMC) are approximately one third lighter than rigid metal conduit (RMC) so it keeps our customer's costs down and increase

productivity. IMC can be interchangeably used for rigid conduits and have same threads and use same couplings and fittings.

Goodluck IMC conduits have prestigious UL 1242 certifications for IMC.

| Trade Size | Metric Designator | Outside Diameter* |        | Nominal Wall Thickness** |     | Approx Weight<br>100 FT (30.5M) | Inner Bundle | Master Bundle | Thread Protector Color |
|------------|-------------------|-------------------|--------|--------------------------|-----|---------------------------------|--------------|---------------|------------------------|
|            |                   | in                | mm     | lb.                      | mm  |                                 |              |               |                        |
| 1/2"       | 16                | 0.815             | 20.7   | 1.97                     | 62  | 28.1                            | 10           | 350           | Yellow                 |
| 3/4"       | 21                | 1.029             | 26.13  | 2.10                     | 84  | 38.1                            | 5            | 250           | Green                  |
| 1"         | 27                | 1.29              | 32.76  | 2.35                     | 119 | 54.00                           | 5            | 170           | Orange                 |
| 1 1/4"     | 35                | 1.638             | 41.6   | 2.41                     | 158 | 71.7                            |              | 135           | Green                  |
| 1 1/2"     | 41                | 1.883             | 47.82  | 2.54                     | 194 | 88                              |              | 110           | Yellow                 |
| 2"         | 53                | 2.36              | 59.94  | 2.67                     | 256 | 116.1                           |              | 80            | Orange                 |
| 2 1/2"     | 63                | 2.857             | 72.56  | 3.81                     | 441 | 200                             |              | 37            | Yellow                 |
| 3"         | 78                | 3.476             | 88.29  | 3.81                     | 543 | 246.3                           |              | 30            | Orange                 |
| 3 1/2"     | 91                | 3.971             | 100.86 | 3.81                     | 629 | 285.3                           |              | 24            | Yellow                 |
| 4"         | 103               | 4.466             | 113.43 | 3.81                     | 700 | 317.5                           |              | 24            | Orange                 |

### Applicable Tolerances -

#### \*OUTSIDE DIAMETER TOLERANCES:

TRADE SIZES 1/2" TO 1" : +/- .005" (0.13MM)  
TRADE SIZES 1-1/4" TO 2" : +/- .0075" (0.19MM)  
TRADE SIZES 2-1/2" TO 4" : +/- 0.10" (0.25MM)

#### \*\*WALL THICKNESS TOLERANCES:

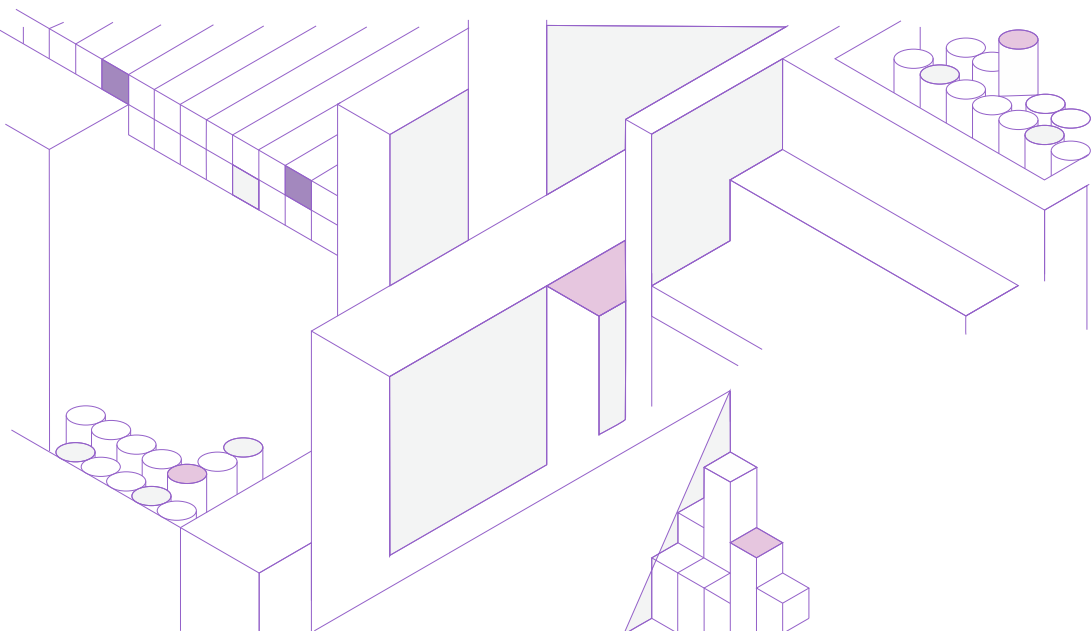
TRADE SIZES 1/2" TO 1" : +/- 0.19 MM  
TRADE SIZES 1 1/4" TO 4" : +/- 0.25 MM

**LENGTH TOLERANCE = 10 FT. (3.05M)**  
**WITH A TOLERANCE OF +/- .25 IN. (6.35MM)**

### Features of Goodluck IMC Conduits -

1. Cost effective as weighs less than Rigid
2. Quick and easy installations.
3. Meets the Underwriters Laboratories specifications UI1242
4. Tested and certified for Safety.

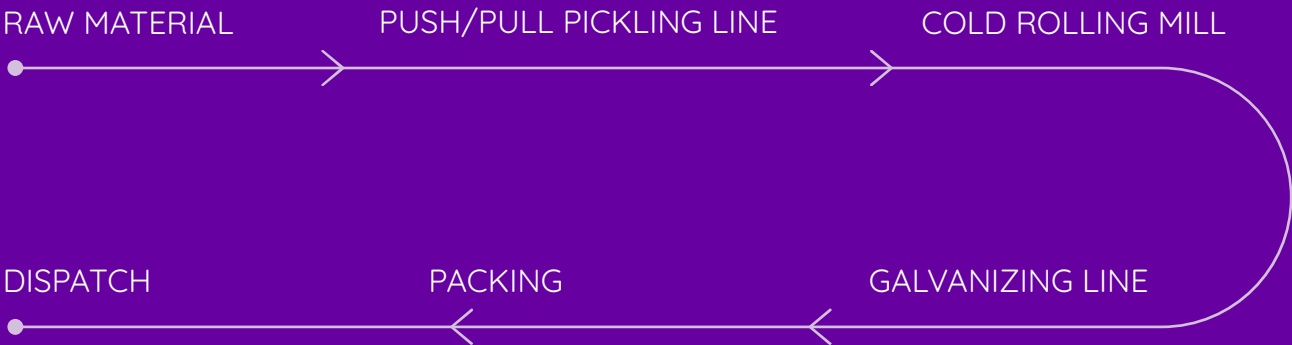
We can also produce IMC conduits in 20 feet (6 Meters) length. 20 Feet conduit provided quick and easy installation and also fewer fittings.



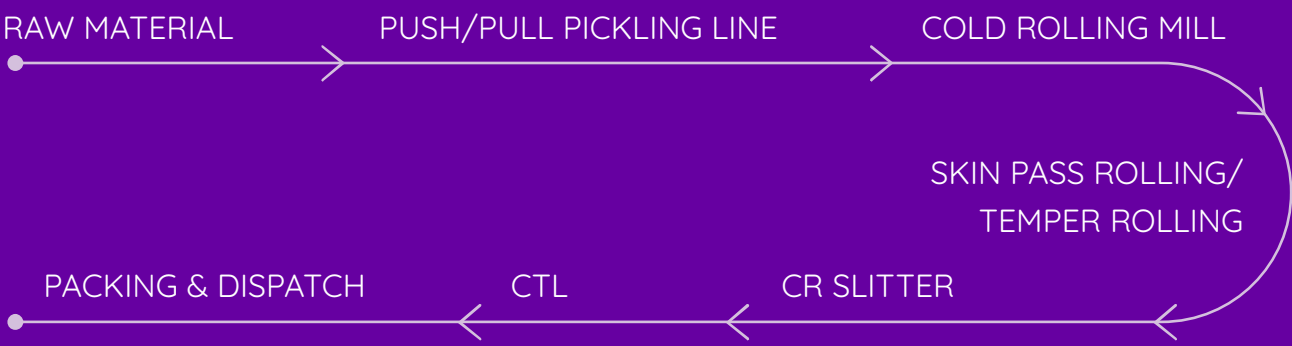
# CR/CRCA/HRPO & GP/GC Sheets

GP/GC

GP/GC



CRCA



## Raw material

Our integrated manufacturing processes start with sourcing the best quality of Hot Rolled Coils. Consistency of raw material quality is maintained by our reliable suppliers. Our suppliers for HR Coils include Tata Steel, Steel Authority of India, JSW, Arcelor Mittal Nippon Steel India (AM/NS India) & POSCO. All these companies have their local stockyard at Ghaziabad for timely delivery of material.

## Push/pull pickling line

To ensure the right quality input of HR Coils to the mill, the unit is equipped with advance technology Pickling Line. High pressure hot acid jet is sprayed on strips thereby removing scales of HR Coils & produce clean bright surface, suitable for Cold Rolling and other processes.

## Cold rolling

4 High reversible mills are designed and engineered with latest technology viz Hydraulic Automatic Gauge Control (AGC) for rolling in very close thickness tolerances, positive and negative roll bending for controlling the strip shape etc. Various other features are also part of Mill Management System for maintaining the consistency of product quality.

## Annealing

Cold Rolled Coils are annealed under protective atmosphere for retaining the properties of material. Bell Annealing furnaces are installed for producing clean and bright strip having excellent metallurgical and surface properties.

## Skin pass rolling/ temper rolling

This process is carried out at the 4 High Mill with non-reversible operation. Approx 1% to 5% reduction is applied on annealed coils for preventing stretcher strain marking on strip. Bridle rolls are provided to enhance the process capability at temper rolling.

## Galvanizing line

The Galvanized sheets & coils manufactured by the company have strong zinc adhesion and corrosion resistance achieved by applying a special coating of zinc & zinc alloys. Further the life of coating is enhanced by giving a special chemical treatment on the surface so as to prevent the attack of environmental pollutants.



# Product specifications

Catering to your specific requirements

## Cold Rolled Full Hard Coils/Sheets

|                 |                                                        |
|-----------------|--------------------------------------------------------|
| Specifications  | : JIS G 3141-SPCC-1B & other equivalent specifications |
| Thickness Range | : 0.140 mm to 2.00 mm                                  |
| Hardness        | : 90 to 98 HRB or 85 HRB Min.                          |
| Edge Condition  | : Smooth Mill Edges or Trimmed Edges as required.      |
| Surface Finish  | : Bright                                               |

## CRCA (Cold Rolled Close Annealed) Coils/Sheets

|                   |                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| Specifications    | : IS 513 (D, DD, EDD), JIS G 3141 (SPCC, SPCD, SPCE), DIN 1623 (ST12, ST13, ST14), BS 1449 ASTM |
| Thickness Range   | : 0.25 mm to 2.00 mm (Further closed tolerances on request)                                     |
| Width Range (mm)  | : 50 mm to 1000 mm                                                                              |
| Cut-to-length(mm) | : Up to 3500 mm with tolerance of +2/-0 mm                                                      |
| Coil Weight       | : 3MT Max                                                                                       |
| Coil ID           | : 508 mm                                                                                        |
| Hardness          | : 45 to 65 HRB (Max) for D/DD, 34/52 (Max) for EDD                                              |
| Edge Condition    | : Trimmed Edges.                                                                                |
| Surface Finish    | : Super Bright, Bright, Dull & Matt                                                             |

## Tolerances:

| Thickness  | Specified Thickness Over | (MM) Upto | Tolerances Upto 250 Width (mm) (±) | Tolerance Over 250 mm Width (mm) (±) |
|------------|--------------------------|-----------|------------------------------------|--------------------------------------|
|            | 0.14                     | 0.19      | 0.015                              | 0.015                                |
|            | 0.20                     | 0.40      | 0.020                              | 0.025                                |
|            | 0.40                     | 0.80      | 0.025                              | 0.030                                |
|            | 0.80                     | 1.60      | 0.030                              | 0.035                                |
|            | 1.60                     | 2.00      | 0.035                              | 0.055                                |
| Width (mm) | Specified Thickness Over | (MM) Upto | Tolerances Upto 250 Width (mm) (±) | Tolerance Over 250 mm Width (mm) (±) |
|            | 50                       | 250       | 0.15                               | 0.20                                 |
|            | 250                      | 600       | 0.20                               | 0.25                                 |
|            | 600                      | 1050      | 0.40                               | 0.50                                 |



## Galvanized Specifications

JAPANESE IS  
JIS G 3302 / SGCH IS-277

### Coils and Sheets (Full hard)

|                |                     |                     |                                       |
|----------------|---------------------|---------------------|---------------------------------------|
| Thickness      | : 0.10 to 0.70 mm   | Coating             | : 90 gm – 300 gm / sq.m. (both sides) |
| Width          | : 750 mm to 1000 mm | Coil inner diameter | : 508 mm                              |
| Outer diameter | : 1500 mm maximum   | Coil Weight         | : 12 MT maximum                       |
| Packet Weight  | : 3 MT Max          | Finish              | : Bright Regular                      |
| Cut to Length  | : 4800 mm (Max)     |                     |                                       |

## Corrugation Details

| Width Before Corrugation (mm) | Width After Corrugation (mm)        | Pitch (mm) | Depth (mm)   | No. of Corrugations |
|-------------------------------|-------------------------------------|------------|--------------|---------------------|
| 750 / 762                     | 660 / 665 / 720 / 740 /             | 75         | 17.5         | 8                   |
| 900 / 914                     | 750 / 760 / 780 / 800 / 810 / 830 / | 65 to 85   | 12.5 to 20.5 | 10                  |
| 1000                          | 885/900/930                         | 75         | 17.5         | 11                  |



## HRPO

|           |                     |               |                     |
|-----------|---------------------|---------------|---------------------|
| Thickness | : 1.4 mm to 6.0 mm  | Length Range  | : 500 mm to 3500 mm |
| Width     | : 100 mm to 1000 mm | Specification | : IS11513, IS1069   |

# World-class packaging

Packaging as per your needs

## Galvanized Coils - Soft Grade

STEEL GRADE  
YST120 - YST 550 Mpa

### Coils and Sheets

|                        |                      |                     |                                 |
|------------------------|----------------------|---------------------|---------------------------------|
| Thickness              | : 1.00 mm to 3.50 mm | Coating             | : 80 gsm – 300 gsm (both sides) |
| Width                  | : 351 mm to 650 mm   | Coil inner diameter | : 508 mm/610 mm                 |
| Outer diameter         | : 1500 mm maximum    | Coil Weight         | : 5 - 6 MT maximum              |
| Packet Weight (Sheets) | : 3 MT Max           | Finish              | : Bright Regular Spangles       |
| Cut to Length          | : 4800 mm (Max)      |                     |                                 |



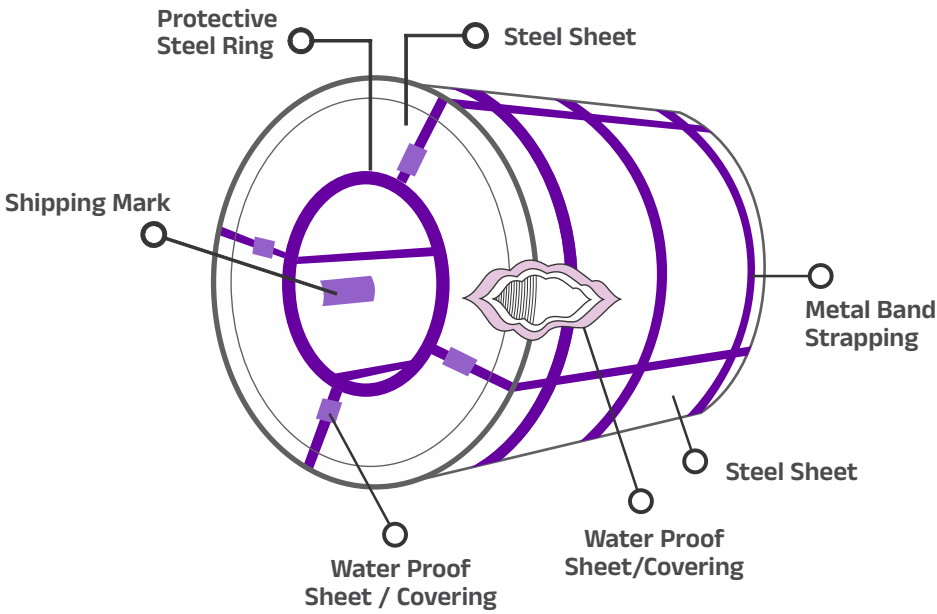
## For Coils

Each Coil is wrapped with VCI paper, covered with Galvanized sheets and edge protected. This packing is secure through three metal straps on the circumference and 4 – 5 straps through the eye of the Coil.

Each Coil is tested after coating.

### Applications :

Pipes and Tubes, Furlins, Ducting etc.

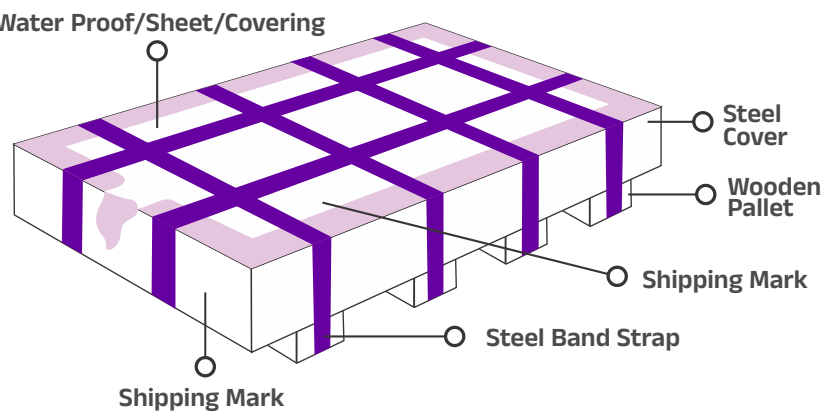


## For Sheets

Sheets are wrapped in VCI paper/air bubble polythene and covered with GP/ CR sheets by metal straps, edge protected and fastened on wooden skids.

We can also do GI as per ASTM A123 and can also supply as per Spec ASTM A653

Packing as per customer's requirement can be provided



# Goodluck Infra

## Building the Nation Infrastructure

Building Infrastructure for the nation. from process industries to building bridges; Goodluck Infra division builds relationships.

Goodluck India Limited has proven record of supplies since the last decade to various sectors of global infrastructure development. The major areas of expertise has been in engineering, manufacturing, erection services for steel structures for:

- Infrastructure and Road Projects
- Mass Rapid Transit Systems like Metro Railways.
- Over Head Electrification projects.
- RDSO design Steel Superstructure Major Bridges over Rivers and Roads using High Performance Steel and Heavier Axle Loads.
- Electrical substation Structures
- Transmission Line Towers
- Telecom Towers
- Solar Module Mounting Structures
- Railway Boggie Parts.

### New areas of active Supply are:

- High Speed Railway Corridor and station buildings.
- Launching Girders for Elevated Corridors

### Our Products are :

- Steel Bridges for spans upto 145 mtrs. – Open Web, Composite Plate Girders, bow String Girders and Cable Stay bridges.
- Support Structures for Coal Handling, Ash Handling, Boiler Island, Building Structures and others.
- Launching Girders.
- Transmission Line Towers. Columns and Beams.
- Substation Structures.
- Telecom Towers,
- Solar Purlins

### Facilities and Location

We are a BSI Certified EMS implemented company having systems regularly audited upon a sustainable manufacturing model. Our highlights are in engineering and manufacturing of critical steel structures through a process and system that harnesses clean environmental systems and ensures safety and health for it's employees and stake holders.

Our facilities are approved by RDSO, Ministry of Railways,, Delhi/Lucknow/Kochi/Gujrat/Pune Metro Rail Corp; RRVNL NTPC , State Power Boards, Power Grid Corporation, MNRE and other subsidiary bodies of Government of India.

We are approved by consultants and inspection bodies from India, Italy, USA and other European countries. We are an Export oriented unit too.

### Sikandrabad Works :

We have dedicated 6 bay area of 40000 sq mtr. for fabrication. Dedicated area for CNC machineries, galvanizing and painting . large platform for trial and proto type assembly of 100 mtr. to 150 mtr. Span girders. Fully equipped laboratory within the premises for physical and chemical testing of raw material and finished goods. Output capacity of 70000 mt. of fabricated steel structures – Steel Girders , Support Structures, Galvanized Structures per annum make Goodluck Infra an efficient state-of-the-art workshop.

### Bhuj – Gujarat Works

Our second workshop in the Western Corner of India catering to requirements PAN India covers an area of 130,000 sq. mtr. Equally equipped as in Uttar Pradesh, this facility is new and is growing. The coveted national high speed railway project is being executed from this location.

Goodluck India Limited works named Goodluck Metallics has an established state-of-the-art facility approved by RDSO, Indian railways (all divisions and SPV like KRCL) in Gujarat since 2019. The facility is equipped with machinery and expert manpower handling CNC process of manufacturing of steel structural fabrication.



### Our other Strengths and Capabilities

- Original manufacturers of round and square hollow sections used for building structures.
- Ease of procurement of raw material from JSPL/ESSAR/SAIL/TATA/JSW.
- Established among Government departments and foreign buyers.
- Facility of forging and furnace annealing of steel coils.
- In-house laboratories for testing. Availability of NDT in-house.
- Trained manpower and staff.

### Solar Module Mounting Structures

#### Design Fabrication Erection

These structures involve pipe, square tube sections and composite (cold formed) purlin structures which are galvanized at 610 GSM and pre galvanized at 550GSM.

We fabricate two types of structures: Traditional and Profile. At Goodluck we have the capacity to produce pipes, plates, purlins for module mounting.

We can cold form different profiles like C, Z, Hot, Omega and Sigma profiles, W and Thrie beam. Our product will carry CE Mark as we have CE Certification for EN 1090.

# The highest focus on engineering excellence

## Awards & recognition

Achieving excellence



Hon'ble Commerce Minister (Govt. of India)  
Presenting Award to **Shri M. C. Garg (CMD.)**

- ▶ Winners of **Award for Excellence in Exports** for Northern Region from Engineering Export Promotion Council for the last three years.
- ▶ We have achieved certifications from EEPC for our exports to major global destinations.
- ▶ Also won **Silver Trophy** for two consecutive years from Federation of Indian Export Organization.



Our products are favoured  
by clients globally



# Playing our role in transporting resources, assisting development

The highest focus on engineering excellence



**450**  
Customers

Customers spread  
across the world

**100**  
Countries

Customers served  
globally across all  
business verticals

**3500+**  
Workforce

A motivated and  
talented team  
powering growth

**35**  
Years

Over three decades  
of consistent growth  
and progress

World-class  
manufacturing facility





## Clean Energy & Climate Action has never been more urgent.

**Goodluck Metallics**  
is the first ERW Pipe company  
in India to have



verification.



### Solar

In process of installing solar panel on the rooftop giving long term sustainable solution for lightning for plants and offices.

### Water

With abundance of rain, rainwater harvesting is one of the most important solutions to the water issue of the future particularly in the developing world.



### Offices & Plants

Climate neutral design of offices have been completed for use of more natural lights and increasing green space across all factories.

Being a part of a conscious society, Goodluck ensures that the necessary steps are well taken to protect the environment for future generations to come and keep on pursuing newer ideas and technology implementations.

# India is our home & the world, our playground

Export to over 100 countries worldwide



- AUSTRALIA

BELGIUM

BOLIVIA

BRAZIL

CANADA

CHILE
- FRANCE

GERMANY

KINGDOM OF SAUDI ARABIA

NEW ZEALAND

NIGERIA

OMAN
- SINGAPORE

SOUTH AFRICA

SWEDEN

UNITED STATES OF AMERICA

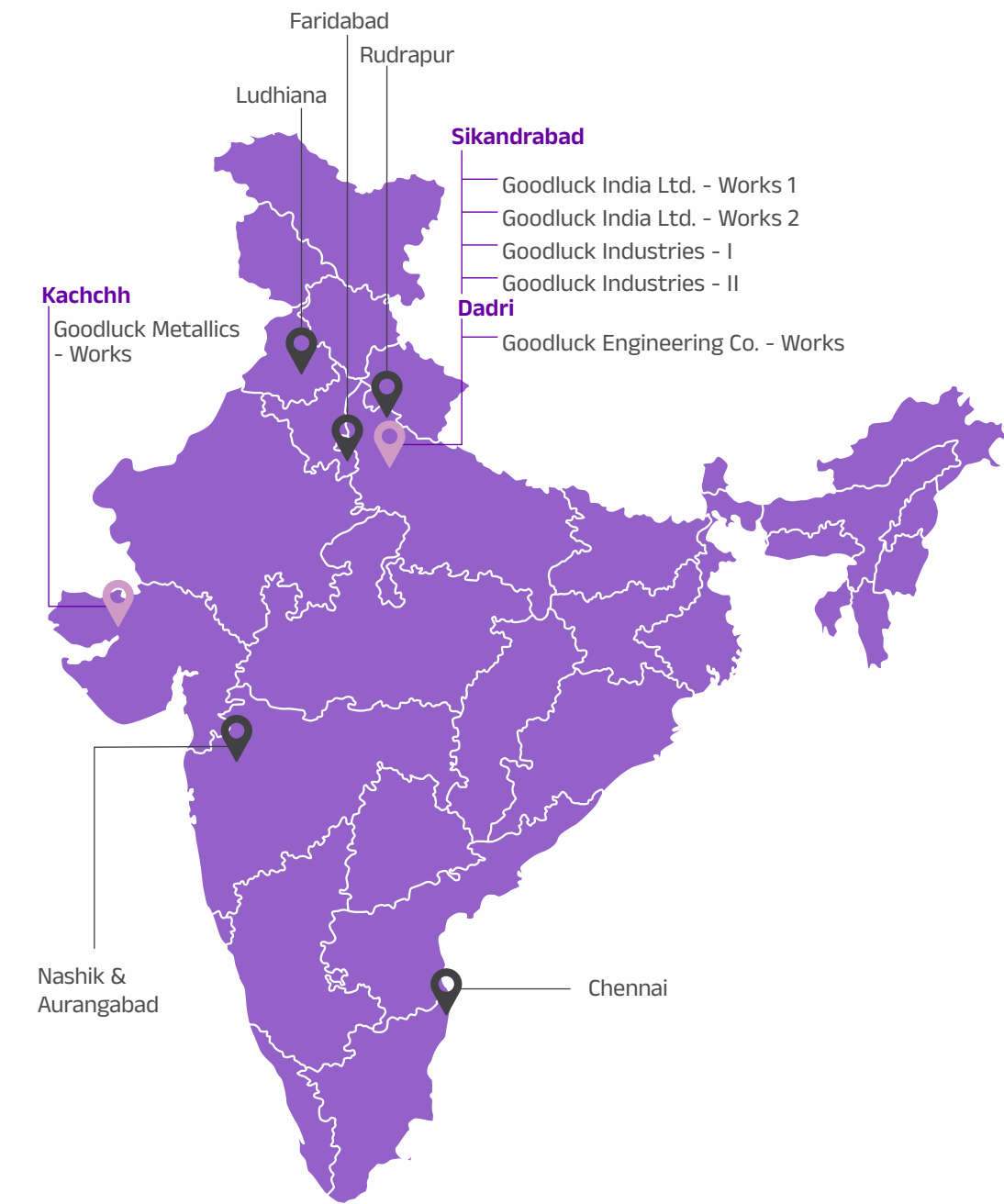
UNITED ARAB EMIRATES

UNITED KINGDOM

AND TO MORE THAN  
100 COUNTRIES...

# World-class manufacturing facility in India

With **6 manufacturing facilities** spread across India, we are a part of India's export growth story for products that are vital to several sectors.



- Manufacturing Plant
- Warehouse

## Goodluck India Limited

(Formerly Goodluck Steel Tubes Limited)

A Govt. of India Recognized Export House

### Administrative Office

II F 166-167, Goodluck House, Nehru Nagar,  
Ambedkar Road, Ghaziabad (U.P.) India

T : +91-120-4196600, 4196700

F : +91-120-4196666, 4196714

### Regd. Office

509, Arunachal Building, Barakhamba Road,  
Connaught Place, New Delhi-110001. India

T : +91-11-23725686

### Factory

A - 42 & 45, Industrial Area, Sikandrabad -203205,  
Distt. Bulandshahar, (U.P.) India

## Goodluck Metalics

(Unit of Goodluck India Ltd.)

### Works:

Village - Sikra, Taluka - Bhachau  
(Kutch), Gujarat - 370140. India

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[www.goodluckindia.com](http://www.goodluckindia.com)



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