

Pennar Industries Limited

Engineering Excellence

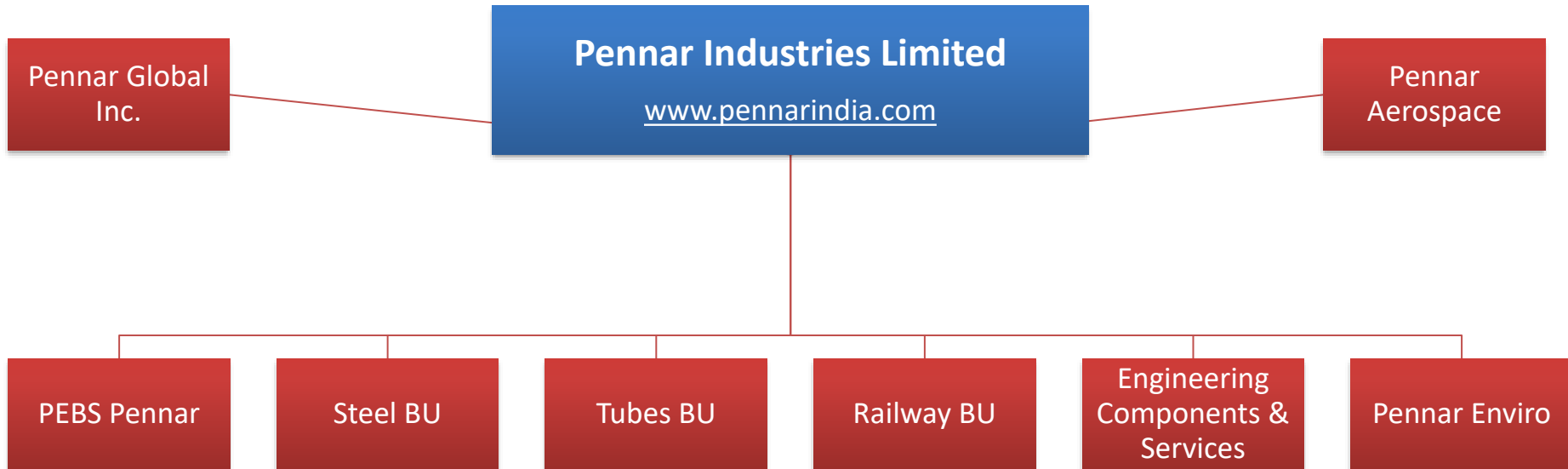


Pennar Group, founded in 1988, has over 3000 employees with an annual turnover of more than Rs2700 crores.

It has 6 main entities, namely, Railway, Steel BU, Tubes , Pre-Engineered Buildings Structure [PEBS] , Pennar Enviro Limited, Engineered components & Services .



PENNAR INDUSTRIES LIMITED



Vision & Mission



VISION:

Our vision is to be a globally reputed engineering metal products company. We endeavor to have a strong and enduring relationship with our customers based on quality and service.

MISSION:

Our mission is to leverage our modern infrastructure, technical expertise and decades of experience to provide high quality and cost effective metal products to our customers. We are committed to ensure rewarding experience to our customers. We work closely with shareholders suppliers, customers and employees to ensure attractive economic returns for every shareholders.



Diversified Product Portfolio

Steel Products

- Narrow and special grade cold rolled strips
- Engineered profiles such as ESP electrodes
- Building products
- Road safety systems
- Sheet piles
- Automobile panels and profiles



Tubes

- Precision tubes
- CDW/ERW Tubes
- GP Tubes
- Stainless Tubes



Systems and Projects (Railways & Solar)

- Systems for rail wagons and coaches (roof, furnishing, side wall assembly, coach body components, under frame and chassis members)
- Solar PV mounting structure



Industrial components

- Pressed steel precision components for Auto, Industrial and White goods segments



Pre-Engineered Buildings

- Pre-engineered building structures
- Industrial buildings
- Warehouses
- Airports and aircraft hangers
- Turnkey buildings
- Leak proof roofing sheets

Water Treatment Systems

- Provide EPC turnkey solution in field of water & waste water treatment.
- Manufacture & supply of fuel additive and water treatment chemicals.



Diversified Products Portfolio



Diversified Product Portfolio

Engineered Products

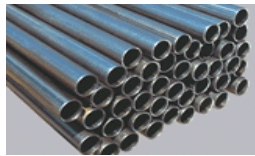
Automobile Panels and Profiles



Engineering Components



Precision Tubes



Rolled Steel Products



Heavy Engineered Products

Rail Coaches



Rail Wagons



Under frame Assembly



Wagon / Coach Components



Infrastructure

ESP Electrodes



Road Safety Systems



Building Components



Heavy Structures



Pre-Engineered Building Systems



Geographical Spread

Strong Manufacturing Capabilities



Pursue business

Tarapur
Steel products




Aurangabad
Tubes Ware House

Velchal
Galvanising
& SS Tube




Hosur
Tubes Ware House


Patancheru
Steel Products
Industrial components




Isnapur
Steel Products
Tubes
Industrial Components



Sadashivpet
Pre Engineered
Buildings



Chennai
Steel Products
Industrial Components &
Tube Ware House



- Manufacturing Facilities (6)
- Service Center (1)
- Sales Offices (18)
- Proposed PEBS Facility (1)



Precision Tubes

Business Overview – Tube Division



Pennar Tube Division started in 2010, has over 500 employees with an annual turnover of more than Rs.300 crores.

The products categories like ERW, CDW, APH, Boiler, Corten Steel & Galvanized Tubes. The tube production capacity 60,000MT/Annum.

Pennar - Tube Division produces low carbon, medium carbon, high strength low alloy (HSLA) tubes for Automobile Industries, Cycle Industries, General Engineering, Textile Industries, Boiler Industries & other Engineering trade segments.

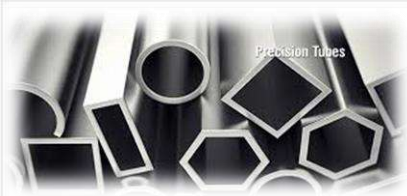


The raw material required for tube making is a steel strip which undergoes various stages of processing. HR or CR strips in the form of coil is procured from indigenous steel makers or from import sources and are used in the manufacture of a tube depending on the application.



Manufacturing begins in a separate preparatory section where the strip is slit into required width depending on the diameter of the tube & subjected to acid pickling process to remove all rust and scale in an ultra modern strip pickling plants.

Separate in-house cold rolling mills also cater to raw material requirements for closer dimensional tolerances and bright surface finish of tubes.



Tube Plant Capacities

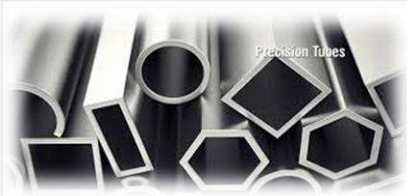


ERW

- Current Capacity : 5000+ MT/Month

CDW

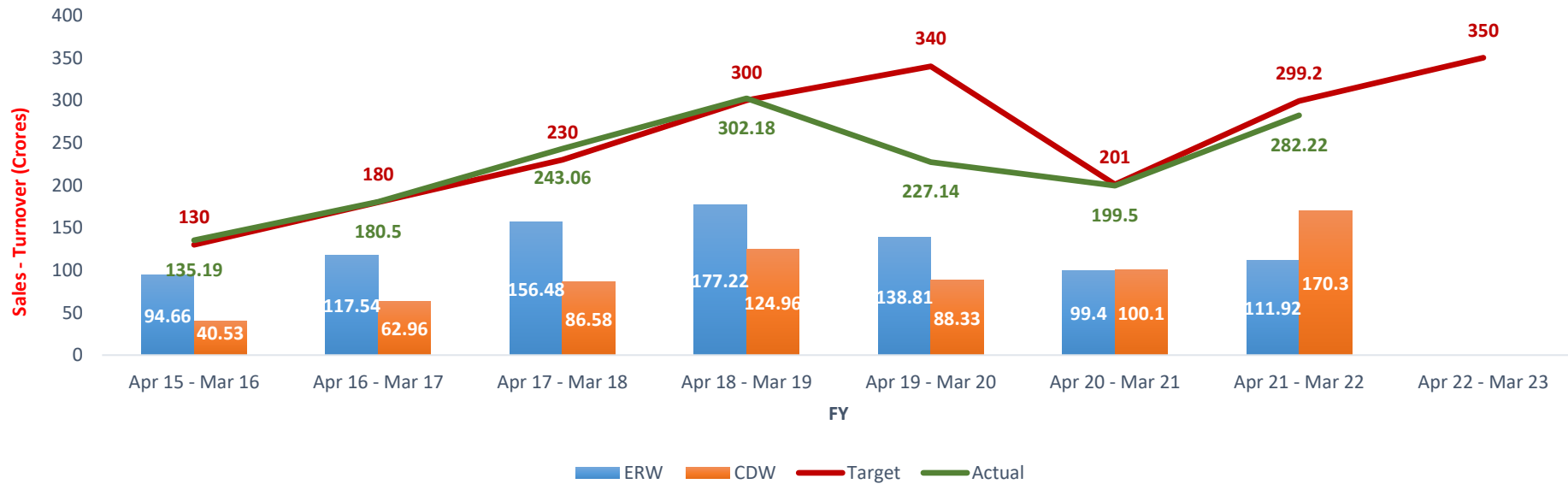
- Current Capacity : 1800 MT/Month



Business Overview - Tubes



Sales Turn Over (Crores)



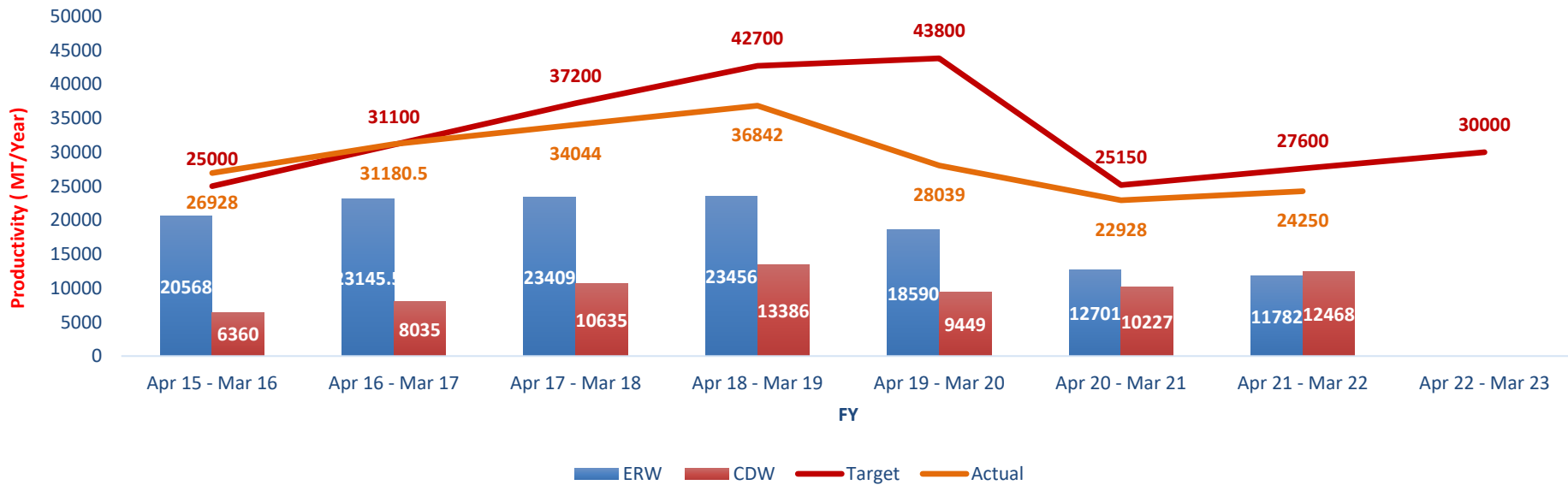


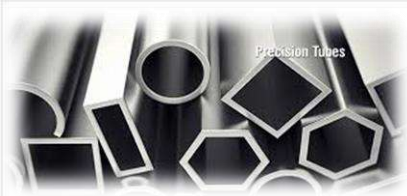
Precision Tubes

Business Overview - Tubes



Productivity (MT/Year)





Tube Product Portfolio

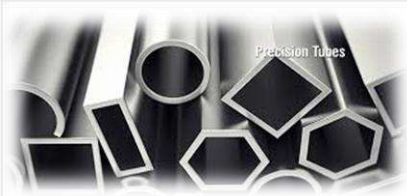
ERW Tube – Electric Resistance Welded Tubes

- Round Tube
- Square Tube
- Rectangle Tube
- Galvanized Tube
- Stainless Steel Tube

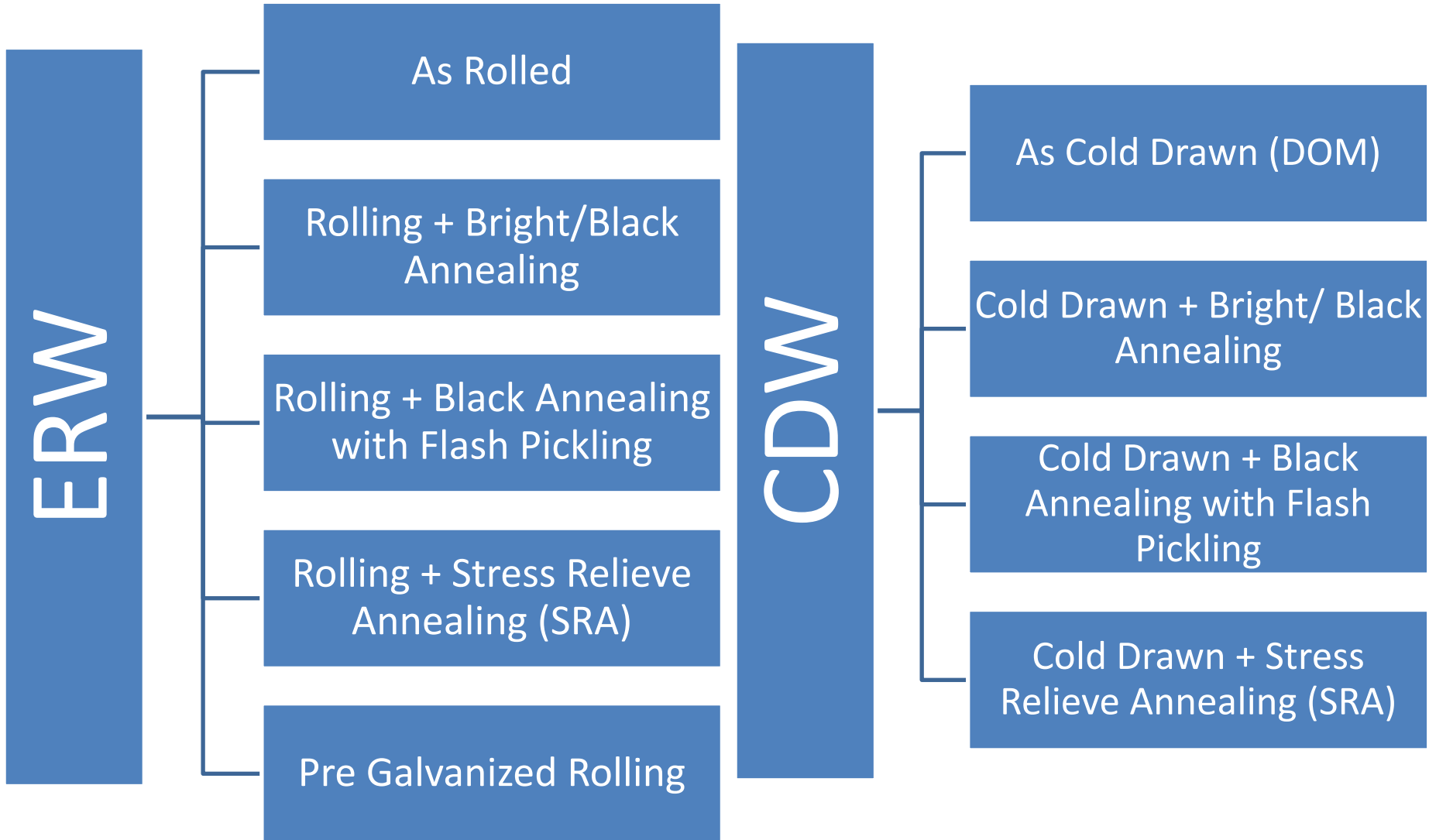
CDW Tube – Cold Drawn Welded Tubes

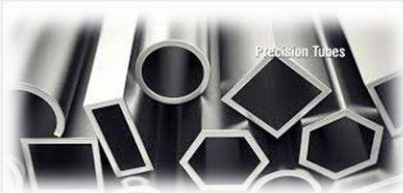
- Round Tube
- Square Tube
- Rectangle Tube
- Hexagonal Tube
- Profile Steel Tube





Supply Condition





Tube Products Range



ERW Tube – Electric Resistance Welded Tubes

- Round Tube / Galvanized Steel Tube

Outer Diameter in mm (Inch)		Thickness in mm (Inch)		Length in mm (Inch)	
Min	Max	Min	Max	Min	Max
10.00 (0.394")	127.00 (5.000")	0.80 (0.0315")	7.20 (0.295")	4000 (157.50")	15000 (472.44")

- * Square Tube / Rectangle Tube – Refer to Section Tube Chart

CDW Tube – Cold Drawn Welded Tubes

- Round Tube

Outer Diameter in mm (Inch)		Thickness in mm (Inch)		Length in mm (Inch)	
Min	Max	Min	Max	Min	Max
9.00 (0.354")	120.00 (4.276")	0.89 (0.035")	6.50 (0.276")	400 (15.748")	9000 (354.33")

- ** Square Tube / Rectangle Tube / Hexagonal Tube / Profile Steel Tube – As per Customer Drawing



CDW Tube Capability Chart



OD in mm (inch)	Thk in mm (inch)	0.89 (0.035")	1.23 (0.049")	1.58 (0.063")	1.81 (0.072")	2.09 (0.083")	2.40 (0.095")	2.91 (0.115")	3.19 (0.126")	3.61 (0.142")	4.10 (0.162")	4.31 (0.170")	4.56 (0.180")	4.76 (0.188")	5.09 (0.201")	5.60 (0.221")	6.01 (0.221")	6.36 (0.251")	6.51 (0.257")	6.61 (0.261")	
		1.22 (0.048")	1.57 (0.062")	1.80 (0.071")	2.0828 (0.082")	2.39 (0.094")	2.90 (0.114")	3.18 (0.125")	3.58 (0.141")	4.09 (0.161")	4.30 (0.169")	4.55 (0.179")	4.75 (0.187")	5.08 (0.200")	5.59 (0.220")	6.00 (0.236")	6.35 (0.250")	6.5 (0.256")	6.60 (0.260")	7.00 (0.276")	
9.00 (0.354")	12.60 (0.499")																				
12.70 (0.500")	14.29 (0.562")																				
14.30 (0.563")	15.87 (0.624")																				
15.88 (0.625")	19.04 (0.749")																				
19.05 (0.750")	20.61 (0.811")																				
20.62 (0.812")	23.79 (0.936")																				
23.80 (0.937")	25.39 (0.999")																				
25.40 (1.000")	27.93 (1.099")																				
27.94 (1.100")	30.47 (1.199")																				
30.48 (1.200")	33.34 (1.312")																				
33.35 (1.313")	38.09 (1.499")																				
38.10 (1.500")	39.72 (1.563")																				
39.73 (1.564")	42.87 (1.687")																				
42.88 (1.688")	44.44 (1.749")																				
44.45 (1.750")	47.36 (1.864")																				
47.37 (1.865")	49.22 (1.937")																				
49.23 (1.938")	52.39 (2.062")																				
52.40 (2.063")	60.32 (2.374")																				
60.33 (2.375")	66.69 (2.625")																				
66.70 (2.626")	76.19 (2.999")																				
76.20 (3.000")	82.57 (3.250")																				
82.58 (3.251")	88.89 (3.499")																				
88.90 (3.500")	95.74 (3.769")																				
95.75 (3.770")	101.59 (3.999")																				
101.60 (4.000")	107.95 (4.250")																				
107.96 (4.260")	108.60 (4.276")																				
108.96 (4.29")	120 (4.724")																				

Section Tube – Capability Chart

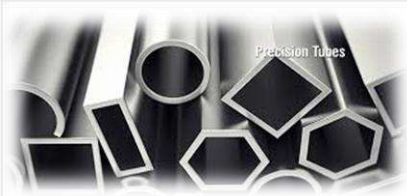


SQUARE TUBE

Thk in mm (Inch)	Square tube in mm (Inch)												
	19.00 (0.7")	20.00 (0.8")	25.00 (1.0")	30.00 (1.2")	31.75 (1.3")	35.00 (1.4")	38.00 (1.5")	40.00 (1.6")	45.00 (1.8")	50.00 (2.0")	60.00 (2.4")	80.00 (3.1")	100.00 (3.9")
0.80 (0.031)	NFC												
0.90 (0.035)	FC	FC	FC	FC	FC								
1.00 (0.039)	FC	FC	FC	FC	FC								
1.20 (0.047)	FC	FC	FC	FC	FC	FC							
1.35 (0.053)	FC	FC	FC	FC	FC	FC							
1.50 (0.059)	FC	FC	FC	FC	FC	FC	FC						
1.60 (0.063)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC		
1.70 (0.067)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC		
1.80 (0.071)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC		
2.00 (0.079)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.20 (0.087)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.30 (0.091)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.50 (0.098)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.60 (0.102)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.80 (0.110)	NFC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
2.90 (0.114)	NFC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.00 (0.118)	NFC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.25 (0.128)	NFC	FC	FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
3.40 (0.134)		NFC	FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
3.50 (0.138)		NFC	FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
3.60 (0.142)		NFC	FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
3.80 (0.150)			FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
4.00 (0.157)			FC	FC		FC	FC	FC	FC	FC	FC	FC	FC
4.20 (0.165)				FC		FC	FC	FC	FC	FC	FC	FC	FC
4.50 (0.177)				FC		FC	FC	FC	FC	FC	FC	FC	FC
5.00 (0.197)					FC		FC	FC	FC	FC	FC	FC	FC
5.50 (0.217)						FC	FC	FC	FC	FC	FC	FC	FC
5.80 (0.228)						FC	FC	FC	FC	FC	FC	FC	FC
6.00 (0.236)						FC	FC		FC	FC	FC	FC	FC
6.30 (0.248)							FC	FC	FC	FC	FC	FC	FC
6.50 (0.256)								FC	FC	FC	FC	FC	FC
6.70 (0.264)									FC	FC	FC		
7.00 (0.276)										FC	FC		
7.20 (0.283)											FC	FC	FC
7.50 (0.295)												FC	FC

RECTANGLE TUBE

Thk in mm (Inch)	OD in mm (Inch)																						
	30.00 x 20.00 (1.181 x 0.787")	40.00 x 20.00 (1.575 x 0.787")	40.00 x 25.00 (1.575 x 0.984")	40.00 x 30.00 (1.575 x 1.181")	50.00 x 20.00 (1.969 x 0.787")	50.00 x 25.00 (1.969 x 0.984")	50.00 x 30.00 (1.969 x 1.181")	50.00 x 40.00 (1.969 x 1.575")	60.00 x 30.00 (2.362 x 1.181")	60.00 x 35.00 (2.362 x 1.378")	60.00 x 40.00 (2.362 x 1.575")	65.00 x 35.00 (2.559 x 1.378")	80.00 x 40.00 (3.150 x 1.575")	80.00 x 60.00 (3.150 x 2.362")	92.00 x 48.00 (3.622 x 1.890")	100.00 x 50.00 (3.937 x 1.969")	100.00 x 60.00 (3.937 x 2.362")	100.00 x 80.00 (3.937 x 3.150")	115.00 x 60.00 (4.528 x 2.362")	115.00 x 69.00 (4.528 x 2.717")	150.00 x 50.00 (5.906 x 1.969")		
0.90 (0.035)	FC	FC	FC																				
1.00 (0.039)	FC	FC	FC																				
1.20 (0.047)	FC	FC	FC	FC	FC																		
1.35 (0.053)	FC	FC	FC	FC	FC																		
1.50 (0.059)	FC	FC	FC	FC	FC	FC																	
1.60 (0.063)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
1.70 (0.067)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
1.80 (0.071)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.00 (0.079)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.20 (0.087)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.30 (0.091)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.50 (0.098)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.60 (0.102)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.80 (0.110)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
2.90 (0.114)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.00 (0.118)	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.25 (0.128)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.40 (0.134)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.50 (0.138)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.60 (0.142)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
3.80 (0.150)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
4.00 (0.157)	FC	FC				FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
4.20 (0.165)							FC																
4.50 (0.177)							FC																
5.00 (0.197)								FC															
5.50 (0.217)									FC														
5.80 (0.228)										FC													
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6.30 (0.248)												FC											
6.50 (0.256)													FC										
6.70 (0.264)														FC									
7.00 (0.276)															FC								
7.20 (0.283)																FC							
7.50 (0.295)																	FC						



Equivalent Standards for Products



Application	Indian	British	Japanese	German	American
Automobiles	IS 3074	BS 6323	JIS G 3445	DIN 2393	ASTM A 513/J525
Boilers	IS 1914	BS 3059	JIS G 3461	-	ASTM A53 / A214
Air Heaters	IS 3601	BS 6323	JIS G 3461	DIN 1717	ASTM A214/A423
Heat Exchanger	-	BS 3606	JIS G 3461	DIN 17177	ASTM A 178/A214
Gen. Engg	IS 3601	BS 6323	JIS G 3445	DIN 2393 & 2394	-
Bicycles	IS 2039	BS 1717	-	-	-
Structural	IS 1161	BS 4360	JIS G 3444	-	ASTM A 500
Furniture	IS 7138	-	JIS G 3445	-	-
Transformer	IS 8036	-	-	-	-
Sectional	IS 4923	-	JIS G 3466	-	ASTM A 500
Oil Pipes	IS 1978	BS 1387	JIS G 3452	DIN 17177	API 5L Gr. A
Idler Pipes	IS 9295	-	-	-	-



Steel (Material Grades)

Low Carbon Steel (< 0.2%C)

- SAE1006
- SAE1008
- SAE1010
- SAE1015
- SAE1018

Medium Carbon Steel (> 0.2% to <0.6% C)

- SAE1020
- SAE1026
- SAE1030
- SAE1040
- SAE1045

High Carbon High Manganese Steel

- SAE1536
- SAE1541

High Strength Low Alloy Steel

- SAPH440/S460MC
- SAPH590/S550MC
- BSK46

Corten Steel

Boiler Steel

Pre Galvanized Steel

Low Carbon High Manganese Steel

- ST42
- ST44
- ST52
- ST59

Stainless Steel

- Austenitic SS
- Ferritic SS
- Martensitic SS



ERW Manufacturing Process Flow



RM Receipt & Inspection



Slitting machine



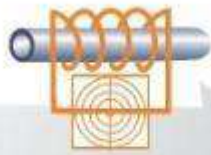
Push Pull Pickling



Tube mill



Heat treatment



Nondestructive examination



Marking/Stencilling



Surface control



Preservation



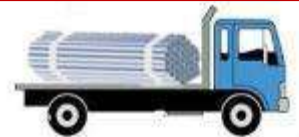
Straightening



Hydrostatic test



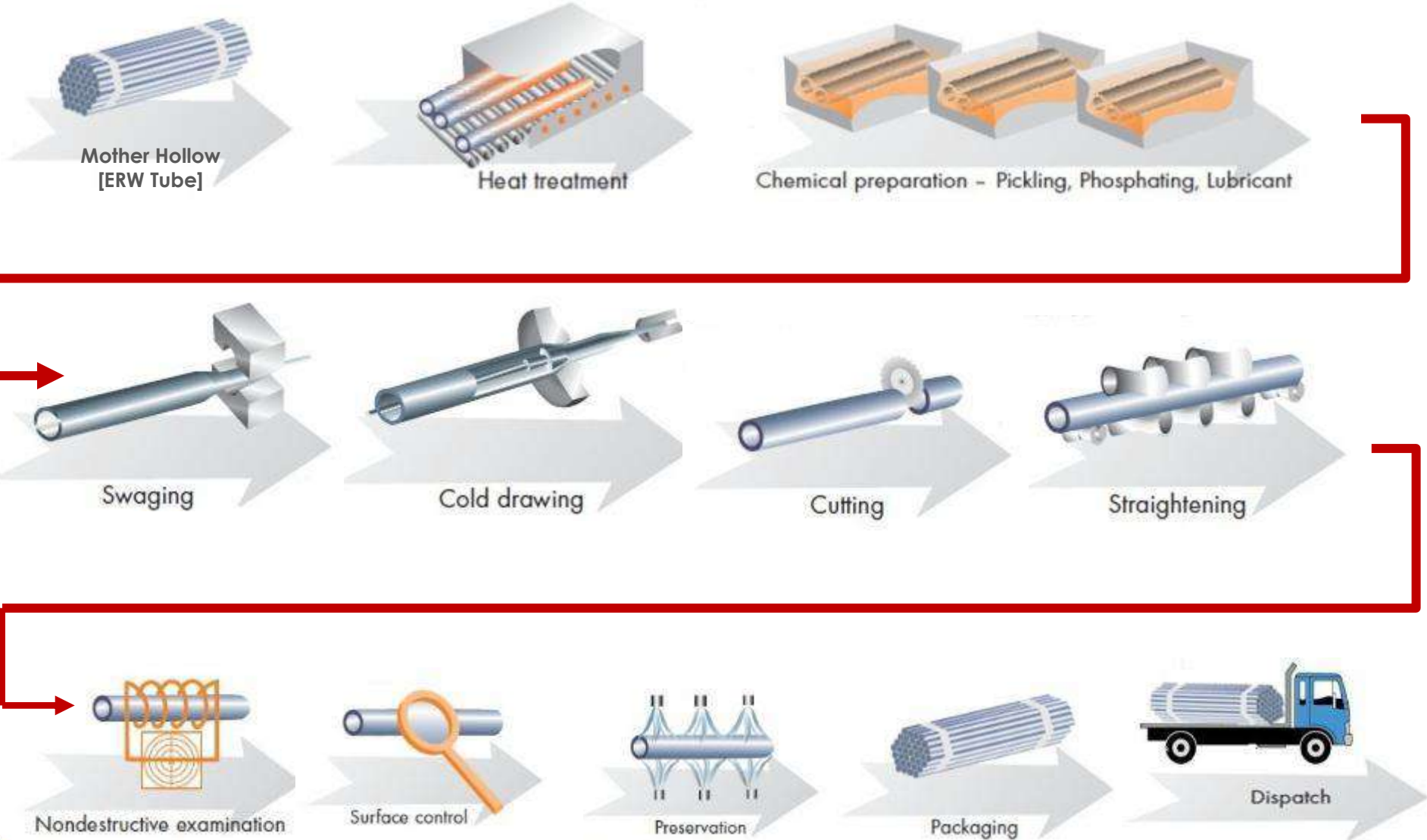
Packaging



Dispatch



CDW Manufacturing Process Flow





In – House Cold Rolled Steel Strip Processing Facilities



Push Pull Pickling Process



Slitting Machine



Cold Rolling Process



Bell Annealing Furnace (CRCA)





Precision Tubes

Tube Plant Facilities



Tube Mill (Forming)



HF Welding



Swaging Process



Cold Draw Bench



Roller Hearth Annealing Furnace





Precision Tubes

Tube Plant Facilities



Surface Treatment Process



Straightening Machine



Eddy Current Tester (NDT)



Soco Cutting Machine





In – House Tool Room Facilities



CNC Milling Machine



CNC Lathe



Wire Cutting Machine



CNC Horizontal Drilling Machine





Tube Plant Facilities



- Slotting Machine
- Cylindrical Grinding Machine
- Lathe
- CMM
- Radial Drilling Machine
- Surface Grinding Machine





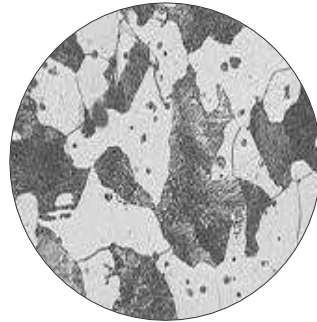
Precision Tubes

Tube Plant Facilities



Abrasive Cutting Machine

Belt Grinder



Mounting Machine

Disc Polishing Machine





Precision Tubes

Testing Lab Facilities



Spectrometer for Chemical Analysis (18 Elements)



Universal Testing Machine (Max. 600 KN)



Metallurgical Microscope with Image Analyzer (Magnification: 40x, 100x, 500x & 1000x)



Surface Hardness Tester (Rockwell)



Cupping Test Machine



Surface Roughness Tester



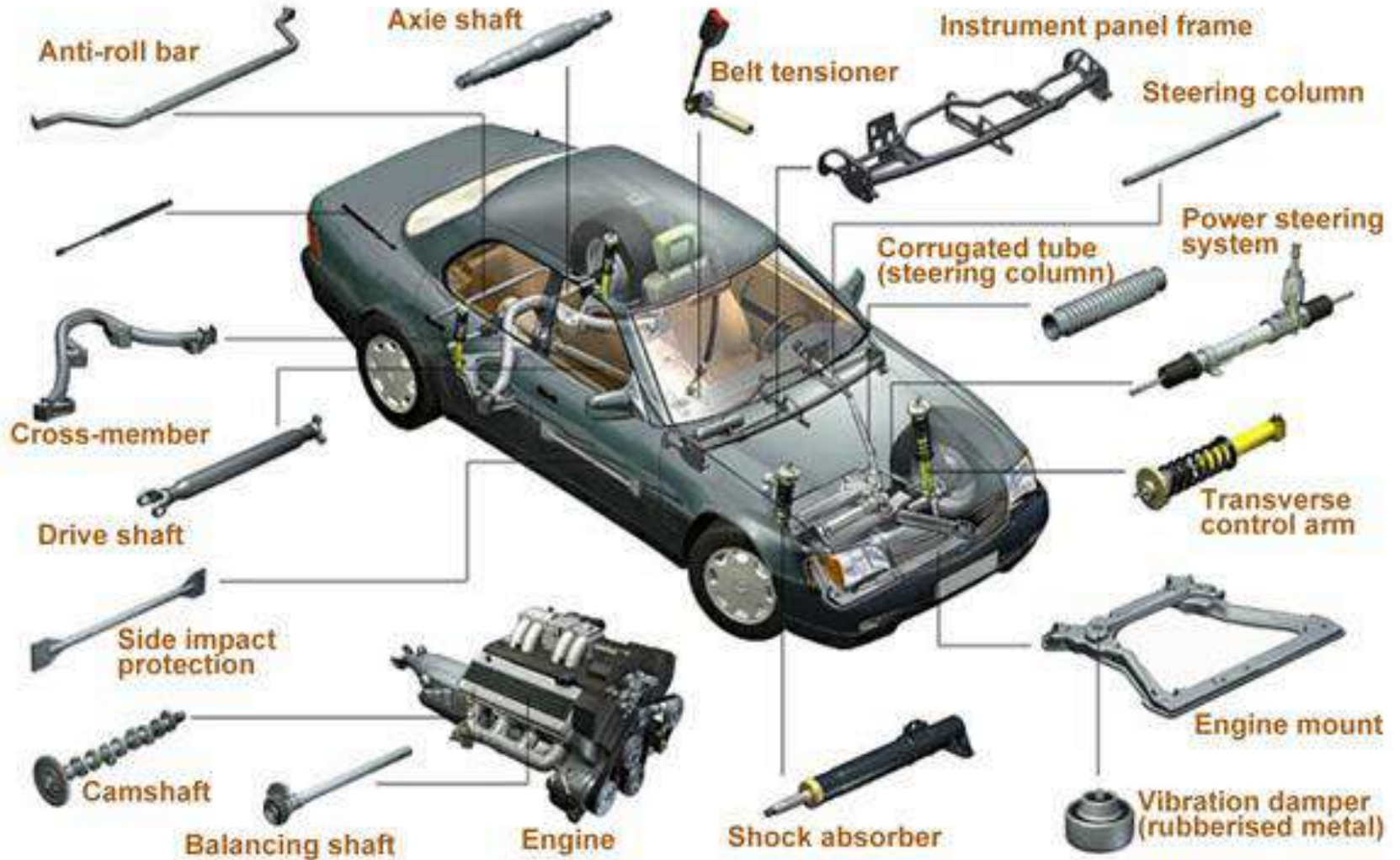
Vickers Hardness Tester





Precision Tubes

Applications – Four Wheeler



Applications – Two Wheeler



Other Applications

Hydraulic Tube



Boiler/Air Pre Heater



Structural /Pipe Fitting



Cycle



Furniture





CERTIFICATE

Management system as per
IATF 16949:2016
 (1st edition, 2016-10-01)

Evidence of conformity with the above standard has been furnished and is certified for

Pennar Industries Limited - Unit 2
 IDA, Pashamylaram - PO, Isnapur Village,
 Sangareddy (Dist.) - 502 307,
 Telangana,
 India

Scope

**Manufacture of Precision Cold Drawn Electric Resistance Welded &
 Electric Resistance Welded Tubes**

without product design responsibility (according to section 8.3)

IATF Registration No. 0329736
 Certificate Registration No. 44 111 121912

Issue date: 2018-09-05
 Expiry date: 2021-09-04

[Signature]
 Director Body
 at TÜV NORD CERT GmbH

Essen, 2018-09-05

This certification was conducted in accordance with the IATF "Rules for achieving and maintaining IATF recognition".

TÜV NORD CERT GmbH Langemarkstraße 20 45141 Essen www.tuv-nord-cert.de

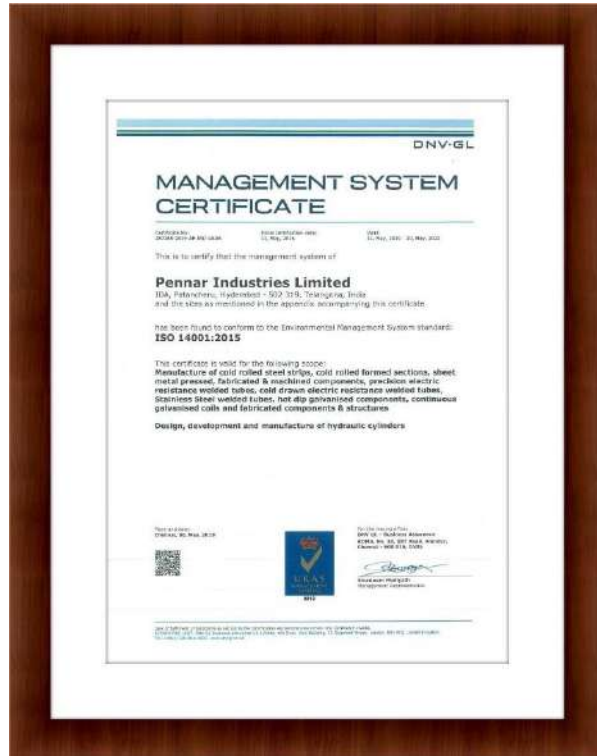


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ISO 9001:2015

ISO 14001:2015


OHSAS 18001:2007



Indian Boiler Well-Known Tube Makers Self Certificate

FORM XVI-F
(Regulation 4C (2))

Serial No. Tube/09/037 F.No 9C30/2014-BOILERS



Central Boilers Board
Certificate of Approval for Well Known Tube Maker

This is to certify that the Inspection and Quality Management System of:

M/s. PENNAR INDUSTRIES LIMITED
ISNAPUR - 502 329
DIST. MEDAK
TELANGANA

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C (2) of the Indian Boiler Regulations, 1950, as a WELL KNOWN TUBE MAKER, for the manufacture of Tubes of sizes from BOILER QUALITY ERW STEEL TUBES (OD 25MM TO 114.3MM AND W.T. 2.0MM TO 5.0MM) IN CARBON AND LOW ALLOY STEELS


This Certificate is valid for five years, i.e. upto 1st JANUARY, 2020


Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

5th FEBRUARY, 2015
Date of Issue

Approval

Certificate No. 124





Secretary

Automobile Customers

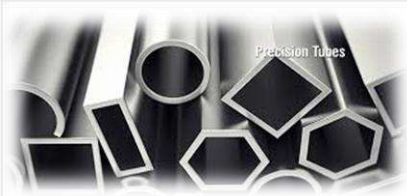


OEM Customers



Daimler India Commercial Vehicles.





Automobile Customers

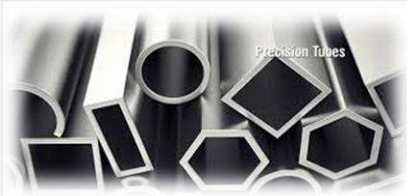


Tier1 Customers



Shocks Absorber Customer





Non Auto Customers

Boiler / Air Pre Heater Customers



Kelvion



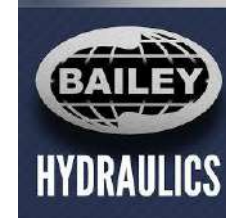
Textile Machinery Mfg. Customers

Conveyors



Non Auto Customers

Hydraulic Cylinder Customers



Export Customers



STEEL TUBE INVESTMENTS, LLC



Thank you.



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