MAHENDRA ENTERPRISES

STEEL SOLUTIONS SINCE 1982

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About Us

Established in 1982, Mahendra Enterprises (**ME**)has its operations spread across major cities in India. Under the tutelage of **Mr. Devendra Shah** – founder ME has catered to the demands of more than 6000 customers including vendors of multinational companies **ALSTOM, SIEMENS, LNT, MAGEBA, SCHEUERLE, INDIAN RAILWAYS, SUZLON ETC**

WHAT MAKES US ONE OF THE PREFERRED VENDORS?

- **R & D** department headed by **Mr. Sahil Shah** to understand the Technical Delivery Condition of every requirement.
- **Quality Policy** that ensures barcoding of each steel item with historical records of 8 years to avoid human errors.
- **Transparent pricing** includes providing customers with price break up for processed steel product.
- Association with **Heat Treaters** that enables post processing of annealing, normalising, quenching and tampering – water, polymer etc.
- **Peeling and Grinding** facility tie ups help to provide steel with precision tolerance.
- **Trepanning** facility tie ups help customers to avoid machining the whole diameter, but only a ring at the periphery.
- **Forging Flats and circles,** for odd size requirements.
- **Small MOQ – 2.5 tons for non-schedule pipes in Round, Square and Rectangular Hollow Sections.**

ROUND BARS

A steel round bar is a cylindrical metal bar made of steel that has numerous industrial and commercial applications. A round bar can be produced vide various methods, highlights of our round bars are as below

- **Manufacturing Route** - EAF LRF VD / ARC LRF VD – AOD
- **Ultra Sound** : ASTM A 388 3mm FBH - 6mm FBH
- **Tolerance** : Hot Rolled + - 1%
- **Cold Rolled** : H9 and above
- **Rolled Round Bars** :Upto 350mm in Selected Grades
- **Forged Round Bars** : Upto 1000mm in Selected Grades

ROUND BARS GRADES

MILD	STRUCTURAL	ALLOY	TOOL	NITRIDING	CASE HARDENING	MARTENSITIC	AUSTENTIC	HIGH NICKEL ALLOYS
AISI 1005	ST37.2	AISI 4140	SAE 52100	EN40B	SAE 8620	S.S.410	S.S.304 / 304L	INCONEL
AISI 1008	ST40	AISI 4130	D2 / DIN 2379	EN41B	16MnCr5	S.S.420	S.S.316 / 316L	MONEL
AISI 1010	ST52.3	42CrMo4	D3	31CRMOV9	20MnCr5	S.S.416	S.S. 310	HASTEALLOY
AISI 1018	S235 J R/O/2	BS 970 En19	H11		En 36 A B C	S.S.440 A B C	S.S.321	DUPLEX
AISI 1020	S275 J R/O/2	AISI 4340	H13		SAE 8630	S.S.422		
AISI 1026	S355 J R/O/2	AISI 4340V				S.S.420C		
12L14		34CrNiMo6				S.S.430F		
EN1A		ASTM A193 B7				17.4PH		
10SMnPb20		ASTM A193 B16				15.5PH		
		30CrNiMO8						
		17CrNiMo6						
		En 353						

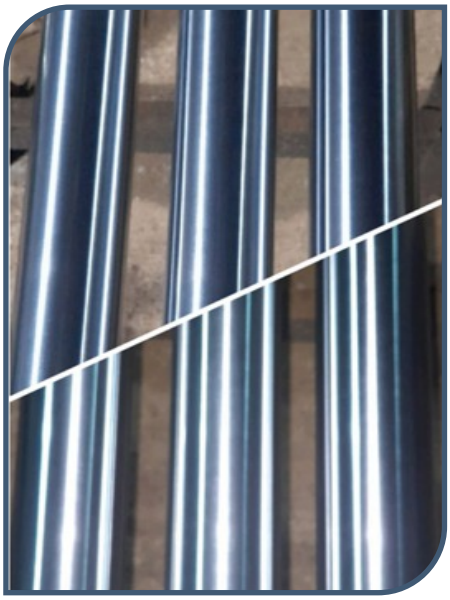
POST PROCESSING ROUND BARS

TREPANNING

Trepanning is a deep hole drilling process. It is typically used on larger diameter bars. The drilling process leaves a core. The solid core may then be used on other orders. The most basic trepanning process creates a hole through the entire length of a bar. Trepanning is one of the biggest cost saving methods where the solid core and the outer ring can be both utilised. Mahendra Enterprises can provide trepanning service with length upto 500 mm and diameter upto 1000mm

PEELING

Round peeled bars are produced by cutting tools chipping off the surface of the steel, as a result they feature a smooth and polished surface. Consequently, possible surface defects may be removed from the rolled product and a technically surface defect free product is obtained.



GRINDING

Grinding is such a critical process which gives final judgment to the tolerance, straightness, and precision of a steel bar. This takes a thoroughly abrasive method of biting and cutting away unwanted bar parts from the material to improve the outer surface.

CHROME PLATING

Chrome plating (less commonly chromium plating) is a technique of electroplating a thin layer of chromium onto a metal object. A chrome plated part is called chrome, or is said to have been chromed. The chromium layer can be decorative, provide corrosion resistance, facilitate cleaning, or increase surface hardness.

HEAD FORGING

Head Forging is used where the head of the component is a bigger diameter as compared to the balance material. It helps immensely in saving the weight of the raw material.

Mahendra Enterprises can provide die head forgings in various grades and short lead time.

RING FORGING

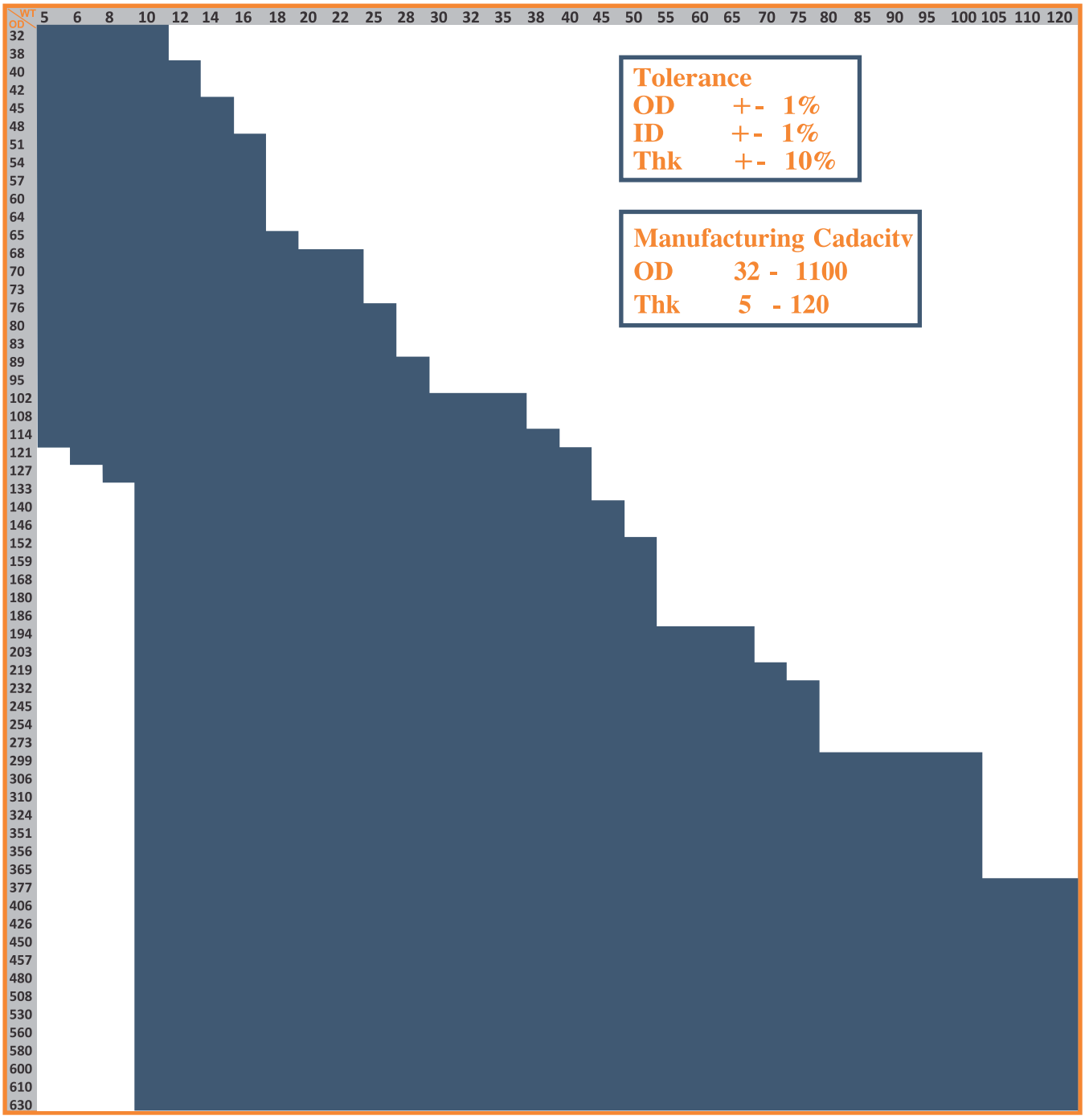
Similar to head forgings, ring forging help to reduce the weight of raw material. With a huge number of dies in ready size we can help in saving cost and delivering quality material all at one time

SEAMLESS PIPES

Seamless pipe as the name suggests is a pipe without a seam or a weld-joint in contrast to Seam or Welded pipe. In a Seam or Welded pipe, the seam or the weld-joint is the weaker part of the pipe limiting the strength of the pipe to the strength of the weld-joint. Whereas the seamless pipe does not have any such joint and thus has uniform structure & strength all over the pipe body. Thus the seamless pipe can withstand higher pressure, higher temperature, higher mechanical stress & corrosive atmosphere and find wide applications in Oil & Gas, Refinery, Petrochemical, Chemical, Fertilizer, Power, Automotive, Bearing, Mechanical & Structural applications.

Seamless Pipes can be classified into three types depending on the manufacturing process – Hot Rolled, Cold Drawn / Cold Rolled. At Mahendra Enterprises, Mr. Sahil Shah understands the application of the user and advises the adequate quality of pipe that shall be suitable for end application. Furthermore, pipes are available in various forms viz, Round Square, Rectangular, Hexagonal Etc

HOT ROLLED CARBON STEEL SEAMLESS PIPES IN ASTM A106GR B, S355, 42CRMO4, AISI 1045 - READY STOCK



HOT ROLLED PIPES

AISI 1026 406 x 50mm | S355j2 & 42CrMo4 Pipes

Various process are available for the manufacture of pipes and tubes by hot working. However CPE, Pugmill and MPM are the most prevalent technologies.MPM is the State-of-the-art manufacturing process for high Quality Seamless Pipes and Tubes. In this Process pierced hollow is further elongated by 6 stand continuous rolling mill, where a high precision mandrel inside the hollow moves along with pipe during rolling, which ensures smooth internal surface finish of the pipe. Each stand is equipped with Hydraulic gauge control, which ensures uniform thickness throughout the length. The deformation of hot metal is in longitudinal direction, which gives better mechanical properties and no torsional stress is induced during hot rolling, which ensures defect free product

COLD ROLLED PIPES

Cold Drawn Seamless (CDS) as implied is made by cold drawing a larger mother seamless pipe, which is generally manufactured through a HFS process. In the CDS process, the mother pipe is pulled through a die & plug in cold without any heating. Because of the tool on outside and inside the surface and tolerances are better in CDS. While this is an additional process over HFS, it is necessary to get smaller size pipes which otherwise cannot be manufactured in HFS. Some applications which require close tolerances and smooth surfaces also specify the requirements to be necessarily CDS. CDS pipes & tubes are extensively used in Heat-Exchanger, Bearing & Automotive sectors. CDS pipes have better tolerance and finish as compared to hot rolled pipes. In case the pipes are to be machined it is advisable to anneal/ stress relieve/ normalise the material to achieve better results.

Cold Rolled 4130 Pipes Small OD x Small Thk | S355J2 Cold Rolled & Annealed Pipes

HOT ROLLED VS COLD ROLLED

	HOT ROLLED	COLD ROLLED
Surface	Black	
Tolerance	Wall thickness +- 10% OD ID : +- 1%	+- 0.50 Cold Drawn Pipes +- 0.30 Cold Rolled Pipes +-0.10 Cold Rolled High Precision Pipes
Diameter	Suitable for Large Diameter	Can be made into a variety of cross-sectional forms to meet the needs of use conditions Suitable for Smaller Diameter

IN CASE YOU ARE LOOKING FOR HIGH PRECISION PIPES /READY TO HONE PIPES WITH TOLERANCE +- 0.30 Contact us

Size Range :-

Circular Hot rolled : 1100 OD max - 120mm Wall thickness

Square Rectangular : 500 Width / Height – 30mm Wall Thickness

Cold Rolled Precision Pipes : 180 OD - 30mm Wall Thickness

Cold Drawn Pipes : 460 OD – 40 mm Wall Thickness

HOT ROLLED SEAMLESS PIPES GRADES

MILD	STRUCTURAL	ALLOY	BEARING	CASE HARDENING
AISI 1020	ST37.2	AISI 4140	SAE 52100	16MnCr5
AISI 1026	St40	AISI 4130		20MnCr5
ASTM A106	ST52.3	42CrMo4		
ASTM A53	S235 J R/O/2 /NL1 & 2			
API 5L	S275 J R/O/2 NL1 & 2			
ASTM A333 GR 6	S355 J R/O/2 NL1 & 2			
AISI 1035				
AISI 1045				
ASTM A500GR A B C				

Quality Policy

Mahendra Enterprises is an **ISO 9001 2015** certified organisation. It is the objective of Mahendra Enterprises to satisfy the quality and delivery requirements of our customers. We measure our performance in meeting customers' requirements and work with them to continually improve the service that we provide.

Specific attention is paid for high quality, endurance and traceability. Our quality assurance program preserves the maximum degree of quality and knowingly contributes to creating and achieving the company goals. Quality people, quality technology and quality solutions, to confirm the distribution made to our customers precise specifications, and our quality management team combines technical experience, understanding of industrial standards and the most recent review machines and tools to fulfil all business needs

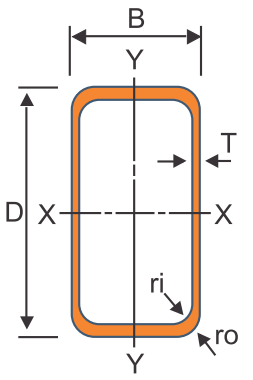
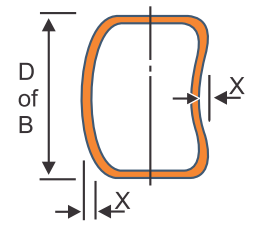
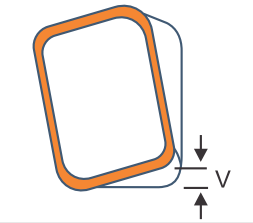
Quality Process

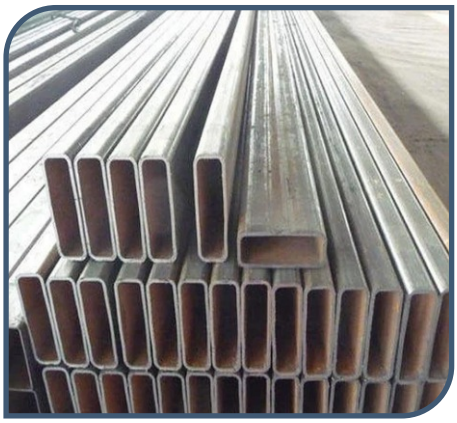
- All incoming goods, are uniquely numbered for identification on arrival and colour coded as per pre-determined norms (listed and explained extensively to stores personnel)
- Goods Inward Note is generated only after chemical check test is done and matched with Mill Test Certificate.
- Pre- despatch chemical and NDT Test conducted as per requirements of the customer, which inter alia includes NABL Check Test to confirm chemical, mechanical and other aspects of steel.
- All rejections are documented and proper corrective action plans (CAPA) are put in place to ensure quality adherence and avoidance of errors.

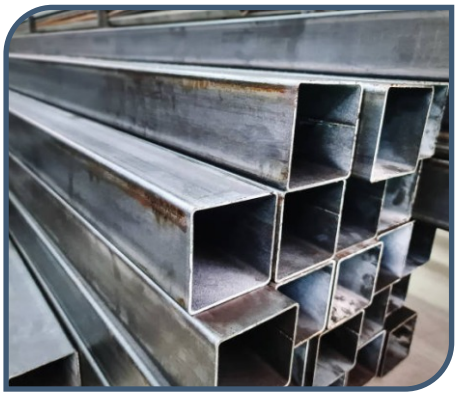
S355J2 SQUARE/RECTANGULAR HOLLOW SEAMLESS SECTIONS

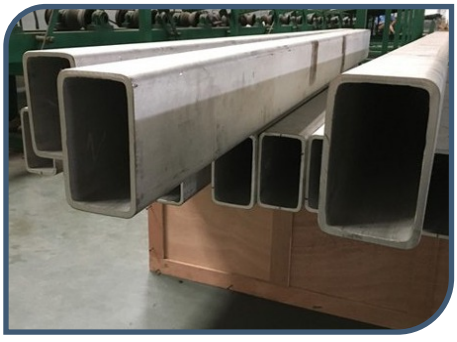
Mahendra Enterprises is one of the leading suppliers for Square and Rectangular Seamless hollow Section. Seamless tube is extruded and drawn from a billet while welded tube is produced from a strip that is roll formed and welded to produce a tube. Welded tube is considerably less expensive than seamless tube and is readily available in long continuous lengths. Although the working pressure of welded tube is 20% less than that for a similar seamless tube, working pressure is not the determining factor for choosing seamless tube over welded tube. The difference in potential impurities, which reduce the corrosion resistance of the finished tube, is why seamless tube is specified.

SPECIFICATION OF SHS / RHS

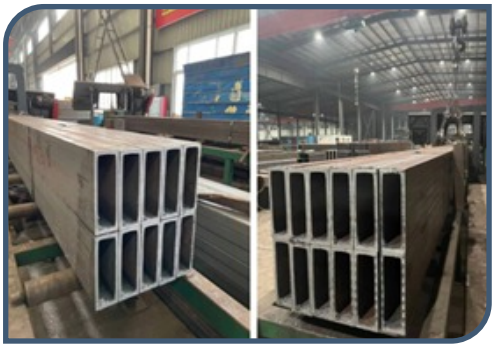
Designation	Property	Tolerance
	Height	'+ - 1%
	Width	'+ - 1%
	Thickness	'+ - 10%
	Outside Radius	2 x T
	Straightness	0.2% of total length and 3mm over any 1 mtr
	Concavity / convexity x	'±0.8% with a minimum of 0.5 mm
	Twist v	'Section is placed on a flat surface with one end held flat. At the other end the height difference of the two lower corners is taken. 2 mm plus 0.5 mm per m max
Measured at the centre of the length	Straightness (x or y direction)	0.15% L
Mass per unit length	Mass of section	±6.0% on individual lengths
Standard	Length L	+50 mm



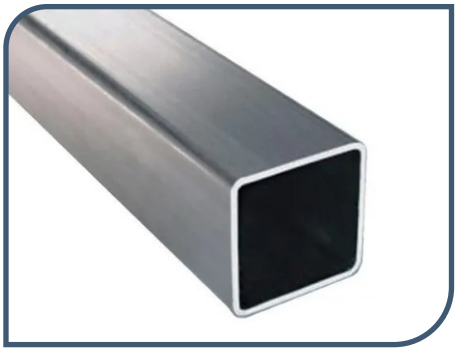




S355j2 Seamless Square and Rectangular Hollow Sections are excellent for Earth Moving and Heavy Wear & Tear Equipments. With a MOQ of 2.5 to 5 tons and a lead time of 45-60 days, Mahendra Enterprises is a one stop solution for rectangular and hollow Seamless Sections.



Square Corner Radius Hollow Sections



Round Corner Radius Hollow Sections