


ISMT



World class manufacturer of seamless tubes,
tube based products and alloy steels

ISMT LIMITED

Solutions You Can Trust

HISTORY

1980

ISMT began life in 1980, as The Indian Seamless Metal Tubes Limited. At the time, the company operated one Assel Mill with an installed capacity of 15,000 metric tons per annum. Subsequently, in 1990 the production capacity was increased to 50,000 metric tons per annum with the addition of a second Assel Mill.

1995

In 1995, The Indian Seamless Metal Tubes Limited launched a new company, Indian Seamless Steels and Alloys Ltd. (ISSAL), to produce alloy steel, the raw material used in the manufacture of seamless tubes, giving the company better control over product quality as well as deliveries.

2000

In 2000, The Indian Seamless Metal Tubes Limited acquired Kalyani Seamless Tubes Ltd. (KSTL), a competing manufacturer of seamless tubes. The combined entity, which retained the name The Indian Seamless Metal Tubes Limited, not only had a larger capacity (150,000 metric tons per annum) , but also a much wider size range (from 6mm to 273mm).

HISTORY

HISTORY

2005

In 2005, The Indian Seamless Metal Tubes Limited and Indian Seamless Steels and Alloys Ltd merged to form ISMT Limited

2007

In 2007, ISMT acquired Structo Hydraulics AB. Based at Storfors in Sweden, Structo is among Europe's leading suppliers of tubes and engineering products for the hydraulic cylinder industry. Structo Hydraulics AB has more than 400 years experience in the field of iron and steel processing. Structo's product range includes cold drawn seamless tubes, cold drawn welded tubes, roller burnished cylinder tubes, cold formed tubes, and components.

2008

In 2008, ISMT added a brand new PQF seamless tube mill. With this addition ISMT's tube making capacity increased from 150,000 MT/annum to 465,000 MT/annum. Simultaneously, Steel making capacity has also been increased from 250,000 MT/annum to 350,000 MT/annum with the addition of a second Ladle Refining Furnace.

2012

In 2012, ISMT commissioned a 40 MW Captive Power Plant further enhancing the self sufficiency of the overall business while also reducing operating costs.

MARKET FOCUS

TUBES

ISMT's tubes are ideal for applications such as the manufacture of bearings, automobile components, drill rods, hydraulic cylinders, gas cylinders, boilers, etc. Apart from seamless tubes, ISMT also manufactures a wide range of value added products made from tubes for each of these industries. These include items such as bearing rings, gear blanks, shifter sleeves, cages for constant velocity joints, swaged & machined axles, threaded and coupled casings, couplings and a host of similar products.

STEEL

ISMT is the leading producer of bearing steels in India with over 70% market share. The quality consciousness that the bearing industry necessarily demands has enabled ISMT to extend that same culture to other product lines and thereby carve out a niche as a specialized producer of carbon and alloy steels. Today, in addition to bearing steels we produce a vast array of specialized high-quality steels for the automotive industry, the forging industry, for textile machinery, fasteners and various other applications. All our steel is produced through the Electric Arc Furnace route, is ladle refined, vacuum degassed, continuous cast and rolled.

Manufacturing Units:
Ahmednagar, Baramati, Jejuri (India), Storfors (Sweden)

Sales Offices:
Pune (India)
Storfors (Sweden)
Stuttgart (Germany)
Leicester (UK)
Houston (USA)

Sales Representatives:
Charlotte (USA)

"The combination of Assel Mills, a PQF Mill, and a Steel Mill puts ISMT in a unique position to cater to the lower volume engineering and bearing segments as well as to the higher volume pressure tube and OCTG markets."

CUSTOMER FOCUS

ISMT has a strong engineering focus and invests heavily in research and development. We stand committed to adding genuine value to our customers. The R&D, Product Support and Marketing teams at ISMT have been organized along Product Application Verticals. Whether it be drill rods, bearings, or automotive axles, at ISMT we try to understand your specific product needs and tailor make our steels and tubes so that we can help you save costs, increase productivity, and stay competitive in a dynamic market environment – as an integrated producer of steel and tubes we are in a unique position to do so.

We have developed new alloy steels that have helped our customers reduce costs while maintaining mechanical properties; we have designed special tubes for the drilling industry that have low residual stresses and therefore improved product life; and we have developed special shaped tubes for customers to reduce machining costs. These are but a few examples of our efforts to work in concert with our customers and thereby add value to them.

TECHNOLOGY PROCESS GROUP

Our newly formed Technology Process Group (TPG), a combination of our best and most experienced engineers, works with our customers to understand their applications and tune our production processes to suit the requirements of the application. Our team is mandated to help our customers reduce costs - the team's performance is measured by their ability to deliver on this promise.

24X7 LOCAL SUPPORT

With multiple offices, stocking locations, and logistics partners across the globe we are in a position to service our customers locally. Wherever you are, we take it upon ourselves to provide you secure, on-time delivery, and 24 x 7 product support.

ISMT's Vision, Core Values, and Mission statements are built around a core philosophy of being a responsible corporate entity, being the best at whatever we do, and keeping pace with change.

V

VISION

"To be the most sought after, efficient, profitable and respected producer globally of precision seamless tubes and alloy steels."
B.R. Taneja

CORE VALUES

- Integrity
- Honesty
- Fairness
- Secularity
- Diversity

MISSION

To produce the highest quality steel, seamless tubes and tubular products for the Bearing, Automotive, Mining, General Engineering, Energy and 'High Value OCTG' sectors and to build global market share globally in these sectors.

To provide the best value proposition in terms of cost and quality of product/service to our customers in the industry. To do so through a wholehearted commitment to the Quality Systems.
To maximize the utilization of our assets as measured by 'Contribution' generated.

To create a working environment that encourages creativity, empowers individuals, creates accountability and rewards performance. To create a self learning organization that gathers knowledge and reacts quickly to changes in customer expectations and the environment.

To play a pro-active and responsible role in social development and in environmental protection within our sphere of influence.

PEOPLE

Our core competence resides in our people. Therefore, we endeavour to create an organization that empowers people, encourages creativity, builds leadership skills and rewards performance. ISMT's human resource policies are structured around and measured against these corporate objectives.

In keeping with these goals, we have launched an in-house training centre, the ISMT Centre of Excellence (ICE). Located on a 13 acre campus, ICE is a full-fledged residential training facility equipped with computer labs, classrooms, a library and recreational facilities. The objective of this institute is to act as a central resource and repository for collecting and disseminating knowledge within the organisation.

Every graduate engineer joining ISMT undergoes a six month, paid, intensive training and orientation programme at ICE followed by three months of on-the-job training. In addition, ICE provides training to all existing managers as part of an effort to periodically upgrade their skills.

SOCIAL RESPONSIBILITY

As an integral part of our mission to play a pro-active and responsible role in social development and in environmental protection we have developed a focused and pragmatic agenda. We have a dedicated Corporate Social Responsibility department that works towards fulfilling these objectives by means of various events, campaigns and policy initiatives to improve the living and working standards as well as awareness levels of our employees and local communities.

ISMT TUBE DIVISIONE FACILITIES

TUBE DIVISION FACILITIES

The ISMT tube plants at Ahmednagar and Baramati are both within a radius of 100 km of Pune, where ISMT is headquartered. Each of these locations is equipped with state-of-the-art tube making as well as finishing and testing facilities which include:

HOT FINISHING EQUIPMENT*

- Piercing Mills
- PQF Mill
- Assel Mills
- Stretch Reducing Mills
- Hot Sizing Mills

* All Hot Finishing equipment has been supplied by Mannesman Huttentechnik, Germany

COLD FINISHING EQUIPMENT

- Cold Pilger Mills
- Cold Draw Benches
- Cold Sizing Mills

FINISHING FACILITIES

- Heat Treatment Furnaces (Normalizing, Annealing, Hardening, Spheroidizing, Quench & Tempering)
- End Finishing Machines (Cutting, Threading, Beveling, Upsetting)
- Peeling Machines
- Cold Ring Rolling Machines (Bad Deuben)
- Swaging Machines
- Stenciling & Lacquering Machines

INSPECTION & TESTING FACILITIES

- Ultrasonic Testing
- Eddy Current Testing
- Magnetic Particle Inspection
- Hydro-testing
- Leakage Flux Testing
- Chemical, Mechanical & Metallurgical testing

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3

TUBE PRODUCT RANGE

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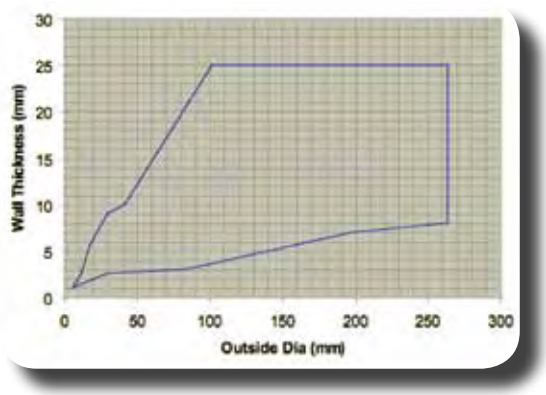
With a unique combination of Assel Mills and a PQF mill, ISMT is one of the world largest and most diversified manufacturers of specialized seamless tubes. We produce both Hot-finished as well as Cold-finished seamless tubes ranging from an outside diameter of 6mm to 273mm. Our tubes are used in a variety of applications such as the manufacture of auto-components, bearing races, OCTG products, drill rods, boilers, heat-exchangers etc.

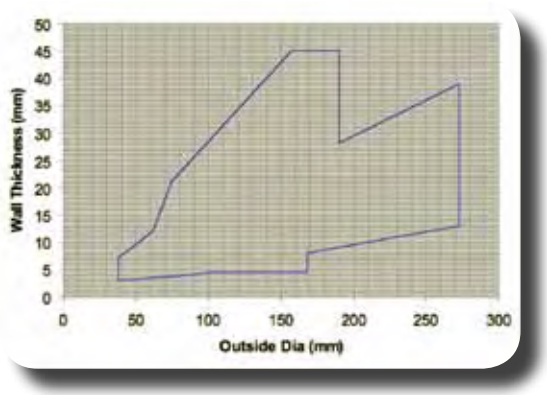
Apart from tubes, ISMT manufactures a variety of value added products such as cold rolled and machined rings for bearings and constant velocity (CV) joints, swaged and machined axles for trucks, steering columns for two-wheelers and ready-to-hone tubes for hydraulic cylinders.

1- Cages for constant velocity joints
2- Shaped tubes
3- Multi-track sleeves for linear bearings
4- Spindle axles for automobiles
5- Starter gears for automobiles
6- Inner races for bearings
7- OCTG coupling
8- Rifled tube

COLD FINISHED TUBES SIZE RANGE



HOT FINISHED TUBES SIZE RANGE



TUBE MAKING PROCESSES

HOT FINISHING

Hot finished tubes at ISMT are produced either through the Assel Mill process or through a PQF mill. Round steel billets of specific lengths are first heated in a rotary hearth furnace. After heating, these billets are descaled, end-face centered, and passed through a cross-roll Piercing Mill to produce rough hollow blooms.

The hollow blooms are then rolled over a mandrel either through a three roll Assel Mill or through a newly installed PQF Mill to produce hot finished tubes.

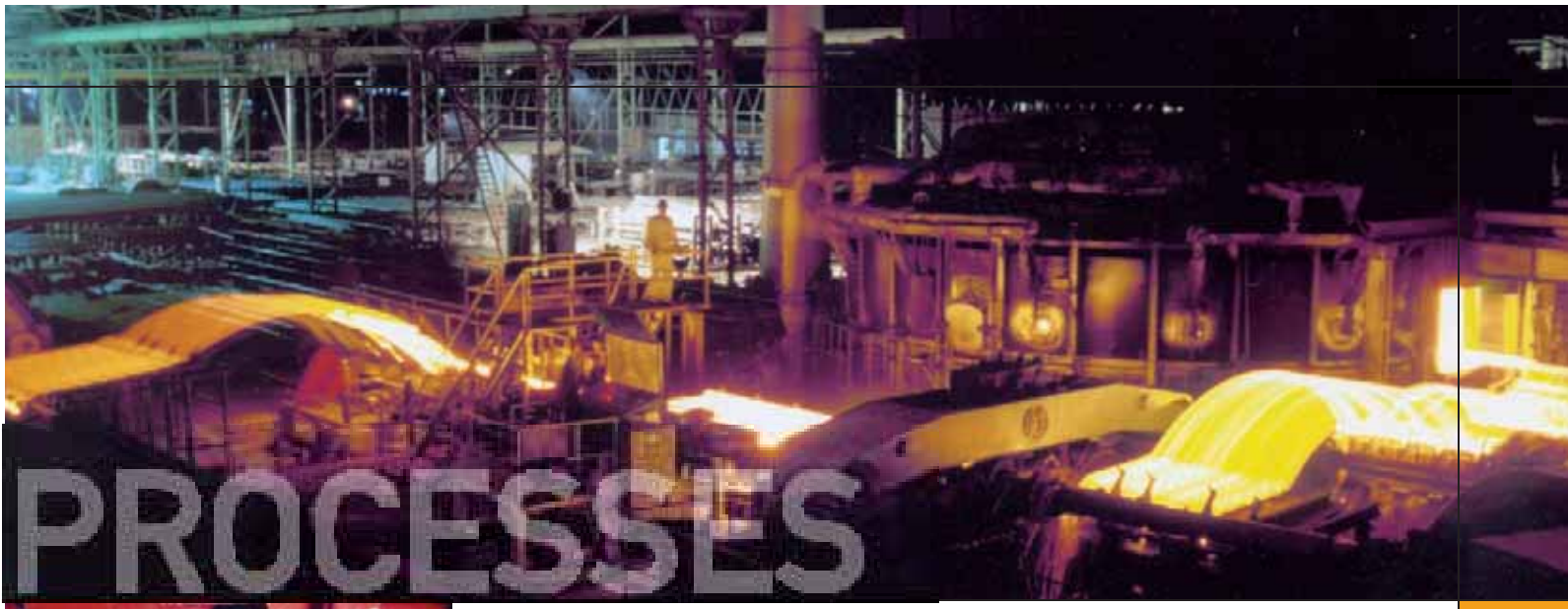
If required these tubes are passed through a hot-sizing or stretch reducing mill to produce tubes of intermediate dimensions. Hot finished tubes are either delivered as is or further cold processed.

The Assel Mill is the ideal process for producing low volume customized tubes with a high dimensional accuracy and excellent concentricity. As a result, these tubes are ideal for the manufacture of items such as bearing rings, cages for constant velocity joints (CV cages), automobile parts, etc.

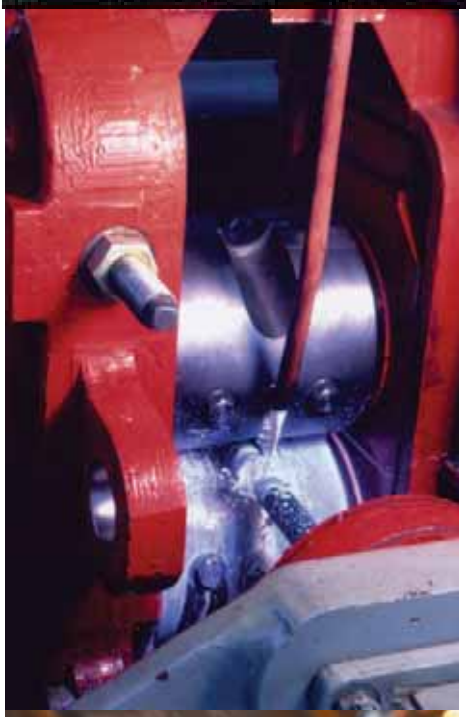
The PQF mill on the other hand is ideal for producing large volumes of very accurately sized tubes. This process is ideal for producing Pressure Tubes, OCTG tubes and for other applications where large volumes are required.

COLD DRAWING

In Cold Drawing, hot finished tubes are surface treated and then drawn through the gap between a reducing die and a central plug (or a mandrel) thereby reducing both the inside and outside diameters and polishing both internal and external surfaces of the tubes to achieve close final tolerances.



PROCESSES



COLD PILGERING

In the Cold Pilgering (Rotorolling) process, the hot finished tube is reduced by rolling and elongating the tube stepwise over a stationary tapered mandrel. Two rolls, each with a tapering semi-circular groove running along the circumference embrace the tube from above and below and rock back and forth over the tube (the pass length) while a stationary tapering mandrel is held in the centre of the tube. At the beginning of the stroke (pass) the circular section formed between the grooves of the two opposing rolls corresponds to the diameter of the ingoing tube and to the thickest section of the mandrel. As the rolls move forward over the tube the circular section reduces in area until, at the end of the pass length the circular section corresponds to the finished inner diameter of the tube. The tube elongation is achieved by reduction of the outer diameter as well as the wall thickness of the ingoing tubes. The Cold Pilgered tube is characterized by very small dimensional variations and a very high surface quality. Furthermore, the high level of cold working (up to 70%) results in very high hardness levels and excellent machinability.

OTHER PROCESSES

Subsequent to the manufacture of tubes, ISMT uses a variety of fi nishing processes to produce value added products such as rings for bearings and CV cages, swaged and machined axles for trucks / trailers, couplings for OCTG products, and drill rods for mining.

Some of the processes used are:

- Cold Ring Rolling: ISMT has a number of Bad Deuben machines which are capable of cold rolling rings to produce near-net shaped annular components. This process has almost zero wastage and yields a product with very tight tolerances.
- Machining: ISMT has a variety of in-house machining facilities and has strategic manufacturing relationships with accredited vendors allowing it to meet virtually any customer requirement at short notice.
- Heat Treatment: Annealing, Hardening, Normalizing, Spheroidizing
- Peeling
- Swaging / Upsetting: ISMT uses this process to produce Axle ends as well as Tubing for the OCTG industry.

FACILITIES FOR STEEL DIVISION

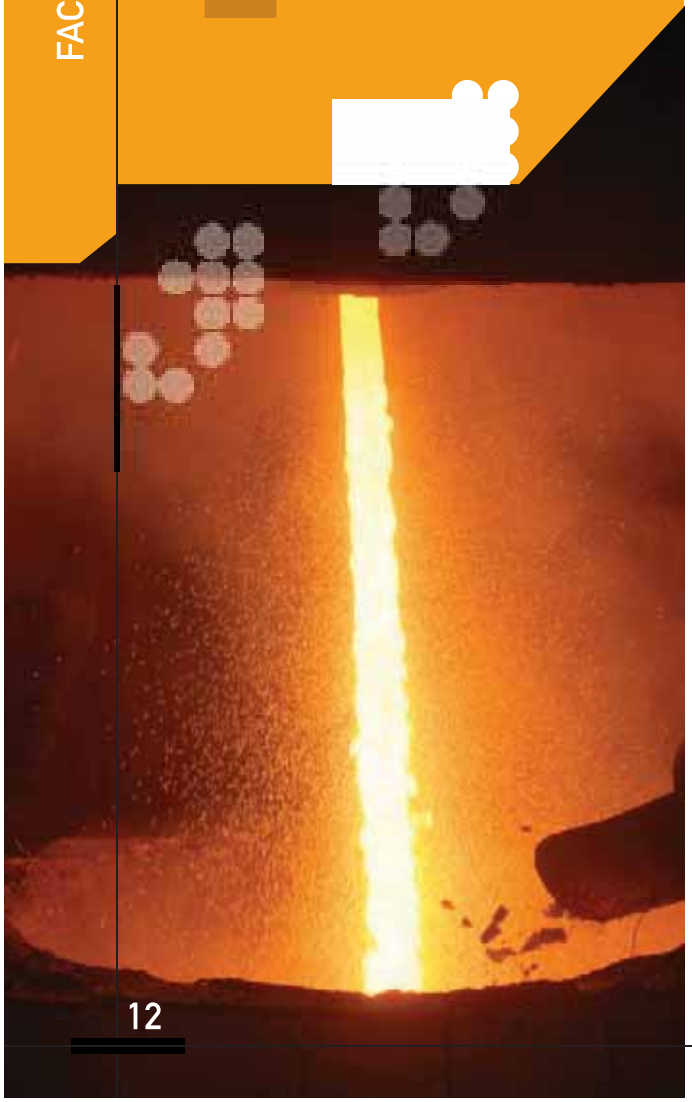
STEEL DIVISION FACILITIES

ISMT has one of the most modern alloy steel plants in India. The factory, located at Jejuri (within a 100 km radius of ISMT's Tube plants) has a capacity of 350,000 MT per annum. The primary production facilities include an Electric Arc Furnace, a Ladle Refining Furnace, a Vacuum Degassing Plant, a Continuous Caster and a twelve stand "no-twist" Rolling Mill. Along with these facilities, there are a variety of finishing and testing equipment that enable the company to meet even the most stringent of customer requirements.

ISMT's Steel Division has established itself as one of the leading suppliers of carbon and alloy steels in India. The company is QS 9000 and ISO 9002 approved. ISMT's product mix includes both rounds as well as round cornered squares. These items form the basic raw material inputs for industries such as forging, seamless tube making, automobile and auto-ancillaries, textile machinery, fasteners and other engineering applications.

SALIENT FEATURES OF THE PLANT

- Computer-controlled addition of Ferro Alloys in LRF
- 100% in-line Vacuum Degassing
- Automatic Mould Level Controller (AMLC) in Caster
- Two Strand Round Caster with 12 meter and 18 meter radius
- In mould EMS in CCM resulting in uniform macro structure
- Continuous Rolling Mill with 12 stands coupled with descaler



STEEL DIVISION PROCESSES

FLOWCHART

PROCESS	EQUIPMENTS / PARAMETERS
Scrap / Metallics	Continuous DRI Addition / Bucket Charging
Primary Melting	50MT, UHP - EAS, EBT & Auto Melt Control
Secondary Melting	50MT LRF, Auto FE-Alloy Addition, Continuous Argon Purging
Vacuum Degassing	Vaccum Level 1 Mbar. 100% Heats are Processed Through VD to Ensure Steel Cleanliness
Continuous Casting	2 Strand, 12 & 18 Metres Radius, AMLC, Mould EMS & Computerised Process Control, Flying Tundish
Walking Hearth Furnace	Oil Fired, PLC Controlled
Descaler	200 Bar, HP Water Pump
Continuous Rolling Mill	12 Strand; PLC Controlled
Inspection	MPI, Pickling, ECT, Ultrasonic & Visual & Laboratory
Heat Treatment	15MT Electrically Heated Furnace
Metallurgical Testing	Laboratory Equipments
Finishing / Despatch	

STEEL PRODUCT RANGE

With a relatively low heat size (50 tons) in the Electric Arc Furnace, the company has the ability to produce virtually any grade of steel, even in small batch quantities for a particular customer.

However the typical grades produced are as follows:

Plain Carbon Steels	SAE 1008, SAE 1010, SAE 1012, SAE 1019, SAE 1026, SAE 1035, SAE 1040, SAE 1045, SAE 1518, 070M20, 080M40, 080M46, 070M55, CK35, CK45, CK55, CK60
Case Hardening Steels	665M23, 635M15, 637M17, 815M17, 822M17, SAE 8617, SAE 8620, 8627, 15Cr3, 16MnCr5, 20MnCr5, 15CrNi6, SCM415, SCM420, SCM421
Spring Steels	55Si7, 60Si7, 65Si7, 37MnSi5, 50CrV4, 38XC, 50Cr4V2, 51CrMoV4
Free Cutting Steels	SAE 1117, SAE 1137, SAE 1140, SAE 1141, 216M36, 220M07
Ball Bearing Steels	SAE 52100, 100Cr6, 103Cr2, SUJ2
Micro Alloyed Steels	HMnV, 38MnSiVS5, 49MnVS3
Other Alloy Steels	SAE4130, SAE4135, SAE4140, SAE4340, 817M40, 34Cr4, 37Cr4, 41Cr4, 25CrMo5, 42CrMo4, 40NiCrMo4, 40NiCrMo15, SCM435, SCM440, SA182-F11, SA182-F12, T11, T22, T23, T5, T9, T91, T92
Supply Conditions	As rolled, heat treated (Black/Bright), quench & tempered.

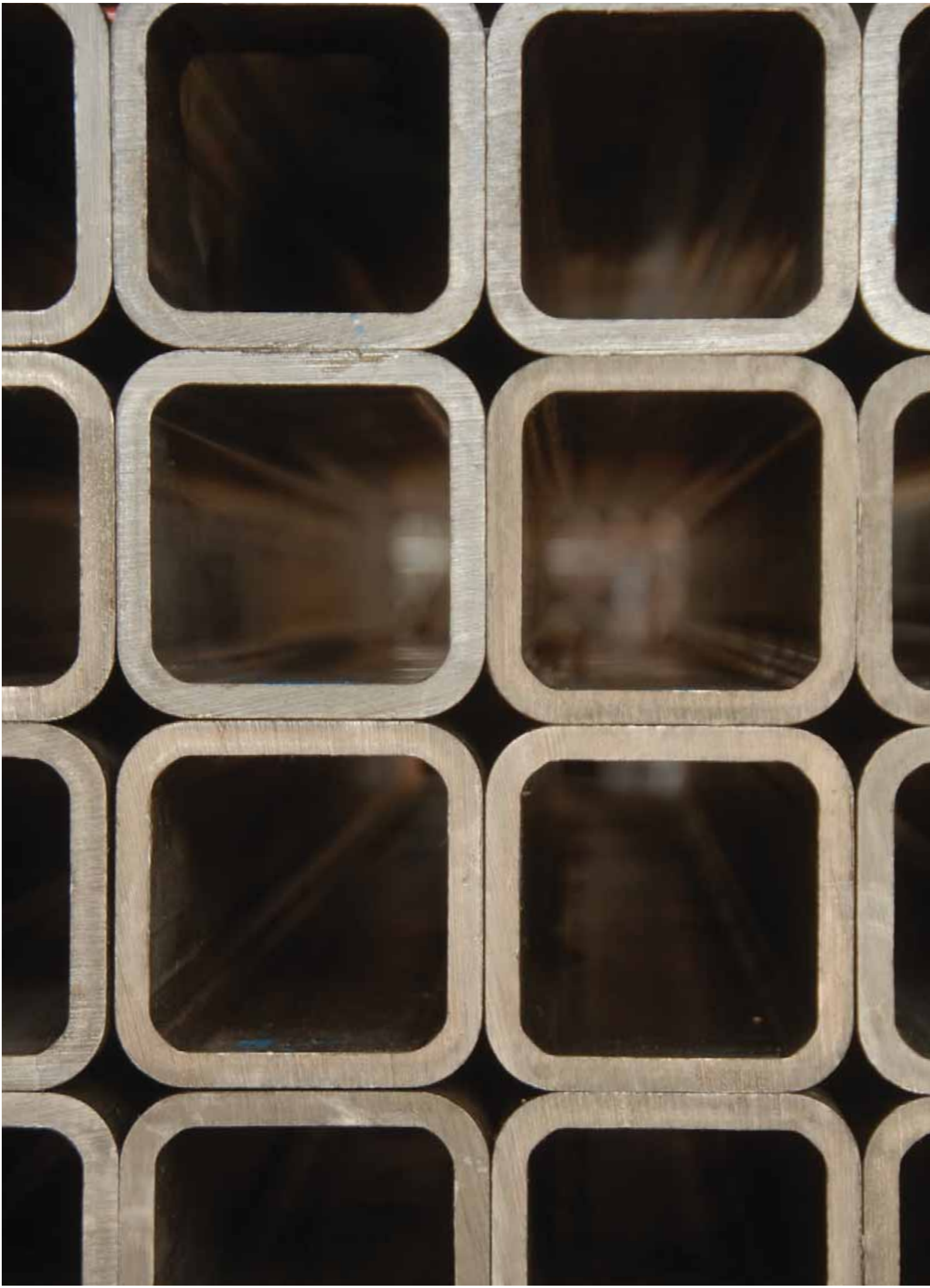
PRODUCT	**SIZE RANGE (DIA OR SIDE IN MM)**
Cast Rounds	160, 180, 200, 225
Rolled Products	40, 42, 45, 48, 50, 52, 56, 60, 63, 65, 70, 75, 80, 90, 95, 100, 115, 125, 137, 150, 170
Rolled Round Cornered Squares	45, 50, 52, 55, 60, 63, 65, 70, 75

ENVIRONMENT

ISMT STRONGLY BELIEVES IN THE NEED TO MAINTAIN AND IMPROVE THE QUALITY OF THE ENVIRONMENT. THE COMPANY SHALL THEREFORE STRIVE TO ENSURE THAT ITS OPERATIONS COMPLY WITH ALL APPLICABLE LAWS AND STANDARDS, HAVE NO ADVERSE IMPACT ON THE ENVIRONMENT AND WHERE POSSIBLE MAKE A POSITIVE CONTRIBUTION TO IMPROVE THE QUALITY OF THE ENVIRONMENT.

HEALTH AND SAFETY

OUR PEOPLE ARE OUR MOST IMPORTANT ASSET. PROTECTION OF THEIR HEALTH AND SAFETY IS OF PRIME IMPORTANCE TO US. WE COMPLY WITH ALL APPLICABLE LAWS AND RELEVANT INDUSTRY STANDARDS OF PRACTICE CONCERNING PROTECTION OF HEALTH AND SAFETY OF OUR EMPLOYEES IN THE WORK PLACE AND OTHER PERSONS AFFECTED BY OUR BUSINESS ACTIVITIES.



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