ISMT

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

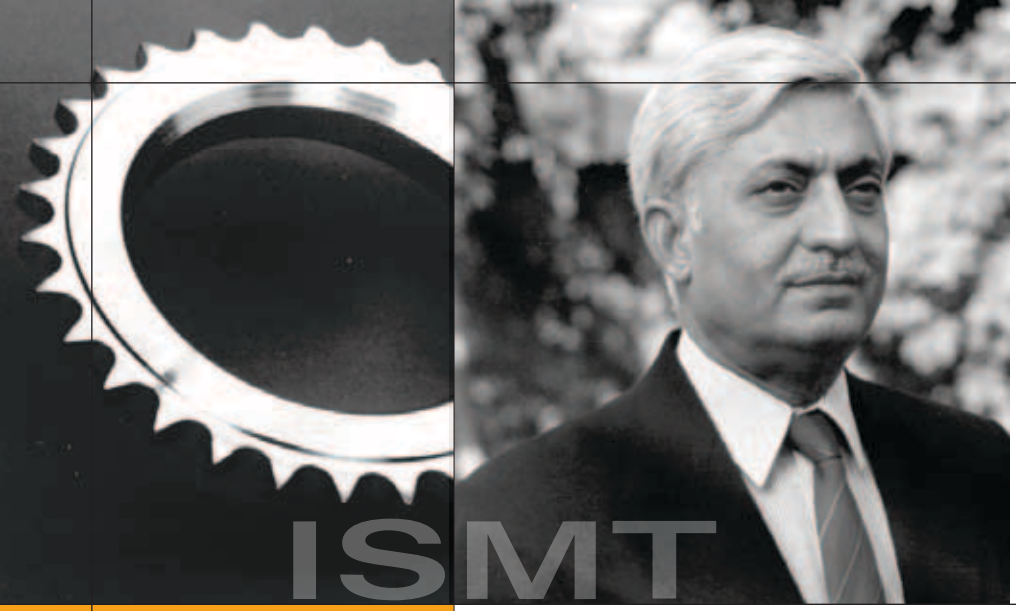
ISMT LIMITED

Solutions You Can Trust

VISION

"TO BE THE MOST SOUGHT AFTER, EFFICIENT, PROFITABLE AND RESPECTED PRODUCER GLOBALLY OF PRECISION SEAMLESS TUBES AND ALLOY STEELS."

- B. R. Taneja CEO



Over the last decade ISMT has evolved from a niche manufacturer of seamless tubes catering exclusively to the automobile and bearing market in India, to a company that supplies an extremely wide variety of specialty steels, specialized seamless tubes, and intermediate products made from tubes to companies all over the world. This transformation has been made possible by our unrelenting focus on improving quality, improving processes and introducing new products, all with the common aim of adding more value to our customers.

As part of this process, we have recently added a new PQF Mill to our facilities. This new seamless tube mill not only increases our seamless tube making capacity from 150,000 MT per annum to 450,000 MT per annum, but also widens our product range and allows us to offer a more cost-effective product to many of our customers. We have simultaneously increased steel making capacity to 350,000 MT/annum to keep pace with the increased production of tubes as well as to cater to our growing customer base for carbon and alloy steel bars.

As we move forward, our growth strategy is to become 'application oriented' and therefore, even more customer-centric. Our R&D, marketing, and production teams have been reorganized along product application verticals, so that, as a company, we better understand your needs and are able to assist you in reducing costs and improving productivity. Simultaneously, our Kaizen teams are working continuously at cutting internal costs and improving quality across all processes through the organization. This effort is supported by a working environment that promotes cooperation among all employees while simultaneously recognizing and rewarding individual creativity and hard work.

Following this path of continuous improvement, our eventual goal is to be the best and the most sought-after manufacturer of seamless tubes and related products. In other words, we wish to be a reliable, valuable, and trusted partner to all our customers.

> "Our growth strategy is to become 'application-oriented' and therefore even more customer centric."

HISTORY

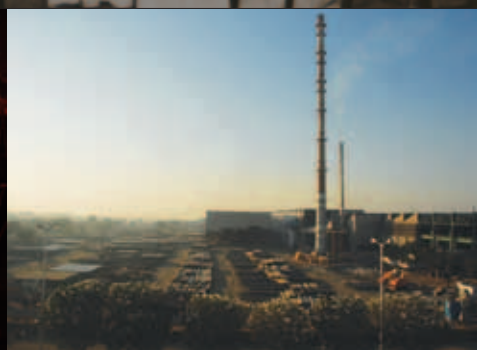
1980

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, production 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 incorporated Indian Seamless Steels and Alloys Limited (ISSAL) to produce alloy steel, the raw material used in the manufacture of seamless tubes. This gave the company complete control over product quality as well as deliveries.

2000



In April 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 6 mm to 273 mm).

2005

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

2007

In 2007, ISMT acquired Structo Hydraulics AB. Based in Storfors, 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 Mill. With this addition, ISMT's tube making capacity increased from 150,000 MT/annum to 450,000 MT/annum. Simultaneously, steel making capacity has also increased from 250,000 MT/annum to 350,000 MT/annum with the addition of a second Ladle refining furnace.

HISTORY

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 for itself 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, 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.

"With the combination of Assel Mills, a new PQF Mill, and a Steel Mill ISMT is uniquely positioned to cater to the lower volume engineering and bearing segments as well as to the higher volume Energy (tubes for Boilers, Super-heaters and Heat-exchangers) and OCTG markets."

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

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

Sales Representatives:
Charlotte, Houston, Cleveland, New York (USA)
Milan (Italy)

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's sole mandate is to help our customers reduce costs – their 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.

VISION VALUES

V

VISION

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

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 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.

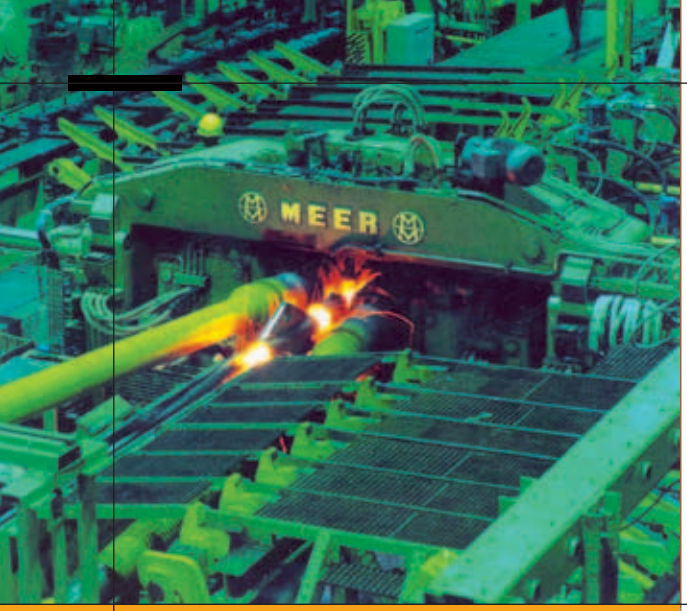
In keeping with these goals, we have launched an in-house training centre, the ISMT Centre of Excellence (ICE). Located on a 13 acre campus, ICE is a full-fledged residential training facility equipped with computer labs, classrooms, a library, and recreational facilities. The objective of this institute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

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

Recognizing that industry must play an important role in the social development of its immediate environment we have developed a focused and pro-active social agenda. ISMT has joined with Prithvi (an NGO based out of Pune) in the development of an innovative partnership in industry-NGO cooperation to combat the HIV epidemic in India.

ISMT also promotes regular events aimed at improving the living standards and awareness levels in the local communities.



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

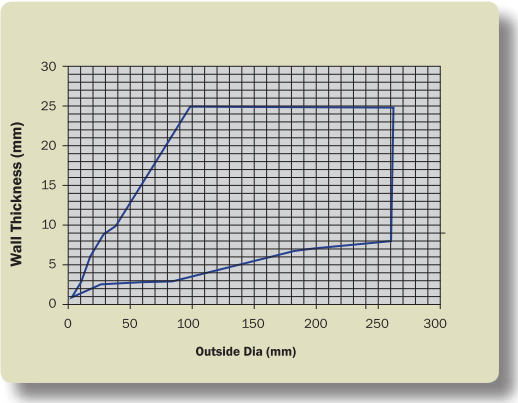
TUBE PRODUCT RANGE

With a unique combination of Assel Mills and a PQF mill, ISMT is one of the world's 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.

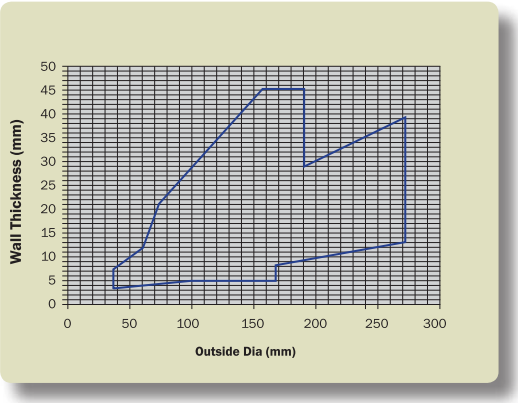
Apart from tubes, ISMT manufactures a variety of value added products such as cold rolled and machined rings for bearings and constant velocity (CV) joints, swaged and machined axles for trucks, steering columns for two-wheelers and ready-to-hone tubes for hydraulic cylinders.

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 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.

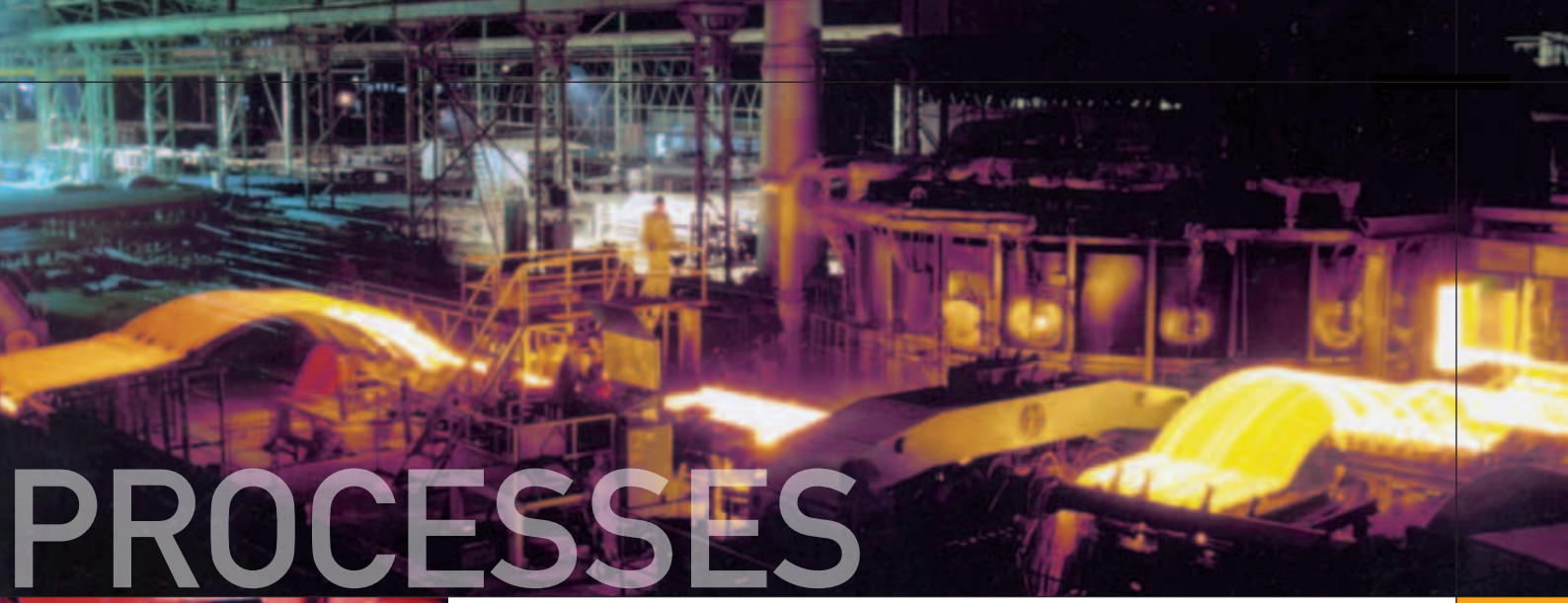
If required these tubes are passed through a hot-sizing or stretch reducing mill to produce tubes of intermediate dimensions. Hot finished tubes are either delivered as-is or further cold processed.

The Assel Mill is the ideal process for producing low volume customized tubes with 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 tubes for the Power Generation Industry, OCTG tubes and other applications where large volumes are required.

COLD DRAWING

In the Cold Drawing process, 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 finishing 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.

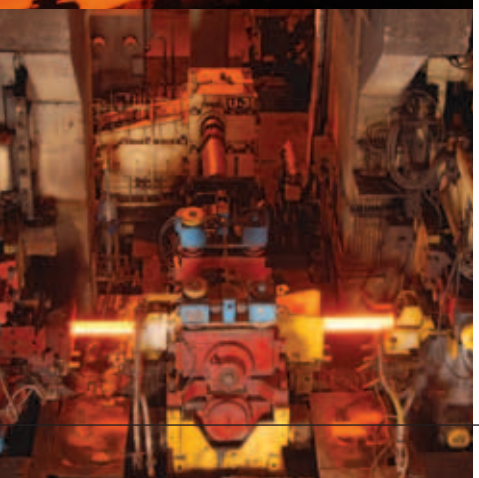
STEEL DIVISION FACILITIES

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. 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	25, 25.4, 26.4, 28.3, 30, 32, 34, 36, 38 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

QUALITY ASSURANCE AND APPROVALS

At ISMT, quality encompasses all processes within the organization, right from sourcing raw material and qualifying vendors to delivering and supporting the final product. Even though the company is ISO 14001, ISO/TS16949:2002, and OHSAS 18001 certified, it strives to exceed the standards set by these agencies. With this objective in mind, ISMT has adopted the Kaizen philosophy of continuous improvement.

ISMT also has specific vendor approvals from a number of leading international companies. Based on individual requirements, ISMT is willing to work with all potential customers to obtain such approvals.

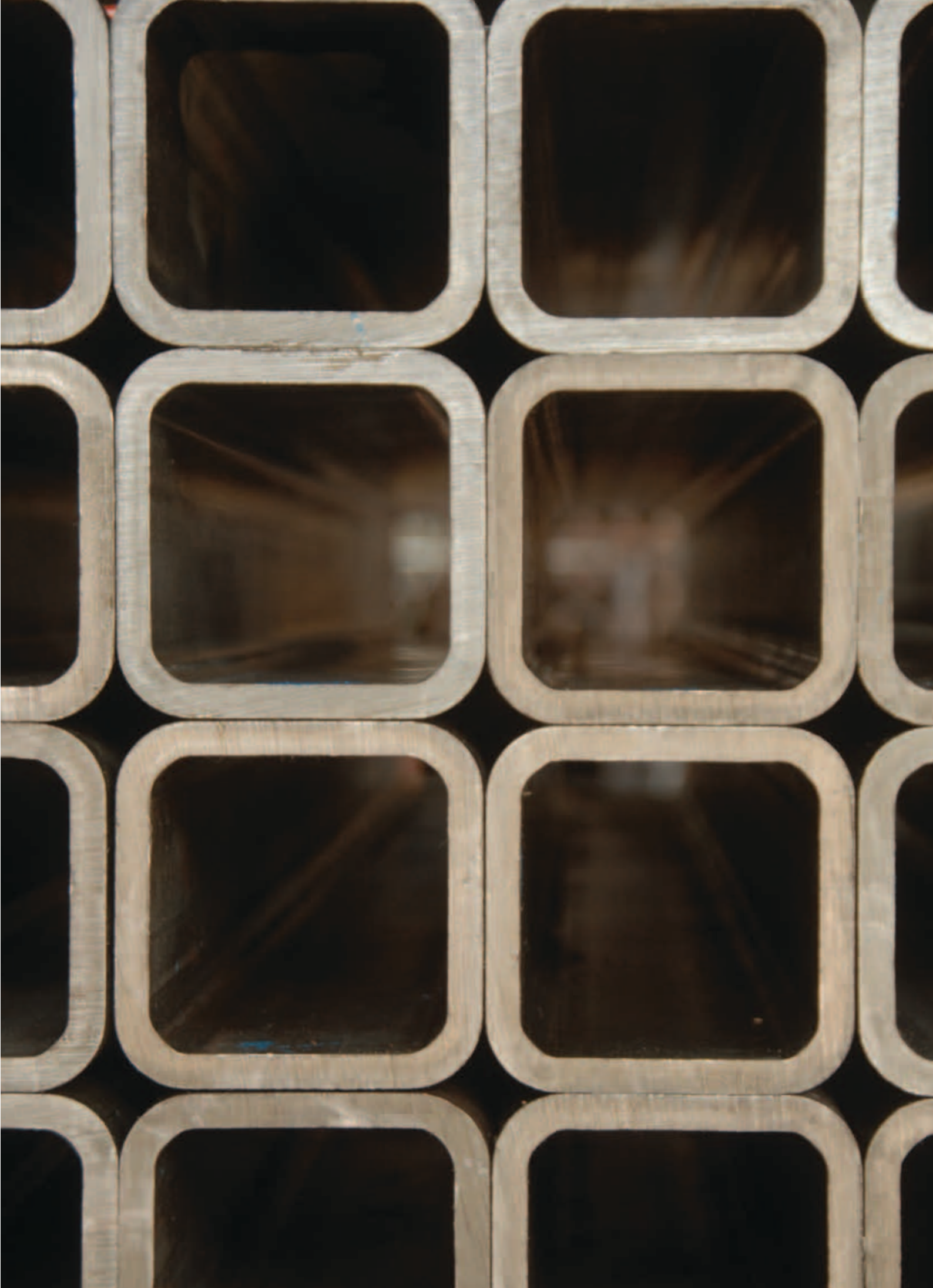
ISMT has also been granted the rights to use the API monogram for its OCTG products

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 IMPROVING THE QUALITY OF THE ENVIRONMENT.

HEALTH AND SAFETY

OUR PEOPLE ARE OUR MOST IMPORTANT ASSET. PROTECTION OF THEIR HEALTH AND SAFETY IS OF VITAL 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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