MAN INDUSTRIES (INDIA) LTD.

ABOUT US

MAN GROUP promoted by the Mansukhani family in the 1970's with a grand vision, is a well-diversified group with its flagship company **MAN Industries (India) Ltd.** incorporated in 1988. The group's main business line includes manufacturing and coating of Large diameter Carbon steel pipes, infrastructure, realty and trading. The group is now contemplating to venture into core sectors of energy, mining and hospitality.

The Company is one of the leading manufacturers of Large Diameter Carbon Steel SAW pipes offering total solutions to its esteemed clients worldwide. Catering to the requirements of the pipe line industry, the Company offers Longitudinal Submerged Arc Welded (LSAW) pipes by using 3 Roll Bending and JCOE Forming process, Spiral / Helical Submerged Arc Welded pipes (HSAW), Casing Pipes with end connectors (both ends), and all types of anti - corrosion coating including CWC, Under one roof their state-of-the-art manufacturing setup.

The spectrum of customers includes international and domestic clients in the oil & gas industry, petrochemicals, water, dredging, fertilizers and part of infrastructure projects. The line pipes are manufactured in strict conformity to the requirements of American Petroleum Institute (API) standards, International specifications and also to requisite Customized requirements.

Over 10000 kms. of pipes have been supplied globally for various onshore, offshore and critical sour services projects adhering to high standard and quality parameters as per international specifications.

Global Growth

With strategic investments and continuous growth, the **Man Group** is a prominent world-class manufacturer of Line Pipes and Coating Systems. Surging forth with lightning speed, it is expanding, integrating and growing in line pipe manufacturing, infrastructure, realty and trading.

Capabilities

The Company is a leading manufacturer of large diameter Carbon Steel Line Pipes meant for high pressure transmission applications like Gas, Crude Oil, Petrochemical Products and Potable Water transmission. It undertakes manufacturing of LSAW & HSAW Line Pipes and Anti-Corrosion Coating Systems i.e. 3LPE, 3LPP, DFBE, FBE, Internal Liquid Epoxy Coating, CWC & External Tape Coating.

Facilities

The state-of-the-art manufacturing facilities are dedicated to highest operating and quality standards. Spread over 200 acres in Anjar Gujarat and Pithampur, Madhya Pradesh, 1.5 Million tonne capacity plant undertake LSAW and HSAW manufacturing, conforming to API and customer specifications in oil & gas, petrochemicals, fertilizers, dredging and water sector.

Recognition

Accredited with ISO 9001,ISO 14001, OHSAS 18001, CE Marking, IS0-3834-2, ISO TS 29001, ISO 17025 Certifications, **Man Industries** is globally accepted by all the reputed energy companies throughout the world.

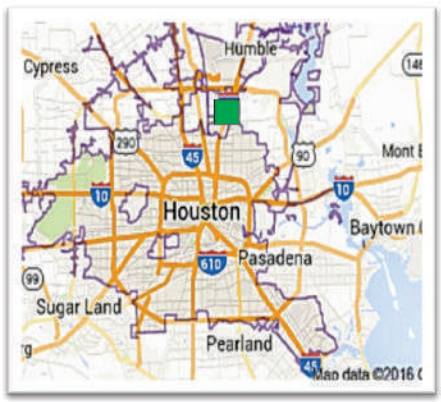
OUR OPERATIONS

LSAW Line Pipes, HSAW Line Pipes, Casing pipe with end connectors and various types of anti-corrosion coating systems including CWC Coating are under one roof.

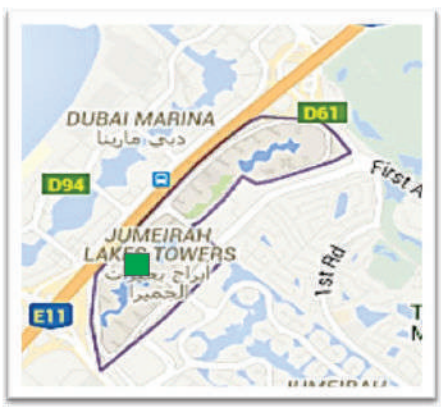
With a background of continual expansion and exponential growth the group has pipe and coating complex at a strategic location's Mundra and Kandla near seaport at Anjar on the west coast of India.

The company's existing HSAW facility at Pithampur, Madhya Pradesh are capable to manufacture pipes up to 140" with a wall thickness of 20mm.

INDIA



U.S.A.



DUBAI

- Office Locations
- Anjar Plant Location
  45km. away from Bhuj Airport
- Adani Port, Mundra
  35km. from Anjar Plant
- Kandla Port
  40km. from Anjar Plant

OUR PRODUCTS

LONGITUDINAL SAW PIPES (LSAW)

The Company offers Longitudinal Submerged Arc Welded (SAW) Line Pipes to meet the growing global demand of high pressure cross - country pipelines.

MANUFACTURING PROCESS

Line pipe are manufactured by the 3 Roll Bending and JCOE forming method. Hot rolled plates with mill test certificates are received, inspected, ultrasonically tested and sorted at the receiving bay. The plate is then milled to precise width and beveled for welding.

3 ROLL BENDING PROCESS

The In-feed conveyor transports the plate to CNC and PLC controlled 3 Roll Bending Machine for rolling. Post bending is carried out to make the required edge profile of the pipe and then the pipe moves on conveyor for continuous tack welding using Gas Metal Arc Welding (GMAW) process. The pipe is then moved to the Internal SAW Welding Station by conveyors.

The internal welding is done by using 3 wires SAW welding followed by external welding on the outer seam of the pipe. Laser controlled guiding systems are used to ensure the best quality weld. The pipe, after welding is tested through real time radiography for flaw detection in the weld. The pipe is then delivered to Expander unit for cold expansion after which the ends are beveled by the end facing machine. This is followed by Hydrostatic Testing and later Ultrasonic Testing, Radiography, MPI as well as visual and dimensional inspections. Painting and Stenciling is then carried out as per specifications.

JCOE FORMING PROCESS

The Company is one of the major global player with in line pipe industry for the past two decades and has commissioned state-of-the-art 5600-ton hydraulic JCOE pipe forming press at Anjar (Kutch, Gujarat) plant, which has been developed indigenously with in-house research, development and technical proficiency. The plate while forming is given a JCOE profile due to uniform forming load, resulting in uniform fibre stress.

With this mill the company can manufacture & supply very critical low diameter & very high wall thickness line pipes, finding application in highly stringent offshore/subsea application with very close dimensional tolerances.

LONGITUDINAL SAW LINE PIPES (LSAW) PRODUCT PROFILE

PRODUCT PARAMETERS	LSAW Line 1	LSAW Line 2
Manufacturing Method	3 Roll Bending Method	JCOE Forming Press Method
Production Capacity	6,00,000 TPA	4,00,000 TPA
Outside Diameter	16" to 56"	18" to 56"
Wall Thickness	6.0 mm to 35.0 mm	6.0 mm to 55mm
Pipe Length	12.2 meter (max)	12.2 meter (max)
Material Grade	Upto API 5L X 80 PSL2	Upto API 5L X 80 PSL2

CASING PIPES

Large diameter Casing pipes are generally used in drilling operations to facilitate the drilling of a Well bore and comes in a variety of sizes, strength and weights and are typically 40 feet in length. Besides, these are also used as casing pipes during drilling operations, to encase the drill pipes and drill stems.

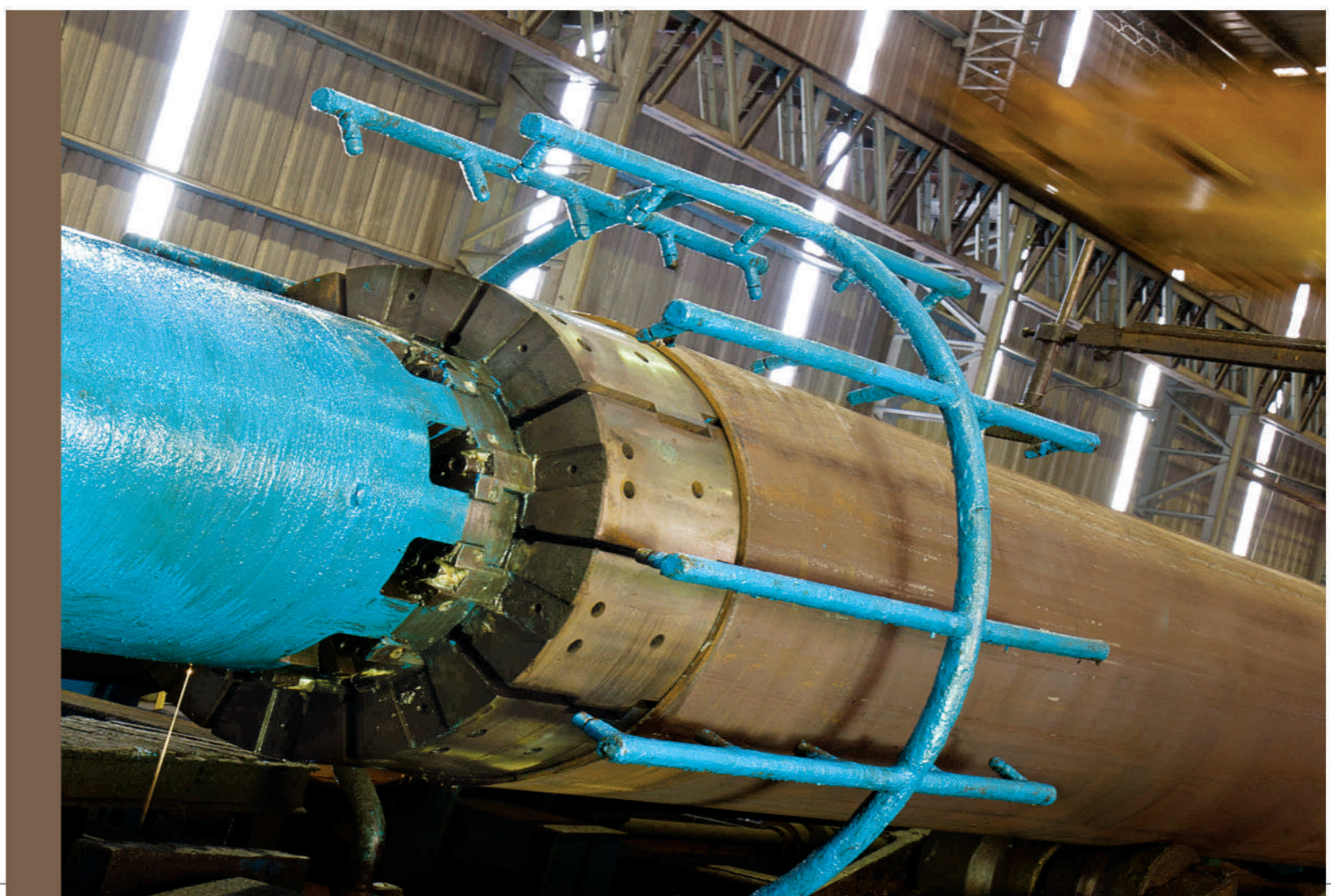
CASING PIPES WITH END CONNECTORS

The large diameter LSAW pipes are welded with the connectors at both ends. The connectors are the forged and hollow machined components having multistar threads and other lock-inarrangements.

The Inside bore of connectors is to match with the pipe bore. These connectors are butt welded with the pipe ends. Casing Pipes are manufactured accordance with strict guidelines of specifications from American Petroleum Institute.

Generally, Connector welded pipes are supplied in size range of 18.5/8”, 20" 26”, 30" & 36” diameter. The End Users are ONGC and other Oil Producing Companies.

Casing Pipes With End Connectors	Diameter
	18.5/8”, 20” 26”, 30” & 36”



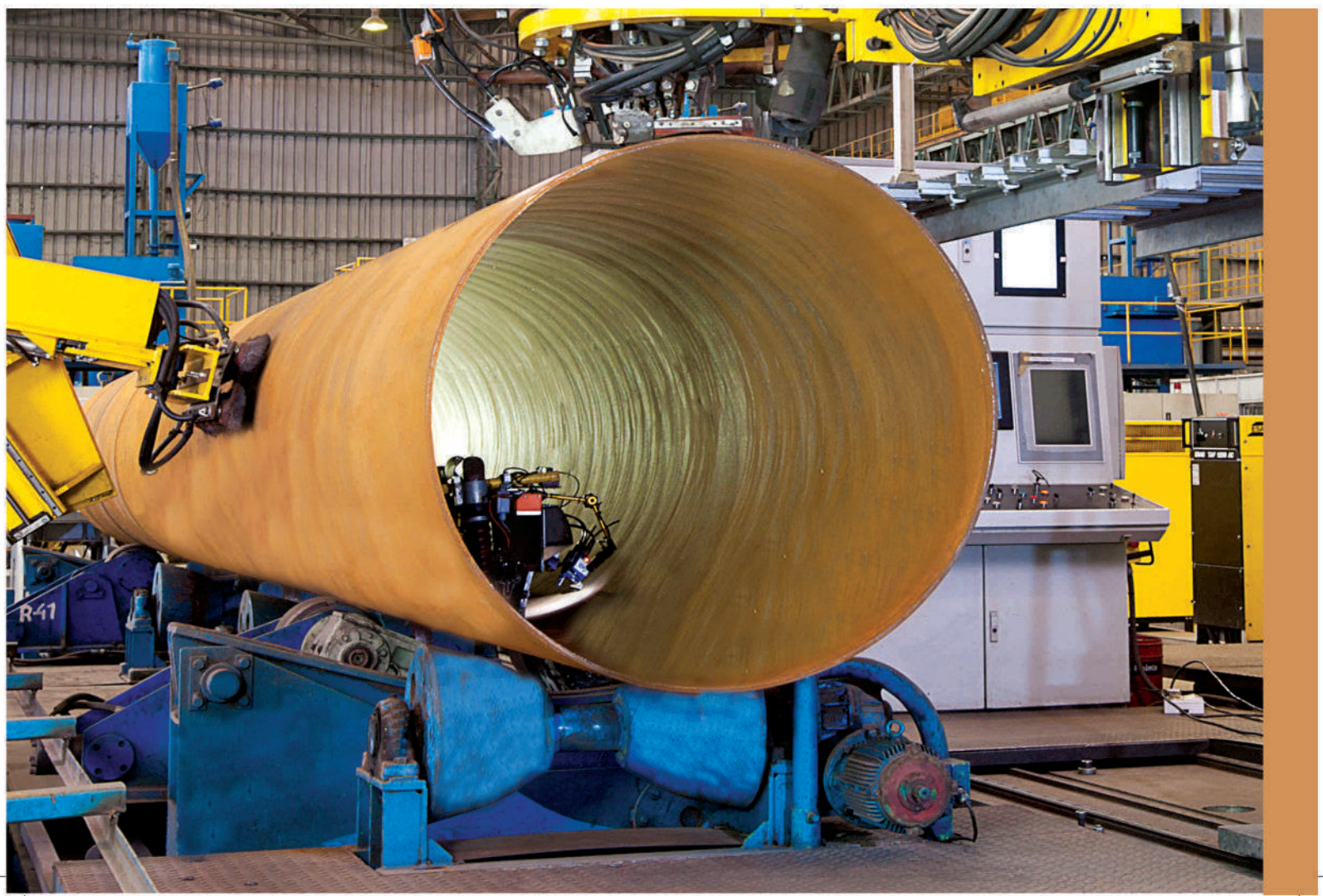
OUR PRODUCTS

SPIRAL / HELICAL SAW PIPES (HSAW)

Spiral Welded Pipes find various applications and uses in the transportation of petroleum products e.g. Crude Oil & Gas, Water supply, Sewerage disposal, Construction industry & Agriculture. To meet the growing demand of pipes meant for critical & non-critical applications, **Man Industries** offers high quality Spirally Welded Steel Pipes conforming to internationally accepted quality standards laid down by the American Petroleum Institute (API) and other requisite customer specification.

The Company has the latest and the most advanced technology to manufacture high quality Spiral Welded Steel Pipes. The spiral pipe plant has three manufacturing lines. All the mills are two step mills and are independently equipped with the latest equipment and auxiliaries to meet critical specifications of the customers of varied segments.

The Spiral mill is one of the robust mill in the world. The mill has a coil car facility which can open the coil upto 120 meters of length. This allows for a continuous manufacturing of pipes without any stoppages on account of coil joining and thus, results in highest productivity. In addition, pipes with maximum length of 18 meter can be supplied from the mill.



MANUFACTURING PROCESS

Hot rolled coils are the main raw material for the production of spiral welded pipes. Coils are first mounted on the decoiler and are fed through series of leveler rolls. The coil is then inspected for lamination, slivers or other surface defects, and is followed by edge milling to give bevel shape.

The beveled coil is fed by drive rollers to the forming cage where pipe is formed and both edges are continuously tack welded. Pipe with desired length, is cut using plasma cutters. The pipe is welded at off line welding station from inside and outside using submerged arc welding process (using up to four weld wires in tandem arrangement). Laser controlled guiding systems are used to ensure the best quality weld. Weld seam of pipe is inspected using real time radiography to ensure a defect free weld. Pipe, then is hydro tested as an assurance for quality product. The finished pipe, after end beveling is subjected to various destructive and nondestructive testing.

HELICAL SAW LINE PIPES (HSAW) PRODUCT PROFILE

	ANJAR		PITHAMPUR
PRODUCT PARAMETERS	**MILL 2**	**MILL 3**	**MILL 1**
Production Capacity	1,40,000 TPA	3,00,000 TPA	1,00,000 TPA
Outside Diameter	18" to 72"	24" to 130"	18" to 140"
Wall Thickness	6.4 mm to 19.0 mm	7.1 mm to 25.4 mm	6.0 mm to 20.0 mm
Pipe Length	13.0 meter (max)	18.0 meter (max)	12.0 meter (max)
Material Grade	Upto API 5L X 80 PSL2	Upto API 5L X 80 PSL2	

OUR PRODUCTS - COATING

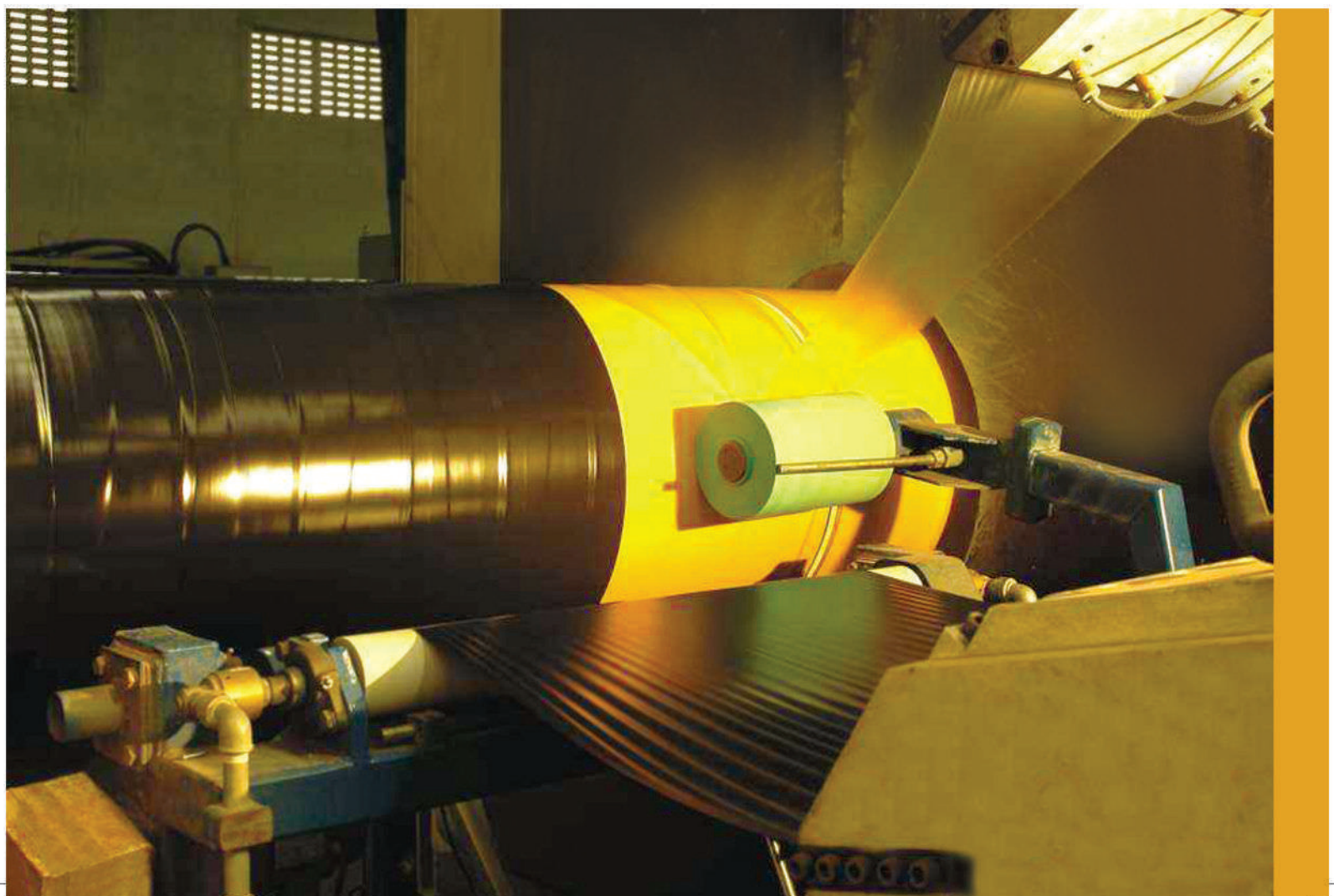
EXTERNAL COATING

Three Layer PE Coating, Three Layer PP Coating, FBE Coating & Tape Coating

Three Layer Polyethylene Coating (3LPE), Three Layer Polypropylene Coating (3LPP), Fusion Bonded Epoxy (FBE) Coating & Tape Coating system are the new generation methods of corrosion prevention and are mainly used for protection against corrosion. PE & PP layers offer mechanical protection to the Epoxy Layer. To protect line pipes from corrosion and to enhance its operational life, the Company offers various options of coatings to the choice of the customer considering the end use of the pipe. The required coating is carried out using the latest technology and proven raw material combination.

SPECIFICATION OF PIPES

Pipe Diameter : 4" to 130"
Plant Capacity : 4 million sq. meters per annum.



MANUFACTURING PROCESS

Three Layer Polyethylene Coating, Three Layer Polypropylene Coating & Fusion Bonded Epoxy Coating systems are applied on a single production line. The pipe is first heated to remove any moisture present on the surface. It is then blast- cleaned to provide the required degree of roughness and inspected for cleanliness. An acidic surface treatment is also given to shot blasted surface, if required. The pipe is then heated by electric induction oven and FBE powder is sprayed on the line pipe to achieve the required thickness. Before the FBE gels, the Co-Polymer Adhesive is applied by extrusion method followed by application of PE or PP Layer. The coated pipe is then allowed to pass through a quenching tunnel for cooling. Further inspection and cut back removal takes place after the pipe is sufficiently cooled.

OUR PRODUCTS - COATING

INTERNAL COATING

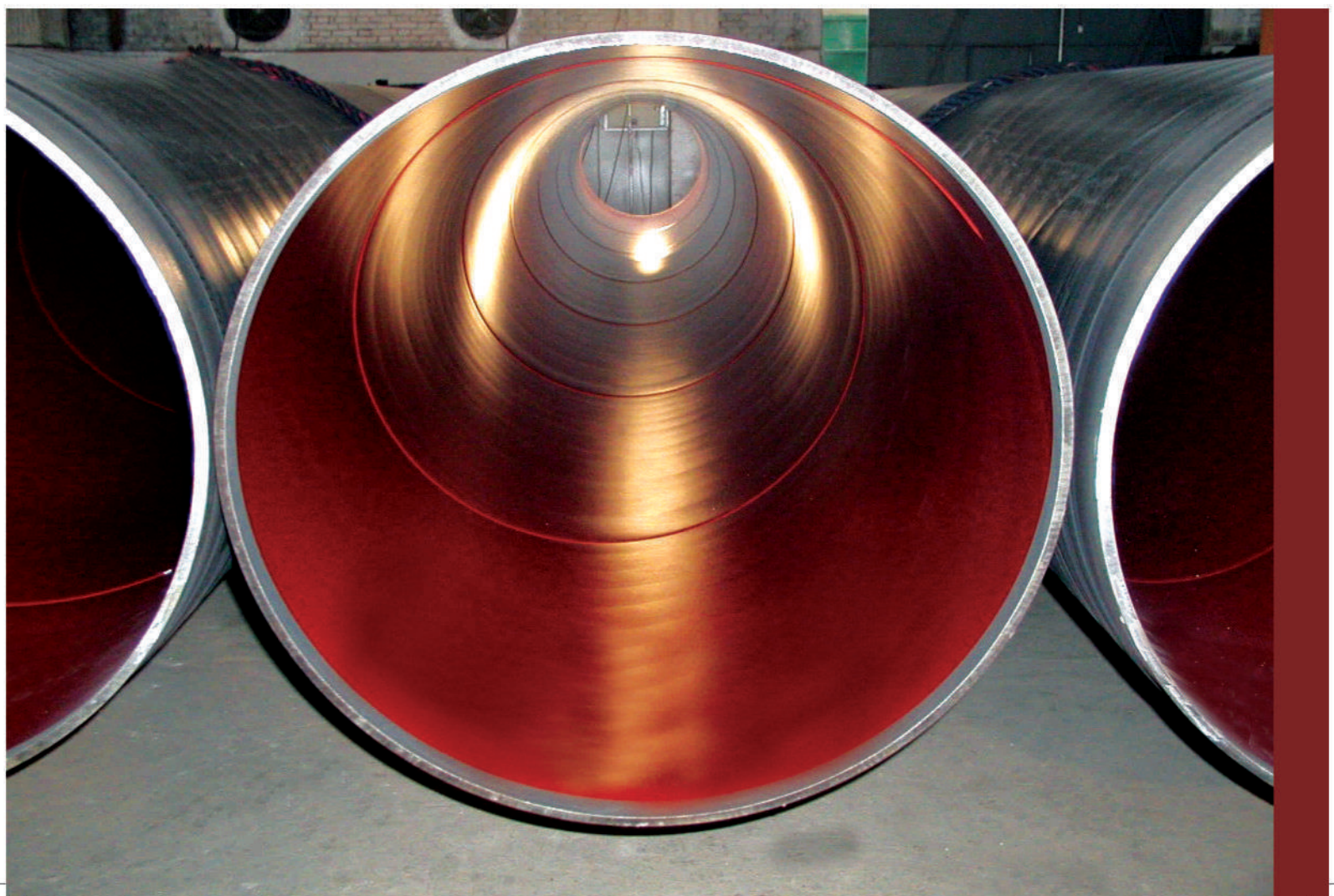
Pipes are coated internally to prevent corrosion and to improve the product flow characteristics. The Company offers coating in the form of two-part liquid epoxy system in thickness range from 75 to 500 microns.

SPECIFICATION OF PIPES

Pipe Diameter : 12" to 130"
Plant Capacity : 4 million sq. meters per annum.

MANUFACTURING PROCESS

The operation begins with the pipe being placed on the rotator of the Shot Blasting Machine and the hose pipe with a rotary turbine travels longitudinally inside the pipe from one end to other, centrifugally emitting the shots-grit mixture with high velocity to provide the required degree of roughness to the internal surface of the pipe. The metallic dust generated during the blast operation is collected by an efficient dust collector. The blast - cleaned pipe is transferred to another rotator by means of hydraulic ejecting and receiving arms. The boom carrying the rotary spray head is inserted inside the pipe, which sprays the epoxy mixture uniformly on the pipe inside surface from one end to other end. The travel speed of the boom is adjusted to meet the required thickness of the epoxy layer as per the specification. The coating can be performed in single or double layers depending on the thickness of coating. The coated pipe is then rolled over the padded skid to the curing chamber and finally to stenciling and storage/dispatch section.



OUR PRODUCTS

OTHER COATING

In addition, the Company also provides following coatings on pipe

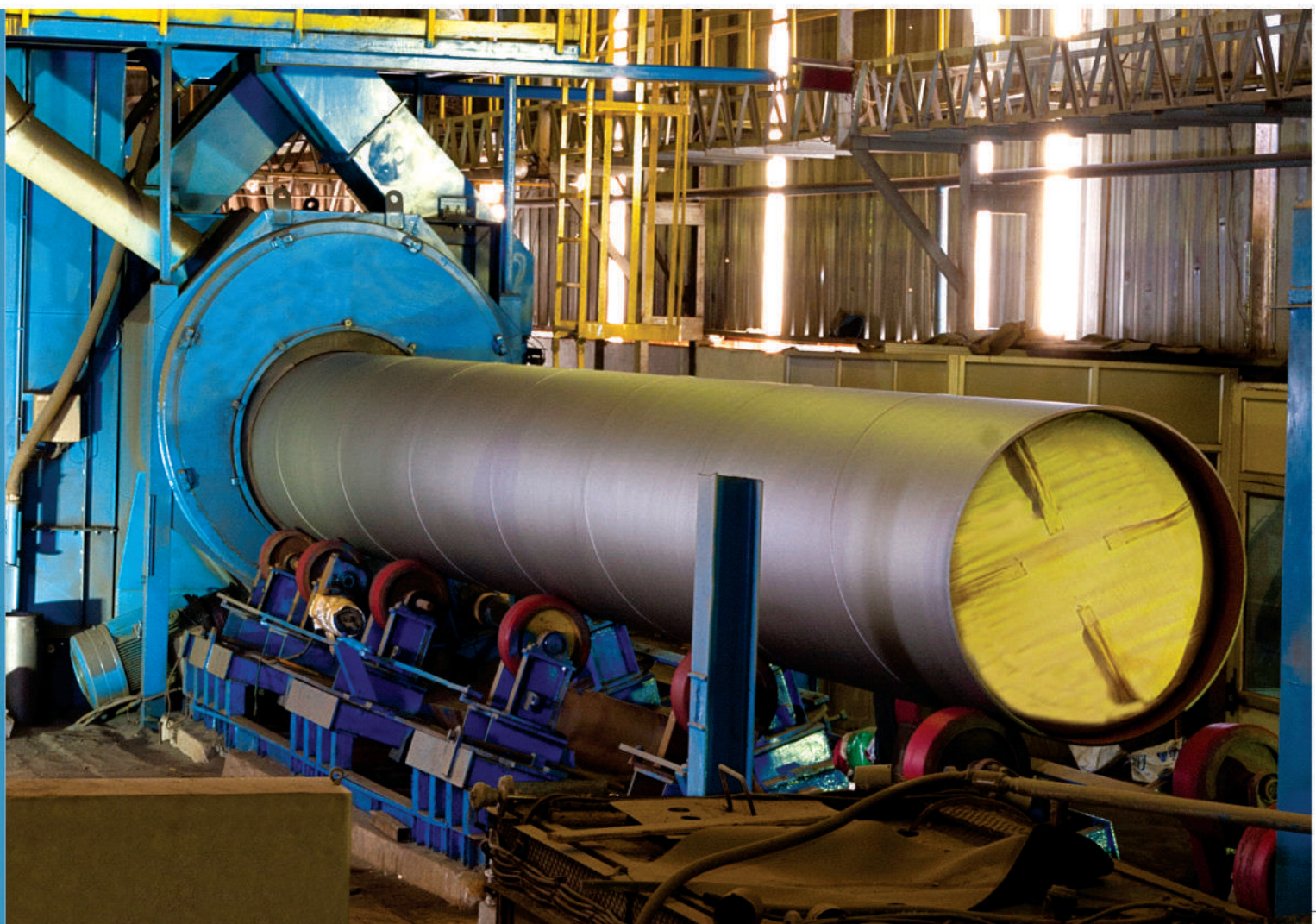
- Polyurathene Coating
- Coal Tar Enamel Coating
- External Cement Mortar Coating
- Internal Cement Mortar Lining
- Concrete Weight Coating

CONCRETE WEIGHT COATING

The concrete weight coating (CWC) is a plant-applied coating used to provide negative buoyancy for offshore pipelines or for river or road crossing applications.

We utilize the compression wrap method or impingement application process which keeps the anti-corrosion coating free of damage. Concrete is applied by wrapping a uniform layer while simultaneously wrapping reinforcing wire within the concrete coating for stability.

CWC PLANT TECHNICAL DETAILS	
Pipe OD Range	Ø 8" - Ø 56"
Pipe Wall Thickness	6 mm - 55.0 mm
Pipe Length	9 to 12.2 meter
Concrete Thickness	30 to 190 mm
CWC Coating Capacity	100 m^3/ Hr.



QUALITY ASSURANCE

Quality has been the hallmark at **MAN Industries** since its inception. With rapid advances in technology and increasingly competitive nature of the business, it has become imperative to be the Leader in terms of quality. Sustainable delivery of quality line pipes is the only focus at **MAN**.

The Company adheres to the highest quality standards by rigorous implementation of the processes involved in manufacturing of line pipes and coating. Beginning with testing of raw material to the actual manufacturing process and then the inspection to transportation of the final product to the customer, everything is done in compliance with Standards Operating Procedure. With various quality certifications such as ISO 9001, ISO 14001, OH SAS 18001, ISO / IEC 17025, ISO /TS 29001, CE Marking, IS0-3834-2 Certifications, API 5L and API 2B along with various inspection and testing processes such as destructive and nondestructive testing, hydrostatic testing, a quality product is an obvious result.

System Certifications & Product License

Certifications	Issued By
API Spec 5L	APIQR
API Spec 2B	APIQR
ISO 9001	TUV Nord
ISO 14001	TUV Nord
OHSAS 18001	TUV Nord
ISO/TS 29001	QCS
ISO/IEC 17025	NABL
ISO 3834-2	QCS
IS 3589	BIS
IS 5504	BIS
CE Marking	QCS

FEW PRESTIGIOUS PROJECTS EXECUTED

Sr. No.	Customer	Country	Grade	Service	Type Meters	Metric Tonne
1	KOC	Kuwait	API 5L X 52 grade	Sour Service	700,000.00	175,000.00
2	SCOP	Iraq	API 5L X 60 grade	Sweet Service	248,000.00	129,000.00
3	GASCO	Abudhabi	API 5L X 65 grade	Sour Service	123,000.00	63,000.00
4	GTCL	Bangladesh	API 5L X 60 grade	Sweet Service	194,000.00	67,500.00
5	IOCL	India	API 5L X 70 grade	Sweet Service	300,000.00	41,000.00
6	ADCO (Technimont S.P.A)	Abu Dhabi	API 5L X 60 / X 65 PSL - 2	Sour, Offshore Service	180,000.00	45,000.00

CLIENTELE + VENDOR APPROVAL

Engineers India Ltd.

Bharat Heavy Electricals Ltd.

Cairn India Ltd.

Gujarat State Petronet Ltd.

Larsen & Toubro Ltd.

Bharat Petroleum Corporation Ltd.

Gas Authority of India Ltd.

IOTL-IOT Infrastructure & Energy Service Ltd

Reliance Industries Ltd.

Hindustan Petroleum Corporation Ltd.

Indian Oil Corporation Ltd.

ONGC, India.

ADCO-Abu Dhabi

ADMA OPCO-UAE

Energy Transfer, USA

Fluor

Gasco-Abu Dhabi

KNPC - Kuwait

KOC, Kuwait

NPCC, Abu Dhabi.

OGC-Oman

PDO, Oman

Petrofac - Abu Dhabi

GASCO - Egypt

GTCL - Bangladesh

PETROBRAS - Brazil

PTT Public Company Limited - Thailand

PETRONAS - Malaysia

Shell Global International B.V.

Qatar Petroleum-Qatar

SCOP- Iraq

Saipem, Italy

ZADCO-Abu Dhabi

Sonatrach - Algeria

SOC, Libya

Technip-Germany

SNC - LAVALIN

BECHTEL

PEMEX

UDT

FOSTER WHEELER

FPAL

TRACTEBEL ENERGIA

PERTAMINA

MC CONNELL DOWELL

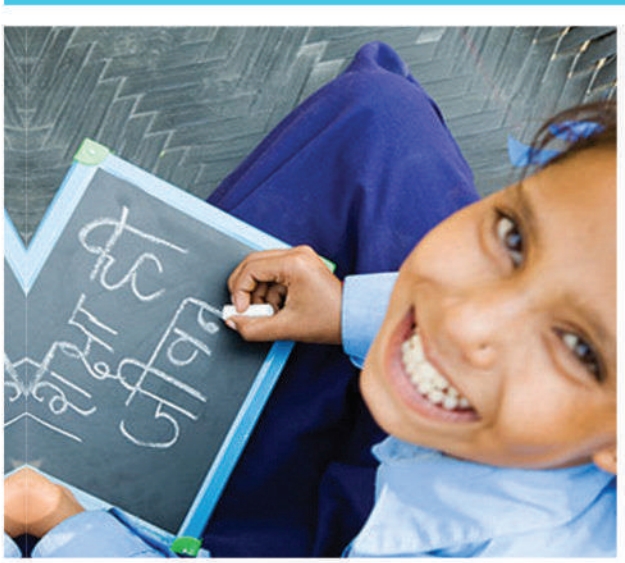
MAN Industries (India) Ltd

the line pipe people

Globally Committed

HEALTH SAFETY & ENVIRONMENT

Man Group is committed to conduct business with a strong environment conscience, so as to ensure sustainable development, safe work place and enrichment of the quality of life of its employees, customers and the community. An Occupational Health Safety and Environment Management System has been developed and implemented in conformity with international standards. Both the manufacturing facilities have therefore been accredited with ISO 14001 and OHSAS 8001 certifications.



CORPORATE SOCIAL RESPONSIBILITY

Man Group has a rich history of corporate social responsibility, a history that has grown and evolved to meet the complexities of today's business world and the challenges of a global society. Social responsibility is a way of life at **Man Group**. The Group contributes towards encouraging education, health care, sustainable livelihood, infrastructure development and espousing social causes.

Man Industries (India) Ltd. has its offices in India and Dubai. The various centers and their addresses are listed below :

CORPORATE & REGISTERED OFFICE

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Email.: enquiry@maninds.org • **Website :** www.mangroup.com

MANUFACTURING FACILITY

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