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TATA DUCTURA
Happiness Guaranteed

"Because *real* happiness flows from within"



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About Tata Metaliks Limited (TML)

Tata Metaliks Limited, a subsidiary of Tata Steel Limited, is one of India's largest manufacturers of foundry-grade pig iron which is used as raw material in industrial castings. The company was established in 1990 and became operational in 1994 with a state-of-the-art manufacturing facility in Kharagpur, West Bengal, India.

About Tata Ductura

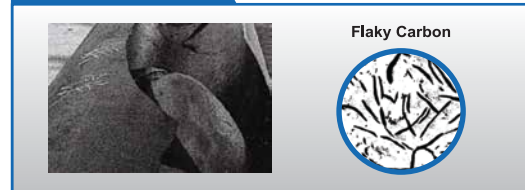
In 2007, with an objective to manufacture and sell superior quality ductile iron pipes in a process-oriented manner with the help of experienced and engaged professionals, Tata Metaliks entered into a joint venture with Kubota Corporation, Japan and Metal One Corporation, Japan. Tata Ductura, the DI Pipe brand from Tata Metaliks, thus began its journey in 2009 from its manufacturing plant in Kharagpur with an installed capacity of 110,000 tonnes per annum which has currently been scaled up to 205,000 tonnes per annum.

In 2016, the Ductile Iron Pipes division of Tata Metaliks was wholly amalgamated with its parent company Tata Metaliks Limited.

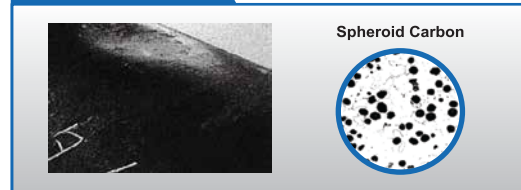
Ductile iron's superiority

Ductile iron's superiority lies in its spheroid graphite microstructure. Since the graphite structure of grey cast iron is linear, under severe loading, stress builds up unevenly around the ends of particles and weakens the metal. However, in ductile iron, since the graphite structure is spherical, similar stress distributes evenly, thereby maintaining strength. Yet, the basic chemical composition of ductile iron is similar to that of grey cast iron, giving it the same excellent anticorrosive properties. Together, these features give ductile iron, excellent resistance to impact, pressure and corrosion.

Grey Cast Iron (CI)



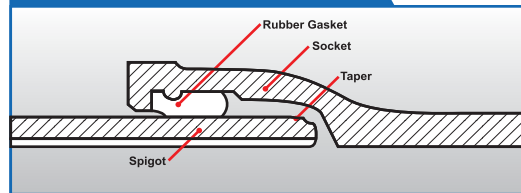
Ductile Iron (DI)



Ductile Iron pipes (DI pipes)

Ductile iron pipes come with socket and spigot ends. Rubber gasket is required as an accessory for all sockets before joining socket and spigot. Ductile iron is known for its longevity. Ductile iron is corrosion resistant and highly durable which makes it the preferred choice for pipeline networks all over the world.

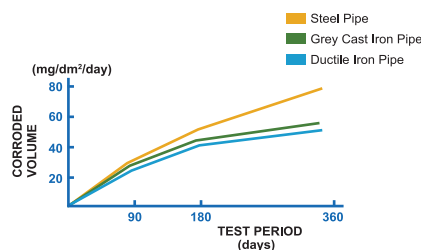
Structure of DI pipe (push-on joint)



Excellent corrosion resistance

Ductile iron is nearly identical to grey cast iron in chemical composition. It also contains far more silicon, carbon and other elements than steel. The resistance of ductile iron to corrosion is also similar to that of grey iron.

Pipe Materials	Corroded Volume (gr/cm ²)	
	After 45 days	After 90 days
Ductile Iron Pipe (DI)	0.0060	0.0090
Grey Cast Iron Pipe (CI)	0.0060	0.0103
Seamless Steel Pipe (MS)	0.0170	0.0273
Welded Steel Pipe (MS)	0.0294	0.0396



Superior mechanical properties

COMPARATIVE ANALYSIS - DIFFERENT PIPE MATERIAL

S No	Parameters	Cast Iron	Ductile Iron	Mild Steel	GRP	HDPE	BWSC	uPVC
1	Tensile Strength (Kg/cm ²)	1800	4200	4100	Varies in axial and hoop directions, depends upon Glass Reinforcement.	1600	Thin steel cylinder does not effectively counter any tensile load.	140
2	Modulus of Elasticity (kg/cm ²)	7.5 x 10 ⁵	1.7 x 10 ¹⁰	2.1 x 10 ¹⁰	15 x 10 ⁵	9 x 10 ⁷	3.5 x 10 ⁵	3 x 10 ⁶
3	Allowable Operating pressure (kg/cm ²)	LA- 12, A- 18, B- 24	K7 - 12.5, K9 - 36	Upto 50	15	16	12.5	6.0
4	Corrosion resistance	High	High	Moderate	Very High	Very High	Low	High
5	Life (years)	>80	> 75	30	30	50	15	15
6	Maintenance	Low	Low	Moderate	High	Low	High	High
7	Smoothness (C value)	110	140	140	145	145	110	140
8	Weight (Tonnes/m ³)	6.8 - 7.8	7.05	7.85	1.8-1.9	0.95	2.5	1.4-1.45
9	Jointing system	Lead joint, Tyton joint	Push fit, Mechanical joint	Welded	Reka Coupling	Fusion welded	Welded, pushfit	Push fit, screwed
10	Ease in Handling	Heavy	Moderately Heavy	Moderately Heavy	Light weight	Light weight	Heavy	Light weight

Product portfolio

Tata Metaliks is committed to exceed customer's expectations in product quality, supply and service. The company manufactures ductile iron pipes conforming to:

Nominal Diameter	Class	Standard Length (m)
80, 100, 125, 150, 200, 250, 300, 350,	K7, K9	5.5
400, 450, 500, 600, 700, 750, 800	C25, C30, C40	

Tata Ductura is committed to exceed customers' expectations in product quality, supply and service. The company manufactures ductile iron pipes conforming to IS 8329 : 2000, ISO 2531 : 2009, BS EN 545 : 2010, BS EN 598 : 2007 + A1 : 2009, Kite Mark and WRAS certificates for cement.

The range comprises ductile iron pipes suitable for push-on joints.

DN	Pressure Class		Thickness Class		Allowable Operating Pressure (MPa)	
	Preferred Class	Nominal Thickness (mm)	Class	Nominal Thickness (mm)	K9	**C - Class
80	C40	4.4	K9	6.0	6.4	4.0
100	C40	4.4	K9	6.0	6.4	4.0
150	C40	4.5	K9	6.0	6.4	4.0
200	C40	4.7	K9	6.3	6.2	4.0
250	C40	5.5	K9	6.8	5.4	4.0
300	C40	6.2	K9	7.2	4.9	4.0
350	C30	6.3	K9	7.7	4.5	3.0
400	C30	6.5	K9	8.1	4.2	3.0
450	C30	6.9	K9	8.6	4.0	3.0
500	C30	7.5	K9	9.0	3.8	3.0
600	C30	8.7	K9	9.9	3.6	3.0
700	C25	8.8	K9	10.8	3.4	2.5
800	C25	9.6	K9	11.7	3.2	2.5

** Preferred 'C' Classes as per ISO 2531 : 2009