

I N S P I R E D B Y S T E E L



About Beekay Group

The Beekay Group started its journey in West Bengal nearly 50 years ago and in the course of time has traversed the country with its sights set on the world. The company has moved up the value chain as one of the most prestigious names in the steel industry and has won many accolades for its stringent quality standards. The Company for more than a decade has been serving the steel industry as an external processing agency for a few primary producers in the trade. Using this all-round expertise in the production of quality TMT bars, Beekay has set up a state-of-the-art TMT bar manufacturing unit at Parwada, Visakhapatnam using Turbo Quench® technology from Germany.

With plants in Andhra Pradesh, Tamil Nadu, Jharkhand and West Bengal, Beekay produces the widest range of steel products and posts an annual turnover of over Rs.1200 crores.

The company manufactures customized steel using methods such as Hot Rolling, Cold Drawing, Thermo Mechanical Treatment (TMT), Peeling & Grinding and Machining. Beekay's steel is used extensively in Automobile Industry, Construction Industry, Infrastructure Projects, Railways and various Engineering Industries.

Beekay is proud of its formidable client list that includes Tata Projects Ltd., Amtek Group, LMW Group, Amrep Group, Mahindra & Mahindra, Tata International, L&T Ltd., Vedanta, TVS Group, Aditya Birla Group, BHEL, Raymonds Group, BEML, The Ramco Cements, Ultratech Cement, Bajaj Electricals Ltd., Megha Engineering & Infrastructure Ltd.(MEIL), NALCO, Dilip Buildcon Ltd., Bridge & Roof Co. Ltd., Rain CII Carbon (Vizag) Ltd. In the International arena, Beekay's products have successfully found markets in countries like Mexico, New Zealand, Canada, UK, Saudi Arabia, Baharin, UAE, Qatar, Philippines, Myanmar, Bangladesh and Sri Lanka.

More and more customers today are happy to pay a premium price for the quality hallmark of Beekay.

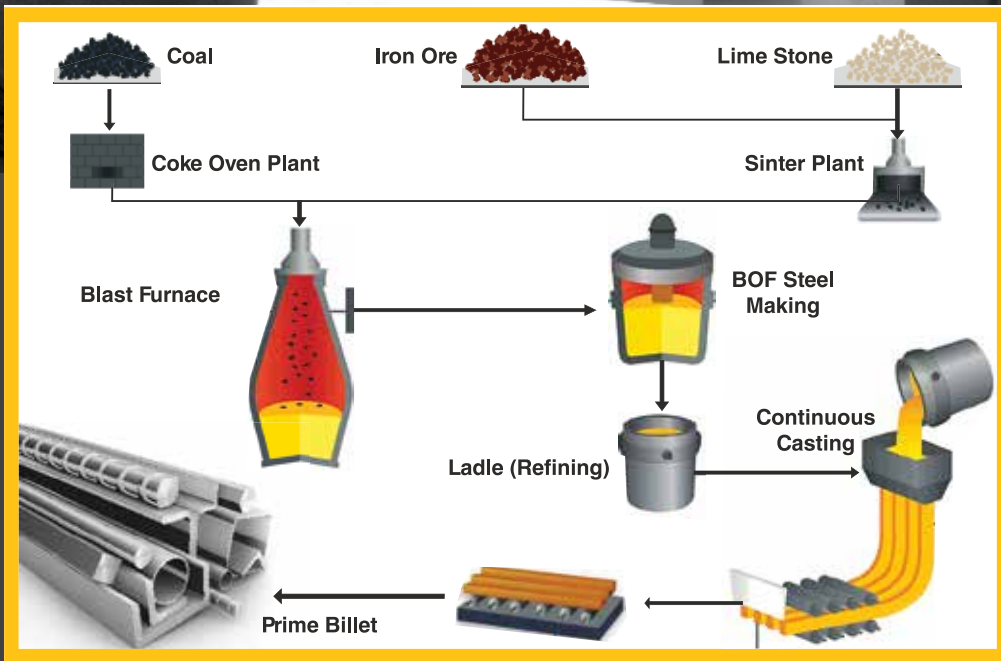


Another feather in the cap

Andhra's First Fe 500D TMT Plant

Andhra's first Fe500D TMT Plant the Parwada unit, will roll out high quality Fe500D TMT bars, the first of its kind in Andhra Pradesh. Made from the best quality billets from Primary Steel Producers, these bars will be a unique choice for all purpose concrete reinforcement structures, bridges, flyovers, dams, power plants, industrial structures, high-rise buildings and other superstructure based needs. Fe500D bars are available in sizes of 8, 10, 12, 16, 20, 25, 32 mm at the retail/distribution network across Andhra Pradesh.

Prime Billets Through Primary Steel Making Route



The Inside Story of Beekay Turbo TMT

Beekay Turbo TMT bars are produced in its state-of-the-art plant under close supervision of our highly experienced engineers and metallurgists. The raw materials used are made from virgin iron ores through Blast Furnace-Basic Steel Making-Secondary Refining Billet Casting route with lowest amount of impurities. Cast Billets are hot rolled in fully automated rolling mill equipped with computer controlled process monitoring devices to ensure uniform properties in each rebar in three successive stages namely:

Turbo Quenching - The rebars made with Turbo Quench technology from Germany are rapidly quenched by the hot rolled bars by a special water gush spray system. This hardens the surface of the bar to a depth optimized for each section through formation of martensitic rim while the core remains hot and austenitic.

Self-tempering - When the bars are released from the quenching box, the core remains hot compared to the surface, allowing heat to flow from the core to the surface, causing tempering of the outer martensitic layer into a structure called "Tempered Martensite". The core still remains austenitic at this stage.

Atmospheric Cooling - This takes place on the automatic cooling bed where the austenitic core is transformed into a ductile ferrite-pearlite structure. Thus the final structure consists of an optimum combination of a strong outer layer (tempered martensite) with a ductile core (ferrite-pearlite). This gives Beekay Turbo TMT bars its unique combination of higher strength and ductility.

Benefits of Tungsten Carbide Rolls

Finished Reinforcement Bars

The use of 'State-of-the-Art' Tungsten Carbide rolls in Beekay Turbo TMT bars makes our product superior in the market. This process, known as Powder Metallurgy, replaces the conventional Pyro-Metallurgy and is one of the most advanced technologies used by market giants like TATA, SAIL, RINL and JSW.

Comparison of Conventional Rolls and Tungsten Carbide Rolls

Parameters	Conventional rolls	Tungsten-Carbide rolls
Corrosion resistance	Corrosion resistance is less	Superior corrosion resistance
Section weight tolerance	Inconsistent	Absolutely consistent
Bond strength	Inconsistent	Absolutely consistent
Yield strength	Inconsistent	Absolutely consistent
Percentage Elongation	Inconsistent	Absolutely consistent
Surface shine	Dull	Mirror-Like Shine
Ribs Uniformity	Not uniform	Uniform for better gripping
Build Quality	Inaccurate shape and embossing	More precise and accurate shape and embossing
Cost of Production	Low	High





Beekay Turbo's Tungsten Carbide rolls finished reinforcement bars are superior because of their

1. **Low maintenance and high resistance:** The use of powder metallurgy in the making of the TMT bars makes the surface smooth, thus, making them resistant to wear and tear, promising lower maintenance cost and longer life.
2. **More yield and production:** The use of Tungsten-Carbide rolls increases the yield, build and bond strength leading to consistent section weight tolerance, much superior to conventional rolls.
3. **Reduction in cost:** The high durability, resistance and strength of Tungsten-Carbide rolls in Beekay Turbo TMT bars ensures that it lasts longer than conventional rolls, thus, reducing the maintenance cost. Our production process has been optimised with detailed powder metallurgy engineering to reduce the cost of production ensuring customer satisfaction.
4. **More visible surface shine:** The mirror-like surface shine of the TC rolls sets them apart from the conventional rolls symbolizing their superior quality.
5. **Uniform Ribs:** The superior engineering and State-of-the-Art powder metallurgy technology create uniformed ribs that ensure better gripping with the cement essential for a long-lasting bond.
6. **More accurate Dimensional tolerance:** The use of powder metallurgy in forming Tungsten-Carbide rolls enables us to achieve more accuracy in dimension tolerance.

Our focus

We focus on construction safety and customer satisfaction, realized by cutting-edge technology in the making of our product, ensuring durability, longevity and cost-effectiveness.

Why is Beekay Turbo TMT Fe500D superior to others in the market?

Sulphur and phosphorus (S&P) are harmful impurities in steel. High levels of phosphorus can lead to the steel getting very brittle under extreme cold conditions and thus becoming vulnerable to cracking. High levels of sulphur can lead to a condition in which the melting point of steel gets lowered thereby reducing its strength dramatically under high temperature conditions. Lower levels of S&P can be achieved only through advanced steel making technology. Such low S&P levels, as specified in the 500D specifications of BIS, are almost impossible to be achieved through normal scrap and induction furnace route. Modern infrastructure and facilities coupled with stringent quality control help Beekay to produce high-grade TMT bars in strict compliance with grade specifications.

Chemical properties

Properties	Unit	BEEKAY TURBO Fe500D	IS 1786 Fe500D	Primary Products Fe500D
Carbon	%	0.25 max	0.25 max	0.25 max
Carbon Equivalent	%	0.40 max	0.42 max	0.40 max
Sulphur	%	0.035 max	0.040 max	0.035 max
Phosphorus	%	0.035 max	0.040 max	0.035 max
Sulphur + Phosphorus	%	0.070 max	0.075 max	0.070 max

Mechanical Properties

Properties	Unit	BEEKAY TURBO Fe500D	IS 1786 Fe500D	Primary Products Fe500D
Yield Stress	N/mm2	540 min	500 min	525 min
Ultimate Tensile Strength	N/mm2	600 min	565 min	600 min
UTS/YS	Ratio	1.12 min	1.10 min	1.15 min
Elongation	%	18 min	18 min	18 min



Beekay Turbo TMT Key Advantages

Industry Presence and Experience

The company has a vast experience in manufacturing more than **2 Million Tons** of TMT Bars. Beekay already having a major industry presence in Southern India will cater to the needs of the customers in the entire Southern region as well as portions of Western, Central and Eastern India from its newest TMT unit at Parwada, Visakhapatnam.

Quality Control

The TQM (Total Quality Management) module being maintained at the Parwada unit includes monitoring and recording of all vital parameters of reheating furnace, rolling, quenching and cooling through computer controlled process and ensures uniform quality and safety standards.

The Beekay Trust

Beekay Turbo TMT Bars combine the best of strength and ductility and have an unparalleled quality consistency. These are available through distribution and dealers' network, assuring company-prescribed price and correct weight at the point of purchase.

Beekay Turbo TMT Attributes

Bendability

Beekay Turbo TMT Bars have excellent bendability due to the unique microstructure. The bars can be bent to the exact angle desired by the design around mandrels unlike ordinary rebars and is much smaller in diameter than what is specified in IS:1786, which is a genuine advantage.

Weldability

Beekay Turbo TMT Bars have low carbon content and has a better weldability. The bars can be butt-welded or lap-welded using ordinary electrodes of matching strength. In manual arc welding, no pre-warming or post-welding treatment is necessary.

Superior Rib Pattern

Beekay Turbo TMT Bars produced through CNC Machined Rolls have unique rib patterns with greater rib depth and closer rib spacing. The ribs are made using computer controlled CNC Rib cutting machines which provide uniform bonding with the concrete.

Seismic Resistant

Beekay Turbo TMT Bars have superior seismic (earthquake) resistant properties. This ensures minimum structural damage and minimizes earthquake related casualties. UTS YS ratio and percentage elongation are important properties in a rebar that reflect the ability to handle the pressure of earthquakes. Beekay Turbo TMT Bars have higher UTS YS values to deliver better performance always.

Corrosion Resistant

Beekay Turbo TMT Bars are produced by TMT technology and not by cold twisting. There is no residual stress in the bars which results in superior corrosion-resistant characteristics while being embedded inside concrete.



Value Additions

Packaging

Each Beekay Turbo TMT Bar is made in a fixed length of 12 metres to ensure standard processing causing less wastage during fabrication. These bars are supplied section-wise in convenient pre-packed and tagged bundles with a fixed number of pieces per bundle.

Recommended Consumer Price (RCP)

Each Beekay Turbo TMT Bar is sold at RCP for better transparency. The RCPs are displayed at all our dealer outlets.

Savings in weight

	Specific Wt.	BIS Standard	Market Standard	Beekay Turbo TMT Bars
Size	Gm/m	Tolerance gm/m %	Tolerance gm/m %	Tolerance gm/m %
8	395	367 to 423 ± 7	387 to 410 +4 to -2	317 to 383 -3 to -6
10	617	574 to 660 ± 7	605 to 642 +4 to -2	580 to 598 -3 to -6
12	888	844 to 932 ± 5	870 to 924 +4 to -2	852 to 861 -3 to -4
16	1580	1501 to 1659 ± 5	1548 to 1643 +4 to -2	1517 to 1533 -3 to -4
20	2470	2396 to 2544 ± 3	2445 to 2519 +2 to -1	2408 to 2421 -2 to -2.5
25	3850	3735 to 3965 ± 3	3812 to 3927 +2 to -1	3754 to 3773 -2 to -2.5

