



MINAR TMT
TEMPCORE Fe 500D



MINAR ISPAT PVT. LTD

(ISO 9001 - 2015, ISO 14001- 2015, 50001 - 2011, 18001 - 2007,
ISI Certified. Tempcore Certified)
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MINAR TMT
TEMPCORE Fe 500D



THE POWERFUL
3 LAYERS

THE TECHNOLOGY. THE WORLD.



**STRENGTHENING
THE NATION WITH THE
POWER OF STEEL**



MINAR TMT
TEMPCORE Fe 500D



EXPLORE THE UNSEEN SECRET OF TECHNOLOGY

Everybody want to see their biggest dreams endure the test of time and last for all eternity. When Shah Jahan built his most ambitious project, the magnificent Taj Mahal, he did everything to make to last forever . We are sure that you never want to see your dream projects go down in tough fights with time-succumbing to heat, rain or earthquake. Many a research has been taking place across the globe to create highly enduring steel bars that can withstand the test of time.

Tempcore technology developed by Centre de Recherches Metallurgiques (C R M) Belgium proved a huge leap in the technological innovations on TMT steel bars. Minar Ispat Pvt.Ltd, the flagship company of the renowned Minar Group brings to you CRM Belgium technology's most exciting power secret!

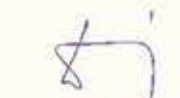


TEMPCORE Trade Name Licence

We, CRM, whose registered office is situated Boulevard de la Plaine, 5 in B-1050 Brussels (BELGIUM), certify hereby that MINAR ISPAT PVT. LTD, for the mill located at No. 13/160, Kuttikkattoor, Mavoor Road, District Calicut, KERALA 673008 - India, has passed successfully the TEMP CORE audit procedure and is therefore authorised to use TEMP CORE trade mark for IS 1786-2008 size 8 mm to 25 mm for Fe 415D, size 8 mm to 20 mm for Fe 500D and size 8 mm to 16 mm for Fe 550D steel grades rebars. This right of trade mark use is restricted to products manufactured, delivered and used in INDIA.

This Certificate can be used for advertising and certification purposes.

Liège, February 25, 2013


B. MAIRY
CFO CRM Group
Finance, IP & Contracts


J.C. HERMAN
CEO CRM Group
General Manager

CRM audit
Centre de Recherches Metallurgiques s.r.l.
Avenue du Bois Saint Jean 21, 1910 - B-4050 Liège - Belgique. Tél. +32 (0)4 334 6211 - Fax +32 (0)4 334 64 64
TVA: BE 0456113125 - BSN: 1456 58 296247087901 57 - BIC: BSWBGB33

ANYTHING ELSE WOULD BE SOMETHING LESS!

When you think of an incredibly enduring and long lasting dream project, think Tempcore! A world class quality Trademark Certification by Centre de Recherches Metallurgiques (C R M), Belgium. That is the ultimate! Anything else would be definitely something less! Tempcore technology employs a metallurgical process that assimilates heat treatment and self tempering stages to a single process. The system of assimilation is exclusive to the technology of CRM and has been proved to impart superior metal strengthening and durability qualities to the TMT Steel Bars. CRM Belgium confers MINAR with Tempcore trade mark license, thus making it an exclusive and unique TMT steel manufacturer in India.



THE POWERFUL THREE LAYERS



Three layers depicting
the international Quality



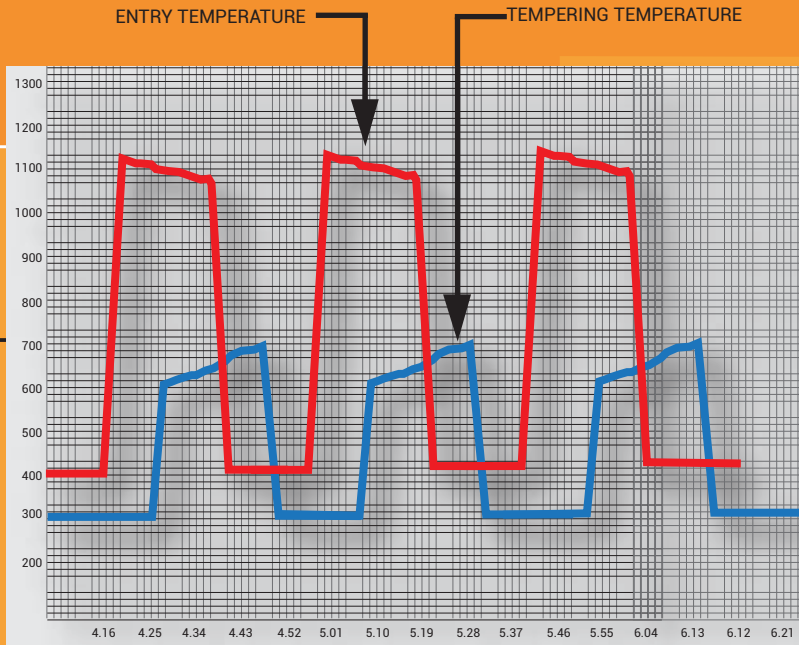
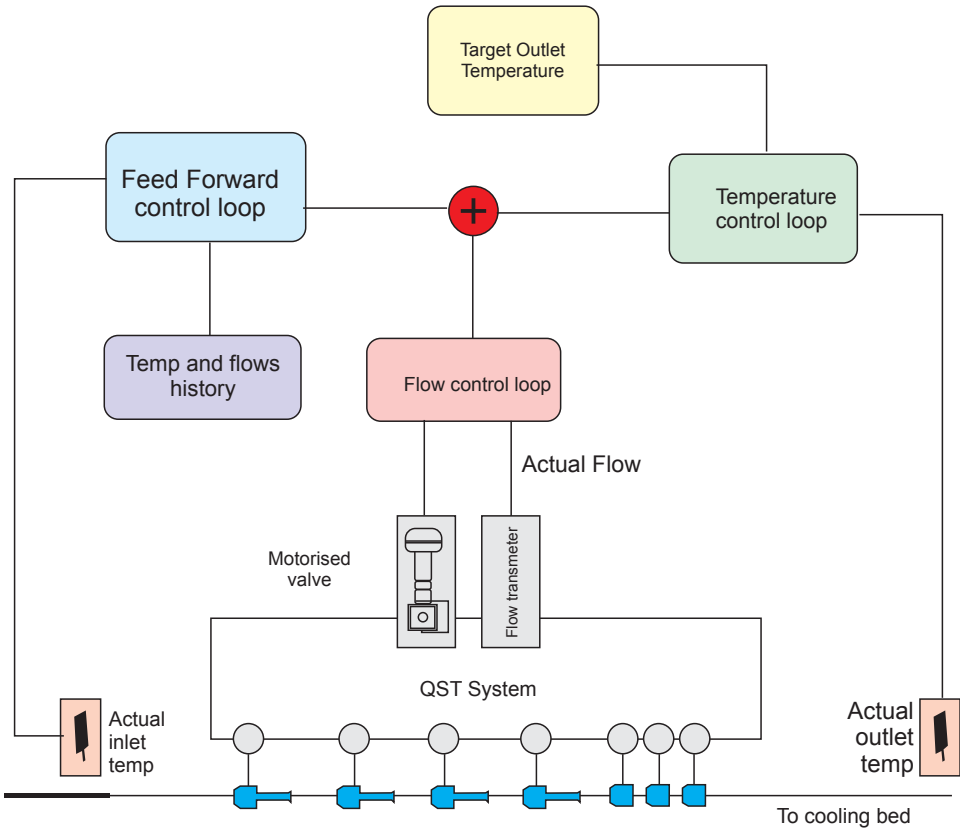
**THE POWERFUL
3 LAYERS**

THE TRENDSETTING TEMP CORE TECHNOLOGY

Tempcore steel bars are thrice fortified by a concealed secret of three layers that enable it to with stand any challenge of the natural forces. Tempcore Technology, developed by CRM (Centre de Recherches Metallurgiques), Belgium proved a huge leap in the technological innovations on TMT steel bars, imparting incredible strength, longevity and endurance to all dream construction projects.

ONLINE COMPUTER CONTROLLED TMT SYSTEM

Minar Ispat implements most advanced technological resources for the manufacturing process of Tempcore steel bars. We have a computer controlled TMT system, operated online. Entry temperature of the rebar to QST system is recorded through inlet pyrometer. The tempering temperature is predetermined based on the water temperature and entry temperature. The required water flow calculation is done in the Program Logic Controller (PLC). The PLC will control the motorized valve and allow only the calculated value of water flow to QST system. The implementation of state-of-the-art technology ensures perfection in result.



INLET - 1056

OUTLET-597

CHEMICAL COMPOSITION

ELEMENT	Unit	IS: 1786 Fe 500D	Minar TMT TEMPCORE 500D*
CARBON	%	0.250 max	0.230 max
CARBON EQUIVALENT (C+Mn/6)	%	0.420 max	0.390 max
SULPHUR	%	0.040 max	0.035 max
PHOSPHORUS	%	0.040 max	0.035 max
SULPHUR & PHOSPHORUS	%	0.075 max	0.065 max
MANGANESE	%	*****	0.900 max
SILICON	%	*****	0.300 max

MECHANICAL PROPERTIES OF MINAR TMT TEMPCORE

PROPERTY	Unit	IS:1786 Fe 500D	Minar TMT TEMPCORE 500D*
YIELD STRENGTH (YS)	N/mm ²	500 min	520 min
TENSILE STRENGTH (UTS)	N/mm ²	565 min	585 min
UTS/YS	Ratio	1.10 min	1.12 min
ELONGATION	%	16 min	18 min

MASS/METRE OF TMT BARS

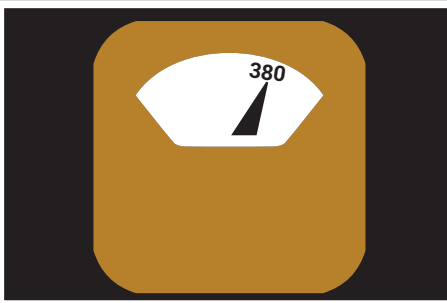
IS 1786:2008 WEIGHT IN KG/M			MINAR TMT WEIGHT IN KG/M		
	Normal	Max	Min	Normal	Max
	0.395	0.423	0.370	0.380	0.400
	0.617	0.66	0.585	0.600	0.620
	0.888	0.932	0.850	0.870	0.890
	1.58	1.659	1.520	1.550	1.590
	2.47	2.544	2.400	2.420	2.550
	3.85	3.965	3.750	3.800	3.970



SPECTRO LAB



UTM MACHINE



QUALITY MEASURING INSTRUMENT



MINAR TMT
TEMPCORE Fe 500D

BEHIND THE TEMPCORE PROCESS

The TEMPCORE Process has been developed in the early seventies by C.R.M., Belgium in order to manufacture high yield strength weldable concrete reinforcing bars from mild steel. It consists in subjecting the hot rolled steel to an in-line heat treatment in 3 successive stages

Stage 1

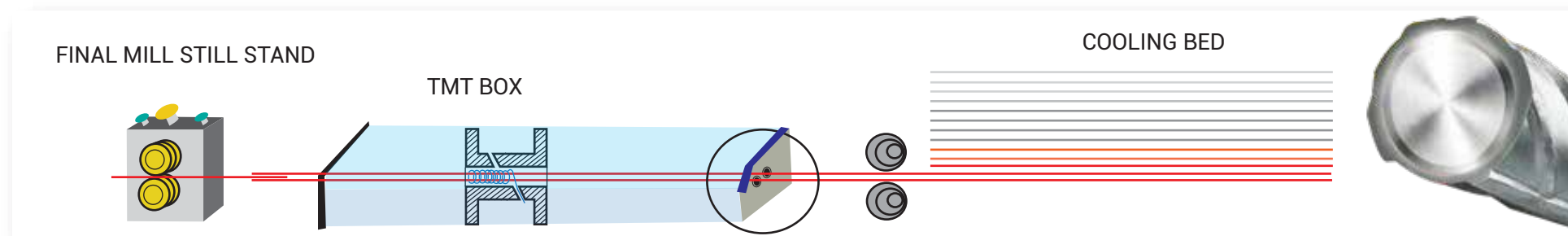
As soon as it leaves the final mill stand, the product is rapidly and energetically cooled through a short cooling installation, where it undergo surface hardening (martensite layer).

Stage2

As soon as this quenching operation is stopped, the surface layer is Tempered by using the residual heat left in the CORE of the bar (self tempering of the martensite layer) ; hence the name Tempcore.

Stage 3

The third stage takes place while the product lies on the cooling bed where the bar is subjected to normal cooling down to ambient temperature (transformation of the residual austenite in the core.)



THE TEMPCORE SUPREMACY



MINAR TMT
TEMPCORE Fe 500D

Tempcore outclasses all other TMT steel bars by its supreme quality that make it the world's favourite choice.

Lowers Steel Consumption
International Quality Steel product at local affordable prices
High weldability and ductility
High yield strength with high elongation
High thermal stability

- Ease of availability
- Better corrosion resistance
- Higher Grades easily available Fe 500D,
- Better resistance of fatigue
- Higher bond strength
- Higher resistance to strain aging
- Availability of International grades
- Ease of use leading to less construction time
- Most suited for seismic zones as nearly 60% of India falls in high seismic hazard category



WE DELIVER THE STEEL THE WORLD PREFERS

Situated in Calicut, Kerala, Minar Ispat Pvt. Ltd. is licensed to manufacture Tempcore Steel Bars with the recognition and licence from the prestigious Centre de Recherchus Metallurgiques (CRM) Belgium. Stringent quality assurance measures are in place at each phase of production, ensuring paramount performance. Minar Ispat is immensely proud to bring the world's favourite Tempcore TMT steel bars to the discerning customers in India. Our highly efficient marketing and distribution network is sure to take it to you wherever you are, when you are in need.



MD'S MESSAGE

I'm delighted to share with you the various Achievements, Awards, Products, Technology that the Group has attained.

Our business principle is to delight our stakeholders-you, our consumers, dealers, investors and our employees with more than they expect. Back in 1995, we made a very humble entry as steel manufacturer and today we have evolved into a highly reputed brand name in the industry. I'm indeed proud of our achievements and we are here simply because of our 'no compromise' quality approach in all that we do.

MOHAMMED SHAFI
Managing Director

MINAR GROUP – THE SAGA OF A SCINTILLATING STEEL EMPIRE

The saga of Minar Group, a world renowned name in steel manufacturing begins in 2006 with a modest entry into business, which scaled enviable heights of excellence through profound foresights and uncompromising commitment. Today the Group is basking in the glory as one of the most sophisticated, prolific and profitable steel manufactures and distributors in India. Head quartered in the industrial belt of Palakkad, Kerala, the Minar Group, spearheaded by a powerful team of NRI entrepreneurs, today integrates group companies namely, Minar Ispat Pvt. Ltd., Minar Alloys & Forgings Pvt.Ltd., and Minar Castings Pvt. Ltd., all of which are ISO 9001 - 2015, ISO 14001- 2015, 50001 - 2011, 18001 - 2007, ISI Certified.

Stringent adherence to quality conforming to international standards, right from the raw materials to the finished products, Minar Group is esteemed as futuristic and reliable by regional and national clientele. National and international accolades naturally followed as recognition for the Group's excellence.

VISION & MISSION

Driven by integrity, inspired by understandings, forced by experiences, with an urge for excellence we stand committed to deliver your thoughts, strengthening your dreams.

With a vision as high as the sky, Minar Group steadily expands its brand portfolio, product line and distribution network. The Group envisage to explore new horizons that will enable us to serve the nation and society better.

We strive to achieve our vision through predetermined values and ethics and we relentlessly review operations in accordance. We value our suppliers, our customers, our environment and furthermore our people.

We strictly adhere to environmental and safety policies and are repeatedly awarded for our excellence in pollution control and safety.



THE SECRET OF LONG LASTING HAPPINESS

To endure your dreams for generations, choose MINAR TMT Tempcore Steel Bars. The world class quality, strength and endurance, will ensure that your happiness will last really long. The power of MINAR TMT TEMPCORE Steel Bars to resist earthquake and other natural forces will bestow a happy life not just for you but your future generations too.

When you choose MINAR TMT TEMPCORE Steel Bars, you are joining the great movement of strengthening the nation with the power of steel.



MINAR GROUP. A STEEL EMPIRE WITH A HUMAN HEART

Minar Group , endowed with a human heart, unreservedly engages itself in social, environmental and humanitarian activities as a responsible corporate citizen. Keen to the welfare of the employees, all companies under Minar Group treats the staff members as the integral part of the company, ensuring their well being and satisfaction.