



SHAPING VISIONS
INTO REALTY

RATHI
SHAKTIMAN Fe-500
THERMEX STEEL BARS

Lotus Temple, Delhi : This complex and immense white architectural marvel was conceived by architect Faribuz Sahba in 1986. It is composed of three ranks of nine petals surrounded by nine reflecting pools, The inherent strength of RATHI® SHAKTIMAN THERMEX® Steel Bars further augments the magnificence of this architectural wonder.



Rooted in History. Routed Towards Tomorrow and Beyond.

RATHI®, a name that is at the core of numerous landmarks, infra-structural marvels and millions of homes for over six decades now. At RATHI®, the art of making steel is a magnificent obsession, And it has been so since the early 1940s, when a vision took the shape of reality

Starting from a re-rolling mill with a production capacity of 369 kilograms per day, today RATHI® has a production capacity of over 1 million tonnes annually, being produced at multi-locational, state-of-the-art plants. RATHI® stands tall as the most trusted and reputed brands for high strength steel bars in the secondary steel sector of India. The company takes pride in being the exclusive licensee for Thermex steel bars for entire Northern India in collaboration with H & K Germany.

Through decades, the company has remained at the forefront of the secondary steel sector with Techno-Innovations. It was the first to introduce Tor Steel in India in collaboration with Tor Isteg Steel Corporation, Germany which ensured 40% saving in steel consumption.

No wonder that RATHI® is at the heart of monumental landmarks like the Lotus Temple, Delhi Metro Rail, LIC Building, the Chattarpur Mandir Complex, Narora Atomic Power Station, numerous flyovers, skyscrapers and millions of Indian homes.



The Best Just Got Better

For three generations, We, at Rathi walked the extra mile to keep pace with the emerging need of our customers and consistently deliver products of the highest international standards.

Now, with extra high demands of today's construction needs, we take pride in offering you yet another exceptional branded product that exceeds your highest expectations.

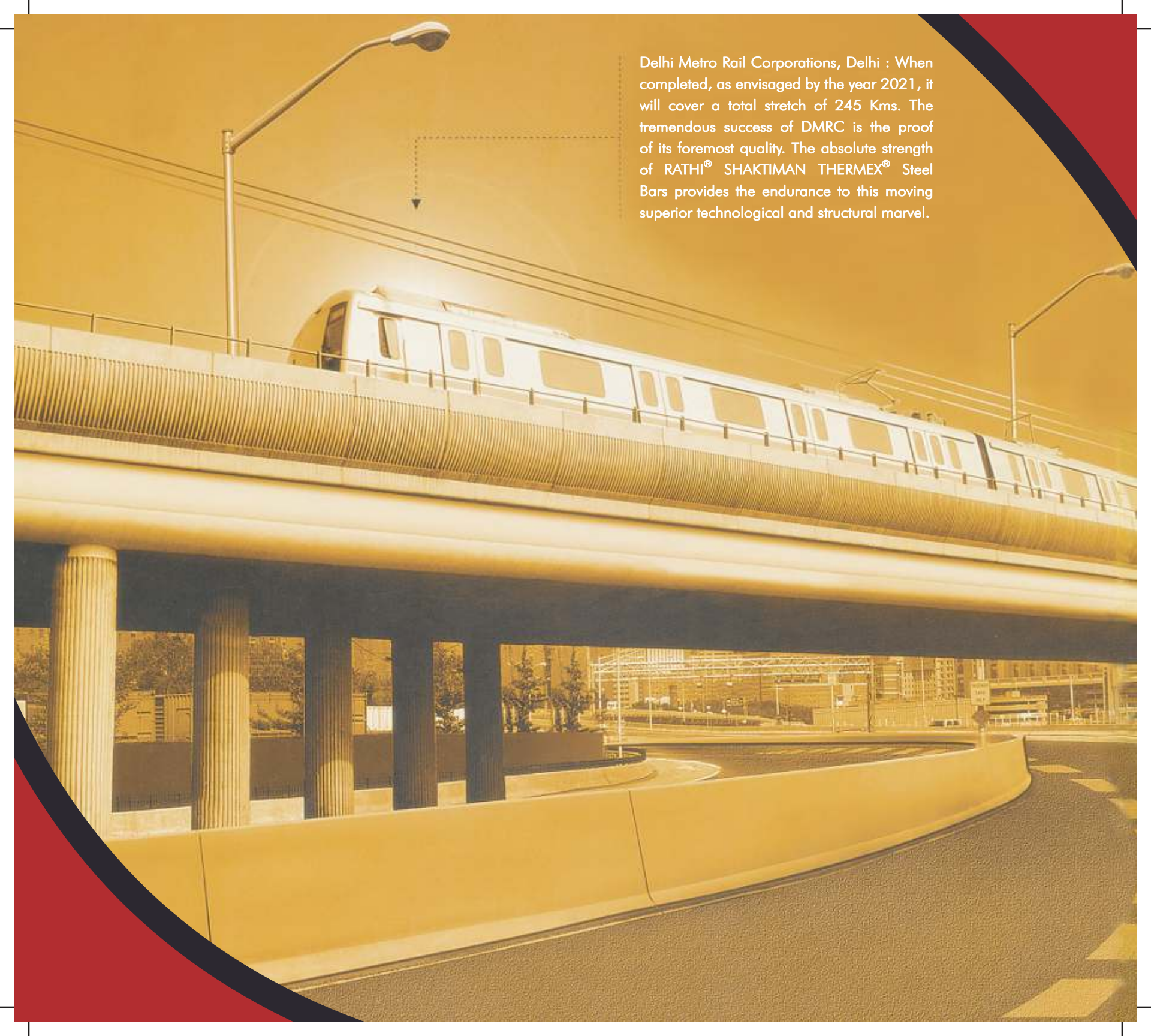
Now Launching

New Generation High Grade Steel Re-Bars

Specially made for today's high demand construction needs

Extra High-Grade Steel Re-Bars

For ★ Extra Strength ★ Extra Saving ★ Extra Safety At ★ No Extra Cost



Delhi Metro Rail Corporations, Delhi : When completed, as envisaged by the year 2021, it will cover a total stretch of 245 Kms. The tremendous success of DMRC is the proof of its foremost quality. The absolute strength of RATHI® SHAKTIMAN THERMEX® Steel Bars provides the endurance to this moving superior technological and structural marvel.

RATHI®

SHAKTIMAN THERMEX® 500

RATHI®

SHAKTIMAN THERMEX® 500+

Meets International Standards, Beats ISI standards.

Look for the " **RATHI® SHAKTIMAN THERMEX®** " signature to ensure you're getting the genuine product

Sizes available 8mm, 10mm, 12mm, 16mm, 20mm, 25mm, 28mm, 32mm, 36mm, 40mm,

In its endeavors to break new grounds in techno-superiority and service quality, RATHI® has now introduced RATHI® SHAKTIMAN THERMEX® construction steel bars.

This has been done in keeping with its mission to produce steel bars that are technologically superior, earthquake resistant, cost innovative and are the basis of structures that will last for the generations to come.

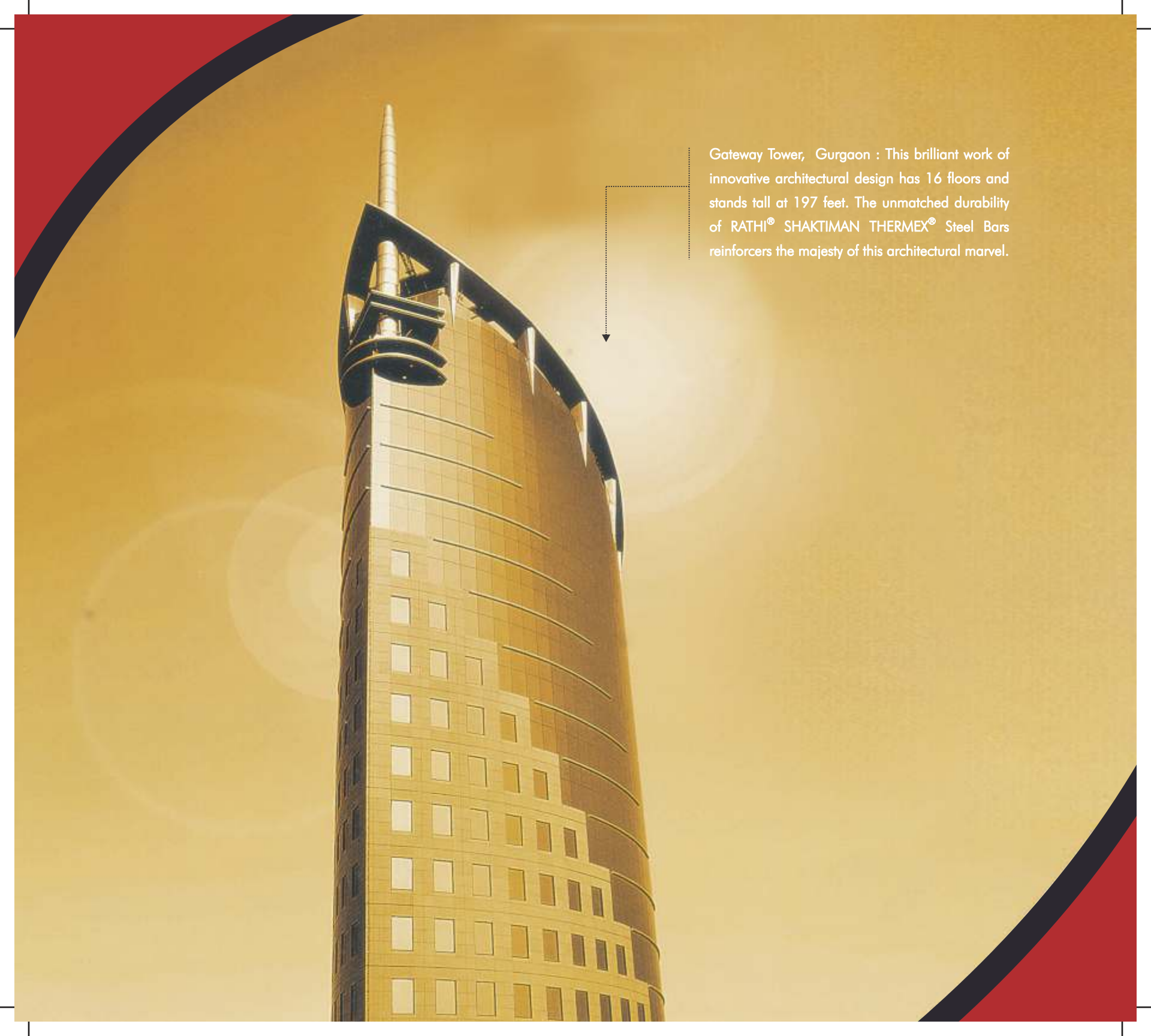
Growing from Strength to Strength. Every day. every Moment.

RATHI® SHAKTIMAN THERMEX® has earned the trust of numerous corporate giants and millions of individuals through vision, conviction, leadership and a commitment to be at par with the world's best. Because, at RATHI®, we believe, we have a promise to keep A promise to turn dreams into structures. Dreams that add impetus to the growth of the nation.

RATHI® SHAKTIMAN THERMEX® comes to you with the strength of :

- ★ 2 state-of-the-art manufacturing plants in North India, with more in the pipeline
- ★ Installed capacity of over 2.5 lac tonnes per annum
- ★ In-house capacity of producing MS billets as raw material for producing high quality steel bars
- ★ An integrated network of 900 dealers
- ★ Global associations with Hennigsdorfer Stah Engineering GmbH, Germany
- ★ Globally the best technology-Thermex
- ★ Global Quality Certifications for its products and manufacturing process such as IS:1786/1985, Grade Fe-415, Fe-500, ISO 14000 and ISO 9001



A low-angle photograph of the Gateway Tower in Gurgaon, India. The tower is a tall, cylindrical skyscraper with a distinctive curved facade and a prominent spire at the top. The building is set against a clear, bright sky. The image is framed by a red and dark blue curved border in the top-left and bottom-right corners. A dotted line with an arrow points from the text to the upper part of the tower.

Gateway Tower, Gurgaon : This brilliant work of innovative architectural design has 16 floors and stands tall at 197 feet. The unmatched durability of RATHI® SHAKTIMAN THERMEX® Steel Bars reinforces the majesty of this architectural marvel.

Extra Bond Strength

Unique rib pattern ensures exceptional bonding with concrete and conforms to IS: 1786 and international standards.

Extra Tensile Strength

The higher tensile strength of Shaktiman Thermex® by Rathi® Steel Re-Bars allows reduction in quantity of steel required in projects. With exceptional dimensional tolerance, they are rolled on the negative side of the Indian Standards Code, resulting in lower steel consumption.

Extra Savings

Because of its inherent higher strength and enhanced elongation, you can save up to 20% on steel consumption, without compromising on safety.

Extra Weldability

Due to the higher grade steel and controlled carbon and manganese content, there is no loss of strength at weld joints. This ensures that they can be butt-welded or lap-welded without any requirement for pre or post welding treatments.

Extra Ductility

The higher strength allows elongation of up to 22% which is a measure of the superior ductility of the Re-Bars.

Extra Bendability

Despite their extra strength, the tough of the outside, soft the inside re-bars can be bent easily and safely around mandrels much smaller in diameter than those specified in IS: 1786.


Extra Corrosion Resistance

Due to the superior manufacturing process, no corrosion residual stresses are left in the re-bar, which results in superior corrosion resistance.

Extra Seismic Resistance

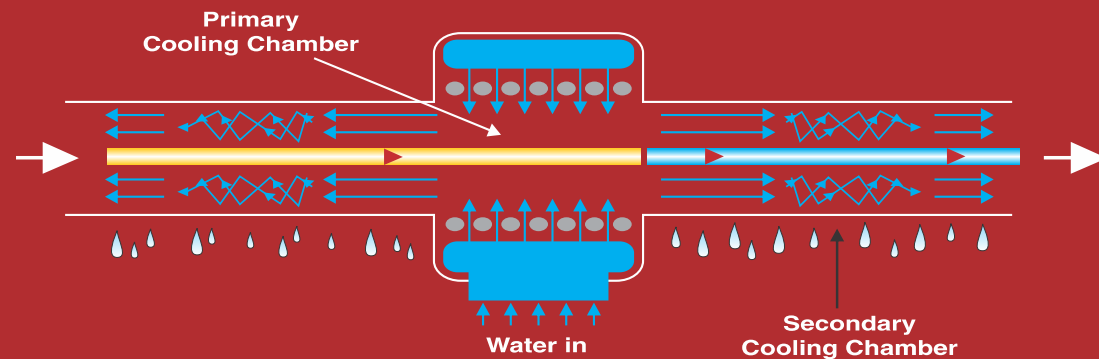
The superior Thermex technology ensures a tough exterior and flexible core. This unique combination of high tensile strength and exceptional ductility, with high fatigue strength makes the re-bar resistant to any kind of stress and seismic activity. It is ideal for earthquake prone areas like North India.





Rajiv Gandhi Setu (AIIMS Flyover), Delhi : This is Delhi's largest and the most unique, multi-connection flyover. This 9-lane Flyover can be used by over 19000 vehicles per hour in 12 signal free directions. The extraordinary strength of RATHI® SHAKTIMAN THERMEX® Steel Bars enhances the endurance of this ultramodern structure.

RATHI® SHAKTIMAN THERMEX® Technology



Using one of the world's best and globally accepted TMT manufacturing technology, Thermex® Rathi® Steel Re-Bars Shaktiman Thermex® draw their strength from the computer controlled in-line Thermex process of hardening and tempering during hot rolling. After leaving the last rolling stand at the precise temperature, the hot rolled bar passes through a set of specially designed cooling pipes. The outer layer gets cooled, while the core is still hot. The surface of the bar gets self-tempered by the heat from the core. The combination of a tempered martensite surface and ferrite + fine pearlite core provides considerably higher strength and ductility to the finished material, making it ideally suited for building strong structures.

Advantage RATHI® SHAKTIMAN THERMEX®



Shaktiman by RATHI®

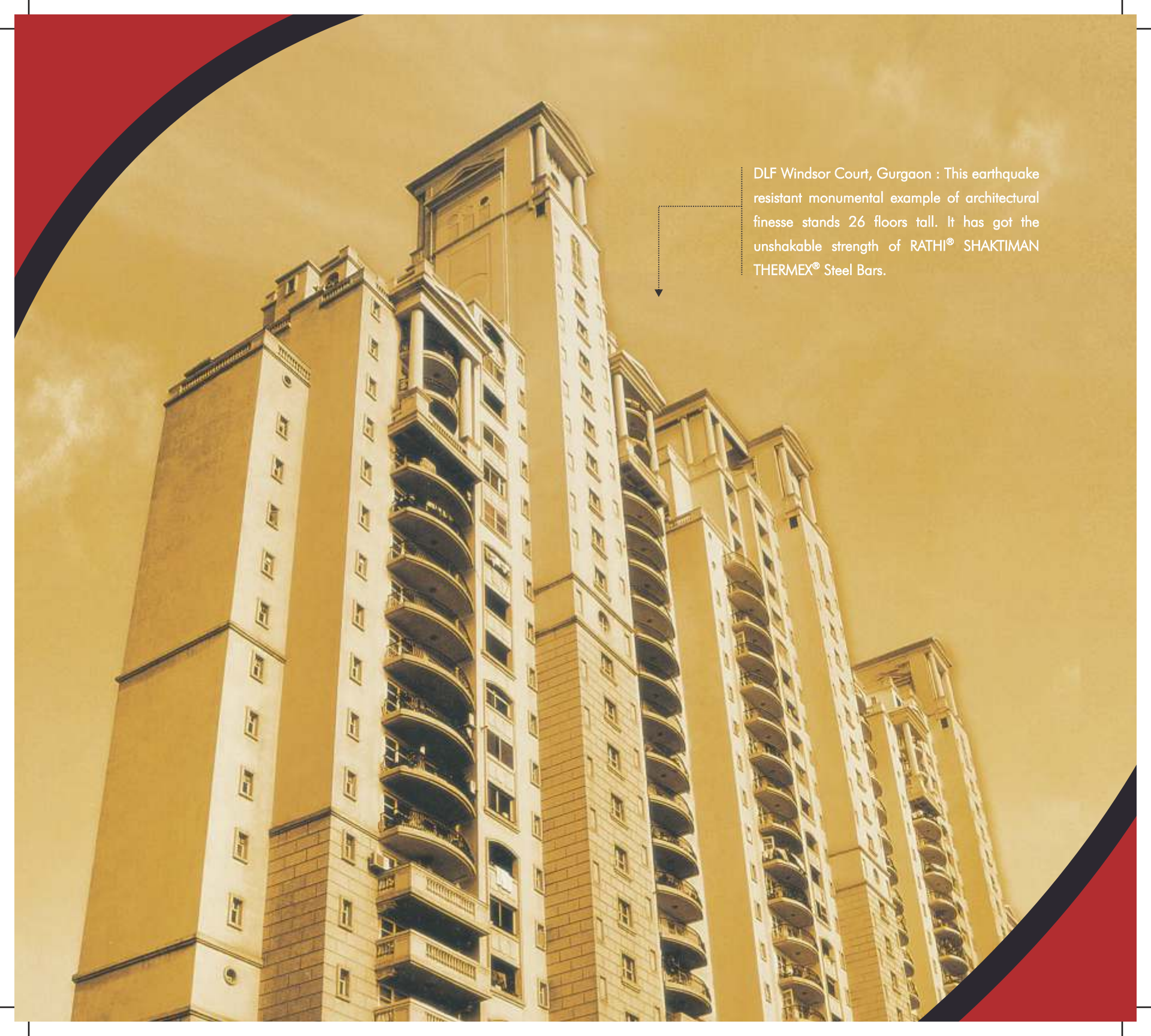


ORDINARY BARS

A Few of our Landmark Project

- ★ Chattarpur Mandir Complex, New Delhi
- ★ Lotus Temple, New Delhi
- ★ LIC Building, New Delhi
- ★ Delhi Metro Rail Corporation, New Delhi
- ★ Atomic Power Station, Narora, UP
- ★ Tehri Dam, Garhwal





DLF Windsor Court, Gurgaon : This earthquake resistant monumental example of architectural finesse stands 26 floors tall. It has got the unshakable strength of RATHI® SHAKTIMAN THERMEX® Steel Bars.

Some of our Clients

- ★ NBCC
- ★ NTPC
- ★ NDMC
- ★ NHPC
- ★ LIC India
- ★ CPWD
- ★ IMCC
- ★ EIL
- ★ EPIL
- ★ Delhi Metro Rail Corporation
- ★ U.P. Rajkiya Nirman Nigam Ltd.
- ★ U.P. Avas Evam Vikas Parishad
- ★ U.P. State Bridge Corporation
- ★ U.P. Jal Nigam
- ★ Alfa Buildtech
- ★ Sahara India
- ★ MES
- ★ Rajasthan Urban Infrastructure Dev. Corp.
- ★ Airport Authority of India Ltd.
- ★ Punjab Police Housing Board
- ★ Gannon Dunkerley & Co. Ltd.
- ★ Panipat Refinery
- ★ UNITECH
- ★ DLF Group
- ★ OMAXE
- ★ Ambience
- ★ Ansals
- ★ American Embassy
- ★ Larsen and Toubro Ltd.
- ★ Hindustan Times
- ★ Jyoti Sarup Mittal
- ★ Gammon India Ltd.
- ★ Millions of Home Owners



HT



NOW SAVE UP TO 20%

In construction cost with

RATHI® SHAKTIMAN THERMEX® STEEL RE-BARS

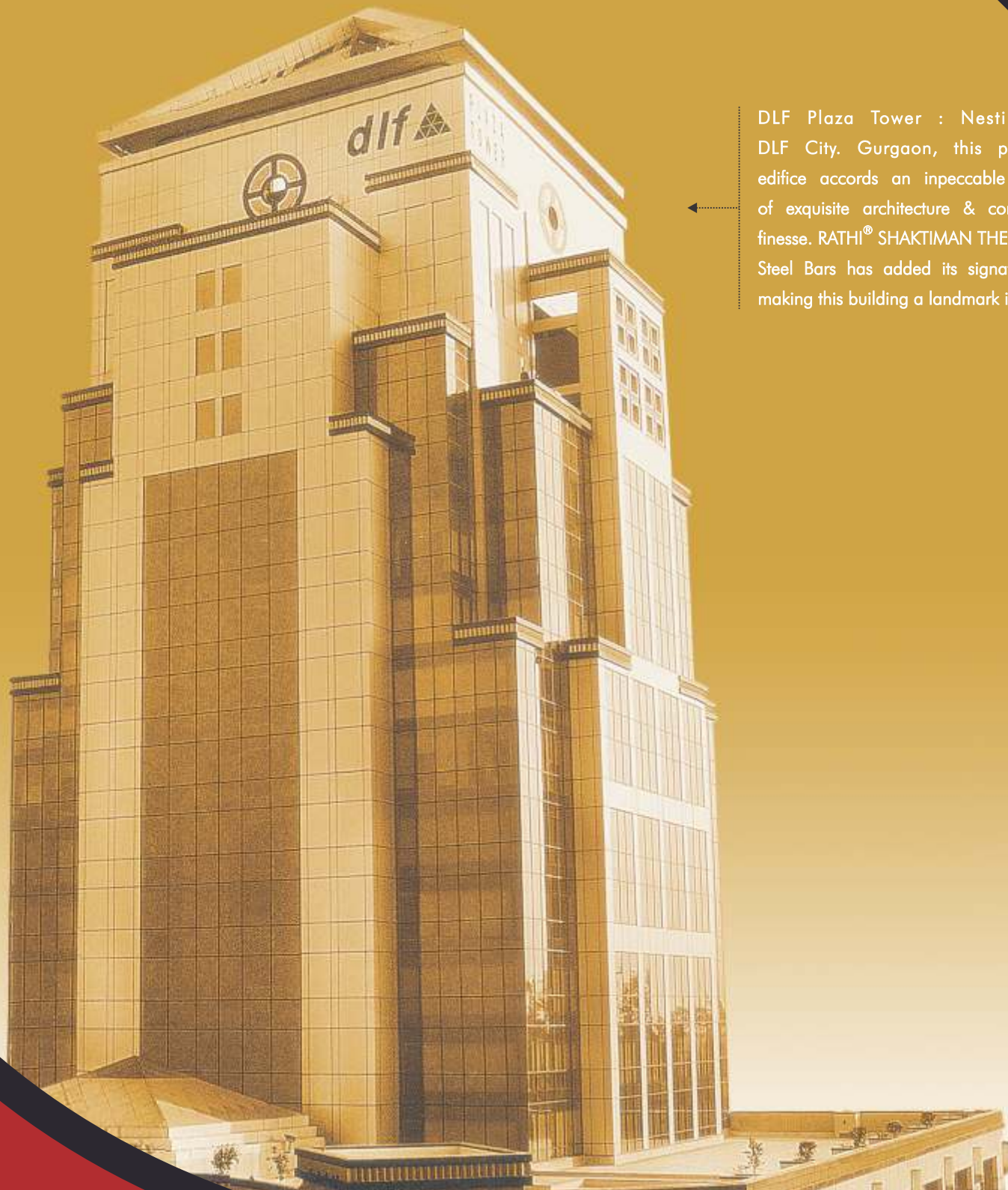
Most steel re-bars available in India today, have an Fe grade of 415.

According to a study conducted by German Institute of Reinforcing Steel, theoretically the increase from Fe 415 to Fe 500 means an improvement in strength and consequent reduction in consumption of steel, by about 16%

In actual use, RATHI® SHAKTIMAN THERMEX® Steel Re-Bars has demonstrated a saving of up to 20% in steel consumption

Studies have indicated, that the more the tensile strength, the lesser the consumption of steel. When the effective material-save factor is considered, the following table should be analyzed:

Saving in Steel Consumption When RATHI® SHAKTIMAN THERMEX® Using Instead of other Steel Bars



DLF Plaza Tower : Nesting in DLF City, Gurgaon, this patatial edifice accords an inpeccable blend of exquisite architecture & corporate finesse. RATHI® SHAKTIMAN THERMEX® Steel Bars has added its signature in making this building a landmark in NCR

Steel Requirement by using:

- ★ 1000 KG FE 415
- ★ 840 KG FE 500
- ★ 802 KG Rathi® Shaktiman Thermex®
- ★ 765 KG Rathi® Shaktiman Thermex® 500

Saving in Steel by using

Rathi® Shaktiman Thermex®

20%

Rathi® Shaktiman Thermex® 500

24%

* Estimated values based on study by German Institute of Reinforcing Steel

Additional savings in construction cost with Rathi® Shaktiman Thermex® Steel Re-Bars

Additional savings are linked with the reduction of the masses of reinforcement:

Better Constructions

More space for concrete

Lower costs for Manufacturing Reinforcement

Less Bending, Cutting, Transport

Faster Execution of Work

Comparative roof Stress Graph

The simple formula to calculate area of steel in tension of a single reinforcement beam is as follows:

Incase of Fe 415 And Fe 500 TMT Re-Bar material, the value of Fe would be 415 n/mm² and 500 N/mm² respectively.

$$A_{st} = \frac{0.85 \times M \times D}{F_y}$$

Where,

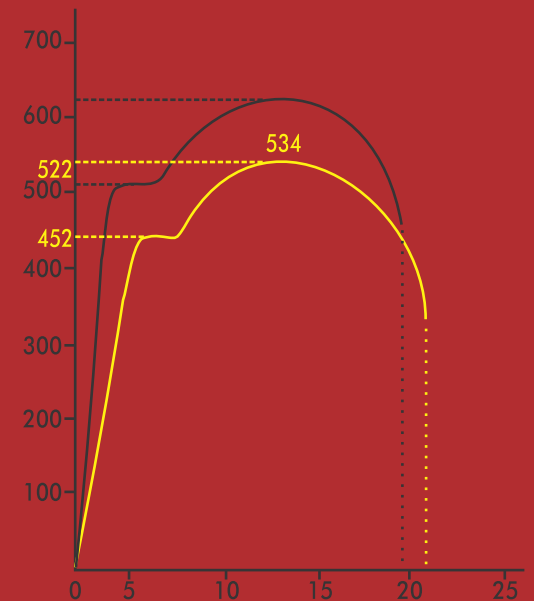
A_{st} = Area of steel in use

M = Moment in tension

D = Depth of Section

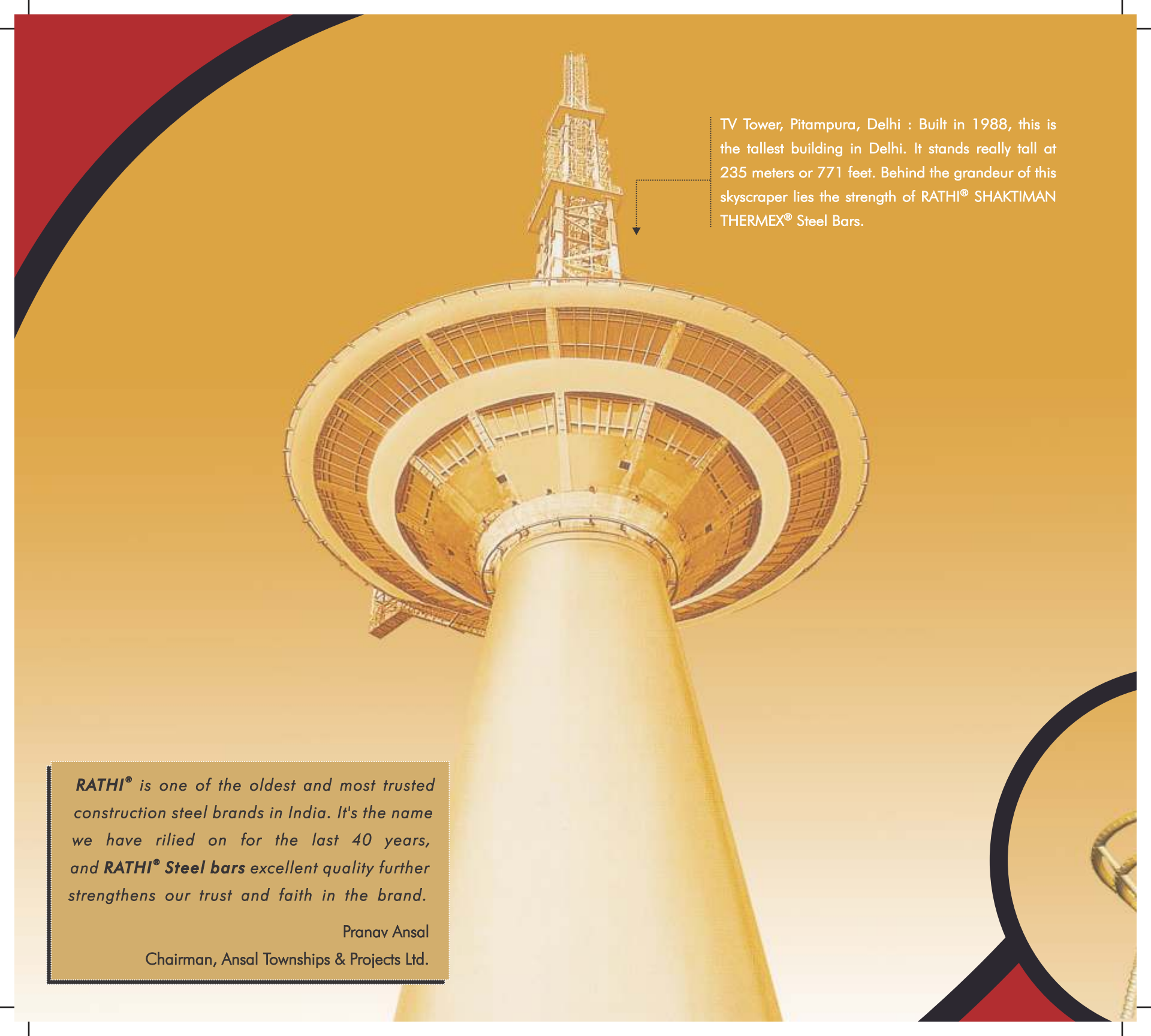
F_y = Proof Stress of Steel in use

The above clearly indicates that higher the value of Proof Stress of Steel in use, the lower will be the consumption of steel.



Ordinary TMT Re-bars Fe 415

Rathi® Shaktiman Thermex® Re-Bars



TV Tower, Pitampura, Delhi : Built in 1988, this is the tallest building in Delhi. It stands really tall at 235 meters or 771 feet. Behind the grandeur of this skyscraper lies the strength of RATHI® SHAKTIMAN THERMEX® Steel Bars.

*RATHI® is one of the oldest and most trusted construction steel brands in India. It's the name we have relied on for the last 40 years, and **RATHI® Steel bars** excellent quality further strengthens our trust and faith in the brand.*

Pranav Ansal
Chairman, Ansal Townships & Projects Ltd.

RATHI® SHAKTIMAN THERMEX® SPECIFICATIONS

Mechanical Properties of RATHI® SHAKTIMAN THERMEX® Steel Re-Bars

Grade	SHAKTIMAN 500	SHAKTIMAN 500	Fe-500
Yield Stress/Proof Stress Minimum (N/sq.mm)	520	540	500
Tensile Strength Minimum (N/sq.mm)	575	600	545
Elongation Minimum	14%	14%	12%

Chemical Composition of RATHI® SHAKTIMAN THERMEX® Steel Re-Bars

Grade	SHAKTIMAN 500+ by RATHI®
Carbon (Maximum)	0.30%
Sulphur (Maximum)	0.055%
Phosphorus (Maximum)	0.055%
Sulphur+Phosphorus (Maximum)	0.110%
Manganese (Minimum)	0.4%

Product Range of RATHI® SHAKTIMAN THERMEX® Steel Re-Bars

NOMINAL DIAMETER (MM)	NOMINAL WEIGHT (kg/meter) as per IS: 1786	WEIGHT RANGE (kg/meter) as per IS: 1786	RATHI® STEEL BARS (kg/meter)	PACKAGING (no. of pieces per bundle)
8	0.395	0.367-0.423	0.387-0.399	20
10	0.617	0.574-0.660	0.605-0.623	15
12	0.888	0.844-0.932	0.870-0.897	10
16	1.578	1.499-1.657	1.546-1.594	5
20	2.466	2.392-2.540	2.417-2.491	3
25	3.853	3.737-3.969	3.776-3.891	1
28	4.834	4.689-4.979	4.737-4.882	1
32	6.313	6.123-6.502	6.187-6.376	1
40	9.850	9.554-10.145	9.653-9.948	1



RATHI
SHAKTIMAN Fe-500
THERMEX STEEL BARS

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