



Pure | Perfect | Precise

# REINFORCEMENT NEWSLETTER

JANUARY 2026

SK SUPER

## ENGINEERING 2026 STRENGTH BEYOND STEEL

As the construction sector enters 2026, the focus is decisively shifting from mere compliance to conscious engineering. Structural safety, durability, sustainability, and lifecycle performance are no longer optional attributes; they are core expectations. Reinforcement steel, being the backbone of RCC construction, plays a defining role in this transition.

At SK Super TMT, the emphasis has always been on engineering-grade steel, not commodity steel. January marks an ideal moment to reaffirm our commitment to quality manufacturing, strict adherence to BIS standards, and continuous engagement with engineers, builders, and academicians. This edition focuses on ductility, seismic resilience, corrosion resistance, and detailing practices, which collectively determine real structural performance on site.



Fe-556 GRADE XTRA GRIP 18% ELONGATION ((EQR)) RENEWABLE



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# ENGINEER'S/ARCHITECTS CORNER:

## DUCTILITY – THE SILENT LIFE SAVER IN RCC STRUCTURES

Ductility is the ability of reinforcement steel to undergo significant plastic deformation before failure. In practical terms, it provides warning before collapse and enables structures to absorb and dissipate energy, especially during earthquakes.

As per IS 1786:2008 (Reaffirmed 2023), Fe 550 grade TMT bars are specifically designed for enhanced ductility with controlled chemical composition and thermo-mechanical processing.

### Key ductility parameters as per BIS

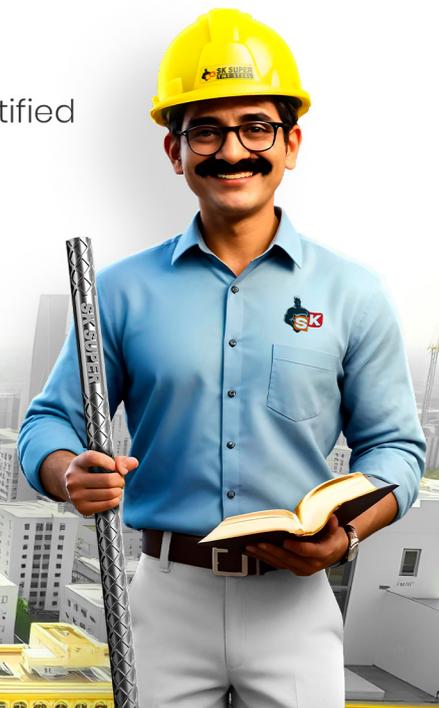
- Elongation (A5)  $\geq 16\%$  for Fe550
- Lower Carbon Equivalent (CE) to ensure weldability
- Defined yield-to-ultimate tensile strength ratio

In seismic zones (Zones III, IV, and V as per IS 1893), ductility becomes more critical than sheer strength. Brittle failure is sudden and catastrophic, whereas ductile failure provides redistribution of stresses and time for evacuation.

### Engineering Insight:

Higher grade steel without ductility is unsafe. Fe550 with certified ductility offers optimal

balance between strength and energy absorption.



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# SEISMIC DETAILING AND REINFORCEMENT INTEGRITY

As per IS 13920:2016 (Ductile Detailing of RC Structures):

- 135° hooks with adequate extension are mandatory in seismic regions
- Closely spaced stirrups in plastic hinge zones
- Proper lap splice locations away from maximum stress zones

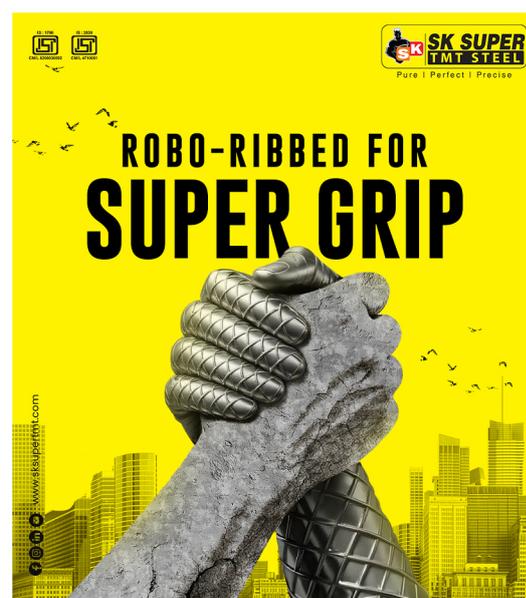
Poor quality reinforcement or incorrect bending practices can negate even the best design intent.

## SK SUPER TMT ADVANTAGE:

- Uniform rib geometry for superior bond strength
- Consistent core-soft rim-hard microstructure
- Excellent bend-rebend performance without surface cracking

While concrete resists compressive forces, reinforcement steel is responsible for tensile resistance and post-cracking behaviour.

However, steel performance is only as good as its detailing and anchorage.



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# SK SUPER TMT TECHNICAL SERVICES

Our Technical Services Division continues to conduct workshops for engineers, supervisors, and students.

## SK Super TMT Services

- On-site and classroom workshops for engineers, site supervisors, and students
- Training on reinforcement detailing and preparation of bar bending schedules (BBS)
- Guidance on coordination between reinforcement works and ready-mix concrete (RMC)
- Awareness programs on seismic-resistant construction and ductile detailing
- Support on quality control practices for reinforcement steel
- Assistance in identifying and preventing common site-level execution errors
- Practical inputs to bridge the gap between design drawings and site execution
- Knowledge-sharing initiatives to promote safe, durable, and compliant construction

## CORROSION RESISTANCE: EXTENDING STRUCTURAL LIFE

Corrosion of reinforcement remains one of the biggest durability challenges in Indian conditions due to:

*High humidity and coastal exposure*  
*Aggressive groundwater and soil conditions*  
*Poor cover and construction practices*

TMT bars with refined outer martensitic layers offer better corrosion resistance than conventional CTD bars. Additionally, controlled sulphur and phosphorus content significantly improve long-term durability.



**Relevant references:**

*IS 456:2000 – Durability requirements and cover provisions*

*IS 16700:2017 – Structural safety and service life considerations*

**Best Practice Recommendation:**

*Use certified TMT bars along with adequate cover, quality concrete (minimum M25 for RCC), and proper curing to achieve a service life exceeding 75–100 years.*

## READY MIX CONCRETE (RMC) AND REINFORCEMENT COMPATIBILITY

With the increasing adoption of Ready Mix Concrete, compatibility between concrete and reinforcement is critical. High-performance concrete demands reinforcement with:

- *Excellent bond characteristics*
- *Stable yield behaviour*
- *Minimal surface defects*

**Relevant standards:**

*IS 4926:2023 – Ready Mixed Concrete*

*IS 456:2000 – RCC design and construction*

Smooth yet well-defined ribs of SK Super TMT bars ensure uniform stress transfer and reduced slip, enhancing composite action in RCC members

### Quality Assurance: From Billet to Building

**Every SK Super TMT bar undergoes:**

- Spectrometric chemical analysis
- Online quenching and tempering control
- Tensile, bend, rebend, and elongation testing
  - Batch-wise traceability

This ensures that the steel reaching the site is not just compliant on paper, but reliable in performance.

**Message to Engineers:**

Always insist on test certificates, heat numbers, and BIS markings. Quality steel is an investment, not a cost.



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## Sustainability Note: Responsible Steel for Responsible Construction

Steel is 100% recyclable, and modern TMT manufacturing minimizes energy consumption through efficient rolling and controlled cooling. By choosing quality steel that lasts longer, we reduce:

- Material wastage
- Carbon footprint over the structure's lifecycle
- Repair and retrofitting needs

Sustainable construction begins with durable materials.

## KNOWLEDGE OUTREACH: BRIDGING INDUSTRY AND ACADEMIA

SK Super TMT continues its technical outreach through:

- Site-level engineer interactions
- Workshops on reinforcement detailing
- Guest lectures for civil engineering students
- Practical exposure to BIS standards and
- real-world failures Engineering excellence is built through continuous learning.

**SK SUPER TMT  
REINFORCING TRUST. ENGINEERING STRENGTH.  
BUILDING THE FUTURE.**

*As we begin 2026, let us collectively raise the bar for construction quality. Strong structures are not defined by concrete alone, but by the integrity of reinforcement steel, correctness of detailing, and ethics of engineering decisions*

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