



Benefits of 600+ CRS TMT Bars

**Defence That
Defies Corrosion**



FEATURES OF MS LIFE 600+ CRS TMT-EQR REBARS



Bond
Strength



Weldability



Bendability



Fire
Resistance



Corrosion
Resistance

Complete Benefits of CRS TMT Bars

Corrosion Resistance

- Specially alloyed with elements like copper, chromium, and phosphorus.
- Offers superior resistance to rust, especially in coastal areas, flood zones, and underground structures.

Superior Strength

- Manufactured with controlled thermo-mechanical treatment.
- Provides high yield strength and ductility, ideal for heavy load-bearing structures.

Longer Life Span

- With corrosion resistance and strong bonding, CRS TMT bars prolong the life of the structure, reducing maintenance costs.

Earthquake Resistance

- Excellent elongation and ductility make CRS bars ideal for seismic zones.
- Absorbs shock loads and prevents sudden failure during quakes.

Fire Resistance

- Can withstand temperatures up to 600°C, enhancing structural safety in fire-prone environments.

Strong Bond with Concrete

- Uniform rib patterns ensure better grip with cement concrete.
- Reduces the chances of cracks and improves load transfer.

Cost-Efficient in the Long Run

- Though slightly costlier than standard bars, lower maintenance, longer durability, and fewer replacements make them more economical over time.

Ideal for Coastal and Industrial Projects

- Perfect for areas with high moisture, salt, or chemical exposure.
- Widely used in marine structures, bridges, industrial buildings, and basements.

Low Carbon Content

- Enhances weldability without the risk of weak joints.

Environment Friendly

- Manufactured through energy-efficient processes with reduced carbon footprint.

Additional & Value-Added Points

Better Performance in Aggressive Soil Conditions

- CRS TMT bars offer excellent resistance to sulphates and chlorides, making them suitable for underground and foundation work, especially in black cotton soils and chemically aggressive environments.

Enhanced Fatigue Resistance

- They handle cyclic loading (load-unload scenarios) better, making them ideal for bridges, flyovers, and industrial structures where vibrations or repeated stress is common.

Consistency in Mechanical Properties

- Due to controlled production in advanced rolling mills, mechanical properties like elongation, yield strength, and tensile strength are uniform, ensuring predictable performance across all bars.

Resistance to Concrete Cracking

- Superior bonding and controlled thermal expansion coefficients help reduce micro-cracks in concrete, improving overall structural stability.

Compatibility with Modern Construction Techniques

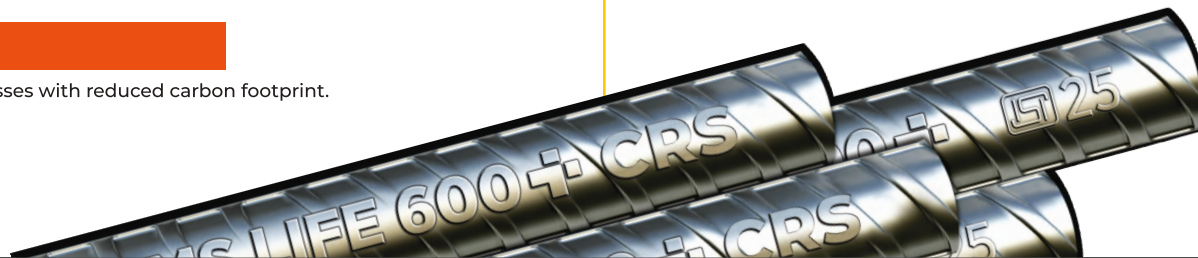
- CRS TMT bars are compatible with RCC, precast, and hybrid construction, making them versatile for modern architectural and civil engineering needs.

Certified Quality & Testing

- Premium CRS TMT bars are BIS certified and undergo rigorous corrosion resistance, bend/rebend, and elongation testing, assuring reliability.

Better ROI for Builders & Developers

- Using corrosion-resistant steel leads to higher resale value, customer satisfaction, and fewer repair liabilities for developers, especially in real estate and government projects.

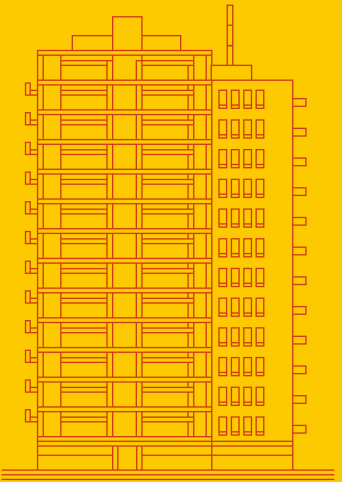
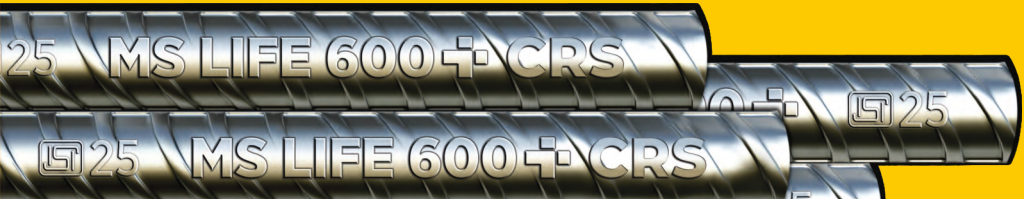


MECHANICAL PROPERTIES OF HIGH STRENGTH DEFORMED BARS-MS LIFE 600+ CRS TMT						
S.No	Test Parameters	Method of Testing	Requirements as per code IS 1786 for			
			Dia (φ)	Nominal mass per meter	Batch	Individual
1.	Mass per meter run.kg/m	IS 1786	08mm	0.395	(±7%)	(-8%)
			10mm	0.617	(±7%)	(-8%)
			12mm	0.888	(±5%)	(-6%)
			16mm	1.580	(+5%)	(-6%)
			20mm	2.470	(+3%)	(-4%)
			25mm	3.650	(±3%)	(-4%)
			32mm	6.310	(±3%)	(-4%)
2.	Tensile Strength, N/mm ²	IS 1608 (Part-1)	06% more than the actual Yield stress but not less than 660.0 N/mm2		695.00	
3.	Yield Stress N/mm ²	IS 1608 (Part-1)	600.0 (min.)		620.00	
4.	Elongation, %	IS 1608 (Part-1)	10% (min)		14.5%	
5.	Bend Properties (Mandrel Diameter)	IS 1599	(i). Up to and including 20mm-5 φ (ii). Above 20mm-6 φ			
6.	Rebend Properties	IS 1786	(i). Up to and including 10mm-6 φ (ii). Over 10mm-7 φ			
Note: φ is the nominal size of the test						

BIS Approved TMT Steel Grades		
a) Fe415, Fe415D, Fe415S;	b) Fe500, Fe500D, Fe500S;	c) Fe550, Fe550D;
d) Fe600;	e) Fe650;	f) Fe700.

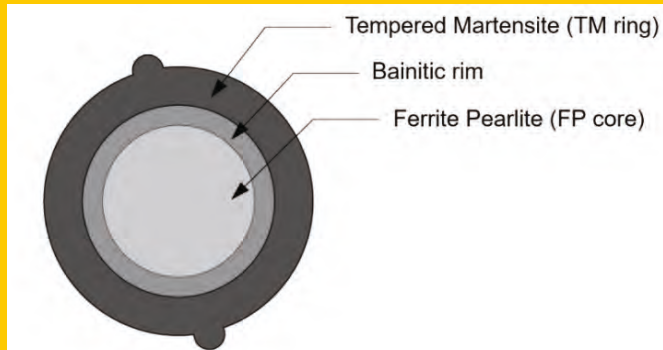
RANGES FOR THE RIB PARAMETERS		
Rib Height (h)	Rib Spacing (c)	Rib Inclination (φ)
0.03d to 0.15d	0.4d to 1.2d	35° to 75°

CHARACTERISTIC RELATIVE RIB AREA	
Nominal bar size, d in mm	Relative rib area
d≤10	0.12 φ
10<d≤16	0.15 φ
d>16	0.17 φ



CHEMICAL COMPOSITION OF HIGH STRENGTH DEFORMED BARS-MS LIFE 600+ CRS TMT

S.No	Test Parameters	Requirement for product analysis as per Clause 4.2 of Code IS 1786 for	MS LIFE 600+ CRS TMT	Variation, Over Specified Maximum limits as per clause 4.2.1 of IS 1786
1.	Carbon	0.15% (max)	$\leq 0.15\%$	0.02% (max)
2.	Sulphur	0.04 % (max)	$\leq 0.04\%$	0.05% (max.)
3.	Phosphorous	0.12 % (max)	$\leq 0.12\%$	0.05% (max.)
4.	P+S	-	-	-
5.	N	0.012	≤ 0.012	-
6.	Cr	0.25	≥ 0.25	-
7.	Cu	0.15	≤ 0.15	-
8.	Ni	0.02	≥ 0.02	-
9.	Mo	0.005	≥ 0.005	-
10.	Cre (Cr+Cu+Ni+Mo+P)	0.4	≥ 0.4	0.02% (max)



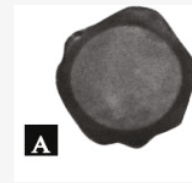
MS AGARWAL FOUNDRIES PVT. LTD

Corporate Office : 5-4-83, TSK Chambers Opp. Ranigunj Bus Depot, MG Road Secunderabad 500003 INDIA
E-mail: ms@msagarwal.com, Web: www.ms-life.com

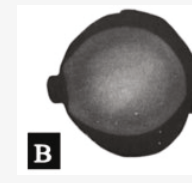
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RING FORMATION CORE DIAGRAM

Step 1: Visual analysis of etched cross-section



Acceptable



Not Acceptable



Not Acceptable



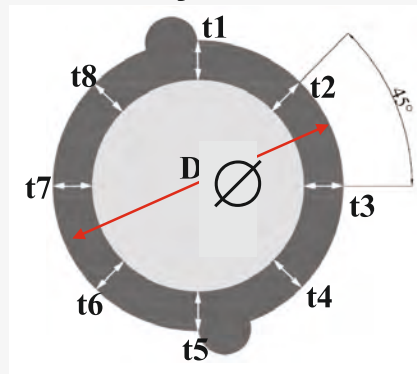
Not Acceptable

- | | | |
|----|---|--------|
| 1. | Is a dark grey peripheral region and light grey core seen as in Case A? | Yes/No |
| 2. | Does the dark grey peripheral region form a continuous outer ring? | Yes/No |

Step 2: Dimension analysis of TM-Ring thickness

3. Diameter ϕ (mm) of steel bar

4. Geometry



5. Is the measured $t_{min} \geq 0.05 \phi$?

Is the measured $t_{max} < 0.15 \phi$?

t_1
t_2
t_3
t_4
t_5
t_6
t_7
t_8
Measured t_{min} (mm)
Measured t_{max} (mm)

Yes / No

Yes / No