ISI 1786

APL APOLLO® SG TMT

MAZBOOTI KI BEMISAAL BUNIYAAD

FE 500 & 500D I FE 550 & 550D

About SG Mart Limited

SG Mart leverages India's growing construction materials market, driven by government infrastructure initiatives and rising demand. Positioned to capture a significant share in the industry, SG Mart operates through:

B2B Trading – Sources steel directly from producers to offer quality materials at competitive prices.

Service Centres – Processes steel into semi-finished products for various industries.

B2C Distribution – Supplies branded construction materials like TMT bars and metal sheets directly to consumers.

With strategically located warehouses, SG Mart ensures timely, reliable delivery to meet project needs across regions.

Welcome to a future built on strength:

APL Apollo SG TMT Bars

APL Apollo SG TMT Bars are premium-quality, high-strength Thermo-Mechanically Treated (TMT) bars that meet the stringent standards set by Bureau of Indian Standards (BIS 1786). Designed for the modern construction industry, APL Apollo SG TMT bars are ideal for residential, commercial, and infrastructure projects, providing a superior combination of strength, ductility, and corrosion resistance.

Technical Specifications

- **Grade:** APL Apollo TMT bars are manufactured in FE 500 & 500D, FE 550 & 550D grades as per BIS 1786, which ensures optimal strength and elongation properties.
- **Chemical Composition:** The bars are produced with a well-balanced composition of carbon, sulfur, and phosphorus levels that remain within the limits prescribed by BIS, enhancing strength without compromising ductility
  - **Carbon Content:** 0.25% max (depending on grade)
  - **Sulfur & Phosphorus:** Low levels maintained for better weldability and bendability.
- **Physical Properties:** APL Apollo SG TMT bars undergo thermo-mechanical treatment, giving them a soft inner core with a strong, tempered outer layer, leading to:
  - **Yield Strength:** 500-600 MPa (based on grade)
  - **Ultimate Tensile Strength (UTS):** Exceeds yield strength by 10-20%
  - **Elongation:** High elongation properties ensure greater ductility, crucial for earthquake resistance.
- **Size Range:** Available from **8mm, 10mm, 12mm, 16mm, 20mm, 25mm to 32 mm** diameter for a wide range of applications.

Manufacturing Process

APL Apollo TMT bars are manufactured using advanced Thermo-Mechanical Treatment (TMT) technology involving:

1. **Quenching:** Bars are rapidly cooled in a special quenching box immediately after rolling, forming a hardened outer layer.
2. **Self-Tempering:** The residual heat from the core further tempers the martensitic outer layer, giving the bars a strong yet flexible structure.
3. **Atmospheric Cooling:** Bars are naturally cooled in ambient air to retain a soft ferrite-pearlite core, enhancing ductility.

- Tensile Strength
- Weldability
- Flexibility & Bendability
- Corrosion Resistance
- Durable
- Shockproof & Earthquake Resistance

WHY CHOOSE APL APOLLO SG TMT BARS

Earthquake Resistance:

The high ductility of APL Apollo SG TMT bars provides superior seismic resistance, which helps structures withstand dynamic loads during earthquakes.

Corrosion Resistance:

Reduced carbon content and advanced TMT technology create a denser outer layer that resists corrosion, extending the lifespan of the bars even in high-moisture environments.

Weldability:

Due to the controlled sulfur and phosphorus content, these bars offer exceptional weldability, reducing the need for preheating and simplifying construction processes.

Bendability:

APL Apollo SG TMT bars can be easily bent into various shapes without cracking, ensuring ease of use in complex designs.

Fire Resistance:

The bars retain strength at high temperatures up to 600°C, providing additional safety in case of fire.

Superior Strength & Cost Efficiency:

High tensile strength reduces required quantities, saving costs.

Enhanced Bonding:

Unique rib design ensures superior steel-concrete adhesion

Quality Assurance

APL Apollo SG TMT bars undergo rigorous quality testing for:

- **Tensile Strength Testing:** Verifies strength and elongation.
- **Bend and Rebend Tests:** Ensures flexibility without compromising structural integrity.
- **Chemical Analysis:** Monitors elemental composition in accordance with BIS 1786 standards.

Certifications and Standards Compliance

APL Apollo SG TMT bars are certified as per **BIS 1786** and hold additional certifications that meet national and international safety and quality standards. This certification assures builders and engineers of the high-grade material quality essential for safe and long-lasting structures.

Chemical Properties	Fe 500	
Parameters	BIS Standards	APL Apollo SG TMT
Carbon %	0.30	0.28
Sulphur %	0.055	0.050
Phosphorous %	0.055	0.050
Sulphur & Phosphorous %	0.105	0.090
Mechanical Properties		
Yield Stress N/mm² (Min)	500	520 to 540
Tensile Strength (N/mm²) Min.	545	560 to 650
Elongation %	12.0	15 to 18
UTS/YS Ratio	1.08	1.12 to 1.20

Chemical Properties	Fe 500 D	
Parameters	BIS Standards	APL Apollo SG TMT
Carbon %	0.25	0.23
Sulphur %	0.040	0.035
Phosphorous %	0.040	0.035
Sulphur & Phosphorous %	0.075	0.065
Mechanical Properties		
Yield Stress N/mm² (Min)	500	520 to 540
Tensile Strength (N/mm²) Min.	565	580 to 660
Elongation %	16.0	18.0 to 22.0
UTS/YS Ratio	1.10	1.12 to 1.22
Total Elongation %	5	8

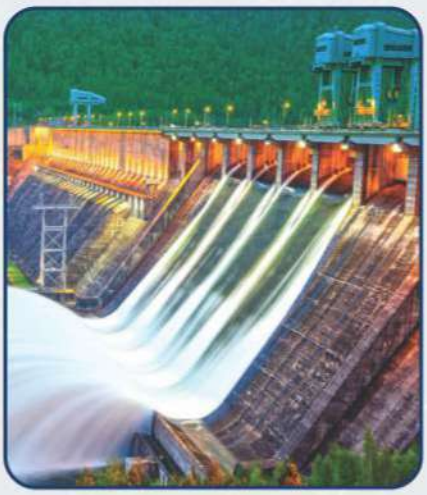
Chemical Properties	Fe 550	
Parameters	BIS Standards	APL Apollo SG TMT
Carbon %	0.30	0.28
Sulphur %	0.055	0.050
Phosphorous %	0.050	0.045
Sulphur & Phosphorous %	0.100	0.090
Mechanical Properties		
Yield Stress N/mm² (Min)	550	570 to 620
Tensile Strength (N/mm²) Min.	585	650 to 750
Elongation %	10.0	15.0 to 20.0
UTS/YS Ratio	1.06	1.14 to 1.20

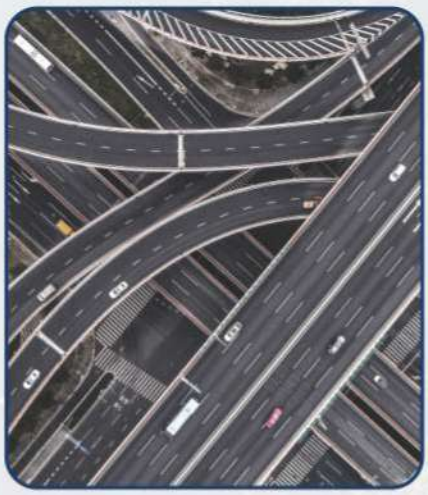
Chemical Properties	Fe 550 D	
Parameters	BIS Standards	APL Apollo SG TMT
Carbon %	0.25	0.23
Sulphur %	0.040	0.035
Phosphorous %	0.040	0.035
Sulphur & Phosphorous %	0.075	0.065
Mechanical Properties		
Yield Stress N/mm² (Min)	500	570 to 620
Tensile Strength (N/mm²) Min.	600	660 to 770
Elongation %	14.5	16.0 to 23.0
UTS/YS Ratio	1.08	1.15 to 1.24
Total Elongation %	5	8

Weight Tolerance

Size of Bar(mm)	Cross Sectional Area (mm2)	I.S. 1786 Limit	APL Apollo SG TMT (Per Mtr. Weight in KG)	Weight/Bar
8mm	50.3	0.367-0.423	0.375-0.405	4.68
10mm	78.6	0.574-0.66	0.580-0.620	7.2
12mm	113.1	0.844-0.932	0.850-0.900	10.5
16mm	201.2	1.501-1.659	1.520-1.600	18.7
20mm	314.3	2.396-2.544	2.421-2.519	29.53
25mm	491.1	3.735-3.966	3.773-3.927	46.2
32mm	804.6	6.121-6.499	6.200-6.373	75.6

Wide Range of Applications





Infrastructure Projects:
Ideal for bridges, flyovers, and other critical structures requiring superior strength

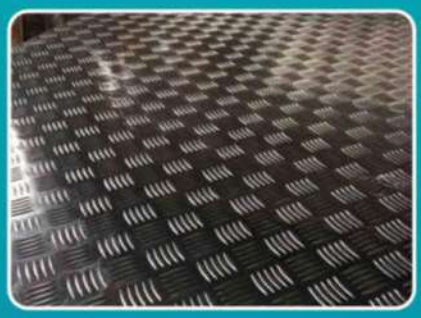
Industrial Constructions:
Supporting heavy machinery and high-dynamic loads with robustness

Commercial Buildings:
Offering load-bearing capacity for high-rise constructions

Residential Construction:
Ensuring durability and structural stability

Other Allied Products from SG Mart

HR Coil and Sheet



HR Checkered Sheet

Welding Rod

Binding Wire

Channels

Angles

SG MART
ONE MART. INFINITE POSSIBILITIES

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