



Stay 
strong
inside.

PRINCE TMT.
STEEL BARS **550D**



THE PROMISE OF STRONGER DREAMS AND HAPPIER HOMES

THE FACE OF STRENGTH ABOUT PRINCE TMT

Founded in 1990, Prince Group of Companies has been growing in strength, power and stature, adding steadily to the development of the country through its diversified offerings in steel, food products and retails.

Prince TMT Steels Pvt.Ltd., the prestigious venture of Prince Group is a dedicated facility for manufacturing TMT steel bars using German technology. Prince TMT has established excellence at every stage of production by maintaining higher side of the standards set by BIS – Bureau of Indian Standards.

**Prince TMT is committed to strengthening
your dream home with high-quality TMT steel bars.**

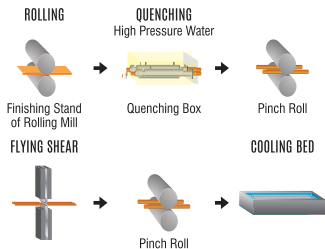




FROM STEEL TO STRENGTH THE MANUFACTURING PROCESS TMT TECHNOLOGY

The TMT (Thermo Mechanical Treatment) process is a sophisticated and precise technology that has been developed after years of continuous research. They are extra high strength reinforcement bars.

THE PROCESS



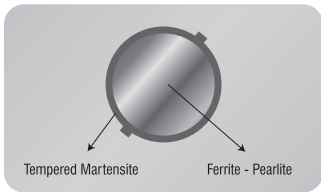


PROCESS ROUTE

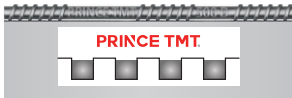
TMT is a special treatment process where the bar is subjected to three successive stages:

QUENCHING: The hot rolled bar leaving the final mill stand is rapidly quenched by a special water spray system.

SELF TEMPERING: The hot core causes tempering of the outer martensitic layer into a structure called 'Tempered Martensite'. The core still remains austenitic at this stage.



ATMOSPHERIC COOLING: This takes place on the cooling bed where the austenitic core is transformed into a ductile ferrite-pearlite structure.



Excellent rib pattern for quality bonding.



KNOW THE PRINCE STRENGTH

THE CHEMISTRY, ADVANTAGES AND APPLICATIONS

PHYSICAL PROPERTIES

Element	IS 1786-2008 Fe 550	IS 1786-2008 Fe 550 D	UK BS 4449/ 2005 500 B	UK BS 4449/ 2005 500 C	Aus /NZ 500 E	Aus /NZ 500 N	Prince TMT Fe 550 D
YS (N/mm ²)	550 min	550 min	500-650	500	500-600	500-650	560
TS (N/mm ²)	585 min	600 min	N. S.	N. S.	N. S.	N.S.	620
TS / YS min	1.06	1.08	1.08	1.15 - 1.35	1.15 - 1.40	1.08	1.10
% Elongation	10	14.5	N.S.	N.S.	N.S.	N.S.	15
% Uniform elongation at max stress	N.S.	5	5	7.5	10	5	5.5
Applications	General	Seismic	General	Seismic	Seismic	General	Seismic

CHEMICAL PROPERTIES

Element	IS 1786-2008 Fe 550	IS 1786-2008 Fe 550 D	UK BS 4449/ 2005 500 B	UK BS 4449/ 2005 500 C	Aus /NZ 500 E	Aus /NZ 500 N	Prince TMT Fe 500 D
% C max	0.30	0.25	0.22	0.22	0.22	0.22	0.25
% C.E. max	0.42	0.42	0.50	0.50	0.44	0.49	0.38
% S max	0.050	0.040	0.050	0.050	0.050	0.050	0.040
% P max	0.050	0.040	0.050	0.050	0.050	0.050	0.040
% (S+P) max	0.095	0.075	N.S.	N.S.	N.S.	N.S.	0.075

MECHANICAL PROPERTIES

Yield Strength (M/mm ²)	560 Min
Tensile strength (N/mm ²)	620 Min
Elongation (%)	15
Ratio of Tensile Strength to Yield Strength	1.1

PRODUCT RANGE

Grades: Fe 500, Fe550, Fe 550 D, Fe 600 as per IS 1786 - 2008

Diameters available (in mm):
8, 10, 12, 16, 20, 25

Available in fixed length of 12 metres

Special lengths and straps can also be supplied as per the customer's specifications

STANDARD: As per IS 1786:2008





THE ROLE OF DUCTILITY IN STEEL BARS

Compared to normal grade TMT steel bars, Prince TMT-XD (Extra Ductile Steel Bars) are able to withstand the seismic forces of earthquakes, ensuring better strength and security.

Prince TMT bars are comparable to American, British and Australian standard TMT bars.

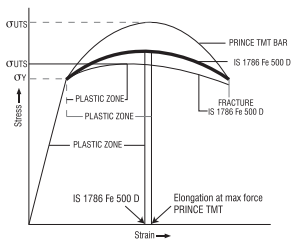


HIGHLIGHTS OF PRINCE TMT STEEL BARS

- Higher strength
- Higher UTS / Yield ratio
(enhanced elongation)
- Higher fatigue strength
- Higher resistance to heat
- Higher resistance to corrosion
- Higher seismic resistance
- Excellent weldability
- Excellent ductility

QUALITY IMPLEMENTATION

- Strict adherence to sampling and testing of steel chemistry
- Detailed sampling of finished products
- Advance products through technological upgrades
- Ensuring systematic working procedure
- Strict adherence to BIS standards and procedures



PRINCE TMT STEEL BARS vis-à-vis BIS grades
Fe 500 and Fe 500 D



CERTIFICATES

IIT



INDIAN INSTITUTE OF TECHNOLOGY
MADRAS, CHENNAI - 600036

STRUCTURAL ENGINEERING LABORATORY DEPARTMENT OF CIVIL ENGINEERING

REPORT ON TESTING OF REINFORMENT STEEL

CLIENT : **PRINCE TMT STEELS PRIVATE LIMITED**

Table 1 - Weight of Steel Specimens

Sl. No.	Dia. mm	Length mm	Actual Weight per m (kg)	Min. Weight per m (kg)	Tolerance Limit (weight per m) kg
1	16	1000	1.581	1.580	1.485
2	16	1000	1.572	1.580	1.485

Table 2 - Yield Strength of steel

Sl. No.	Dia. mm	Cross Sec. Area mm ²	Load at Yield kg	Actual Yield Strength N/mm ²	Minimum Yield Strength N/mm ²
1	16	201.06	10500	512.30	500
2	16	201.06	11000	536.70	500

Table 3 - Ultimate Tensile Strength of steel

Sl. No.	Dia. mm	Cross Sec. Area mm ²	Load at Ultimate kg	Actual Ultimate Strength N/mm ²	Minimum Ultimate Strength N/mm ²
1	16	201.06	13256	646.78	545
2	16	201.06	13769	671.80	545

Table 4 - Percentage of Elongation

Sl. No.	Dia. mm	Initial Gauge Length mm	Final Gauge Length mm	Elongation (%)	Min. Elongation (%)
1	16	80	94.60	21.11	12.00
2	16	80	96.00	21.25	12.00

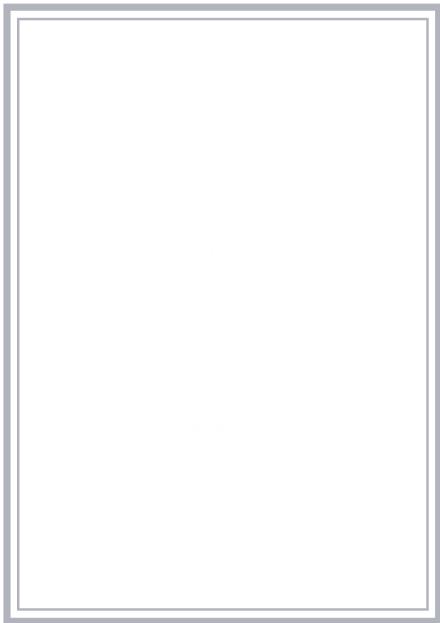
Table 5 - Chemical Test Report

Dia. mm	Carbon (%)	Sulphur (%)	Phosphorus (%)	Sulphur + Phosphorus (%)
16	0.20	0.027	0.021	0.048

Certificate No & Date :
CQC/MT/16-17/014 & 19/10/2016
Date: 01.11.2016



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XD
Extra Ductile

- ✓ Manufactured at a plant designed exclusively for TMT process
- ✓ Quality is certified by IIT
- ✓ The best range specified by BIS
- ✓ Superior corrosion and seismic resistance properties

Selection of TMT Steel bars are the most important decision in any construction, as once used they cannot be changed.

36 YEARS
MILLIONS OF
SMILES
PRINCE GROUP



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