



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

An ISO - 9001:2008 Certified Institute

TEST CERTIFICATE

000371767

Issued To:
Client Code : S0595
SHYAM SEL & POWER LTD
S.S CHAMBER, 5 C.R AVENUE

KOLKATA
WEST BENGAL-700072

Date 22/06/2015
Job No. 1505-1-171-3105
Booking No. RG1516/1/1847
Booking Date 27/05/2015
Customer Ref No. -
Customer Ref Date 25/05/2015



Sample Description :

ONE SAMPLE DESCRIBED AS TMT BARS 8 MM, Make: - SEL THERMAX 500+ WAS RECEIVED.
The sampling was not carried out by SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH.
The sample particulars provided in the Test Certificate are based on the declaration by the party.

TEST RESULTS

(As Per IS: 1786-2008 with amendment No. 2)

S.No. Tests	Observation	Requirement Grade FE-500	Conformity	Protocol Adopted
A. Chemical Tests(% by wt.)				
1. Carbon	0.14	0.30 Max.	Yes	IS: 228 Part(1)
2. Sulfur	0.010	0.055 Max.	Yes	IS: 228 Part(9)
3. Phosphours	0.035	0.055 Max.	Yes	IS: 228 Part(3)
4. Sulfur + Phosphorus	0.045	0.105 Max.	Yes	IS: 1786-2008
B. Physical Tests				
1. TS/Y.S ratio ¹	1.12	>= 1.08 but TS	Yes	IS: 1786-2008
Tensile Strength, N/mm ²	748	not less than 545.0	Yes	IS: 1608-2005
2. Yield Stress, N/mm ²	665	500 Min.	Yes	IS: 1608-2005
3. Elongation (%) (Gauge Length 5.65 Sq Root Area)	25.6	12.0 Min.	Yes	IS: 1608-2005
4. Bend Test	Satisfactory	To satisfy the test	Yes	IS: 1599-2012
5. Rebend Test	Satisfactory	To satisfy the test	Yes	IS: 1786-2008
6. Mass per metre run (Kg)	0.378	Not less than 0.363	Yes	IS: 1786-2008
7. Deformation & Surface Characterstics				
a. Mean ribs area in mm ² /mm length	1.32	0.96 Min.	Yes	IS: 1786-2008
b. Mean projected area of transvers ribs in mm ² /mm length	1.32	0.32 Min.	Yes	IS: 1786-2008

Remarks: The sample conforms to IS: 1786-2008 Amendment No. 2 for Grade FE 500 w.r.t. above tests.

Note:- TS/Y.S ratio refers to ratio of tensile strength to the yield stress of the test piece.

DOR: 27/05/2015

DOC: 22/06/2015

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AUTHORISED SIGNATORY
(EMPLOYEE CODE: 5065)

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TEST CERTIFICATE

Issued To:

Client Code : S0595
SHYAM SEL & POWER LTD
S.S CHAMBER, 5 C.R AVENUE

Date 22/06/2015

Job No. 1505-1-171-3016

Booking No. RG1516/1/1847

Booking Date 27/05/2015

Customer Ref No. -

Customer Ref Date 25/05/2015



KOLKATA
WEST BENGAL-700072

Sample Description :

ONE SAMPLE DESCRIBED AS TMT BARS 12 MM, Make: - SEL THERMAX 500+ WAS RECEIVED.
The sampling was not carried out by SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH.
The sample particulars provided in the Test Certificate are based on the declaration by the party.

TEST RESULTS

(As Per IS: 1786-2008 with amendment No. 2)

S.No. Tests	Observation	Requirement Grade FE-500	Conformity	Protocol Adopted
A. Chemical Tests(% by wt.)				
1. Carbon	0.15	0.30 Max.	Yes	IS: 228 Part(1)
2. Sulfur	0.014	0.055 Max.	Yes	IS: 228 Part(9)
3. Phosphours	0.038	0.055 Max.	Yes	IS: 228 Part(3)
4. Sulfur + Phosphorus	0.052	0.105 Max.	Yes	IS: 1786-2008
B. Physical Tests				
1. TS/YS ratio ¹	1.17	≥= 1.08 but TS	Yes	IS: 1786-2008
Tensile Strength, N/mm ²	646	not less than 545.0	Yes	IS: 1608-2005
2. Yield Stress, N/mm ²	553	500 Min.	Yes	IS: 1608-2005
3. Elongation (%) (Gauge Length 5.65 Sq Root Area)	22.0	12.0 Min.	Yes	IS: 1608-2005
4. Bend Test	Satisfactory	To satisfy the test	Yes	IS: 1599-2012
5. Rebend Test	Satisfactory	To satisfy the test	Yes	IS: 1786-2008
6. Mass per metre run (Kg)	0.851	Not less than 0.835	Yes	IS: 1786-2008
7. Deformation & Surface Characterstics				
a. Mean ribs area in mm ² /mm length	2.35	1.80 Min.	Yes	IS: 1786-2008
b. Mean projected area of transvers ribs in mm ² /mm length	2.35	0.60 Min.	Yes	IS: 1786-2008

Remarks: The sample conforms to IS: 1786-2008 Amendment No. 2 for Grade FE 500 w.r.t. above tests.

Note:- TS/YS ratio refers to ratio of tensile strength to the yield stress of the test piece.

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TEST CERTIFICATE

000371769

Issued To:

Client Code : S0595
SHYAM SEL & POWER LTD
S.S CHAMBER, 5 C.R AVENUE

Date 22/06/2015

Job No. 1505-1-171-3017

Booking No. RG1516/1/1847

Booking Date 27/05/2015

Customer Ref No. -

Customer Ref Date 25/05/2015



KOLKATA
WEST BENGAL-700072

Sample Description :

ONE SAMPLE DESCRIBED AS TMT BARS 20 MM, Make: - SEL THERMAX 500+ WAS RECEIVED.
The sampling was not carried out by SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH.
The sample particulars provided in the Test Certificate are based on the declaration by the party.

TEST RESULTS

(As Per IS: 1786-2008 with amendment No. 2)

S.No. Tests	Observation	Requirement Grade FE-500	Conformity	Protocol Adopted
A. Chemical Tests(% by wt.)				
1. Carbon	0.14	0.30 Max.	Yes	IS: 228 Part(1)
2. Sulfur	0.015	0.055 Max.	Yes	IS: 228 Part(9)
3. Phosphours	0.030	0.055 Max.	Yes	IS: 228 Part(3)
4. Sulfur + Phosphorus	0.045	0.105 Max.	Yes	IS: 1786-2008
B. Physical Tests				
1. TS/YS ratio ¹	1.22	>= 1.08 but TS	Yes	IS: 1786-2008
Tensile Strength, N/mm ²	692	not less than 545.0	Yes	IS: 1608-2005
2. Yield Stress, N/mm ²	566	500 Min.	Yes	IS: 1608-2005
3. Elongation (%) (Gauge Length 5.65 Sq Root Area)	20.8	12.0 Min.	Yes	IS: 1608-2005
4. Bend Test	Satisfactory	To satisfy the test	Yes	IS: 1599-2012
5. Rebend Test	Satisfactory	To satisfy the test	Yes	IS: 1786-2008
6. Mass per metre run (Kg)	2.496	Not less than 2.371	Yes	IS: 1786-2008
7. Deformation & Surface Characterstics				
a. Mean ribs area in mm ² /mm length	4.15	3.40 Min.	Yes	IS: 1786-2008
b. Mean projected area of transvers ribs in mm ² /mm length	4.15	1.13 Min.	Yes	IS: 1786-2008

Remarks: The sample conforms to IS: 1786-2008 Amendment No. 2 for Grade FE 500 w.r.t. above tests.

Note:- TS/YS ratio refers to ratio of tensile strength to the yield stress of the test piece.

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