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भारत सरकार

Government of India

005054

Form No : NTH (WR)/MUM-5

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

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Register No & Date

0060/NTH(WR)/M(L)/21/01/2022

परीक्षण सामग्री का विवरण

Description of Test Item

8 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

परीक्षण सामग्री का पहचान

Identification of Test Item

Embossed as ESSAR, ISI, 550, 8, 666713.

नमूना का विशिष्टि (यदि हों)

Product Specification (if any)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

नमूना प्राप्ति की तिथि

Date of Receipt of the Test Item

21/01/2022

कार्य सम्पादन की तिथि

Date(s) of Performance of Tests

From: 02/03/2022

To: 02/03/2022

व्यावहृत प्रणाली का पहचान

Method(s) used for Test

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

NA

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

Tested By

Aniruddha Mukherjee

SA(Mechanical)

Checked By

Kuppuraj Paramasivam

Scientist- B (Mechanical)

Approved By

D. V. S. Prasad

Scientist- D (Civil)



TC-7185

Note : Please See Overleaf / सूचनार्थ : कृप्या पृष्ठ के पीछे ध्यान दें ।

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भारत सरकार

Government of India

005055

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

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Register No & Date

0060/NTH(WR)/M(L)/21/01/2022

परीक्षण सामग्री का विवरण

Description of Test Item

10 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

परीक्षण सामग्री का पहचान

Identification of Test Item

Embossed as ESSAR, ISI, 550, 10, 666713.

नमूना का विशिष्टि (यदि हों)

Product Specification (If any)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

नमूना प्राप्ति की तिथि

Date of Receipt of the Test Item

21/01/2022

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Date(s) of Performance of Tests

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Method(s) used for Test

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

NA

Tested By

Aniruddha Mukherjee

SA(Mechanical)

Checked By

Kuppuraj Paramasivam

Scientist- B (Mechanical)

Approved By TC-7185

D. V. S. Prasad

Scientist- D (Civil)



Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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Government of India

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

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Test Name

Test Result

Limit

1

Test Results

Refer Annexure.

-

टिप्पणी

Note

Refer Annexure.

: Refer Annexure.

केफियत

Remarks



TC-7185

Tested By

Aniruddha Mukherjee

SA(Mechanical)

Checked By

Kuppuraj Paramasivam

Scientist- B (Mechanical)

Approved By

D. V. S. Prasad

Scientist- D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

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1642758731652No. of page
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ANNEXURE

As desired the sample described as Essar TMT Rebar, Sizes: 10 mm Diameter, Grade: Fe 550D has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	0.599	0.617 -8%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	689.0	550.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	24.5	14.5 Min.
	iii) Tensile Strength, N/mm ²	763.5	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	7.5	5 Min.
	v) TS/YS Ratio.	1.11	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion
V	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.12	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.029	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.030	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.059	0.075 Max.
	v) Carbon equivalent (CE)	0.23	0.61 Max



TC-7185

Remark: The above sample of Essar TMT Rebar, Sizes: 10 mm Diameter conforms requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D as regards of the above tests carried out.

Tested by

Aniruddha Mukherjee
Scientific Assistant (Mech.)

Checked by

Kuppuraj Paramasivam
Scientist B(Mech.)

Approved by

D. V. S. Prasad
Scientist D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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Government of India

005058

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

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0060/NTH(WR)/M(L)/21/01/2022

परीक्षण सामग्री का विवरण

Description of Test Item

12 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

परीक्षण सामग्री का पहचान

Identification of Test Item

Embossed as ESSAR, ISI, 550, 12, 666713.

नमूना का विशिष्टि (यदि हों)

Product Specification (if any)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

नमूना प्राप्ति की तिथि

Date of Receipt of the Test Item

21/01/2022

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To: 02/03/2022

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Method(s) used for Test

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

नमूना प्रक्रिया वहाँ प्रासंगिक हों

Sampling Procedure where relevant

NA

Tested By

Anruddha Mukherjee

SA(Mechanical)

Checked By

Kuppuraj Paramasivam

Scientist- B (Mechanical)

Approved By

TC-7185

D. V. S. Prasad

Scientist- D (Civil)



Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

47668

ULR:TC 7185 224 00000013F



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 Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

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1	Test Results	Refer Annexure.	-
	टिप्पणी Note	: Refer Annexure.	
	कैफियत Remarks	: Refer Annexure.	



TC-7185

Tested By

Aniruddha Mukherjee
SA(Mechanical)

Checked By

Kuppuraj Paramasivam
Scientist- B (Mechanical)

Approved By

D. V. S. Prasad
Scientist- D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

47669

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Government of India

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Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

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ANNEXURE

As desired the sample described as Essar TMT Rebar, Sizes: 12 mm Diameter, Grade: Fe 550D has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	0.871	0.888 -6%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	688.4	550.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	18.5	14.5 Min.
	iii) Tensile Strength, N/mm ²	753.0	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	7.5	5 Min.
	v) TS/YS Ratio.	1.09	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion
V	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.12	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.018	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.022	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.040	0.075 Max.
	v) Carbon equivalent (CE)	0.24	0.61 Max



TC-7185

Remark: The above sample of Essar TMT Rebar, Sizes: 12 mm Diameter conforms requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D as regards of the above tests carried out.

Tested by

Aniruddha Mukherjee
Scientific Assistant (Mech.)

Checked by

Kuppuraj Paramasivam
Scientist B(Mech.)

Approved by

D. V. S. Prasad
Scientist D (Civil)



सत्यमेव जयते

भारत सरकार

Government of India 005057

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
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NATIONAL TEST HOUSE (Western region)

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पंजिका सं एवं दिनांक

0060/NTH(WR)/M(L)/21/01/2022

Register No & Date

परीक्षण सामग्री का विवरण

16 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-02 Nos of approx 01 meter length each.

Description of Test Item

परीक्षण सामग्री का पहचान

Embossed as ESSAR, ISI, 550, 16, 666713.

Identification of Test Item

नमूना का विशिष्टि (यदि हों)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

Product Specification (If any)

नमूना प्राप्ति की तिथि

21/01/2022

Date of Receipt of the Test Item

कार्य सम्पादन की तिथि

From: 02/03/2022

To: 02/03/2022

Date(s) of Performance of Tests

ब्याबहूत प्रणाली का पहचान

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

Method(s) used for Test

NA

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

Tested By

Aniruddha Mukherjee

SA(Mechanical)

Checked By

Kuppuraj Paramasivam

Scientist- B (Mechanical)

Approved By

D. V. S. Prasad

Scientist- D (Civil)



TC-7185

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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Sl. No.

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Test Results

Refer Annexure.

-

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Note

Refer Annexure.

:

: Refer Annexure.

कैफियत
Remarks

TC-7185

Tested By

Anruddha Mukherjee
SA(Mechanical)

Checked By

Kuppuraj Paramasivam
Scientist- B (Mechanical)

Approved By

D. V. S. Prasad
Scientist- D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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ANNEXURE

As desired the sample described as Essar TMT Rebar, Sizes: 16 mm Diameter, Grade: Fe 550D has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	1.54	1.58 -6%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	628.9	550.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	19.6	14.5 Min.
	iii) Tensile Strength, N/mm ²	705.5	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	9.0	5 Min.
	v) TS/YS Ratio.	1.12	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion
V	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.09	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.015	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.023	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.038	0.075 Max.
	v) Carbon equivalent (CE)	0.20	0.61 Max



Remark: The above sample of Essar TMT Rebar, Sizes: 16 mm Diameter conforms requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D as regards of the above tests carried out.

Tested by

Aniruddha Mukherjee
Scientific Assistant (Mech.)

Checked by

Kuppuraj Paramasivam
Scientist B(Mech.)

Approved by

D. V. S. Prasad
Scientist D (Civil)



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Register No & Date

परीक्षण सामग्री का विवरण

20 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

Description of Test Item

परीक्षण सामग्री का पहचान

Embossed as ESSAR, ISI, 550, 20, 666713.

Identification of Test Item

नमूना का विशिष्टि (यदि हों)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

Product Specification (If any)

नमूना प्राप्ति की तिथि

21/01/2022

Date of Receipt of the Test Item

कार्य सम्पादन की तिथि

From: 02/03/2022

To: 02/03/2022

Date(s) of Performance of Tests

व्यावहृत प्रणाली का पहचान

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

Method(s) used for Test

NA

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

Tested By

Checked By

Approved By

Aniruddha Mukherjee

Kuppura Paramasivam

D. V. S. Prasad

SA(Mechanical)

Scientist- B (Mechanical)

Scientist- D (Civil)

TC-7185





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ANNEXURE

As desired the sample described as Essar TMT Rebar, Sizes: 20 mm Diameter, Grade: Fe 550D has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	2.45	2.47 -4%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	580.9	550.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	16.9	14.5 Min.
	iii) Tensile Strength, N/mm ²	670.9	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	7.4	5 Min.
	v) TS/YS Ratio.	1.15	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion
V	Chemical Composition: Clause 4.2		
	i) Carbon (as C) , Content percent.	0.17	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.026	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.032	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.058	0.075 Max.
	v) Carbon equivalent (CE)	0.29	0.61 Max



TC-7185

Remark: The above sample of Essar TMT Rebar, Sizes: 20 mm Diameter conforms requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D as regards of the above tests carried out.

Tested by

Aniruddha Mukherjee
Scientific Assistant (Mech.)

Checked by

Kuppuraj Paramasivam
Scientist B(Mech.)

Approved by

D. V. S. Prasad
Scientist D (Civil)



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पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2021/67(M), Date. 28.03.2022			
परीक्षण सामग्री का विवरण Description of the test item	: 25 mm dia. ESSAR TMT Rebar, Grade Fe 550D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 25 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 550D, 25, 666713.			
नमूना का विशिष्ट (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1- 4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 28.03.2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 28/03/2022 to 06/04/2022			
व्यवहृत प्रनाली का पहचान Method(s) used for test	: IS 1608 (Part 1): 2018, IS 1599-2019 & OES Method IS 8811: 1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



ध्यान दें :

1. यह परीक्षण/अंशांकन प्रमाण पत्र पूर्ण रूप के अलावा तब पुनः प्रस्तुत नहीं किया जाएगा जब तक कि अनुमोदित सारांश प्रस्तुति के लिए निदेशक, राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र), मुंबई से अनुमति न लिया गया है।
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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 25 mm dia. Grade Fe 550D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	3.84	3.85 -4%. Plus tolerances not specified
Mechanical Properties : Clause 8.1, 9.2 & Table 3			
II	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	627.8	550.0 Min.
	ii) Percentage Elongation on gauge length 5.65√A where A is the cross sectional area of the test piece.	17.4	14.5 Min.
	iii) Tensile Strength, N/mm ²	726.2	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length 5.65√A Where A is the cross sectional area of the test piece.	5.8	5 Min.
	v) TS/Ys Ratio.	1.17	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 25 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)

ध्यान दें :

१. यह परीक्षण/अंशांकन प्रमाण पत्र पूर्ण रूप के अलावा तब पुनः प्रस्तुत नहीं किया जाएगा जब तक कि अनुमोदित सारांश प्रस्तुति के लिए निदेशक, राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र), मुंबई से अनुमति न लिया गया है।
२. यह परीक्षण/अंशांकन प्रमाण पत्र केवल उन नमूनों/सामग्रीयों से संबंधित है जो कि प्रयोगशाला में परीक्षण/अंशांकन के लिए जमा किया गया हो।

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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 25 mm dia. Grade Fe 550D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
Chemical Composition: Clause 4.2			
I	i) Carbon (as C), Content percent.	0.19	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.016	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.024	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.040	0.075 Max.



TC-7185

Remark: The above sample of ESSAR TMT Rebar 25 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D in regards of the above tests carried out.

Tested by

J Srinivas Rao

(Srinivas Rao J)
Scientific Assistant (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Anath Bandhu Mondal

(Dr. Anath Bandhu Mondal)
Scientist C (Chem.)

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2. यह परीक्षण/अंशांकन प्रमाण पत्र केवल उन नमूनों/सामग्रियों से संबंधित है जो कि प्रयोगशाला में परीक्षण/अंशांकन के लिए जमा किया गया हो।

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ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL Date 14.03.2022			
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2021/67(M), Date. 28.03.2022			
परीक्षण सामग्री का विवरण Description of the test item	: 25 mm dia. ESSAR TMT Rebar, Grade Fe 550D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 25 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 550D, 25, 666713.			
नमूना का विशिष्टि (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1- 4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 28.03.2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 28/03/2022 to 06/04/2022			
व्यवहृत प्रणाली का पहचान Method(s) used for test	: OES Method IS 8811: 1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



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ANNEXURE

RESULT:

As desired the sample described as ESSAR TMT Rebar 25 mm dia. Grade Fe 550D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Chemical Composition: Clause 4.2		
	Carbon Equivalent, Content percent.	0.32	0.61 Max.

Note: Read with conjunction of TC No. NTH(WR)/M(L)/2021/67A(M)

Remark: The above sample of ESSAR TMT Rebar 25 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D in regards of the above tests carried out.

Tested by

J. Srinivas Rao

(Srinivas Rao J)
Scientific Assistant (Chem.)

Checked by

Dr. Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Dr. Anath Bandhu Mondal

(Dr. Anath Bandhu Mondal)
Scientist C (Chem.)



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005059

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Date: 12/01/2022

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Register No & Date

0060/NTH(WR)/M(L)/21/01/2022

परीक्षण सामग्री का विवरण

Description of Test Item

25 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

परीक्षण सामग्री का पहचान

Identification of Test Item

Embossed as ESSAR, ISI, 550, 25, 666713.

नमूना का विशिष्टि (यदि हों)

Product Specification (If any)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

नमूना प्राप्ति की तिथि

Date of Receipt of the Test Item

21/01/2022

कार्य सम्पादन की तिथि

Date(s) of Performance of Tests

From: 02/03/2022

To: 02/03/2022

ब्याबद्धत प्रणाली का पहचान

Method(s) used for Test

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

NA

Tested By

Aniruddha Mukherjee
SA(Mechanical)

Checked By

Kuppuraj Paramasivam
Scientist- B (Mechanical)

Approved By

D. V. S. Prasad
Scientist- D (Civil)

TC-7185

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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Register No & Date

परीक्षण सामग्री का विवरण

32 mm dia. ESSAR TMT Rebar, Grade Fe 550D,
Quantity-03 Nos of approx 01 meter length each.

Description of Test Item

परीक्षण सामग्री का पहचान

Embossed as ESSAR, ISI, 550, 32, 666713.

Identification of Test Item

नमूना का विशिष्टि (यदि हों)

IS 1786 (2008): High strength deformed steel bars and wires for
concrete reinforcement, AMENDMENT NO. 1-4.

Product Specification (If any)

नमूना प्राप्ति की तिथि

21/01/2022

Date of Receipt of the Test Item

कार्य सम्पादन की तिथि

From: 02/03/2022

To: 02/03/2022

Date(s) of Performance of Tests

व्यावहृत प्रणाली का पहचान

IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS
8811:1998.

Method(s) used for Test

NA

नमूना प्रक्रिया जहाँ प्रासंगिक हों

Sampling Procedure where relevant

Tested By

Aniruddha Mukherjee

SA(Mechanical)

Checked By

Kuppura Paramasivam

Scientist- B (Mechanical)

Approved By

D. V. S. Prasad

Scientist- D (Civil)



TC-7185

Note : Please See Overleaf / सूचनार्थ : कृप्या पृष्ठ के पीछे ध्यान दें ।

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Test Name

Test Result

Limit

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Test Results

Refer Annexure.

-

टिप्पणी
Note

Refer Annexure.

: Refer Annexure.

केफियत
Remarks

TC-7185

Tested By

Anruddha Mukherjee
SA(Mechanical)

Checked By

Kuppuraj Paramasivam
Scientist- B (Mechanical)

Approved By

D. V. S. Prasad
Scientist- D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृप्या पृष्ठ के पीछे ध्यान दें ।

47681

LR: TC 718522400000017E



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ANNEXURE

As desired the sample described as Essar TMT Rebar, Sizes: 32 mm Diameter, Grade: Fe 550D has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 550D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	6.28	6.31 -8%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	598.6	550.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	17.9	14.5 Min.
	iii) Tensile Strength, N/mm ²	709.4	600.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	9.7	5 Min.
	v) TS/YS Ratio.	1.18	≥ 1.08
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion
V	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.20	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.021	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.030	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.051	0.075 Max.
	v) Carbon equivalent (CE)	0.36	0.61 Max



TC-7185

Remark: The above sample of Essar TMT Rebar, Sizes: 32 mm Diameter conforms requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 550D as regards of the above tests carried out.

Tested by

Aniruddha Mukherjee
Scientific Assistant (Mech.)

Checked by

Kuppuraj Paramasivam
Scientist B(Mech.)

Approved by

D. V. S. Prasad
Scientist D (Civil)



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Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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NTH(WR)/M(L)/2022/01A(M)	13/04/2022	(MANUAL)	1	3
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 400034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL Date 12.01.2022			
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M), Date. 01.04.2022			
परीक्षण सामग्री का विवरण Description of the test item	: 8 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 8 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 8, 711166.			
नमूना का विशिष्टि (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रनाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 8 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	0.397	0.395 -8%. Plus tolerances not specified
Mechanical Properties : Clause 8.1, 9.2 & Table 3			
II	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	647.2	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	25.9	16.0 Min.
	iii) Tensile Strength, N/mm ²	762.6	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	9.6	5 Min.
	v) TS/YS Ratio.	1.18	≥ 1.10
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 8 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 8 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.22	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.034	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.026	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.060	0.075 Max.



TC-7185

Remark: The above sample of ESSAR TMT Rebar 8 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

B. Conk

(Marxe K)
Scientific Officer (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
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राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



31471

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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01B(M)	13/04/2022	(MANUAL)	1	3
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 400034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL	Date 12.01.2022		
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M),	Date. 01.04.2022		
परीक्षण सामग्री का विवरण Description of the test item	: 10 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 10 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 10, 711166.			
नमूना का विशिष्टि (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रणाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



सत्यमेव जयते

भारत सरकार
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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01B(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 2	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 10 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	0.598	0.617 -8%. Plus tolerances not specified
Mechanical Properties : Clause 8.1, 9.2 & Table 3			
II	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	652.5	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	20.8	16.0 Min.
	iii) Tensile Strength, N/mm ²	749.8	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	9.1	5 Min.
	v) TS/YS Ratio.	1.15	≥ 1.10
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 10 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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भारत सरकार
Government of India

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01B(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 3	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 10 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
1	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.19	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.028	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.017	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.045	0.075 Max.



Remark: The above sample of ESSAR TMT Rebar 10 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

b. Conter

(Marxe K)
Scientific Officer (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01C(M)	13/04/2022	(MANUAL)	1	3
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 4000034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL	Date 12.01.2022		
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M),	Date. 01.04.2022		
परीक्षण सामग्री का विवरण Description of the test item	: 12 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 12 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 12, 711166.			
नमूना का विशिष्ट (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रणाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



सत्यमेव जयते

भारत सरकार
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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093

Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01C(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 2	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 12 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	0.870	0.888 -6%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	582.0	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	20.8	16.0 Min.
	iii) Tensile Strength, N/mm ²	690.1	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	7.7	5 Min.
	v) TS/YS Ratio.	1.19	≥ 1.10
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 12 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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सत्यमेव जयते

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Government of India

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01C(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 3	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 12 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.13	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.022	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.016	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.038	0.075 Max.



TC-7185

Remark: The above sample of ESSAR TMT Rebar 12 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

B. Comte

(Marxe K)
Scientific Officer (Chem.)

Checked by

Dr. Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Dr. Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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000093

परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01D(M)	13/04/2022	(MANUAL)	1	3

जिसे जारी करना है Issued to	: Stecol International Private Ltd.
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 4000034.
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL Date 12.01.2022
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M), Date. 01.04.2022
परीक्षण सामग्री का विवरण Description of the test item	: 16 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.
परीक्षण सामग्री का पहचान Identification of the test item	: 16 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 16, 711166.
नमूना का विशिष्ट (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022
व्यवहृत प्रणाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



सत्यमेव जयते

भारत सरकार
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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093

Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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000093

परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01D(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 2	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 16 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	1.52	1.58 -6%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	594.5	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	19.8	16.0 Min.
	iii) Tensile Strength, N/mm ²	690.6	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	7.1	5 Min.
v) TS/YS Ratio.	1.16	≥ 1.10	
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 16 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)

Note : Please See Overleaf / सूचनार्थ : कृपया पृष्ठ के पीछे ध्यान दें ।

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सत्यमेव जयते

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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01D(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 3	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 16 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.12	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.018	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.016	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.034	0.075 Max.



TC-7185

Remark: The above sample of ESSAR TMT Rebar 16 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Marxe K)
Scientific Officer (Chem.)

Checked by

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



31476

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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01E(M)	13/04/2022	(MANUAL)	1	3
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 4000034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL	Date 12.01.2022		
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M),	Date. 01.04.2022		
परीक्षण सामग्री का विवरण Description of the test item	: 20 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 20 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 20, 711166.			
नमूना का विशिष्ट (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रणाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



Tested by

(Signature)

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Signature)

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(Signature)

(D. V. S. Prasad)
Scientist D (Civil)



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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01E(M)	13/04/2022	(MANUAL)	2	3

ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 20 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	2.53	2.47 -4%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	549.0	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	19.3	16.0 Min.
	iii) Tensile Strength, N/mm ²	677.9	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	9.7	5 Min.
v) TS/YS Ratio.	1.23	≥ 1.10	
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



Remark: The above sample of ESSAR TMT Rebar 20 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



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Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01E(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 3	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 20 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.21	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.032	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.026	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.058	0.075 Max.



TC-7185

Remark: The above sample of ESSAR TMT Rebar 20 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

B. Cantor

(Marxe K)

Scientific Officer (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01F(M)	13/04/2022	(MANUAL)	1	3
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 4000034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL	Date 12.01.2022		
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M),		Date. 01.04.2022	
परीक्षण सामग्री का विवरण Description of the test item	: 25 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each.			
परीक्षण सामग्री का पहचान Identification of the test item	: 25 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 25, 711166.			
नमूना का विशिष्टि (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रणाली का पहचान Method(s) used for test	: IS 1608 (Part 1):2018, IS 1599:2019 & (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			



TC-7185

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



सत्यमेव जयते

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NATIONAL TEST HOUSE (Western region)

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Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



31475

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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No NTH(WR)/M(L)/2022/01F(M)	जारी होने की तिथि Date of Issue 13/04/2022	कोड न Code No (MANUAL)	पृष्ठ Page 2	पृष्ठ की संख्या No. of Page 3
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ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 25 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	3.79	3.85 -4%. Plus tolerances not specified
II	Mechanical Properties : Clause 8.1, 9.2 & Table 3		
	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	527.2	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	20.4	16.0 Min.
	iii) Tensile Strength, N/mm ²	637.7	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	11.3	5 Min.
v) TS/YS Ratio.	1.21	≥ 1.10	
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 25 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



सत्यमेव जयते

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उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



31475

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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01F(M)	13/04/2022	(MANUAL)	3	3

ANNEXURE - II

RESULT:

As desired the sample described as ESSAR TMT Rebar 25 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Chemical Composition: Clause 4.2		
	i) Carbon (as C), Content percent.	0.19	0.25 Max.
	ii) Sulphur (as S), Content percent.	0.032	0.040 Max.
	iii) Phosphorus (as P), Content percent.	0.027	0.040 Max.
	iv) Sulphur plus Phosphorus, Content percent.	0.059	0.075 Max.



Remark: The above sample of ESSAR TMT Rebar 25 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

B. Condit

(Marxe K)
Scientific Officer (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)



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Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01G(M)	13/04/2022	(MANUAL)	2	3

ANNEXURE - I

RESULT:

As desired the sample described as ESSAR TMT Rebar 32 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the results noted below:

Sl. No	TESTS	Result	Specified Individual Values Grade: Fe 500D
I	Mass per meter, Kg. Clause 6.2, 6.3 & 7.2 Table 1 & 2	6.21	6.31 -4%. Plus tolerances not specified
Mechanical Properties : Clause 8.1, 9.2 & Table 3			
II	i) 0.2% Proof Stress/ Yield Stress, N/mm ²	542.9	500.0 Min.
	ii) Percentage Elongation on gauge length $5.65\sqrt{A}$ where A is the cross sectional area of the test piece.	19.5	16.0 Min.
	iii) Tensile Strength, N/mm ²	636.4	565.0 Min.
	iv) Percentage Elongation at maximum force on gauge length $5.65\sqrt{A}$ Where A is the cross sectional area of the test piece.	12.1	5 Min.
	v) TS/YS Ratio.	1.17	≥ 1.10
III	Bend test, Clause 9.3 & Table 4.	Satisfactory	No rupture or crack visible on bend portion
IV	Re-bend test, Clause 9.4 & 9.4.1	Satisfactory	No rupture or crack visible on re bend portion



TC-7185

Remark: The above sample of ESSAR TMT Rebar 32 mm dia confirms the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the above tests carried out.

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)



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NATIONAL TEST HOUSE (Western region)

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Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



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31477

परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01H(M)	13/04/2022	(MANUAL)	1	2
जिसे जारी करना है Issued to	: Stecol International Private Ltd.			
पता Address	: ESSAR House, 14 th Floor, 11 K. K. Marg, Mahalaxmi, Mumbai 400034.			
ग्राहक का सन्दर्भ सं. एवं दिनांक Customer's Ref. No.	: NIL		Date: 12.01.2022	
पंजिका सं. एवं दिनांक Register No. and Date	: NTH(WR)/M/2022/01 (M),		Date: 01.04.2022	
परीक्षण सामग्री का विवरण Description of the test item	: 8, 10,12,16,20,25 & 32 mm dia. ESSAR TMT Rebar, Grade Fe 500D, Quantity-03 Nos of approx 01 meter length each of Dia.			
परीक्षण सामग्री का पहचान Identification of the test item	: 8, 10,12,16,20,25 & 32 mm dia. ESSAR TMT Rebar Embossed as ESSAR, ISI, 500D, 711166.			
नमूना का विशिष्टि (यदि हो) Product Specification (if any)	: IS 1786 (2008): High strength deformed steel bars and wires for concrete reinforcement, AMENDMENT NO. 1-4.			
नमूना प्राप्ति की तिथि Date of receipt of test the Item	: 01/04/2022			
कार्य संपादन की तिथि Date of Performance of the Tests	: 01/04/2022 to 11/04/2022			
व्यवहृत प्रनाली का पहचान Method(s) used for test	: (OES) method IS 8811:1998.			
नमूना प्रक्रिया जहाँ प्रासंगिक हो Sampling procedure where relevant	: NA			

Tested by

(Aniruddha Mukherjee)
Scientific Assistant (Mech.)

Checked by

(Kuppuraj Paramasivam)
Scientist B (Mech.)

Approved by

(D. V. S. Prasad)
Scientist D (Civil)

ध्यान दें :

१. यह परीक्षण/अंशांकन प्रमाण पत्र पूर्ण रूप के अलावा तब पुनः प्रस्तुत नहीं किया जाएगा जब तक कि अनुमोदित सारांश प्रस्तुति के लिए निदेशक, राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र), मुंबई से अनुमति न लिया गया है।
२. यह परीक्षण/अंशांकन प्रमाण पत्र केवल उन नमूनों/सामग्रीयों से संबंधित है जो कि प्रयोगशाला में परीक्षण/अंशांकन के लिए जमा किया गया हो।

Note :

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भारत सरकार
Government of India

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, उपभोक्ता मामले विभाग
Ministry of Consumer Affairs, Food & Public Distribution, Department of Consumer Affairs

राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र)

NATIONAL TEST HOUSE (Western region)

प्लॉट सं. एफ-१०, एम.आई.डी.सी. मरोल, अंधेरी (पूर्व), मुंबई - 400 093
Plot No. F-10, M.I.D.C., Marol Andheri (E), Mumbai - 400 093



000097

परीक्षण प्रमाण पत्र

TEST CERTIFICATE

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड न Code No	पृष्ठ Page	पृष्ठ की संख्या No. of Page
NTH(WR)/M(L)/2022/01H(M)	13/04/2022	(MANUAL)	2	2

Result: As desired the sample described as ESSAR TMT Rebar 8, 10, 12, 16, 20, 25 & 32 mm dia. Grade Fe 500D, has been tested as per IS 1786:2008 with the result noted below:

Test Certificate No.	Description of the test item	Identification of the test item	Result Carbon Equivalent in %	Spec. Grade: Fe 500D
NTH(WR)/M(L)/2022/01A(M)	Ø8 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 8, 711166.	0.35	0.50 Max.
NTH(WR)/M(L)/2022/01B(M)	Ø10 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 10, 711166.	0.33	
NTH(WR)/M(L)/2022/01C(M)	Ø12 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 12, 711166.	0.26	
NTH(WR)/M(L)/2022/01D(M)	Ø16 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 16, 711166.	0.24	
NTH(WR)/M(L)/2022/01E(M)	Ø20 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 20, 711166.	0.34	
NTH(WR)/M(L)/2022/01F(M)	Ø25 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 25, 711166.	0.33	
NTH(WR)/M(L)/2022/01G(M)	Ø32 mm ESSAR TMT Rebar, Grade Fe 500D,	Embossed as ESSAR, ISI, 500D, 32, 711166.	0.32	

Note: Read in conjunction with the above mentioned TC numbers for Full parameters.

Remark: The above samples of ESSAR TMT Rebar dia. 8,10,12,16,20,25 & 32 mm are confirming to the requirement of IS 1786:2008 (Amend. No. 1-4) for the Grade Fe 500D in regards of the Chemical tests carried out.

Tested by

b. Candia

(Marxe K)
Scientific Officer (Chem.)

Checked by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

Approved by

Mangesh Gharpure

(Dr. Mangesh Gharpure)
Scientist C (Chem.)

ध्यान दें :

१. यह परीक्षण/अंशांकन प्रमाण पत्र पूर्ण रूप के अलावा तब पुनः प्रस्तुत नहीं किया जाएगा जब तक कि अनुमोदित सारांश प्रस्तुति के लिए निदेशक, राष्ट्रीय परीक्षण शाला (पश्चिमी क्षेत्र), मुंबई से अनुमति न लिया गया है।
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