



भारत सरकार Government of India
 राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
 तारामणी, चेन्नई, तमिलनाडु - 600113
 Tharamani, Chennai - 600113, Tamilnadu



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001586F

परीक्षण अनुरोध/Test Certificate No: **NTH(SR)/M(L)/26/10106** टेस्ट रिक्वेस्ट सं./Test Request No: **TR/SR/26/1310** जारी होने की तिथि/Date of Issue: **29 Apr, 2026** क्यूआर कोड/QR Code: **NTH260118632**

TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26MED4BBN
 Location of Testing : National Test House (SR), Chennai.

Section Certificate No. : 26MED4BBN_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 8 mm as "AMMAN TRY 550D ISI 8 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M Pull out test for 0 to 12 mm	M Pull out test for 0 to 12 mm	-	-	-	-	Please refer annexure.	Conforms
2	9.2 (4)	Tensile Strength (up to 12 mm), N/mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	683	Conforms
3	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	588,9	Conforms
4	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,16	Conforms
5	9.2 (2)	Elongation Percent on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	23,5	Conforms
6	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	0,363	-	kg/m	-	0,369	Conforms
7	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:06:07



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:36:44



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001586F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10106

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1310

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118632

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
8	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	8	Conforms
9	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	0,32	-	mm ² / mm	-	1,04	Conforms
10	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:06:07



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:36:44



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



भारत सरकार Government of India
 राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26MED4BBN

TC-13137

ULR : TC1313726700001586F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 8 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 8 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	2.90 —	5.87 102	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	4.19 —	9.20 120	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	5.34	11.42	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:06:07



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:36:44



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CHDD21N

TC-13137

ULR : TC1313726700001586F

Annexure

Encoded no.: 26CHDD21N

Sample: HSD Steel Bar (Size 8 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.20	0.25 (Max)
2.	Sulphur, %.	0.023	0.040 (Max)
3.	Phosphorus, %.	0.027	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.050	0.075 (Max)
5.	Carbon equivalent, %.	0.36	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:54:25



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:20:01



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



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National Test House (SR), Chennai
 तारामणी, चेन्नई, तमिलनाडु - 600113
 Tharamani, Chennai - 600113, Tamilnadu



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001587F

परीक्षण अनुरोध/Test Certificate No:
 NTH(SR)/M(L)/26/10105

टेस्ट रिक्वेस्ट सं./Test Request No:
 TR/SR/26/1335

जारी होने की तिथि/Date of Issue:
 29 Apr, 2026

क्यूआर कोड/QR Code:
 NTH260118716

TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26MEC9D7N
 Location of Testing : National Test House
 (SR), Chennai.

Section Certificate No. : 26MEC9D7N_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 10 mm as "AMMAN TRY 550D ISI 10 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M ₁ Pull out test for 0 to 12 mm	M ₁ Pull out test for 0 to 12 mm	-	-	-	-	Please refer annexure.	Conforms
2	9.2 (4)	Tensile Strength (up to 12 mm), N/mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	639	Conforms
3	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	560,7	Conforms
4	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,14	Conforms
5	9.2 (2)	Elongation Percent on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	25,7	Conforms
6	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	0,568	-	kg/m	-	0,587	Conforms
7	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:05:45



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:38:43



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001587F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10105

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1335

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118716

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
8	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	11	Conforms
9	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	0,40	-	mm ² / mm	-	1,57	Conforms
10	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:45



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:38:43



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



भारत सरकार Government of India
 राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26MEC9D7N

TC-13137

ULR : TC1313726700001587F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 10 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 10 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.39 —	5.94 75	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	4.70 —	9.85 110	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	5.49	11.38	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:45



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:38:42



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CHCE7CN

TC-13137

ULR : TC1313726700001587F

Annexure

Encoded no.: 26CHCE7CN

Sample: HSD Steel Bar (Size 10 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.20	0.25 (Max)
2.	Sulphur, %.	0.032	0.040 (Max)
3.	Phosphorus, %.	0.025	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.057	0.075 (Max)
5.	Carbon equivalent, %.	0.36	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:53:23



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:20:41



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001588F

परीक्षण अनुरोध/Test Certificate No: **NTH(SR)/M(L)/26/10104** टेस्ट रिक्वेस्ट सं./Test Request No: **TR/SR/26/1337** जारी होने की तिथि/Date of Issue: **29 Apr, 2026** क्यूआर कोड/QR Code: **NTH260118720**

TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26ME17B8N
 Location of Testing : National Test House (SR), Chennai.

Section Certificate No. : 26ME17B8N_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 12 mm as "AMMAN TRY 550D ISI 12 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M Pull out test for 0 to 12 mm	M Pull out test for 0 to 12 mm	-	-	-	-	Please refer annexure.	Conforms
2	9.2 (4)	Tensile Strength (up to 12 mm), N/mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	665	Conforms
3	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	577,0	Conforms
4	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,15	Conforms
5	9.2 (2)	Elongation Percent on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	22,6	Conforms
6	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	0,835	-	kg/m	-	0,871	Conforms
7	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:05:23



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:40:50



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001588F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10104

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1337

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118720

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
8	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	8	Conforms
9	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	0,60	-	mm ² / mm	-	1,89	Conforms
10	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:23



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:40:50



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



भारत सरकार Government of India
 राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26ME17B8N

TC-13137

ULR : TC1313726700001588F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 12 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 12 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.67 —	6.55 78	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	5.04 —	10.40 106	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	6.16	12.52	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:23



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:40:50



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CH1AFCN

TC-13137

ULR : TC1313726700001588F

Annexure

Encoded no.: 26CH1AFCN

Sample: HSD Steel Bar (Size 12 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.22	0.25 (Max)
2.	Sulphur, %.	0.024	0.040 (Max)
3.	Phosphorus, %.	0.030	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.054	0.075 (Max)
5.	Carbon equivalent, %.	0.36	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:52:46



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:19:59



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001589F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10103

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1338

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118721

TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26ME51B4N
Location of Testing : National Test House
(SR), Chennai.

Section Certificate No. : 26ME51B4N_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 16 mm as "AMMAN TRY 550D ISI 16 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M Pull out test for 16 to 40 mm	M Pull out test for 16 to 40 mm_M	-	-	-	-	Please refer annexure.	Conforms
2	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	567,5	Conforms
3	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,18	Conforms
4	9.2 (2)	Elongation Percent on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	17,8	Conforms
5	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	1,49	-	kg/m	-	1,53	Conforms
6	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:05:00



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:42:51



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001589F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10103

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1338

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118721

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
7	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	9	Conforms
8	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	0,80	-	mm ² / mm	-	2,82	Conforms
9	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms
10	9.2 (5)	Tensile Strength (16 to 28 mm), N/ mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	672	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:00



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:42:51



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



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National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26ME51B4N

TC-13137

ULR : TC1313726700001589F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 16 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 16 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.90 —	6.93 78	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	5.02 —	10.97 119	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	5.66	11.97	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:05:00



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:42:51



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



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राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CH548CN

TC-13137

ULR : TC1313726700001589F

Annexure

Encoded no.: 26CH548CN

Sample: HSD Steel Bar (Size 16 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.20	0.25 (Max)
2.	Sulphur, %.	0.027	0.040 (Max)
3.	Phosphorus, %.	0.025	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.052	0.075 (Max)
5.	Carbon equivalent, %.	0.38	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:51:34



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:19:26



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



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National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001590F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10102

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1339

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118722

TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26MEB0DFN
Location of Testing : National Test House
(SR), Chennai.

Section Certificate No. : 26MEB0DFN_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 20 mm as "AMMAN TRY 550D ISI 20 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M Pull out test for 16 to 40 mm	M Pull out test for 16 to 40 mm_M	-	-	-	-	Please refer annexure.	Conforms
2	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550.0	-	N/mm ²	-	561.9	Conforms
3	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1.08	-	-	-	1.18	Conforms
4	9.2 (2)	Elongation Percent on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14.5	-	%	-	19.7	Conforms
5	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	2.37	-	kg/m	-	2.42	Conforms
6	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:04:36



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:44:51



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



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National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001590F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10102

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1339

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118722

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
7	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	9	Conforms
8	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	1,13	-	mm ² / mm	-	2,77	Conforms
9	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms
10	9.2 (5)	Tensile Strength (16 to 28 mm), N/ mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	662	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:04:36



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:44:51



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



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National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26MEB0DFN

TC-13137

ULR : TC1313726700001590F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 20 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 20 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.69 —	7.54 104	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	4.75 —	10.06 112	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	5.54	12.79	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:04:36



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:44:51



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CHB468N

TC-13137

ULR : TC1313726700001590F

Annexure

Encoded no.: 26CHB468N

Sample: HSD Steel Bar (Size 20 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.21	0.25 (Max)
2.	Sulphur, %.	0.022	0.040 (Max)
3.	Phosphorus, %.	0.023	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.045	0.075 (Max)
5.	Carbon equivalent, %.	0.35	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:51:01



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:19:21



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR), Chennai
 तारामणी, चेन्नई, तमिलनाडु - 600113
 Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001591F

परीक्षण अनुरोध/Test Certificate No: NTH(SR)/M(L)/26/10101	टेस्ट रिक्वेस्ट सं./Test Request No: TR/SR/26/1340	जारी होने की तिथि/Date of Issue: 29 Apr, 2026	क्यूआर कोड/QR Code: NTH260118723
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TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26MEEA7FN
 Location of Testing : National Test House
 (SR), Chennai.

Section Certificate No. : 26MEEA7FN_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 25 mm as "AMMAN TRY 550D ISI 25 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M Pull out test for 16 to 40 mm	M Pull out test for 16 to 40 mm_M	-	-	-	-	Please refer annexure.	Conforms
2	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	574,3	Conforms
3	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,20	Conforms
4	9.2 (2)	Elongation Percent on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	19,6	Conforms
5	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	3,70	-	kg/m	-	3,81	Conforms
6	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the bent portion observed.	Conforms

Signature valid

Date: 2026-04-30 15:04:14



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:47:08



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



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राष्ट्रीय परीक्षण शाला (द.क्षे.),चेन्नई
National Test House (SR), Chennai
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
IS 1786 (2008)
ULR No.: TC1313726700001591F

परीक्षण अनुरोध/Test Certificate No:
NTH(SR)/M(L)/26/10101

टेस्ट रिक्वेस्ट सं./Test Request No:
TR/SR/26/1340

जारी होने की तिथि/Date of Issue:
29 Apr, 2026

क्यूआर कोड/QR Code:
NTH260118723

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
7	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	9	Conforms
8	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	1,42	-	mm ² / mm	-	4,48	Conforms
9	9.4	Rebend test (0 - 28 mm) - IS 1786: 2008	Rebend test to 135 / 157.5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms
10	9.2 (5)	Tensile Strength (16 to 28 mm), N/ mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	692	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:04:14



Senthil Kumar M , S.O. (Mech.)
Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
(Tested by)

Signature valid

Date: 2026-04-29 18:47:08



Mani S, Sc. D (Mech.)
OIC Testing/Calibration (Mechanical (Testing/Calibration))
(Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26MEEA7FN

TC-13137

ULR : TC1313726700001591F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 25 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 25 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.36 —	6.82 103	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	4.16 —	9.03 117	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	4.82	11.86	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:04:14



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:47:08



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CHEF32N

TC-13137

ULR : TC1313726700001591F

Annexure

Encoded no.: 26CHEF32N

Sample: HSD Steel Bar (Size 25 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.19	0.25 (Max)
2.	Sulphur, %.	0.032	0.040 (Max)
3.	Phosphorus, %.	0.030	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.062	0.075 (Max)
5.	Carbon equivalent, %.	0.34	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:50:38



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:18:37



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR), Chennai
 तारामणी, चेन्नई, तमिलनाडु - 600113
 Tharamani, Chennai - 600113, Tamilnadu



TC-13137

परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001592F

परीक्षण अनुरोध/Test Certificate No: NTH(SR)/M(L)/26/10100	टेस्ट रिक्वेस्ट सं./Test Request No: TR/SR/26/1341	जारी होने की तिथि/Date of Issue: 29 Apr, 2026	क्यूआर कोड/QR Code: NTH260118724
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TEST RESULT

Division : Mechanical (Testing/Calibration)

Test Item Lab Code : 26ME21A1N
 Location of Testing : National Test House (SR), Chennai.

Section Certificate No. : 26ME21A1N_1

Identification of Sample : Embossed on the sample of HSD Steel Bar of Nominal Size 32 mm as "AMMAN TRY 550D ISI 32 662709".

Sampling Procedure where relevant : NA.

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
1	5.7	M_Pull out test for 16 to 40 mm	M_Pull out test for 16 to 40 mm_M	-	-	-	-	Please refer annexure.	Conforms
2	9.4 (1)	Rebend test (32 to 40mm)- IS 1786: 2008	Rebend test to 135 / 157,5 degree bend	-	-	Visual	-	Satisfactory. No rupture or crack on the re-bent portion observed.	Conforms
3	9.2 (6)	Tensile Strength (32 to 40 mm), N/mm ² - IS 1608 (Part 1): 2022.	Tensile Test	600	-	N/mm ²	-	672	Conforms
4	9.2	Yield Stress/ 0.2 % Proof Stress, N/mm ² - IS 1608 (Part 1): 2022.	Mechanical Test	550,0	-	N/mm ²	-	551,6	Conforms
5	9.2 (1)	TS/ YS Ratio - (IS 1786: 2008/ IS 1608 (Part 1): 2022).	Tensile Test	1,08	-	-	-	1,22	Conforms
6	9.2 (2)	Elongation Percent on gauge length of 5.65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	14,5	-	%	-	20,7	Conforms
7	7.2	Mass per metre run, kg/m - IS 1786: 2008	Mass per metre run	6,06	-	kg/m	-	6,21	Conforms

Signature valid

Date: 2026-04-30 15:03:49



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:49:05



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR), Chennai
 तारामणी, चेन्नई, तमिलनाडु - 600113
 Tharamani, Chennai - 600113, Tamilnadu



परीक्षण प्रमाण-पत्र/Test Certificate

Complete
 IS 1786 (2008)
 ULR No.: TC1313726700001592F

परीक्षण अनुरोध/Test Certificate No: **NTH(SR)/M(L)/26/10100** टेस्ट रिक्वेस्ट सं./Test Request No: **TR/SR/26/1341** जारी होने की तिथि/Date of Issue: **29 Apr, 2026** क्यूआर कोड/QR Code: **NTH260118724**

S. No.	Clause No.	Parameter	Method of test	Min Limit	Max Limit	Unit	Env. Condition	Result/Observation	Remarks
8	9.3	Bend test - IS 1599: 2023.	Bend Test to 180 degree bend	-	-	Visual	-	Satisfactory, No rupture or crack on the bent portion observed.	Conforms
9	9.2 (3)	Total Elongation at Maximum Force on gauge length of 5,65 Square Root of Cross- Sectional Area, % - IS 1608 (Part 1): 2022.	Mechanical Test	5	-	%	-	10	Conforms
10	5.4	Rib Area, mm ² / mm - IS 1786: 2008	Mean Projected Rib Area of Transverse Ribs, Sq mm/ mm	1.81	-	mm ² / mm	-	5.44	Conforms

नोट/Note: Disclaimer : 1. The information / data provided by the customer is clearly identified in the Test Report. The laboratory is not responsible for the information / data provided by the customer, 2. Conformity statement is based on the limiting values of the product specification of the tested parameters without considering the Measurement Uncertainty.

टिप्पणियां/Remarks: In respect of tests carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:03:49



Senthil Kumar M , S.O. (Mech.)
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:49:05



Mani S, Sc. D (Mech.)
 OIC Testing/Calibration (Mechanical (Testing/Calibration))
 (Reviewed & Approved by)



भारत सरकार Government of India
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National Test House (SR)
 तारामणी, चेन्नई, तमिलनाडु – 600113
 Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26ME21A1N

TC-13137

ULR : TC1313726700001592F

Annexure

Page no.: 1 of 1

Identification Marks: Embossed as “AMMAN TRY 550D ISI 32 662709”.

As desired, the sample of “High Strength Deformed Steel Bar of nominal size 32 mm” has been tested as per IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

RESULTS OF TESTS:

Pull out test (Comparative bond strength test as per Cl. 5 of IS 1786:2008).
Bond Stress (Average of 3 samples), in N/mm²

Sl. No.	Nature of tests	Observed Values		Requirements of Cl. 5 of IS 1786:2008, (RA 2018) Amendment No. 4, July 2019 for Grade Fe 550D
		Plain bar	HSD steel bar (TMT bar)	
1	Pull out test. (As per Cl. 5)			
1.1	Bond Stress at 0.025 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.19 —	6.29 97	— Bond Stress of deformed bar shall exceed minimum 40% against corresponding plain bar.
1.2	Bond Stress at 0.25 mm slip. i. Bond Stress, N/mm ² ii. Percentage increase in Bond Stress of deformed bar against corresponding plain bar, %.	3.91 —	8.77 124	— Bond Stress of deformed bar shall exceed minimum 80% against corresponding plain bar.
1.3	Bond Stress at Ultimate Failure. Bond Stress, N/mm ²	4.42	10.61	—

Note: NA.

Remark: In respect of “Pull Out Test” carried out, the sample meets the requirements of IS 1786:2008 (Reaffirmed 2018) Amendment No. 4, July 2019 for Grade Fe 550D.

Signature valid

Date: 2026-04-30 15:03:49



Senthil Kumar M
 Lab Sc. Testing/Calibration (Mechanical (Testing/Calibration))
 (Tested by)

Signature valid

Date: 2026-04-29 18:49:05



Mani S
 OIC Testing/Calibration (Mechanical (Testi...))
 (Reviewed & Approved by)



भारत सरकार Government of India
राष्ट्रीय परीक्षण शाला (द.क्षे.)
National Test House (SR)
तारामणी, चेन्नई, तमिलनाडु - 600113
Tharamani, Chennai - 600113, Tamilnadu



Section Code : 26CH2624N

TC-13137

ULR : TC1313726700001592F

Annexure

Encoded no.: 26CH2624N

Sample: HSD Steel Bar (Size 32 mm)

Specification: IS 1786:2008 (RA 2018) (read with amendment no. 4, July-2019)

Grade: "Fe 550D"

Results of Tests:

Sl. No.	Tested parameters	Observed Values	Requirements of IS 1786:2008, (RA 2018) read with amendment no. 4, July 2019 for Grade "Fe 550D"
Chemical Composition, % by mass (As per Clause 4.2)			
1.	Carbon, %.	0.21	0.25 (Max)
2.	Sulphur, %.	0.021	0.040 (Max)
3.	Phosphorus, %.	0.022	0.040 (Max)
4.	Sulphur and Phosphorus, %.	0.043	0.075 (Max)
5.	Carbon equivalent, %.	0.37	0.61(Max)

— END OF TEST REPORT —

Signature valid

Date: 2026-04-30 12:49:05



R Murali
Lab Sc. Testing/Calibration (Chemical (General, Standard, Metal, Oil Fuel))
(Tested by)

Signature valid

Date: 2026-04-29 20:18:12



Dr. Amarnath Chakraborty
OIC Testing/Calibration (Chemical (General...))
(Reviewed & Approved by)