

Testing to the Core



TEST REPORT

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Issued to:

JSW STEELS LIMITED,
Vijayanagar Works
Toranagallu (V) - 583275
Vidyanagar Post
Bellary District.

Report No: LL/24-25/008803
Issue Date: 02/01/2025.
C. Ref: Letter.
Ref. Date: 11/12/2024.

Sample Particulars: TMT BAR-Ø8mm, Grade: Fe500D. BRAND NAME: JSW NEO STEEL.

Sample Description: TMT Bar Ø8mm. **Heat No:** G986988.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding pullout test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
4.2	Chemical composition			
1	Carbon as C	% by mass	0.25 + 0.02 Max.	0.22
2	Sulphur as S	% by mass	0.040 + 0.005Max.	0.017
3	Phosphorus as P	% by mass	0.040 + 0.005Max.	0.021
4	Manganese as Mn	% by mass	---	0.80
5	Sulphur + Phosphorus	% by mass	0.075+ 0.010 Max.	0.038
6	Silicon as Si	% by mass	--	0.25
7	Carbon equivalent, CE		0.50 Max	0.37
8	Micro-alloying elements (Nb+V+Ti+B)	% by mass	0.30 Max.	0.002
9	Nitrogen Content	% by mass	0.012 Max.	0.007
4.3	Rolling and cold working of bars/wires		The bars/wires shall be well and cleanly rolled and shall be sound and free from surface defects and pipe.	Bars are well and cleanly rolled, sound. Free from surface defects and pipe.
5.0	Requirements for Bond (Deformation and surface characteristics)			
5.3	The mean projected rib area per unit length	mm ² /mm	0.12 Ø for Ø < 10mm (i.e., 0.96 Min.)	1.13
5.5	The mean projected area of transverse rib above	mm ² /mm	Shall not be less than one-third of the value given above. (i.e., 1/3 of 0.96 = 0.32Min)	1.13


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Sample Particulars: **TMT BAR-Ø8mm,** Grade: **Fe500D.** BRAND NAME: **JSW NEO STEEL.**

Sample Description: TMT Bar Ø8mm. **Heat No:** G986988.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding pullout test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
6.0	Nominal Sizes			
6.1	Nominal size of bar	mm	8.0	8.0
6.2	Nominal cross-sectional area	mm ²	50.3	48.5
6.3	Mass per metre	kg	0.395 - 8%	0.381
8 & 9	Physical properties			
9.2 (i)	TS/YS Ratio	---	≥ 1.10 (but TS not less than 565 N/mm ²)	1.14 (TS 682 N/mm ²)
(ii)	0.2% Proof Stress/Yield Stress	N/mm ²	500 Min	596
(iii)	Elongation on 5.65√So mm Gauge Length	Percent	16.0 Min.	23.0
(iv)	Total elongation at maximum force on 5.65 √So mm GL.	Percent	5 Min.	9.5
9.3	Bend Test	Visual	Pass the test if there is no rupture or cracks in the bent portion.	No rupture or cracks observed.
9.4	Rebend Test	Visual	Pass the test if there is no rupture or cracks in the rebent portion.	No rupture or cracks observed.

Method of testing: As per IS:8811-1998(RA2012), IS: 1608(P1)-2022, IS: 2770(Part-1), IS: 1599-2023 & IS: 1786-2008(RA 2018).

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Issued to:

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Vidyanagar Post
Bellary District.

Report No: LL/24-25/008804

Issue Date: 02/01/2025.

C. Ref: Letter.

Ref. Date: 11/12/2024.

Sample Particulars: TMT BAR-Ø8mm, Grade: Fe550D. BRAND NAME: JSW NEO STEEL.

Sample Description: TMT Bar Ø8mm. **Heat No:** A59699.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe550D.	Results
4.2	Chemical composition			
1	Carbon as C	% by mass	0.25 + 0.02 Max.	0.20
2	Sulphur as S	% by mass	0.040 + 0.005Max.	0.018
3	Phosphorus as P	% by mass	0.040 + 0.005Max.	0.027
4	Manganese as Mn	% by mass	---	0.72
5	Sulphur + Phosphorus	% by mass	0.075+ 0.010 Max.	0.045
6	Silicon as Si	% by mass	--	0.25
7	Carbon equivalent, CE		0.61 Max.	0.35
8	Micro-alloying elements (Nb+V+Ti+B)	% by mass	0.30 Max.	0.003
9	Nitrogen Content	% by mass	0.012 Max.	0.006
4.3	Rolling and cold working of bars/wires		The bars/wires shall be well and cleanly rolled and shall be sound and free from surface defects and pipe.	Bars are well and cleanly rolled, sound. Free from surface defects and pipe.
5.0	Requirements for Bond (Deformation and surface characteristics)			
5.3	The mean projected rib area per unit length	mm ² /mm	0.12 Ø for Ø < 10mm (i.e., 0.96 Min.)	1.39
5.5	The mean projected area of transverse rib above	mm ² /mm	Shall not be less than one-third of the value given above. (i.e., 1/3 of 0.96 = 0.32Min)	1.39


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Sample Particulars: TMT BAR-Ø8mm, Grade: Fe550D. BRAND NAME: JSW NEO STEEL.

Sample Description: TMT Bar Ø8mm. **Heat No:** A59699.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe550D.	Results
6.0	Nominal Sizes			
6.1	Nominal size of bar	mm	8.0	8.0
6.2	Nominal cross-sectional area	mm ²	50.3	49.2
6.3	Mass per metre	kg	0.395 - 8%	0.386
8 & 9	Physical properties			
9.2 (i)	TS/YS Ratio	---	≥ 1.08 (but TS not less than 600 N/mm ²)	1.14 (TS 686 N/mm ²)
(ii)	0.2% Proof Stress/Yield Stress	N/mm ²	550 Min	602
(iii)	Elongation on 5.65√So mm Gauge Length	Percent	14.5 Min.	19.9
(iv)	Total elongation at maximum force on 5.65√So mm GL.	Percent	5 Min.	8.4
9.3	Bend Test	Visual	Pass the test if there is no rupture or cracks in the bent portion.	No rupture or cracks observed.
9.4	Rebend Test	Visual	Pass the test if there is no rupture or cracks in the rebent portion.	No rupture or cracks observed.

Method of testing: As per IS:8811-1998(RA2012), IS: 1608(P1)-2022, IS: 2770(Part-1), IS: 1599-2023 & IS: 1786-2008(RA 2018).

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Bellary District.

Report No: LL/24-25/008805
Issue Date: 02/01/2025.
C. Ref: Letter.
Ref. Date: 11/12/2024.

Sample Particulars: TMT BAR-Ø16mm, Grade: Fe500D. BRAND NAME: JSW NEO STEEL.

Sample Description: TMT Bar 16mm. Heat No: A3082644.
Quantity: 1 Set (1mtr x 3Nos). Packing: Loose, Sample Condition: Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
4.2	Chemical composition			
1	Carbon as C	% by mass	0.25 + 0.02 Max.	0.21
2	Sulphur as S	% by mass	0.040 + 0.005Max.	0.018
3	Phosphorus as P	% by mass	0.040 + 0.005Max.	0.019
4	Manganese as Mn	% by mass	---	0.74
5	Sulphur + Phosphorus	% by mass	0.075+ 0.010 Max.	0.037
6	Silicon as Si	% by mass	--	0.31
7	Carbon equivalent, CE	.	0.50 Max	0.34
8	Micro-alloying elements (Nb+V+Ti+B)	% by mass	0.30 Max.	0.003
9	Nitrogen Content	% by mass	0.012 Max.	0.007
4.3	Rolling and cold working of bars/wires	.	The bars/wires shall be well and cleanly rolled and shall be sound and free from surface defects and pipe.	Bars are well and cleanly rolled, sound. Free from surface defects and pipe.
5.0	Requirements for Bond (Deformation and surface characteristics)			
5.3	The mean projected rib area per unit length	mm ² /mm	0.15 Ø for < Ø < 16mm (i.e., 2.40 Min.)	2.75
5.5	The mean projected area of transverse rib above	mm ² /mm	Shall not be less than one-third of the value given above. (i.e., 1/3 of 2.40 = 0.80Min)	2.75


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Report No: LL/24-25/008805
Issue Date: 02/01/2025.
C. Ref: Letter.
Ref. Date: 11/12/2024.

Sample Particulars: **TMT BAR-Ø16mm,** Grade: **Fe500D.** BRAND NAME: **JSW NEO STEEL.**

Sample Description: TMT Bar Ø16mm. **Heat No:** A3082644.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
6.0	Nominal Sizes			
6.1	Nominal size of bar	mm	16.0	16.0
6.2	Nominal cross-sectional area	mm ²	201.2	193.3
6.3	Mass per metre	kg	1.58 - 6%	1.52
8 & 9	Physical properties			
9.2 (i)	TS/YS Ratio	---	≥ 1.10 (but TS not less than 565 N/mm ²)	1.17 (TS 651 N/mm ²)
(ii)	0.2% Proof Stress/Yield Stress	N/mm ²	500 Min	555
(iii)	Elongation on 5.65√So mm Gauge Length	Percent	16.0 Min.	20.9
(iv)	Total elongation at maximum force on 5.65√So mm GL.	Percent	5 Min.	9.4
9.3	Bend Test	Visual	Pass the test if there is no rupture or cracks in the bent portion.	No rupture or cracks observed.
9.4	Rebend Test	Visual	Pass the test if there is no rupture or cracks in the rebent portion.	No rupture or cracks observed.

Method of testing: As per IS:8811-1998(RA2012), IS: 1608(P1)-2022, IS: 2770(Part-1), IS: 1599-2023 & IS: 1786-2008(RA 2018).

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Bellary District.

Report No: LL/24-25/008806
Issue Date: 02/01/2025.
C. Ref: Letter.
Ref. Date: 11/12/2024.

Sample Particulars: TMT BAR-Ø16mm, Grade: Fe550D. BRAND NAME: JSW NEO STEEL.

Sample Description: TMT Bar 16mm. Heat No: A3082511.
Quantity: 1 Set (1mtr x 3Nos). Packing: Loose, Sample Condition: Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe550D.	Results
4.2	Chemical composition			
1	Carbon as C	% by mass	0.25 + 0.02 Max.	0.22
2	Sulphur as S	% by mass	0.040 + 0.005Max.	0.015
3	Phosphorus as P	% by mass	0.040 + 0.005Max.	0.020
4	Manganese as Mn	% by mass	---	0.82
5	Sulphur + Phosphorus	% by mass	0.075+ 0.010 Max.	0.035
6	Silicon as Si	% by mass	--	0.23
7	Carbon equivalent, CE		0.61 Max.	0.37
8	Micro-alloying elements (Nb+V+Ti+B)	% by mass	0.30 Max.	0.002
9	Nitrogen as N	% by mass	0.012 Max.	0.008
4.3	Rolling and cold working of bars/wires		The bars/wires shall be well and cleanly rolled and shall be sound and free from surface defects and pipe.	Bars are well and cleanly rolled, sound. Free from surface defects and pipe.
5.0	Requirements for Bond (Deformation and surface characteristics)			
5.3	The mean projected rib area per unit length	mm ² /mm	0.15 Ø for < Ø < 16mm (i.e., 2.40 Min.)	3.35
5.5	The mean projected area of transverse rib above	mm ² /mm	Shall not be less than one-third of the value given above. (i.e., 1/3 of 2.40 = 0.80Min)	3.35


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Bellary District.

Report No: LL/24-25/008806
Issue Date: 02/01/2025.
C. Ref: Letter.
Ref. Date: 11/12/2024.

Sample Particulars: **TMT BAR-Ø16mm,** Grade: **Fe550D.** BRAND NAME: **JSW NEO STEEL.**

Sample Description: TMT Bar Ø16mm. **Heat No:** A3082511.
Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).
Date of receipt of sample : 14/12/2024.
Date of starting of analysis : 16/12/2024.
Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe550D.	Results
6.0	Nominal Sizes			
6.1	Nominal size of bar	mm	16.0	16.0
6.2	Nominal cross-sectional area	mm ²	201.2	199.7
6.3	Mass per metre	kg	1.58 - 6%	1.57
8 & 9	Physical properties			
9.2 (i)	TS/YS Ratio	---	≥ 1.08 (but TS not less than 600 N/mm ²)	1.14 (TS 701 N/mm ²)
(ii)	0.2% Proof Stress/Yield Stress	N/mm ²	550 Min	617
(iii)	Elongation on 5.65√So mm Gauge Length	Percent	14.5 Min.	24.8
(iv)	Total elongation at maximum force on 5.65 vSo mm GL.	Percent	5 Min.	8.9
9.3	Bend Test	Visual	Pass the test if there is no rupture or cracks in the bent portion.	No rupture or cracks observed.
9.4	Rebend Test	Visual	Pass the test if there is no rupture or cracks in the rebent portion.	No rupture or cracks observed.

Method of testing: As per IS:8811-1998(RA2012), IS: 1608(P1)-2022, IS: 2770(Part-1), IS: 1599-2023 & IS: 1786-2008(RA 2018).

Note: The report and results relate only to the samples/items tested.


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Bellary District.

Report No: LL/24-25/008807

Issue Date: 02/01/2025.

C. Ref: Letter.

Ref. Date: 11/12/2024.

Sample Particulars: **TMT BAR-Ø32mm,** Grade: **Fe500D.** BRAND NAME: **JSW NEO STEEL.**

Sample Description: TMT Bar 32mm. Heat No: A3083087.

Quantity: 1 Set (1mtr x 3Nos).

Packing: Loose,

Sample Condition: Ambient.

Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Pullout Test).

Date of receipt of sample : 14/12/2024.

Date of starting of analysis : 16/12/2024.

Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
4.2	Chemical composition			
1	Carbon as C	% by mass	0.25 + 0.02 Max.	0.21
2	Sulphur as S	% by mass	0.040 + 0.005Max.	0.021
3	Phosphorus as P	% by mass	0.040 + 0.005Max.	0.022
4	Manganese as Mn	% by mass	---	0.78
5	Sulphur + Phosphorus	% by mass	0.075+ 0.010 Max.	0.043
6	Silicon as Si	% by mass	--	0.20
7	Carbon equivalent, CE		0.50 Max	0.35
8	Micro-alloying elements (Nb+V+Ti+B)	% by mass	0.30 Max.	0.002
9	Nitrogen Content	% by mass	0.012 Max.	0.007
4.3	Rolling and cold working of bars/wires		The bars/wires shall be well and cleanly rolled and shall be sound and free from surface defects and pipe.	Bars are well and cleanly rolled, sound. Free from surface defects and pipe.
5.0	Requirements for Bond (Deformation and surface characteristics)			
5.3	The mean projected rib area per unit length	mm ² /mm	0.17 Ø for Ø > 16mm (i.e., 5.44 Min.)	5.78
5.5	The mean projected area of transverse rib above	mm ² /mm	Shall not be less than one-third of the value given above. (i.e., 1/3 of 4.25 = 1.81Min)	5.78


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 Ref. Date: 11/12/2024.

Sample Particulars: TMT BAR-Ø32mm, Grade: Fe500D. BRAND NAME: JSW NEO STEEL.
Sample Description: TMT Bar Ø16mm. **Heat No:** A3083087.
 Quantity: 1 Set (1mtr x 3Nos). **Packing:** Loose, **Sample Condition:** Ambient.
Test Required: All tests as per IS:1786-2008(RA 2018) with amendment Nos 1 to 4 (Excluding Nitrogen).
 Date of receipt of sample : 14/12/2024.
 Date of starting of analysis : 16/12/2024.
 Date of completion of analysis : 27/12/2024.

TEST RESULTS

Cl. No	Test Parameters	UOM	Requirements as per IS: 1786-2008(RA 2018) with amendment Nos 1 to 4, Grade: Fe500D.	Results
6.0	Nominal Sizes			
6.1	Nominal size of bar	mm	32.0	32.0
6.2	Nominal cross-sectional area	mm ²	804.6	807.6
6.3	Mass per metre	kg	6.31 - 4%	6.34
8 & 9	Physical properties			
9.2 (i)	TS/YS Ratio	---	≥ 1.10 (but TS not less than 565 N/mm ²)	1.19 (TS 706 N/mm ²)
(ii)	0.2% Proof Stress/Yield Stress	N/mm ²	500 Min	591
(iii)	Elongation on 5.65√So mm Gauge Length	Percent	16.0 Min.	18.4
(iv)	Total elongation at maximum force on 5.65 vSo mm GL.	Percent	5 Min.	8.4
9.3	Bend Test	Visual	Pass the test if there is no rupture or cracks in the bent portion.	No rupture or cracks observed.
9.4	Rebend Test	Visual	Pass the test if there is no rupture or cracks in the rebent portion.	No rupture or cracks observed.

Method of testing: As per IS:8811-1998(RA2012), IS: 1608(P1)-2022, IS: 2770(Part-1), IS: 1599-2023 & IS: 1786-2008(RA 2018).

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