



Corporate Dossier





High strength **Essar TMT bars**

Foundations of GROWTH

Quality that assure reliability

Manufactured at most

ADVANCED

PROCESS PLANTS

IN INDIA

Conforming to IS:1786 - 2008



Fe 500



Fe 500D



Fe 550D

AT ESSAR, QUALITY - OUR MAXIM.

Essar TMT Bars:

Quality that raises the standards

Essar TMT bars are manufactured in the most advanced process plants in India, and are BIS-certified conforming to IS 1786 specifications for Fe 500 and higher grades. The products are tested and certified by SGS, and comes with the assurance of quality that is the hallmark of the Essar brand.

High Strength

Essar TMT bars offer higher yield strength and tensile strength compared to other rebars. It has been established that Essar TMT bars bring down the requirement of steel in construction which results in cost savings.



Bendability

The 'thermo mechanical treatment' ensures tempered martensite on the outer surface (making it tough) and an inner core of fine-grain ferrite-pearlite, which makes the bars bendable and ideal for any RCC construction.



Thermal Resistance

The uniform and dense layer of tempered martensitic ribs of the outer surface of the bars prevent the strength loss at high temperatures



High Quality Standards

Essar TMT bars are certified for quality by SGS and also carry ISI mark. Every batch of Essar TMT bars undergo rigorous tests and quality control checks



Bond Strength with Concrete

Essar TMT bars are processed using Computerised Numeric Control (CNC) rib cutting machines, which ensure better bonding of steel with concrete



Weldability

The low carbon content in Essar TMT bars offer superior weldability. It does not require pre-heating or post-warming in any welding process, be it welding, flash butt welding, gas shielded semi-automatic welding, gas pressure welding, or resistance welding



Earthquake Resistance

Alloy chemistry and process parameters of Essar TMT bars are controlled to achieve a high stress ratio (UTS/YS) at a high level of ductility. This enables them to absorb high in-elastic strain energy during cyclic loading in an earthquake, making them the right choice for a seismic design



Tried & Tested

Essar TMT bars are the preferred choice of builders of industrial, infrastructure, and residential / commercial projects, and continues to win the trust of many with its inherent strengths.



The Essar Edge

- Timely delivery
- Assured quality
- Automatic fixed-size bundling
- Value for money
- Service commitment

The Hallmark of Quality

Every TMT bar carries the Essar brand name at regular intervals along its length.

Essar TMT is the registered trademark of Essar.

Applications of Essar TMT



Essar TMT - Technical Parameters

Mechanical Properties:

	ISI Grade Fe 500	ESSAR 500	ISI Grade Fe 500D	ESSAR 500D	ISI Grade Fe 550D	ESSAR 550D
Yield strength	500 N/mm ²	545 N/mm ²	500 N/mm ²	575 N/mm ²	550 N/mm ²	600 N/mm ²
Tensile strength	545 N/mm ²	595 N/mm ²	565 N/mm ²	630 N/mm ²	600 N/mm ²	650 N/mm ²
Elongation	12%	13% - 18%	16%	16% - 22%	14.5%	16%

Chemical Composition:

	ISI Grade Fe 500	ESSAR 500	ISI Grade Fe 500D	ESSAR 500D	ISI Grade Fe 550D	ESSAR 550D
Carbon	0.30% Max.	~0.23%	0.25% Max.	~0.23%	0.25 Max	~0.23%
Sulphur	0.055% Max	~0.048%	0.040% Max.	~0.037%	0.04 Max	~0.037%
Phosphorous	0.055% Max	~0.050%	0.040% Max.	~0.037%	0.04 Max	~0.037%
Sulphur & Phosphorous	0.105% Max	~0.095%	0.075% Max.	~0.72%	0.075 Max	~0.072%

Essar TMT Customers



Get in Touch

☎ 022 6660 1100

🌐 stecolinfo@stecol.co.in
www.stecol.co.in

📍 Essar House, 11, K.K. Marg,
 Mahalaxmi, Mumbai, MH 400034



@essartmtbars

CRS



BUILT TO LAST LONGER

XXXXXXXXX ESSAR XXXXXXXX FE500D XXXXXXXX CRS XXXXX

ESSAR TMT CRS - Produced by addition of copper, chromium, nickel and molybdenum which are corrosion resistant.

ESSAR CRS : Advantages

1. Longevity: Enhances lifespan of structures due to superior corrosion resistance properties
2. Structural Integrity: Better bonding with concrete and long term durability
3. Reliability : Typically used in coastal areas with high salinity, high acidic content in air
4. Pitting Resistance: Presence of chromium increases passivity of anions and improves pitting resistance
5. Dense oxide layer: Dense oxide layer with few pores and cracks reduces the ingress of oxygen, sulphur-dioxide and chloride.

ESSAR CRS – THE CORROSION SHIELD

Essar TMT CRS are suitable for construction in coastal areas, industrial areas, marine structures and in areas with high salinity & high acid content in air.

Essar TMT CRS has increased strength, durability, bendability and corrosion properties as compared to regular TMT rebars.

ESSAR CRS – AVAILABILITY

Essar CRS (as per IS1786 in Fe 500, Fe500D, Fe550 & Fe550D grade) rebars are available in sizes: 8mm, 10mm, 12mm, 16mm, 20mm, 25mm, 32mm & 40mm

MECHANICAL & CHEMICAL PROPERTIES

Chemical Properties	IS 1786 (Standard)	Essar CRS Fe 500D (Typical)
Constituent (%)		
Carbon ©	0.25 max	0.18-0.23
Sulphur (S)	0.04 max	0.035
Phosphorous (P)	0.04 max	0.038
Corrosion Resistant Elements (Cu, Cr & Ni)	0.4 min	0.40-0.5
Mechanical Properties		
Yield Strength (YS) N/mm ²	500 min	520-530
Ultimate Tensile Strength (UTS) N/mm ²	565 min	580-600
% ELONGATION	16 min	17-18

GET IN TOUCH

 022 6660 1100  stecolinfo@stecol.co.in / www.stecol.co.in

 Essar House, 11, K.K. Marg Mahalaxmi, Mumbai, MH 400034

EPOXY COATED REBARS



Shield from Corrosion

EPOXY COATED REBAR significantly increases protection against corrosion as compared to standard rebar.

The coating acts as barrier against corrosive elements like chlorides & moisture, which can cause pre-mature failure in reinforcement concrete.

ESSAR EPOXY Advantages:

1. Improves durability and performance of concrete structures in harsh environments
2. Lower maintenance and longer life span of structures
3. Acts as an insulator of electrochemical cells

Fusion Bonded Epoxy Coating Process

1. Surface Preparation
2. Pre-Heating
3. Epoxy Coating Powder application
4. Curing & Cooling

Why Essar TMT Epoxy ?

- Excellent Corrosion Protection enhances the life of the Structures
- Manufactured using cutting edge fusion bonded coating technology with uniform coating
- Minimum maintenance & upkeep, resulting in significant lower overhead cost
- Lower Life cycle cost
- Excellent Adhesive i.e. Bonding of coating with Steel rebars
- Eco friendly material

ESSAR TMT EPOXY Availability

Essar Epoxy (as per IS13620 in Fe 500, Fe500D, Fe550 & Fe550D grade) rebars are available in sizes: 8mm, 10mm, 12mm, 16mm, 20mm, 25mm, 32mm & 40mm

GET IN TOUCH

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@essartmtbars    



(Amended)

Government of India

Form GST REG-06

[See Rule 10(1)]

Registration Certificate

Registration Number :27AAACY3342A1ZR

1.	Legal Name	STECOL INTERNATIONAL PRIVATE LIMITED			
2.	Trade Name, if any	Stecol International Private Limited			
3.	Additional trade names, if any				
4.	Constitution of Business	Private Limited Company			
5.	Address of Principal Place of Business	14, 11, Essar House, K K Marg, Mahalaxmi, Mumbai, Mumbai, Maharashtra, 400034			
6.	Date of Liability				
7.	Date of Validity	From	18/10/2018	To	Not Applicable
8.	Type of Registration	Regular			
		Signature valid			
9	Particulars of Approving Authority	Digitally signed by DS GOODS AND SERVICES TAX NETWORK-07 Date: 2022.12.21 01:02:45 IST			
Signature					
Name					
Designation					
Jurisdictional Office					
9. Date of issue of Certificate		21/12/2022			
Note: The registration certificate is required to be prominently displayed at all places of Business/Office(s) in the State.					

This is a system generated digitally signed Registration Certificate issued based on the deemed approval of application on 21/12/2022 .



सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS

Office of the Registrar of Companies

Certificate of Incorporation pursuant to change of name
[Pursuant to rule 29 of the Companies (Incorporation) Rules, 2014]

Corporate Identification Number (CIN):



Registrar of Companies

Mailing Address as per record available in Registrar of Companies office:



INCOME TAX PAN SERVICES UNIT

(Managed by NSDL e-Governance Infrastructure Limited)

4th Floor, Mantri Sterling, Plot No. 341, Survey No. 997/8, Model Colony,
Near Deep Bungalow Chowk, Pune - 411 016.

F. No. DIT(S)/PAN/ITMN_REG



Dear Sir / Madam,

Permanent Account Number (PAN)

AAACY3342A

Your request for changes / corrections in PAN data / reprint of PAN card has been processed and new PAN card is enclosed.

We wish to inform you that quoting of PAN on return of income and challans for payment of taxes is necessary to ensure accurate credit of taxes paid by you and faster processing of return of income. Please quote PAN in all communications with department as it helps to improve taxpayer services.

Income Tax Department maintains a website – www.incometaxindia.gov.in and Aayakar Sampark Kendra (Phone - 1800 - 180 - 1961) for providing information and services to citizens. This site contains detailed information on PAN also.

The PAN Card enclosed contains Enhanced QR Code which is readable by a specific Android Mobile App. Keyword to search this specific Mobile App on Google Play Store is "Enhanced QR Code Reader for PAN Card".

Income Tax Department

PGK ID: PCC39129501 / 56 / 2-6 / 23869 / 07122018 / VLX



MUM/ 773/ 88203225199578661C1/ 07121810782

STECOL INTERNATIONAL PRIVATE LIMITED

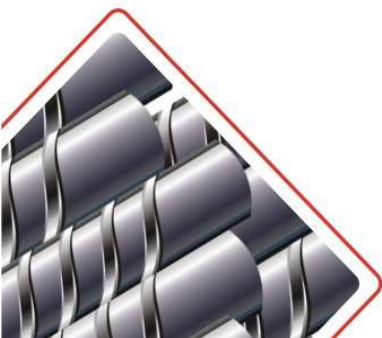
STECOL INTERNATIONAL PRIVATE LIMITED
9 ESSAR HOUSE
11, K.K. MARG MAHALAXMI, MUMBAI
MAHARASHTRA-400034
TEL. No.: 9930136425



BOM/PCO to BOM/BBC
23304895593

(This being a computer-generated letter, no signature is required)

SIPL Quality Documents





qualityaustria

Succeed with Quality



CERTIFICATE

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH awards this **qualityaustria** certificate to the following organisation:

This **qualityaustria** certificate confirms the application and further development of an effective

STECOL INTERNATIONAL PVT. LTD

Head Office : Essar House, 11, K.K. Marg, Mahalaxmi, Mumbai - 400034, Maharashtra, India.

Site 1 - Sr. No. 601/1, Plot no. 14, near Essar petrol pump, Deoli-Wardha Road, Deoli, Wardha, Maharashtra 442101

Site 2 - WD. 38, Triveni Chok, Bindrawangarh, Sarora, Raipur Chhattisgarhi 493221

Site 3-255, Ground Floor, Rambhai ni Chal, Opp. Railway Station, Busstand road, near Post office, Viramgam, Ahmedabad, Gujarat 382150

Site 4- Shop No.36, Avani Arcade bearing on block No.96/1, Vill: Karanj Tal: Mandvi, Dist: Surat, Gujarat-394110

Head office - Sales & Marketing of ESSAR TMT rebars, Structural and Steel Products

Sites - Contract Manufacturing and Supply of ESSAR TMT rebars, Structural and Steel Products

The validity of the **qualityaustria** certificate will be maintained by annual surveillance audits and one renewal audit after three years.

ENVIRONMENTAL MANAGEMENT SYSTEM

complying with the requirements of standard
ISO 14001:2015

Registration No.: U-04043/0

Date of initial issue: 03 March 2020

Valid until: 02 March 2026

Vienna, 31 July 2024

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH,
AT-1010 Vienna, Zelinkagasse 10/3



MEMBER OF



Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH is accredited according to the Austrian Accreditation Act by the BMWFW (Federal Ministry of Science, Research and Economy).

Quality Austria is accredited as an organisation for environmental verification by the BMLFUW (Federal Ministry of Agriculture, Forestry, Environment and Water Management).

Quality Austria is authorized by the VDA (Association of the Automotive Industry).

For accreditation registration details please refer to the applicable decisions or recognition documents.

Quality Austria is the Austrian member of IQNet (International Certification Network).

Dok. Nr. FO_24_028

27ab3c66-601a-49f3-b3ac-57bf7a536191

The current validity of the certificate is documented exclusively on the Internet under <http://www.qualityaustria.com/en/cert>

Mag. Christoph Mondl
CEO

Mag. Dr. Werner Paar
CEO

DI Axel Dick, MSc
Specialist representative



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Sites - Contract Manufacturing and Supply of ESSAR TMT rebars, Structural and Steel Products

The validity of the **qualityaustria** certificate will be maintained by annual surveillance audits and one renewal audit after three years.

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS

complying with the requirements of standard
ISO 45001:2018

Registration No.: OHS-00528/0

Date of initial issue: 03 March 2020

Valid until: 02 March 2026

Vienna, 31 July 2024

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH,
AT-1010 Vienna, Zelinkagasse 10/3



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Dok. Nr. FO_24_028

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Mag. Christoph Mondl
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Ing. Klaus Weitmann
Specialist representative



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QUALITY MANAGEMENT SYSTEM

complying with the requirements of standard
ISO 9001:2015

Registration No.: Q-24058/0

Date of initial issue: 03 March 2020

Valid until: 02 March 2026

Vienna, 31 July 2024

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH,
AT-1010 Vienna, Zelinkagasse 10/3



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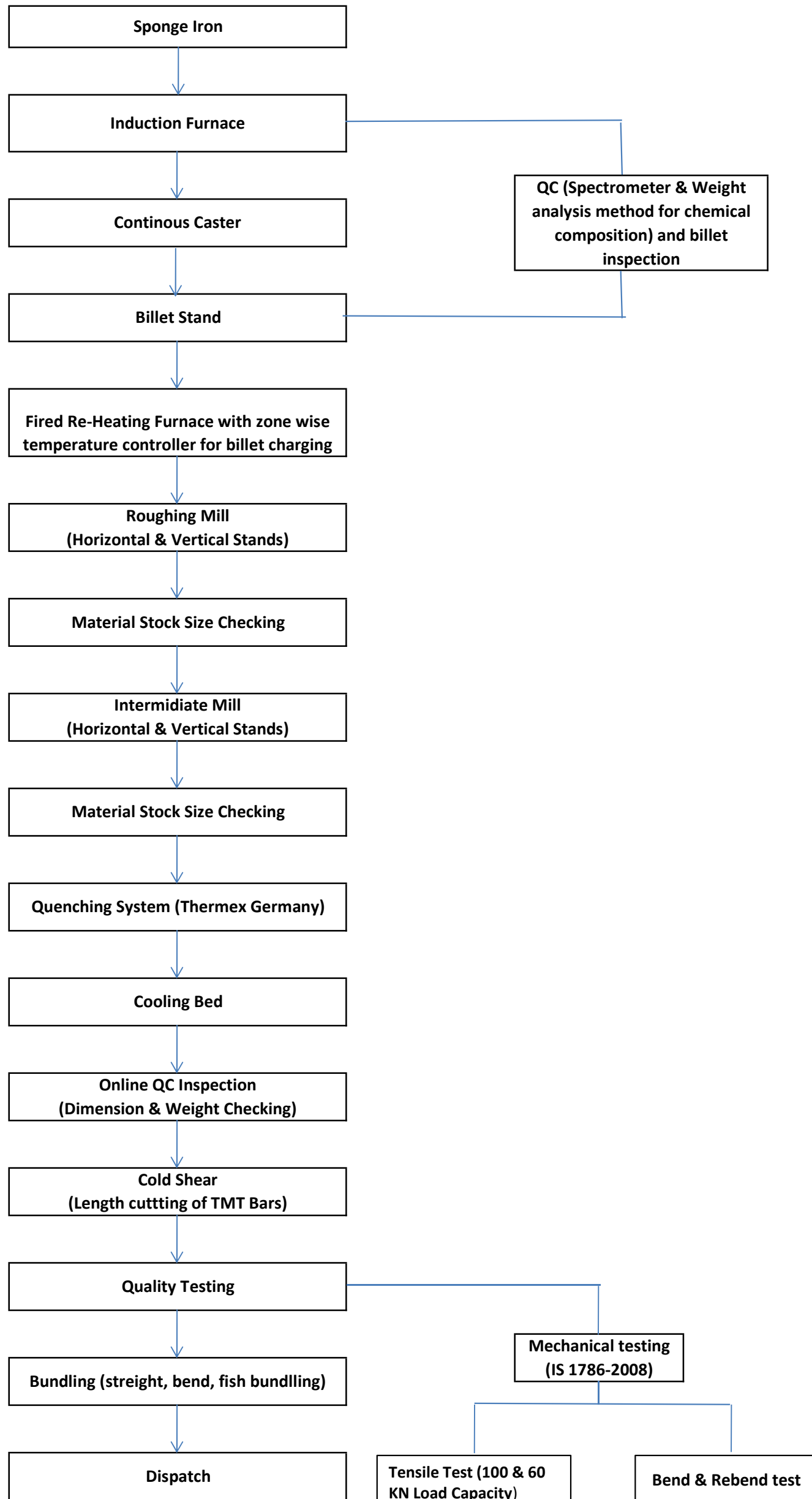
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Mag. Dr. Werner Paar
CEO

Mag. Dr. Anni Koubek
Specialist representative



QUALITY ASSURANCE PLAN FOR INSPECTION & TESTING OF ESSAR TMT

Document	SIPL/ISO/QAP
Revision	00
Date	24-Aug-20
Prepared by	Manager Quality
Reviewed by	Head Quality
Approved by	CEO

1. **Scope:** This quality assurance plan describes inspection and quality requirement of ESSAR TMT from Raw material to finished good. And also it covers the procedure of storage and dispatch.
2. **Description of process:** Stecol international private limited has contract manufacturing tie-up with reputed and established rolling mills across the nation. And, grades can be supplied Fe 500 and Fe 500D (also Fe 550, Fe 550D and CRS), Sizes can be supplied 8, 10, 12, 16, 20, 25 and 32 mm .Specification can be of IS 1786/ customer specification.

3. Inspection and testing plan:

S No	Activity	Frequency	Acceptance criteria	Responsibility
1	Billet chemical composition	Every heat	Table 1	Shift incharge
2	Billet internal soundness	Every heat and every strand	Table 2	Shift incharge
3	Physical inspection- Length, surface and bend	Randomly	+50mm -0mm Length Tol, free from marks & 5mm bend per meter	Shift incharge
4	Charging- verification charging billets	As and when rolling is scheduled	No ambiguity to rolling partner and rebars requirement	Shift incharge
5	Tracking and tagging	Every 5 tons	Traceability from billets to rebars	Shift incharge
6	Sectional weight	Every 10 tons	Table 3	Shift incharge
7	Mechanical properties	Every 10 tons	Table 4	Shift incharge
8	RIB geometry	Every pass	Table 5	Shift incharge
9	Bend-Re bend test	Every 20 tons	Table 6	Shift incharge
10	Surface	Randomly	Free from mechanical marks, scales, colour change, oil stain	Shift incharge
11	Physical inspection	Randomly	Ribless, Rollout, fin	Shift incharge
12	Ring test	Every campaign	Uniform and centric with ~30% Martensite	Shift incharge
13	Length	Every 20 tons	As per PO length with Tol +50mm/-0mm	Shift incharge
14	Bundling & Storage	Based on dispatch requirement & Daily	Table 7-End to end covering with good quality tarpaulin and no contact with water or ground	Shift incharge
15	Loading verification	Every vehicle	As per DO request	Shift incharge
16	Post loading	Every vehicle	4 tags per ton, 3 SGS stickers per tons, 6 seals per vehicle and end to end tarpaulin covering	Shift incharge

QUALITY ASSURANCE PLAN FOR INSPECTION & TESTING OF ESSAR TMT

Document	SIPL/ISO/QAP
Revision	00
Date	24-Aug-20
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Reviewed by	Head Quality
Approved by	CEO

4. Bar gradation criteria:

S No	Type of defect	Prime	Hold	Reject
1	Sectional wt issue	Within ESSAR spec-Table 3	Out of ESSAR Spec-Table 3	Out of IS 1786-Table 3
2	Mechanical properties issue	Within ESSAR spec-Table 4	Out of ESSAR Spec-Table 4	Out of IS 1786-Table 4
3	Bend-Rebend test	Should pass ESSAR spec-Table 6	Abnormality in ESSAR Spec-Table 6	Abnormality in IS 1786 Spec-Table 6
4	Chemical issue	Within ESSAR spec-Table 1	Out of ESSAR Spec-Table 1	Out of IS 1786-Table 1
5	Surface issue	Free from color, oil stain, marks and scales	If present	Based on intensity and sales clearance
6	RIB abnormality	Not allowed and value as per ESSAR spec Table 5	Ribless or rollout/ Out of ESSAR Spec-Table 5	Based on intensity and sales clearance- Out of IS 1786-Table 5.
7	Random length bar mixing	Not allowed	If present	Based on intensity and sales clearance
8	Loose bundling	Not allowed	If present	Based on intensity and sales clearance

5. Customer classification:

Rebars falls under prime is ideally fit to A class customers

Rebars falls under Hold is to be allocated to B or C customers

Rebars falls under Rejection should be separately stacked with special color code and tagging- Disposal action memo to be recorded.

6. References:

IS 1786: 2008

Table:1

S.No	Elements	Fe 500		Fe 550		Fe 500D		Fe 550D	
		IS 1786 specification	ESSAR Spec	IS 1786 specification	ESSAR Spec	IS 1786 specification	ESSAR Spec	IS 1786 specification	ESSAR Spec
1	C% Max	0.300	0.250	0.300	0.250	0.250	0.230	0.250	0.230
2	Mn% Min	NA	0.630	NA	0.630	NA	0.580	NA	0.580
3	S% Max	0.055	0.050	0.055	0.050	0.040	0.038	0.040	0.038
4	P% Max	0.055	0.050	0.050	0.045	0.040	0.038	0.040	0.038
5	CE Max	0.420	0.380	0.420	0.380	0.420	0.400	0.420	0.400
6	S+P% Max	0.105	0.100	0.100	0.095	0.075	0.072	0.075	0.072

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Revision	00
Date	24-Aug-20
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Table:2

S No	Internal flaws	Remarks
1	Pin holes	Not allowed
2	Blow holes	Not allowed
3	Star crack	Not allowed
4	Subsurface cracks	Not allowed
5	Midway cracks	Not allowed
6	Corner cracks	Not allowed
7	Center pipe	2mm max

Table:3

S No	Size (mm)	IS 1786				ESSAR Spec			
		Standard	± Tol	Min	Max	Tol Min %	Tol Max %	Min	Max
1	8	0.395	7	0.367	0.423	5	1	0.375	0.399
2	10	0.617	7	0.574	0.660	5	1	0.586	0.623
3	12	0.888	5	0.844	0.932	4	1	0.852	0.897
4	16	1.58	5	1.501	1.659	4	1	1.517	1.596
5	20	2.47	3	2.396	2.544	2	1	2.421	2.495
6	25	3.85	3	3.735	3.966	2	1	3.773	3.889
7	32	6.31	3	6.121	6.499	2	1	6.184	6.373

Table:4

S No	Mech properties	Fe 500		Fe 550		Fe 500D		Fe 550D	
		IS 1786	ESSAR Spec	IS 1786	ESSAR Spec	IS 1786	ESSAR Spec	IS 1786	ESSAR Spec
1	YS (Mpa) Min	500	550	550	580	500	550	550	580
2	UTS (Mpa) Min	545	620	585	645	565	620	600	650
3	%EL Min	12	15	10	14	16	18	14.5	16
4	%TE Min	NA	NA	NA	NA	5	7	5	7
5	UTS/YS Ratio Min	1.08	1.15	1.06	1.12	1.10	1.15	1.08	1.15

Note: If YS goes beyond 630 Mpa, that particular sample should pass ESSAR bend test
Standard dev (σ) is allowed 15

Table:5

S No	Mean projected RIB area Ar Value (mm ² /mm)Min	Fe 500/Fe 500D	
		IS 1786	ESSAR Spec
1	8	0.96	1.20
2	10	1.20	1.50
3	12	1.80	2.16
4	16	2.40	2.88
5	20	3.40	4.00
6	25	4.25	5.00
7	32	5.44	6.40

QUALITY ASSURANCE PLAN FOR INSPECTION & TESTING OF ESSAR TMT

Document	SIPL/ISO/QAP
Revision	00
Date	24-Aug-20
Prepared by	Manager Quality
Reviewed by	Head Quality
Approved by	CEO

Table: 6

S No	Mandrel for bend test	Fe 500		Fe 500D		Fe 550		Fe 550D	
		IS 1786	ESSAR	IS 1786	ESSAR	IS 1786	ESSAR	IS 1786	ESSAR
			Spec		Spec		Spec		Spec
1	8	32	16	24	16	40	16	32	16
2	10	40	20	30	20	50	20	40	20
3	12	48	24	36	24	60	24	48	24
4	16	64	32	48	32	80	32	64	32
5	20	80	60	60	40	100	60	80	60
6	25	125	75	100	75	150	75	125	75
7	32	160	96	128	96	192	96	160	96

S No	Mandrel for re- bend test	Fe 500		Fe 500D		Fe 550		Fe 550D	
		IS 1786	ESSAR	IS 1786	ESSAR	IS 1786	ESSAR	IS 1786	ESSAR
			Spec		Spec		Spec		Spec
1	8	40	24	32	24	56	40	48	32
2	10	50	30	40	30	70	50	60	40
3	12	84	60	72	60	96	72	84	60
4	16	112	80	96	80	128	96	112	80
5	20	140	100	120	100	160	120	140	100
6	25	175	125	150	125	200	150	175	125
7	32	224	160	192	160	256	192	224	160

Table: 7

S No	Bundles	Straight		Fish	
	Size	No of bars in a bundle	Approx Th.wt in MT	No of bars in a bundle	Approx Th.wt in Kg
1	8	420	2	10	48
2	10	270	2	7	53
3	12	186	2	5	54
4	16	104	2	3	58
5	20	68	2	2	60
6	25	43	2	1	47
7	32	26	2	1	77

Note: Based on customer demand/plant, bundle wt may vary from 2-3 tons in straight form.

MATERIAL SAFETY DATA SHEET

1. Product Identification:

Product: TMT Steel Rebar

Identification: Essar TMT Rebar - Every Essar TMT rebar is embossed and branded with “ESSAR TMT” trademark followed by ISI Mark///Grade///size///BIS 6-digit number.

Identified Use: Reinforcement Bars (IS 1786)

Supplied by: **Stecol International Private Limited**

2. Hazards Identification:

Under normal environments, there is no significant information on danger or toxicity with TMT Steel bars. However, fumes generated during welding and fusing and fine particles generated during grinding may irritate respiratory organs and mucosae of eyes and other parts of a human body.

Hence it is advised that full PPE should be worn at all times when handling TMT Steel bars.

Suitable eye protection should also be taken while processing TMT Steel bars.

3. First Aid Measures

Following few first aid measures can be taken while handling TMT Steel bars:

- In case a person develops difficulty in breathing after inhalation of fumes or other hazardous substances, use respiration support, and promptly call for medical aid.
- In case a person is burned during or after welding or fusing work, cool the affected part and call for medical aid if needed.
- In case fumes, fine particles, or foreign matter enters the eyes, wash the eyes with water, and promptly call for medical aid.
- In case the skin is damaged by sharp edge, shavings, or other sharp debris of the product, keep the wound clean, and call for medical aid if needed

4. Fire Fighting Measures

TMT Steel bars are inflammable under normal environments. Fine powder of the products, however, may lead to abrupt combustion with oxygen. In such a case, a chemical fire extinguisher must be used.

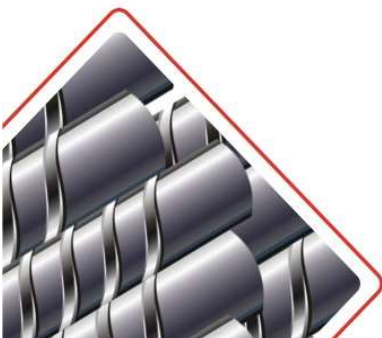
5. Precautions on Handling, Storage & Packaging

Proper storing, handling & packaging of TMT Steel bars are important factors. Improper handling of these reinforcement bars may result in damages. On a broader prospect, if a damaged steel rebar is reinforced in to the concrete, it may affect the performance of the structure. TMT Steel bars at the construction site have to go through a number of procedures, starting from unloading, hoisting; stacking; cutting; bending; fabrication; welding etc.

Hence following measures are taken for storing, handling & packaging of the TMT Steel bars fortify the tensile strength of the concrete structures.

- A designated fixed area is fixed for storing & stacking TMT bars
- Such area is levelled with concrete/paver blocks and is provided with adequate and proper stacking facilities like wooden dunnages, pallets, concrete sleepers and other equipment whichever is pertinent to keep the quality intact of the Product, sufficiently above the ground (at least 150 mm) and is covered with tarpaulin, at all times to avoid exposure to rain, dust particles, mud, industrial grease, lubricants or other foreign particles.
- The designated stocking is in a covered shed to protect from rain, storms, cyclones and harsh weather conditions.
- EOT crane is also installed for movement of FG from the designated SIPL storage area for loading on to the trucks. Normal manual handling criteria apply when lifting single or small numbers of items.
- For tying and packing TMT Steel bars bindles mild steel straps/wires to be used.
- Pneumatic packing machine(s) should be used for tying of metal straps to the rebar bundles.
- At least 4 nos. of metal black coated straps (32 mm width X 0.8 mm thickness) shall be put with red clips, for each straight mega bundle of 2 tons and at least 3 straps for each U bend bundle or fish bend mini bundle of TMT rebars.
- Metal tags shall to be also used for tagging the bundles.

Test Reports



ULR: TC-88192400003720F

Test Report No.: STEEL/2024/0371

Issue Date: 12.12.2024

TEST REPORT FOR STEEL

*NAME OF AGENCY		Steel International Pvt. Ltd.														
*NAME OF WORK		Physical testing of Essar TMT Rebars towards Brand Approval														
*C. A. NO		LAB2024														
TEST REQUISITION NO		2024-07/0/0021 Dated: 25/10/2024														
*SET NO.		1														
JOB CODE NO.		STEEL-1024-0863														
SAMPLE IDENTIFICATION		FE550D / 32MM ESSAR TMT REBARS														
CONDITION OF SAMPLE		Acceptable														
*DATE OF SAMPLING		04/12/2024														
DATE OF TESTING		04/12/2024														
OBSERVATIONS & RESULTS																
Sr. No	Parameters tested	Unit	Test Method followed	*Sample Identification			Requirement as per IS 1786 :2008 (RA 2018)									
				Set No. I	Set No. II	Set No. III	Fe-415	Fe-415D	Fe-500	Fe-500D	Fe-550	Fe-550D	Fe-600			
1	Diameter	mm	IS 1786 : 2008	32.00	-	-										
2	Nominal Mass per metre	kg/m	IS 1786 : 2008 (RA 2018)	6.421	-	-	Refer Table 2, IS 1786 : 2008 (RA: 2018), for tolerances on nominal mass.									
	Sample 1	kg/m		6.462	-	-										
	Sample 2	kg/m		6.424	-	-										
	Sample 3	kg/m		6.436	-	-										
	Average	kg/m					Refer Table 3, IS 1786 : 2008 (RA: 2018), for Mechanical Properties.									
3	Mechanical Properties															
4	Ultimate Tensile Strength	N /mm ²	IS 1608 (Part 1) : 2022	703.66	-	-	485 Min.	500 Min.	545 Min.	565 Min.	585 Min.	600 Min.	660 Min.			
5	0.2 % Proof Stress (Yield Stress)	N /mm ²	IS 1608 (Part 1) : 2022	607.74	-	-	415 Min.	415 Min.	500 Min.	500 Min.	550 Min.	550 Min.	600 Min.			
6	Percentage Elongation	%	IS 1608 (Part 1) : 2022	19.60	-	-	14.5Min.	18 Min.	12 Min.	16 Min.	10 Min.	14.5Min.	10 Min.			
7	Bend test		IS 1786 : 2008 (RA 2018)	No Cracks observed	-	-										
7	Rebend Test		IS 1786 : 2008 (RA 2018)	No Cracks observed	-	-										

Notes:-

- Above test results are based on the sample submitted by the agency and relates only to the samples tested in laboratory.
- The test results mentioned above are valid at the time and conditions specified herein.
- Any Correction invalidates this Certificate.
- No part of the report, except in full, shall be reproduced without written consent of the Competent Authority.
- The laboratory does not take responsibility to express any opinion, interpretation of test results mentioned herein.

Reviewed by



T.G. Sawarkar
AE (QC-LAB)

Authorised Signatory


S. B. Dhameane
AE (QC-LAB)

To,

EE(QC) EEC(PA) (K)

ULR: TC-881924000003725F

Test Report No.: STEEL/2024/0372

Issue Date: 13.12.2024

TEST REPORT FOR STEEL

*NAME OF AGENCY	Steel International Pvt. Ltd.		
*NAME OF WORK	Physical testing of Essar TMT Rebars towards Brand Approval		
*C. A. NO	LAB2024		
TEST REQUISITION NO	2024-0070/0021	Dated: 25/10/2024	
*SET NO.	1		
JOB CODE NO.	STEEL-1024-0862		
SAMPLE IDENTIFICATION	FE550D / 16MM ESSAR TMT REBARS		
CONDITION OF SAMPLE	Acceptable		
*DATE OF SAMPLING			
DATE OF TESTING	04/12/2024		

OBSERVATIONS & RESULTS

Sr. No	Parameters tested	Unit	Test Method followed	*Sample Identification			Requirement as per IS 1786 :2008 (RA 2018)							
				Set No. I	Set No. II	Set No. III	Fe-415	Fe-415D	Fe-500	Fe-500D	Fe-550	Fe-550D	Fe-600	
1	Diameter	mm	IS 1786 : 2008	16.00	-	-	--	--	--	--	--	--	--	
2	Nominal Mass per metre	kg/m	IS 1786 : 2008 (RA 2018)				Refer Table 2, IS 1786 : 2008 (RA: 2018), for tolerances on nominal mass. 16 mm Φ - Av. wt. of Set, 1.5 to 1.66 kg/m & wt. of individual bar \geq 1.49 kg/m							
	Sample 1	kg/m	1.561	-	-									
	Sample 2	kg/m	1.566	-	-									
	Sample 3	kg/m	1.558	-	-		Refer Table 3, IS 1786 : 2008 (RA: 2018), for Mechanical Properties.							
	Average	kg/m	1.562	-	-									
	Mechanical Properties													
3	Ultimate Tensile Strength	N /mm2	IS 1608 (Part 1) : 2022	734.47	-	-	485 Min.	500 Min.	545 Min.	565 Min.	585 Min.	600 Min.	660 Min.	
4	0.2 % Proof Stress (Yield Stress)	N /mm2	IS 1608 (Part 1) : 2022	612.51	-	-	415 Min.	415 Min.	500 Min.	500 Min.	550 Min.	550 Min.	600 Min.	
5	Percentage Elongation	%	IS 1608 (Part 1) : 2022	18.59	-	-	14.5Min.	18 Min.	12 Min.	16 Min.	10 Min.	14.5Min.	10 Min.	
6	Bend test		IS 1786 : 2008 (RA 2018)	No Cracks observed	-	-	--	--	--	--	--	--	--	
7	Rebend Test		IS 1786 : 2008 (RA 2018)	No Cracks observed	-	-	--	--	--	--	--	--	--	

Notes:-

- Above test results are based on the sample submitted by the agency and relates only to the samples tested in laboratory.
- The test results mentioned above are valid at the time and conditions specified herein.
- Any Correction invalidates this Certificate.
- No part of the report, except in full, shall be reproduced without written consent of the Competent Authority.
- The laboratory does not take responsibility to express any opinion, interpretation of test results mentioned herein.
- Addition, deviation, exclusion from standard test method is not applicable.
- The star (*) marked in the report represents the information furnished by the agency.
- The laboratory do not provide decision rule or conformity statement for the results mentioned above.

Reviewed by

Authorised Signatory



T. G. Sawarkar
AE (QC-LAB)


S. B. Dharmane
AEE (QC-LAB)

To,
-EE(QC)-EECP45R2)



CHEMICAL TESTING AND ANALYTICAL LABORATORY
DEPARTMENT OF INDUSTRIES AND COMMERCE
GOVERNMENT OF TAMILNADU
INDUSTRIAL ESTATE, GUINDY, CHENNAI -32
PHONE : (044) - 22501641

CTAL

CERTIFICATE	2	4	1	2	1	2	0	1	DATE	3	0	/	1	2	/	2	4	TOTAL	0	3
No.																		PAGES		

CLIENT'S PARTICULARS:

Name of the client : **M/s. Stecol International Private Ltd.**

Address : **Suresh Complex,
S.F. No.182/79 First Floor,
Agaram main road,
Varanavasi,
Kanchipuram,
Chennai – 631604.**

Reference : **Testing of Steel Rods – reg.**

Clients Letter No. : **----**

Date : **----**

File No. : **3387/CW4/2024.**

SAMPLE PARTICULARS:

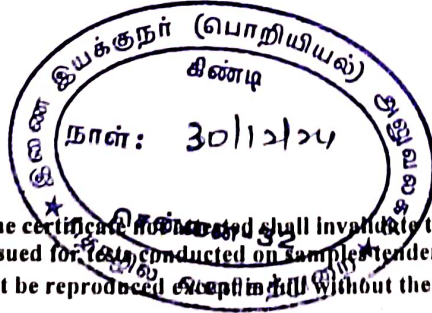
Nature of sample : **Deformed Reinforcement Steel Rods**

Sample identification : **ESSAR TMT Bar Fe 550D –
8mm, 10mm, 12mm, 16mm,
20mm, 25mm and 32mm**

Date of Receipt : **20.12.2024**

Standards/ References of test methods if any : **IS: 1786-2008
(Reaffirmed 2018),
IS: 1608 (Part 1)-2022,
IS: 1599-2023**

Quantity : **7 Nos.**



Note:

1. Any correction in the certificate shall invalidate this certificate.
2. This certificate is issued for tests conducted on samples tendered only.
3. This report shall not be reproduced or reprinted without the written approval of the laboratory.

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SENIOR CHEMIST
Chemical Testing And
Analytical Laboratory
GUINDY, CHENNAI-32.



CHEMICAL TESTING AND ANALYTICAL LABORATORY

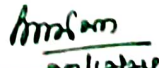
TEST RESULTS

CERTIFICATE No.	2	4	1	2	1	2	0	1	DATE	3	0	/	1	2	/	2	4	TOTAL PAGES	0	3
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Sample Tested : Deformed Reinforcement Steel Rods
Brand Name & Grade : ESSAR TMT 550D
Date of Testing : 23.12.2024
Test Method : IS: 1608 (Part 1)-2022, IS: 1786-2008, IS: 1599-2023

Sl. No.	Sample Tested	Sample Diameter (mm)	Weight/ Metre (kg)	0.2% Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elonga tion (%)	Bend	Rebend
1.	8mm Essar 550D	8.0	0.398	553.7	632.8	20.0	Passes the Test	Passes The Test
2.	10mm Essar 550D	10.0	0.587	564.5	645.2	20.0	Passes the Test	Passes The Test
3.	12mm Essar 550D	12.0	0.877	610.7	700.6	18.3	Passes the Test	Passes The Test
4.	16mm Essar 550D	16.0	1.545	562.2	680.0	21.3	Passes the Test	Passes The Test
5.	20mm Essar 550D	20.0	2.386	585.6	684.3	20.0	Passes the Test	Passes The Test
6.	25mm Essar 550D	25.0	3.873	559.4	656.7	20.0	Passes the Test	Passes The Test
7.	32mm Essar 550D	32.0	6.315	571.8	671.3	18.8	Passes the Test	Passes The Test

Remarks: The given samples conform to IS-1786-2008 (Reaffirmed 2018), Grade Fe 550D in respect of above tests.


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GUINDY, CHENNAI-32.



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TEST RESULTS

CERTIFICATE No.	2	4	1	2	1	2	0	1	DATE	3	0	/	1	2	/	2	4	TOTAL PAGES	0	3
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Sample : Deformed Reinforcement Steel Rods
Marked as : ESSAR TMT Fe 550D
Test Methods : IS 8811-1998 (Reaffirmed 2018)

Sl. No.	Sample Marked as	Elemental analysis (percent by mass)			
		Carbon as 'C'	Sulphur as 'S'	Phosphorus as 'P'	Sulphur & Phosphorus
1.	8mm	0.21	0.004	0.006	0.010
2.	10mm	0.22	0.010	0.010	0.020
3.	12mm	0.18	0.012	0.011	0.023
4.	16mm	0.22	0.014	0.005	0.019
5.	20mm	0.22	0.009	0.011	0.020
6.	25mm	0.16	0.010	0.013	0.023
7.	32mm	0.18	0.015	0.010	0.025

Remarks: The given samples marked as 1.) 8mm, 2.) 10mm, 3.) 12mm, 4.) 16mm, 5.) 20mm, 6.) 25mm and 7.) 32mm conform to the **Grade Fe 550D** of IS: 1786 – 2008 (Reaffirmed 2018) (Specification for high strength deformed Steel bars and wires for concrete reinforcement) with respect to above tests.


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Chemical Testing And
Analytical Laboratory
GUINDY, CHENNAI-60.
Page 3 of 3

Essar TMT Approvals List



Mumbai Metropolitan Region Development Authority - MMRDA



Maharashtra Housing & Area Development Authority- MHADA



Gujarat Metro



Chennai Metro Rail Limited



Rail Vikas Nigam Limited - Pune Metro



Dedicated Freight Corridor Corporation Of India Ltd



Maharashtra State Police Housing & Welfare Corporation



Maharashtra Airport Development Corporation



NHAI- Bharatmala Pariyojna - Rajasthan



Larsen & Toubro Limited - National Highways



Delhi Jal Board



PWD Madhya Pradesh
































PWD Kerala



Visvesvaraya National Institute Of Technology - Nagpur

Essar TMT TOP Customer List

	Indian Oil Corporation Limited - Koyali, Baroda
	Indian Oil Corporation Limited - Panipat, Haryana
	Indian Oil Corporation Limited - Barauni, Bihar
	Hindustan Petroleum Corporation Limited - Barmer, Rajasthan
	Bharat Petroleum Corporation Limited - Rasayani, Maharashtra
	Nuclear Power Corporation - Rawalbhatta, Rajasthan
	ONGC - Uran, Maharashtra & Ahmedabad, Guajrat
	Mumbai Metro
	Pune Metro - Rail Vikas Nigam Limited
	Pune Metro - URC
	Gujarat Metro - Ahmedabad & Surat
	TATA Projects
	Dedicated Freight Corridor Corporation - Maharashtra
	Railways - Patil Infra & GHV(India) - Gujarat & Rajasthan
	Maharashtra State Police Housing - Maharashtra
	Maharashtra Medium Irrigation Project - PVR - Deharji, Pune
	JJ Hospital - Capacite - Maharashtra
	Ayodhya Sewage Treatment Plant - Ayodhya
	Doosan Thermal Power Plant - Etah, UP
	Doosan Thermal Power Plant - Obra, UP
	L&T Limited - National Highways - Tamil Nadu
	L&T - ITC Limited Green Centre - Bangalore
	L&T - Realty - Seawoods, Mumbai
	Kalpataru Realty - Maharashtra
	ITC Project - Nadiad, Guajarat
	Shree Cement Limited
	Thyssenkrupp - GNFC - Gujarat
	Jindal Polyfilms - Igatpuri, Maharashtra
	Minda - Foxconn - Bangalore