



REINFORCING BARS

PRODUCT CATALOGUE



CONTENTS

03 About Us

11 Product Technical Specifications

05 Corporate Philosophy

12 Quality Management

06 How we Make our Steel

16 Product Certifications

08 Product Ranges and Applications

18 Sustainability and Decarbonization

10 Our Innovative Sustainable High Strength Rebar - ES600

20 Product Iconic Projects

About Us

Who we are

EMSTEEL Building Materials PJSC (ADX: EMSTEEL) is the UAE's largest steel and building materials manufacturer. We are proud to deliver high-quality steel, cement, blocks, pipes, and dry mortar to major projects across the UAE and into global markets. Our products support the construction, engineering, and energy sectors, making EMSTEEL a fully integrated choice for the region's manufacturing and construction needs.

We are committed to innovation, efficiency, and sustainability, and to integrating the latest technologies to ensure safe, responsible, and future-ready operations. Our business is built on a foundation of strong governance, a culture of safety, and a drive to support the UAE's industrial growth.

Corporate Philosophy



Vision

We aspire to establish EMSTEEL as a global leader in sustainable steel and building materials production, enriching both our people and our planet.



Mission

Our mission is to contribute to UAE's economic growth as envisaged in the National Industrial Strategy while enhancing value for our shareholders by:

- Thriving to become the leading supplier of best quality steel and building materials as well as premier solution provider for construction and industrial sectors in UAE and in global markets.
- Championing safety, sustainability, and a net-zero future through green supply chain and by harnessing innovative technologies in our steel and building materials businesses.
- Cultivating human capital in our steel and building materials businesses, fostering a spirit of togetherness among our people and partners, while maintaining our position as a preferred employer for Emirati nationals and talented individuals.



Values



People



Innovation



Accountability

How We Make Our Steel



Product Ranges and Applications

Standard Reinforcing Bars

EMSTEEL standard reinforcing bars are engineered to deliver consistent mechanical performance, excellent weldability, and full compliance with international standards. Produced through a controlled DRI-based metallurgical route with optimized chemistry and steel cleanliness, these rebars ensure stable yield strength, reliable ductility, and predictable structural behavior across residential, commercial, and infrastructure projects. Tight dimensional and mass tolerances, combined with availability in straight bars and rebar in coil, support efficient fabrication, bending, and on-site installation.

High-Strength Reinforcing Bars

EMSTEEL high-strength reinforcing bars provide a specified yield strength of 600 MPa, enabling optimized structural design and measurable reduction in reinforcement quantities. Through advanced thermo-mechanical processing and controlled microstructure, ES600 ensures a stable yield-to-tensile strength ratio, adequate elongation, and consistent mechanical properties. These characteristics contribute to reduced reinforcement congestion, improved constructability, and enhanced design efficiency for complex structural systems while maintaining full structural safety and performance.

ES600 is recommended for special projects such as high-rise and super-tall buildings, bridges, heavy foundations, and complex structural systems requiring high material efficiency.

APPLICATIONS:

-  Residential buildings
-  Commercial buildings
-  Industrial buildings
-  High-rise building and skyscraper
-  Long-span bridges and viaducts
-  Heavy foundations, transfer slabs, core walls and complex systems requiring high material efficiency
-  Foundations, slabs, beams, columns, walls and general infrastructure works

Seismic Reinforcing Bars

EMSTEEL seismic reinforcing bars are developed to meet stringent ductility and energy dissipation requirements under cyclic and dynamic loading conditions. Controlled chemistry, low residual elements, and homogeneous microstructure ensure reliable weldability and stable yield behavior. Defined elongation capacity and predictable cyclic performance provide enhanced structural resilience in seismic zones, supporting performance-based design for critical infrastructure and safety-sensitive projects.

APPLICATIONS:

-  Seismic zones and critical infrastructure
-  Public facilities
-  Shear walls
-  Coupling beams and moment-resisting frames

Nuclear & Energy-Related Reinforcing Bars

Rebars for nuclear and energy-related projects, Emirates Steel reinforcing bars are produced under enhanced quality control with strict chemistry limits, high steel cleanliness, and consistent mechanical performance across heats and sizes. Full traceability and compliance with project-specific and nuclear-grade requirements, supported by certified quality management systems, ensure long-term reliability in safety-critical structures where performance consistency and durability are essential.

APPLICATIONS:

-  Nuclear power plants and containment structures
-  Energy facilities
-  Critical infrastructure
-  Heavy reinforced concrete shielding and foundations

Pre-Qualification and Product Approvals

EMSTEEL reinforcing bars, including ES600, are pre-qualified with major UAE and regional approval bodies, confirming suitability for infrastructure, commercial, residential, energy and strategic development projects. This common pre-qualification applies to Standard Reinforcing Bars, Seismic Reinforcing Bars, High-Strength Reinforcing Bars and Nuclear & Energy-Related Reinforcing Bars.

PRODUCT PRE-QUALIFICATION



هيئة الطرق والمواصلات
ROADS & TRANSPORT AUTHORITY



قطر تستحق الأفضل
Qatar Deserves The Best



PRODUCT APPROVALS

ES600 is evaluated under ICC-ES ESR-4800 and AC525 for reinforced concrete construction in accordance with ACI 318 and international building code requirements.



ES600 is formally recognized under **Abu Dhabi Technical Standards** and approved by major **UAE municipalities and authorities**, enabling use in public and private projects.



PRODUCT CERTIFICATION



Produced under an ASME-certified quality management system for **nuclear grades**, supporting suitability for energy and safety-critical applications.

Our Innovative Sustainable High-Strength Rebar

ES600

Value Beyond Reinforcement

Contractor Benefits

-  Construction time reduction
-  Increased safety
-  up to **16%** logistics savings
-  **15-22%** manpower reduction

Fabricator Benefits

-  Logistics savings
-  up to **20%** storage space saving
-  Faster Project productivity

Project Owner Value

-  up to **24%** Reduced steel usage
-  Lower building carbon emissions
-  Reduce other building materials
-  Supports LEED platinum objectives

Consultant / Design Efficiency

-  Improve spans and reduce sections
-  Lighter foundation
-  Reduction in rebar congestion
-  Aesthetically improved structure

Better Constructability

-  Better product performance features will make constructability much faster and easier

Compliance & Compatibility

-  **100%** compliant with ACI 318-19/ 25 and Eurocode EN1992-1-1:2004
-  Same market coupler can be used
-  Reduction of coupler costs

Product Performance & Technical Advantages



Higher Mechanical Properties

- 600 MPa min yield strength
- 690 MPa min tensile strength



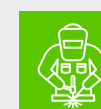
Better Ductility

- Better ductility with higher **tensile to yield ratio** of min 1.1 compared to conventional grades
- Higher elongation with min **7%** and min **6%** Agt



Durability & Fatigue

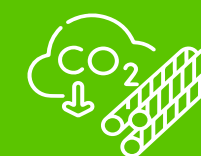
- Fatigue performance as per BSEN ISO 15630-1:2020 with **no failure meeting STD requirements**
- Enhanced **corrosion resistance** performance up to **35%** better than conventional grades as per ASTM B117



Higher Product Performance

- Weldable product with **CE < 0.52**
- supports **complex** reinforcement details and shapes
- **Bond strength** comparable to **conventional grades across all sizes**
- Good cohesion with concrete

Sustainable & Lower CO₂



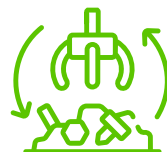
- Reduces steel and concrete usage
- Around **11 tcoeq CO₂** per floor in tower construction
- Every **10,000 t of ES600** can eliminate **12,107 t of CO₂** emissions

Product Technical Specification

Process Route followed



Up to **100%**
Direct Reduced
Iron (DRI)



Up to **58%**
recycled scrap

Product Dimensions

Size Range	8.0~40 mm and coil 8.0 ~16.00 mm
Bundle/ coil weight	2.0 tons
Length	12.00 m as default and from 6.00 m to 11.50 m upon request and approval

Physical and treatment Conditions

- Dimensional tolerance as per applicable standards
- Length tolerance is **-0/+100mm**
- QST treatment is default and air cooled is upon request and approval



Strapping, packaging and delivery

Each rebar coil has **4 straps** tied with **7 mm diameter wire** and straight bars are supplied in bundles with 5 straps.



Labeling

Two rip proof **plastic labels** are attached to each coil with the following details and shall be marked with **name of manufacturer, heat number, size, grade, and coil weight**.



Lab Accreditation

EMSTEEL labs are accredited by **Emirates International Accreditation Centre** for its laboratories in accordance to the requirements of **ISO/IEC 17025:2017**



Test Certificate

Inspection certificate provided with **detailed chemical composition** and **mechanical properties**.

Quality Management

The Quality Management Department of EMSTEEL is focused and dedicated to achieving the rigorous zero defects and zero failures standard and provide our customers with highest premium quality reinforcing bar products. We have several dedicated labs for each process sector.



Direct Reduction Plant Laboratory

The laboratory is equipped with highest technology equipment and instrument to provide our customers with highest quality DRI to ensure the final product material quality and properties.



Steel Making Laboratory

Equipped with Spectro Laboratory and Optical Emission to ensure minimal fluctuations of chemical elements within required standards range and can be adapted as per customer special requirements. Also slag analyzers to ensure the highest steel quality.



Rolling Mill Laboratory

Product Mechanical tests of Wire Rod and Re-bar in Coil are performed in Inspection and Testing Laboratories. Suitability of standard and customer requirements is given by well qualified Inspection and Testing team member. The lab will ensure better control of product dimensional tolerances. Also, work in tandem with customers requirement, to continuously fine tune our products.



Metallurgical Laboratory

An integral part of the steelmaking and rolling complex, the metallurgical laboratory, i.e. Central Lab is fully equipped to test variations in steel structure from center to surface, distribution and size of non-metallic inclusions and the nature and depth of surface imperfections. Microstructure of different samples is observed to ensure decarburization level



CATEGORY	SIZE & IDENTIFICATION						CHEMISTRY (heat analysis) (b) (d)							MECHANICAL PROPERTIES					WEIGHT / MASS TOLERANCE		TYPICAL APPLICATIONS
	Standard Reference	Grade Standard	Steel grade	Product Type		Size Range	C (max, %)	Si (max, %)	Mn (max, %)	P (max, %)	S (max, %)	N (max, %)	C.E.V (max)	Y.S MPa, min)	T.S MPa, min)	T.S/Y.S (min)	Elongation "200mm" (min, %)	Agt (min, %)	Linear mass tolerance		
				Straight Bars	Rebar Coil (D8~D16)															Straight Bars (mm)	
STANDARD REINFORCING BARS	British /Europe	BS4449:2005+A3:2016	B500B	✔	✔	8-40	0.22	-		0.05	0.05	0.012	0.50	500	540	≥1.08		≥5	±6.0% (D8); ±4.5% (D10-D40)	▪ Residential and commercial buildings ▪ Foundations, slabs, beams, and columns ▪ High-rise and super-tall buildings ▪ Long-span bridges and viaducts ▪ Heavy foundations, transfer slabs, and core walls ▪ Complex architectural and structural systems requiring high material efficiency	
	American	ASTM A615/A615M-24	Gr40 (a)	✔	○	10-40		-	-	0.05	0.05	-		280	420	≥1.1	Size-dependent , min ≥11	-	±6.0% (all diameters)		
			Gr60 (a)	✔	○	10-40		-	-	0.05	0.05	-		420	550	≥1.1	Size-dependent , min ≥7	-	±6.0% (all diameters)		
			Gr80	✔	○	10-40		-	-	0.05	0.05	-		550	690	≥1.1	Size-dependent , min ≥6	-	±6.0% (all diameters)		
	Saudi	SASO-ASTM A615/ A615M-23	Gr60	✔	○	10-40		-	-	0.05	0.05	-		420	550	≥1.1	Size-dependent , min ≥7	-	±6.0% (all diameters)		
			Gr80	✔	○	10-40		-	-	0.05	0.05	-		550	690	≥1.1	Size-dependent , min ≥6	-	±6.0% (all diameters)		
	Kuwait	KWS GSO-ISO 6935-2:2024	B500BWR	✔	○	8-40	0.22	0.6	1.6	0.05	0.05	0.012	0.50	500	540	≥1.08		≥5	±8.0% (D8); ±6.0% (D10-D12);±5.0% (D14-D20); ±4.0% (D25-D40)		
	Hong Kong	CS2-2012	500B	✔	✔	8-40	0.22	-		0.05	0.05	0.012	0.50	500	540	≥1.08		≥5	±6.0% (D8); ±4.5% (D10-D40)		
		BS4449:2005+A3:2016/ CS2-2012	B500B/500B	✔	✔	8-40															
	Singapore	SS560:2016	B500B	✔	✔	8-40	0.22	-		0.05	0.05	0.012	0.50	500	540	≥1.08		≥5	±6.0% (D8); ±4.5% (D10-D40)		
		BS4449:2005+A3:2016/ SS560:2016	B500B	✔	✔	8-40															
	KIWA	SS 212540:2014	K500BT	✔	○	8-40	0.22	-	-	0.05	0.05	0.012	0.5	500	540	≥1.08		≥5	±6.0% (D8); ±4.5% (D10-D40)		
SFS 1300:2020		B500B	✔	○	8-40																
DS EN 1992-1-1:2023		B500B	✔	○	8-40																
Israel	SI4466-3:2015	S500WC	✔	✔	10~40	0.24	0.55	1.8	0.05	0.05		0.55	500	575	≥1.15		≥7.5	+4.5/-2.5% (D8~D10); +3.5/-2.5% (D12~D40)			
HIGH-STRENGTH REINFORCING BARS	Internal	ES600:2019+A1:2025	Gr600 (c)	✔	○	8~40	0.24 (e)			0.04	0.04	0.01	0.52	600	690	≥1.1	≥7%	≥6%	±6.0% (D8); ±4.5% (D10-D40)		
	Singapore	SS560:2016	B600B	✔	○	10~32	0.22	-		0.05	0.05	0.012	0.50	600	648	≥1.08		≥5	±4.5% (D10-D32)		
SEISMIC REINFORCING BARS	Saudi	SASO-ASTM A706/ A706M-23	Gr60 (a)	✔	○	10-40	0.3	0.5	1.5	0.035	0.045	-	0.55	420	550	≥1.25	Size-dependent , min ≥12	-	±6.0% (all diameters)	▪ Buildings in seismic zones ▪ Critical infrastructure and public facilities ▪ Shear walls, coupling beams, and moment-resisting frames	
			Gr80	✔	○	10-40	0.3	0.5	1.5	0.035	0.045	-	0.55	550	690	≥1.25	Size-dependent , min ≥10	-	±6.0% (all diameters)		
	American	ASTM A706/A706M-24	Gr60 (a)	✔	○	10-40	0.3	0.5	1.5	0.035	0.045	-	0.55	420	550	≥1.25	Size-dependent , min ≥12	-	±6.0% (all diameters)		
			Gr80 (a)	✔	○	10-40	0.3	0.5	1.5	0.035	0.045	-	0.55	550	690	≥1.25	Size-dependent , min≥ 10	-	±6.0% (all diameters)		
NUCLEAR & ENERGY RELATED REINFORCING BARS	American	ASTM A615/A615M-24	Gr60 S (c)	✔	○	10-40	0.36	-	-	0.05	0.05	-		420	550	≥1.1	Size-dependent , min ≥7	-	±6.0% (all diameters)	▪ Nuclear power plants and containment structures ▪ Energy facilities and critical infrastructure ▪ Heavy reinforced concrete shielding and foundations	
			Gr60 HR (c)	✔	○	10-40	0.36	-	-	0.05	0.05	-		420	550	≥1.25	Size-dependent , min ≥7	-	±6.0% (all diameters)		
			Gr60 QHV (c)	✔	○	10-40	0.36	-	-	0.05	0.05	-		420	550	≥1.1	Size-dependent , min ≥7	-	±6.0% (all diameters)		

Note:

- (a) Upon Approval and minimum order quantity
(b) Other Alloying elements like Cr, V, Ti, Ni, Nb, Ti, etc may be added if required
(c) Internal grades
(d) All chemical elements will be within tolerance as per standard
(e) As per ES 600:2019+A1:2025 : "It is permitted to exceed the maximum values of carbon by 0.03 % by mass, provided that the carbon equivalent value is decreased by 0.02 % by mass."

Product Certifications

EMSTEEL's Integrated Management System (quality, environment, health, safety, sustainability, innovation and water) products have been certified by globally recognized certification bodies.

EMSTEEL holds **50+ certifications**, product licenses and quality marks.

We have adopted CARES Dynamic Bundle QR Code to Generate MolAT Digital Product Passport

Products Certificates



Emirates Quality Marks

- ECAS Straight Bars
- ECAS Coils
- BS4449:2005+A3:2016

علامة الجودة الإماراتية
Emirates Quality Mark
24-10-23355/Q24-10-049604/NB0030



CARES

- Certificate of Conformity of the FPC
- Digital Product Passport UAE
- CS2 -2012 (Hong Kong)
- BS4449:2005+A3:2016
- ES600:2019+A1:2025
- SS560:2016 (Singapore)

DCL Certificates



- ASTM A615/A615M-24
- BS4449:2005+A3:2016
- ES600:2019+A1:2025



SASO Certificate

- SASO ASTM A615/A615M+A1:2023
- SASO ASTM A706M:2023



علامة أبوظبي للنقطة
Abu Dhabi Trust Mark

QAD Conformity

- BS4449:2005+A3:2016



KIWA FINAS

- SS-EN 10080 / SS 212540: 2014
- DS-EN 10080 / DS-EN 1992-1-1:2023
- SFS 1300: 2020



Kuwait Quality Mark

- KWS GSO ISO 6935-2: 2024



ASME

Nuclear Quality System
Certification (QSC-677)

Sustainable Products and Management System Certificates



Environmental Label Program



Products Recycle Content



Management System Certificates

- ISO 14001
- ISO 45001



WSA Climate Action



- Responsible Sourcing Certificate
- Sustainable Product



Management System Certificates

- ISO 9001

New Certifications



ResponsibleSteel™ Core Site Certification (first steel producer in the MENA region)



Green Industries Label Certificates - renewed for Steel operations and newly obtained for Cement operations



First company to receive ECAS certifications for construction product quality from MolAT, through UK CARES

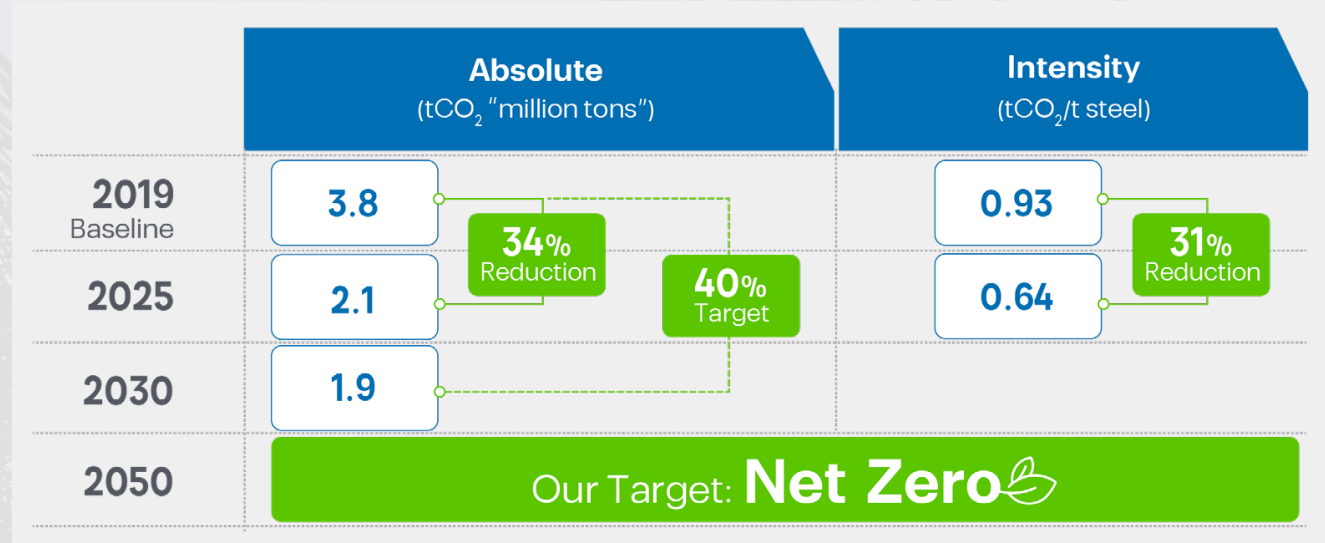
ISO 50001
Energy Management System
Certification

ISO 46001
Water Management System
Certification

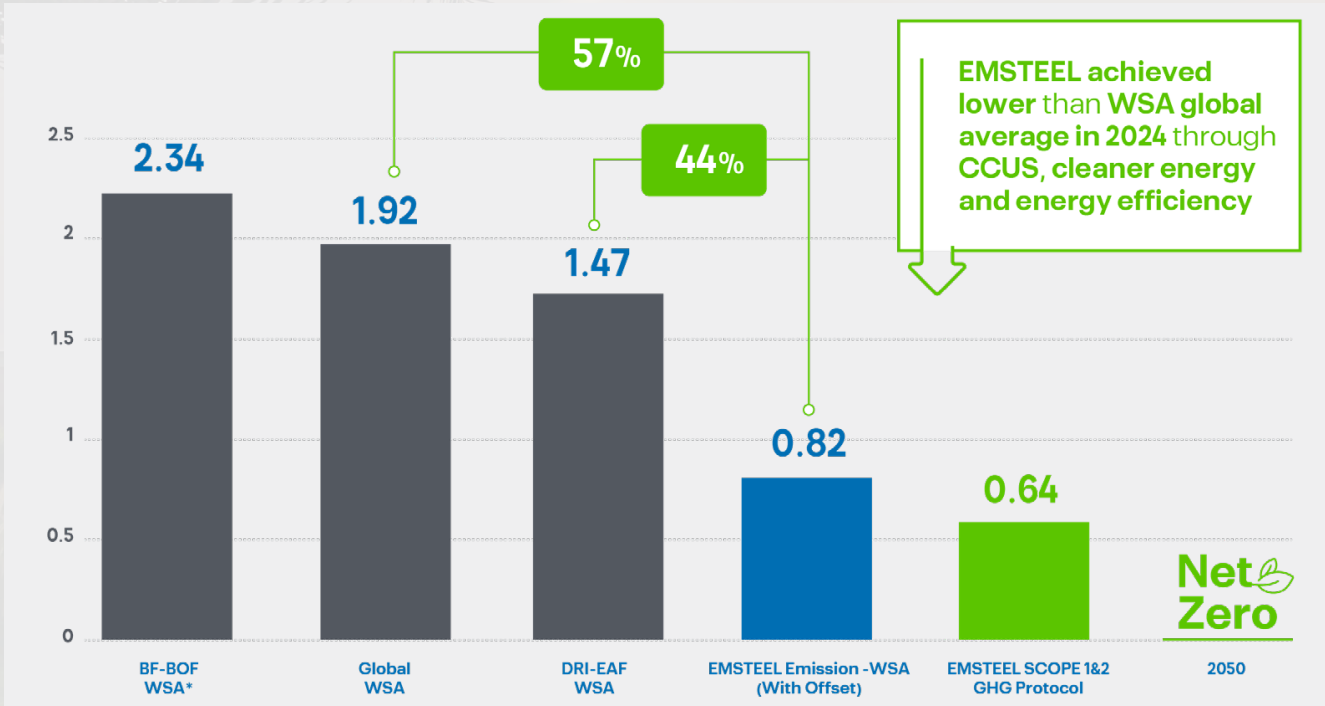
Sustainability and Decarbonization

EMSTEEL is advancing a clear decarbonization roadmap aligned with national and global climate objectives. Through strategic investments in CCUS, green hydrogen, clean energy integration, and energy efficiency, we are reshaping steel production toward a lower-carbon future.

Decarbonization Strategy Roadmap



Decarbonization Benchmark



*WSA: World Steel Association as per 2024 statistical data
** 0.64 tCO₂/t steel emission intensity achieved in 2025 as per GHG Protocol

Turning Climate Strategy to Results

Our decarbonization strategy is delivering measurable results. Through four key pillars – CCUS, Green Hydrogen, Clean Energy, and Energy Efficiency – EMSTEEL has reduced its absolute emissions by 34% from the 2019 baseline, advancing our path toward net zero.

Carbon Capture, Utilization and Storage (CCUS)

EMSTEEL's CCUS facility, developed in partnership with ADNOC, captures up to **800 kt of CO₂** annually and remains a key decarbonization lever, supporting emissions reduction today while enabling future carbon utilization and storage opportunities.



1st **FIRST**
in the World

Green Hydrogen

EMSTEEL is pioneering the region's hydrogen economy with the MENA region's **first green hydrogen electrolysis pilot plant**, already producing green steel and paving the way for a large-scale hydrogen-based steel value chain.



1st **FIRST**
in MENA Region

Clean Energy

Clean energy is a key enabler of EMSTEEL's decarbonization journey, supporting lower-carbon steel production through cleaner power sources.



Clean electricity use through I-RECs increased to **89%** in 2025 across the Steel Business, whilst in parallel progressing with the development of captive solar and electrification initiatives.

Energy Efficiency

Energy efficiency is a core pillar of EMSTEEL's sustainability strategy, reducing energy consumption and emissions intensity across operations, with ISO 50001 certification received in 2025.



Energy-efficiency measures in 2025 generated **AED 67 million** in **cost savings** and **27 Ktonnes CO₂e** in emissions savings, directly supporting **EMSTEEL's decarbonization strategy** by reducing energy consumption and lowering emissions intensity

1st Place
UAE Energy Management Awards
- UAE Ministry of Energy and Infrastructure

Our Efforts Toward Net Zero

True:Green

True:Green™ represents EMSTEEL's vision for sustainable steel production. It unites all of our sustainability efforts, past, present, and future, under one philosophy. It represents EMSTEEL's core sustainability identity, a framework that consolidates every sustainable investment, and innovation. At its core, **True:Green™** is grounded in transparency, measurable impact, and responsible progress"

Verified Environmental Performance (EPD-Based)

EMSTEEL reinforcing bars are supported by independently verified Environmental Product Declarations (EPDs) developed using internationally recognized life-cycle assessment (LCA) methodologies under a cradle-to-gate scope.

Rebars EPD values

Emissions
t CO₂e/t product

0.55 ~ 0.58

Recycle content
(post-consumer/total)

Up to **36%** / Up to **58%**



Digital Emissions Traceability Platform

True:Green™ is EMSTEEL's internally developed digital low-carbon steel and emissions traceability platform, designed to provide customers with order-specific carbon footprint data in addition to product-level EPDs. Unlike generic annual reporting, True:Green™ digitally links each sales order to its actual production emissions, ensuring transparency and accuracy.

This enables customers to:

- Quantify embodied carbon at project level
- Support CBAM compliance and regulatory reporting
- Enhance ESG disclosures
- Make sustainability-driven procurement decisions



Our H2 Green Rebar – Built for a sustainable future

1 **FIRST**
in the World

EMSTEEL offers the world's first H₂ Green Rebar – a net-zero emissions product made with certified zero-emission electricity, hydrogen, and durable carbon removals – helping advance sustainable construction and green building standards.

Hydrogen-Based Rebar Delivered for World's First Net-Zero Mosque

EMSTEEL is proud to have delivered hydrogen-based rebar for **Abu Dhabi's first Net-Zero Mosque** in Sustainable City on Yas Island. Developed by Aldar, this landmark project is the world's first mosque designed for LEED Zero Carbon certification spanning **1,595 m³** and hosting over **850** worshippers.



Our Rebar Iconic Projects

BS4449 :2016 - B500B Grade

- Burj Khalifa
- Dubai Frame
- Etihad Railways
- Sheik Zayed Mosque
- Museum of the Future
- Abu Dhabi Airport Midfield Terminal Complex
- Abu Dhabi Airport Midfield Terminal Complex - APM Tunnel
- Al Maktoum International Airport, Dubai
- EXPO 2020
- Ibn Batuta Mall (Gate Complex & Hotel)
- Saadiyat Grove
- The Louvre Museum
- Kuwait International Airport
- Dubai Metro Projects
- Emirates Palace Hotel
- Palm Marina Apartment - Palm Jumeirah
- Al Habtoor City
- Velodrome Indoor Cycling Track
- Burj Binghatti
- Center of Curiosity -Saadiyat
- NMC Specialty Hospital, Khalifa City
- 134 Villas Jumeirah Park
- Southern Sun Hotel - Abu Dhabi
- Siemens HQ Building
- 411 Villas in Baniyas Residential Development
- Al Murooj Complex, Dubai
- Majestic Tower
- Old Town Marina Residence
- Capital Tower
- Mediterranean Garden
- Jumeirah Lake Tower
- Golf Towers

- City Hospital (Healthcare City)
- Saba Tower
- Shoreline Apartments
- Lake View / JLT Tower Plot No. B2
- Hilal Bank HQ Building in Sowwah Island
- 6 Towers Dubai Hills MBR City
- The Address Hotel Downtown Dubai
- Crown Plaza & Stay Bridge Hotel
- Training Centre and Lab Bldg

High-Strength Rebar - Grade ES600

- Al Habtoor Tower
- Al Zorah Development
- Casa Canal - (AHS)
- Dubai Canal, NARESCO
- EMAAR Creek Bridge (ECC)
- Haven by Aldar - Dubai
- MEC Contracting (ALDAR Project)
- Al Zorah
- Al Habtoor Residence Project
- Muraba Veil Project - Zetas

Nuclear Grades ASTM A615

- Barakah Nuclear Reactor (All Phases)

Green H2 Rebar

- Net-Zero Mosque by Aldar in Abu Dhabi
- Al Reem hills ancillary buildings by Modon





