SKD COMPOSITE
MORE THAN EXPECTATION

Discovering GFRP's Power :

" A New Era Beyond Steel "

- **2X** STRONGER THAN STEEL
- **30%** SAVINGS
- **80%** LIGHTER THAN STEEL
- **CORROSION** RESISTANT
- **NON** ELECTROMAGNETIC
- **NO THEFT** IN TRANSIT/ AT SITE
- **EASY TO** CUT & INSTALL
- **Highly** CHEMICAL REGISTANT

TRANSFORMING THE REBAR INDUSTRY

INDEX

" Better Quality, Better Rate "

INTRODUCTION OF GFRP REBAR

Glass Fiber Reinforced Polymer (GFRP) rebar is a non-metallic reinforcement material used as an alternative to traditional steel reinforcement in concrete structures. It is composed of high-strength glass fibers embedded in a polymer resin matrix, typically epoxy. This combination offers superior corrosion resistance, lightweight properties, and high tensile strength. GFRP rebars are widely used in construction applications where durability and resistance to harsh environmental conditions, such as marine, industrial, and deicing salt environments, are critical. Their non-conductive nature also makes them ideal for projects requiring electromagnetic neutrality.

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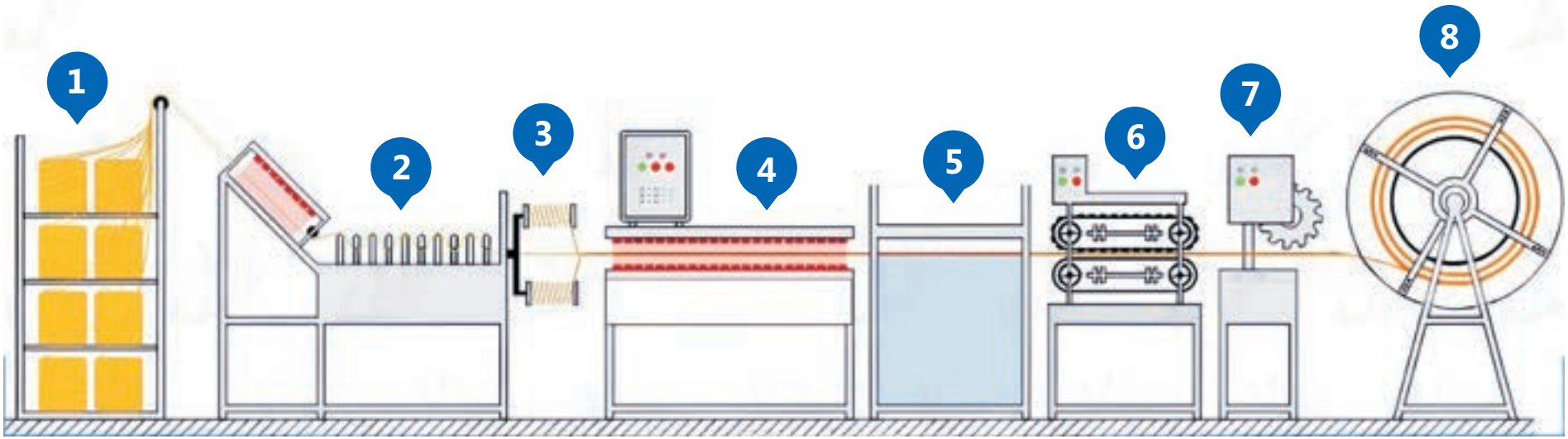
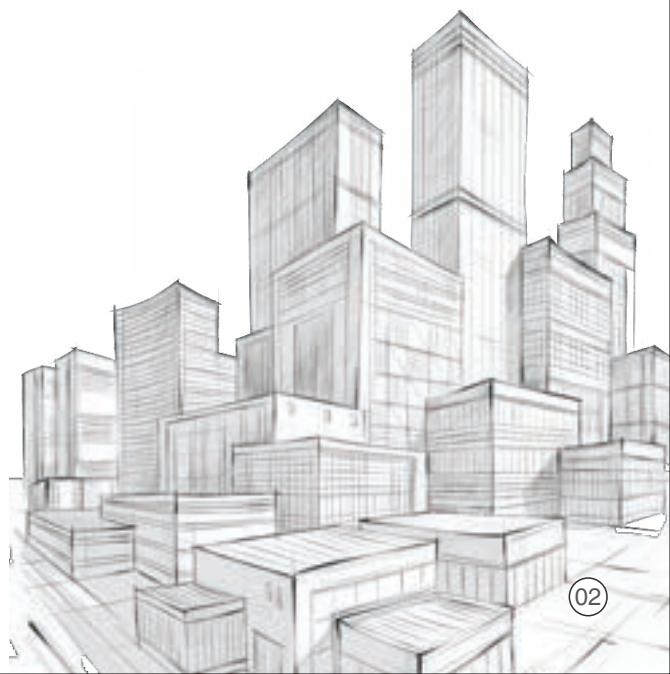
⁘ What is the Manufacturing Process of SKD GFRP Rebar ?



1. Roving Creel
2. Chemical Bath
3. Twisting Device
4. Polymerization Chamber
5. Water Cooling
6. Pulling Device
7. Cutting Device
8. Winding Machine



COMPANY PROFILE

ABOUT US

SKD Composite, established in 2022, is a pioneering manufacturer of GFRP (Glass Fiber Reinforced Polymer) rebars. Our focus is on providing innovative, corrosion-resistant alternatives to traditional steel reinforcement, enhancing the durability and sustainability of construction projects. With a commitment to quality, performance, and eco-friendly solutions, we cater to a wide range of industries, helping build infrastructure that stands the test of time.

SKD COMPOSITE - VISION

To be the foremost provider of innovative, corrosion-resistant reinforcement solutions, driving the future of sustainable construction globally.

SKD COMPOSITE - MISSION

To manufacture cutting-edge GFRP rebars that improve structural performance, reduce environmental impact, and provide long-term value for the construction sector. We aim to contribute to safer, more sustainable infrastructure worldwide.

PRODUCTS

- GFRP Rebar (Standard & Custom Sizes)
- GFRP Bent Elements

RAW MATERIALS

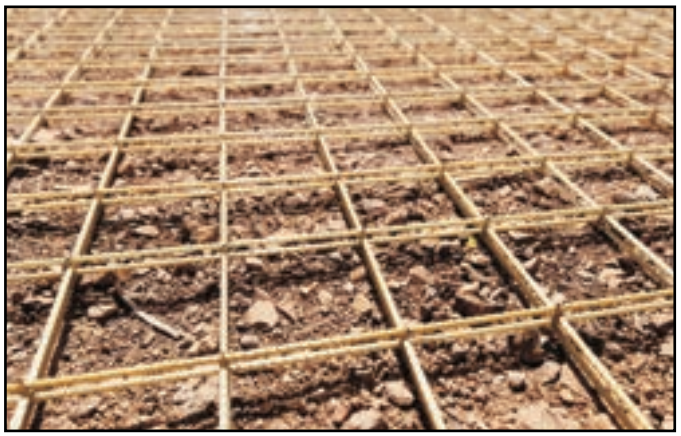
High-quality Epoxy Resin: Ensuring strong adhesion and durability of GFRP Rebars.
Premium Glass Fibers: Providing excellent tensile strength and resistance to environmental factors.

CORE STRENGTHS

- **ISO 9001:2015 Certified:** Adhering to international standards for quality management and consistent product excellence.
- **Advanced Technology:** Incorporating advanced Russian technology and machinery for precision manufacturing and Improved production efficiency, ensuring consistent quality in GFRP rebar.
- **Corrosion Resistance:** GFRP rebars that excel in harsh environments, reducing maintenance needs.
- **Sustainability:** Commitment to environmentally friendly production practices.

WHY CHOOSE SKD COMPOSITE ?

- High-quality GFRP solutions tailored to client needs.
- Competitive pricing and on-time delivery.
- ISO 9001:2015 certified, ensuring a commitment to quality.
- Use of premium Epoxy resin for enhanced product performance.
- Advanced Russian technology and machinery for precision and efficiency.
- Experienced team providing technical support and guidance.



GFRP: **A Breakthrough Beyond Steel emphasizes the rise of Glass Fiber Reinforced Polymer (GFRP) is a game-changing material across multiple sectors, offering advancements that surpass traditional steel applications. With its potential advantages, innovative features, and transformative shifts, GFRP promises to make a significant impact. Let's explore this in detail:**

Corrosion is a Serious & Critical Concern for Steel

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Challenges with TMT Bars: Tmt Bars Encounter Several Key Issues

Corrosion

TMT bars are prone to corrosion, especially in coastal areas or humid environments, where exposure to moisture and salts can weaken the structure over time. This reduces the lifespan and durability of the construction.

Heavy Weight

TMT bars are relatively heavy, making transportation, handling, and installation more labor-intensive and costly. The added weight can also increase the overall structural load, which may not be ideal for all projects.

Thermal Expansion

TMT bars expand and contract with temperature changes. In regions with significant temperature variations, this can lead to cracks in the concrete, affecting the structural integrity over time.

Cost Variability

The cost of TMT bars can be highly variable, influenced by factors such as steel prices, manufacturing quality, and transportation expenses. This unpredictability can make budgeting difficult for construction projects.

Environmental Impact

The manufacturing process of TMT bars involves high energy consumption and carbon emissions, contributing to environmental concerns. This makes TMT bars less eco-friendly compared to some alternatives.

Electromagnetic Interference

As steel is conductive, TMT bars can cause electromagnetic interference, which may be problematic in structures that house sensitive electronic equipment.

Shorter Lifespan in Harsh Environments

In environments with high chloride content, such as marine or industrial areas, TMT bars have a shorter lifespan due to accelerated corrosion. This can lead to higher maintenance and replacement costs over time.

Theft During Transit & Site

TMT bars are often stolen during transport or at construction sites, leading to financial losses and project delays, and requiring additional security measures.

Scrap Generation

TMT bars' fixed 12m length often results in excess waste during cutting, leading to material loss, increased costs, and handling issues.

Labor Requirements

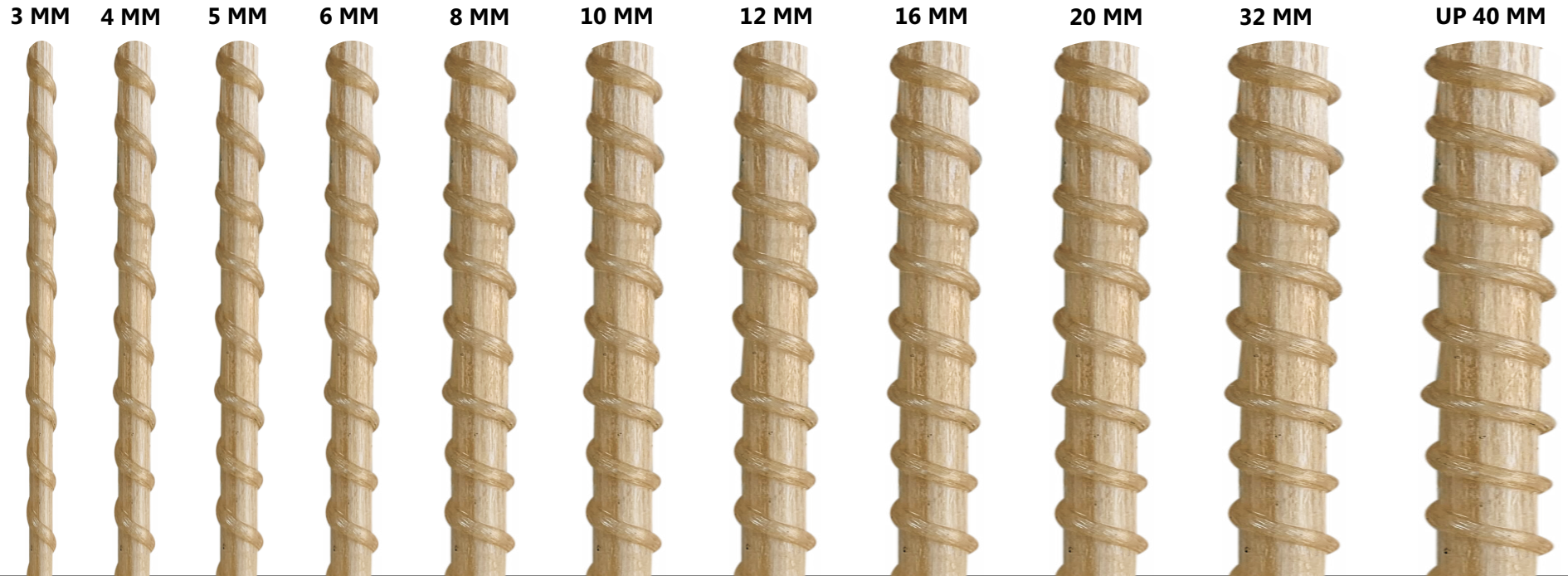
TMT bar installation is labor-intensive, especially for large projects, requiring skilled workers for bending, cutting, and positioning, which can prolong construction timelines.

These challenges are prompting the construction industry to explore alternatives like GFRP rebars, which offer advantages such as corrosion resistance, lighter weight, and consistent quality.

PRESENTING GFRP BARS

Discover the future of construction with GFRP Bars (Glass Fiber Reinforced Polymer), a groundbreaking innovation designed to surpass traditional materials. GFRP Bars offer exceptional strength and durability while remaining lightweight and resistant to corrosion, making them ideal for various demanding environments. Their advanced properties not only enhance structural performance but also contribute to longer-lasting and more sustainable building solutions. By integrating GFRP Bars into your projects, you embrace a cutting-edge alternative that promises to revolutionize construction practices, delivering superior results with reduced maintenance and increased longevity. Experience the benefits of GFRP Bars and elevate your construction standards to new heights.

GFRP BARS



PRESENTING GFRP BENT ELEMENTS

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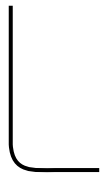
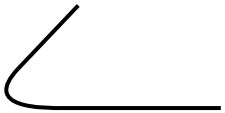
SKD 1 90 DEGREE BENT

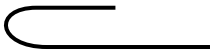


SKD 2 >45 DEGREE BENT

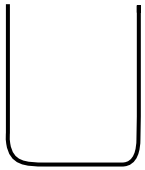
SKD 3 <45 DEGREE BENT



SKD 4 HOOKED BAR

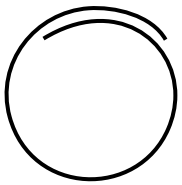


SKD 5 U/C SHAPE BAR

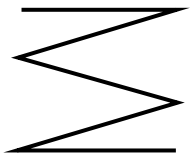


SKD 6 OPEN U

SKD 7 HOOP

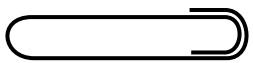


SKD 8 SPIRAL

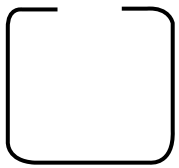


SKD 9 HALF HOOKED

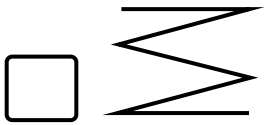
SKD 10 DUAL HOOKED

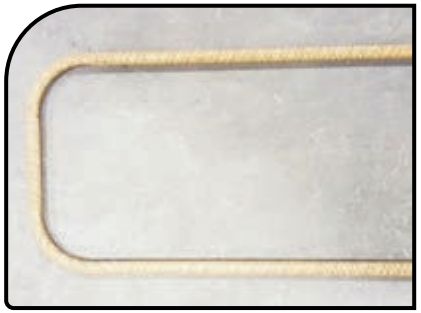


SKD 11 CLOSED U/C SHAPE BAR



SKD 12 RECTANGULAR SPIRAL





ADVANTAGES OF GFRP BARS

STRONGER THAN STEEL

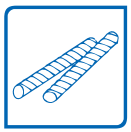
GFRP Rebar is characterized by high tensile strength, which is higher tensile strength than 2-3 times stronger than steel Rebars with the same diameter. So It can be replaced by GFRP rebar smaller diameter in place of steel rebar bigger diameter without loss of performance.

CHEAPER

By using GFRP bars, you can save between 20% and 30% compared to conventional TMT bars. Additionally, the higher tensile strength of GFRP rebar allows for the use of a smaller diameter than steel rebar, leading to potential cost savings of 40% to 50%. This makes GFRP bars a highly cost-effective solution.

LIGHTER

GFRP Bars are up to 80% lighter than TMT Bars, greatly reducing the weight of your construction materials.



DURABILITY

Studies indicate that GFRP Bars maintain their performance for over 80 years without degrading or reacting with acids and other materials. Their corrosion resistance enhances the durability of concrete structures by preventing internal stresses and ensuring long-term stability.

ANTI CORROSION

GFRP Bars resist corrosion, unlike steel rebar, making them immune to rust and deterioration from moisture, chemicals, and harsh conditions. This ensures longer-lasting structures, lower maintenance costs, and greater durability, making GFRP Bars ideal for coastal and high-humidity environments.

ELECTRICITY

GFRP Bars are non-conductive, making them an excellent choice for applications where electrical insulation is crucial.

REDUCED OVERLAP COST

GFRP Bars eliminate the need for overlapping, unlike traditional TMT bars. Available in standard lengths of 12, 50, 100, and 200 meters, as well as customizable sizes, they are tailored to your project needs.
This results in significant savings on materials and labor, while also reducing waste and minimizing rebar scraps during construction.

NO THEFT RISK

GFRP Rebars are less susceptible to theft during transit or at the construction site due to their specialized applications and lack of resale value. This minimizes the risk of theft and can save significant amounts on project costs.

EASY TO TRANSPORT

GFRP Bars are lightweight and supplied in coils, making transportation, loading-unloading, and handling on-site more efficient and cost-effective.

EASY TO CUT & INSTALL

GFRP Bars are easy to install due to their lightweight nature, requiring 30 to 40% less manpower than TMT Bars. This results in significant cost savings.

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GFRP WITH TMT BARS

GFRP and TMT Bars Can be used together in construction.

Low Environmental Impact

GFRP bars consume around 85% of the embodied energy of steel, resulting in a significantly lower carbon footprint. This makes them a more sustainable choice for environmentally conscious construction projects

Highly Chemical Resistant

Offers exceptional resistance to various chemicals, ensuring durability in harsh environments.

Non-magnetic

GFRP bars are non-magnetic, making them ideal for structures requiring no electromagnetic interference, such as hospitals, research labs, and sensitive electronic installations

GFRP BAR

TMT BAR

TECHNICAL COMPARISON

PROPERTIES	Grade 500	GFRP	COMPARISON
Tensile strength Mpa	500 min	800-1100	Stronger
Weight/Meter 8mm	0.395 kg	0.080 kg	Lighter
Bar Length	12 meter	upto 100 meters	Better improvement
Durability embedded	50 years	(+) 100years	More durable
Class III and IV	(+/-)5years	(+) 100 years	More durable
Corrosion resistance	No	Yes	More durable
Electric conductivity	Yes	No	No accidents risk
Thermal conductivity	Yes	No	Does not dissipate heat
Concrete covering	35mm - 45mm	20mm	Lower concrete volume
Shear Strength	120	170	Higher
Bond strength MPa/N/mm^2	14*	12.5	Lower
Compression MPa/N/mm^2	500	450	Lower
Modulus of Elasticity [Gpa]	160-200	65	Lower
Elongation [%]	12% (min.)	4% (max.)	Lower
Density [ton/m^3]	7.8	1.9	Lower

THE JOURNEY OF GFRP: A HISTORICAL OVERVIEW

The history of Glass Fiber Reinforced Polymer (GFRP) showcases the remarkable evolution of materials technology from the 1930s to the present day. Initially developed as fiberglass for aerospace and automotive applications, GFRP quickly gained recognition for its exceptional lightweight strength and durability. Over the decades, advancements in production methods and a deeper understanding of composite materials led to its integration into diverse industries, including construction and marine applications. As the demand for sustainable materials grew, GFRP emerged as a versatile solution, combining performance with environmental benefits. This presentation will explore the key milestones in the development of GFRP and its transformative impact across various sectors.

1930

The first use of GFRP was in boat construction.

1940

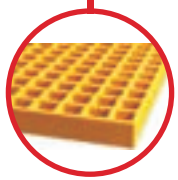
This period was crucial in establishing FRP as a versatile and durable material, revolutionizing its future use across various sectors.

1950

Fiberglass, carbon, and aramid were utilized in military applications, including ships and aircraft.

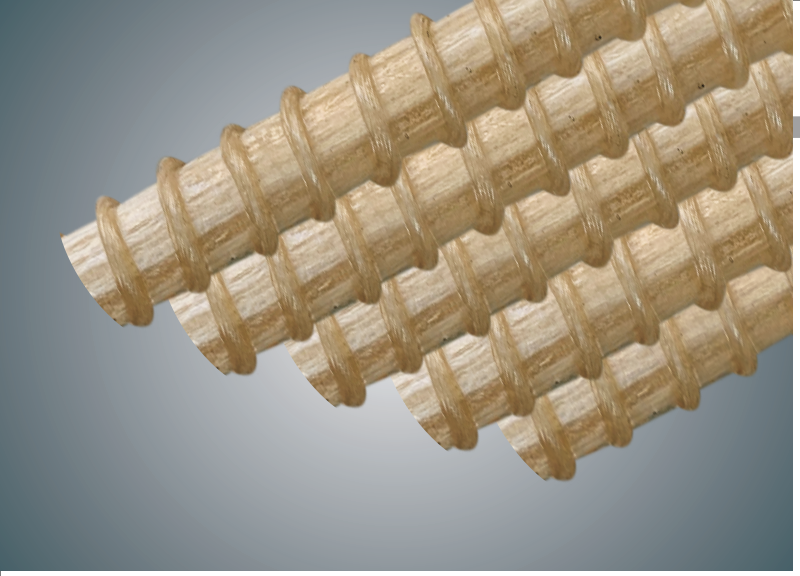
1960

Research into GFRP for construction began.



1970

GFRP quality improved with pultrusion technology, leading to widespread use in sports equipment, automotive manufacturing, and industries like civil aviation, electricity, and wind turbines.

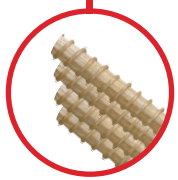


THE HISTORY OF GFRP BARS IN THE CONSTRUCTION INDUSTRY

The journey of Glass Fiber Reinforced Polymer (GFRP) in the construction industry began in the 1950s, laying the groundwork for its future applications. Significant advancements emerged in the 1970s with the introduction of pultrusion technology, which enhanced the quality and reliability of FRP materials. As concerns about corrosion in existing structures grew in the 1980s, interest in composite materials surged. This era marked a pivotal moment with the installation of the first FRP system—prestressed GFRP rebar in a pedestrian bridge. The 1990s saw Japan leading the charge in FRP usage, while the 2000s witnessed China rising as the largest user of FRP for new construction projects. During the same period, Carbon Fiber Reinforced Polymer (CFRP) gained prominence, becoming the go-to solution for strengthening aging structures. This rich history underscores the transformative impact of FRP in modern construction, highlighting its potential to enhance durability and resilience in building practices.

1980

Corrosion problems in existing buildings increased interest in composites, leading to the construction of the first FRP system with prestressed GFRP rebar in a pedestrian bridge.



1990

Japan emerged as a leader in the use of GFRP

2000

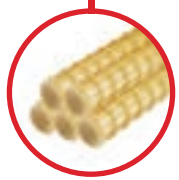
China became the largest user of FRP for new structures.

2010

Automotive industry began using GFRP composites more extensively for electric and autonomous vehicles focusing on reducing weight and improving efficiency.

2020

GFRP is widely adopted in sustainable construction practices, providing excellent anti-corrosion properties, and supporting the development of eco-friendly buildings.



INDUSTRY-WISE FRP PRODUCT LIST

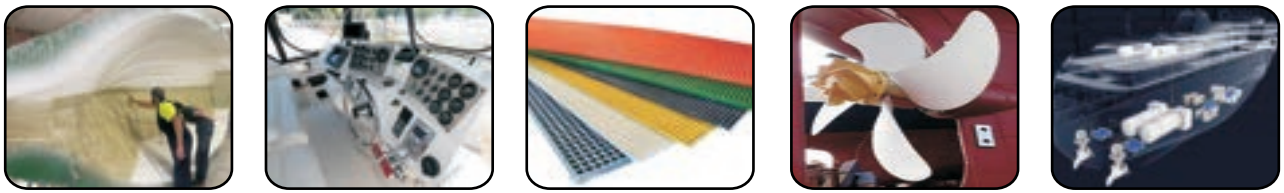
FRP (Fiber Reinforced Polymer) materials are increasingly utilized across various industries due to their lightweight, durable, and corrosion-resistant properties. This versatility allows for multiple applications that enhance performance and efficiency.

AEROSPACE INDUSTRY

- Airplane
- Rocket
- Satellite
- Radomes
- Helicopter

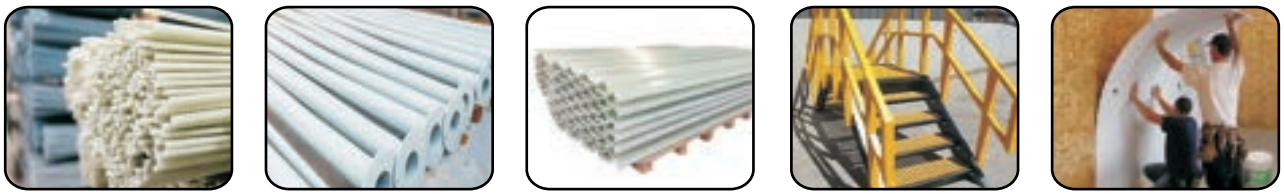
MARINE INDUSTRY

- Boat Hulls
- Decks and Cabins
- FRP Gratings
- Marine Propellers
- Fuel Tanks



CONSTRUCTION INDUSTRY

- GFRP Bars
- FRP Gratings
- FRP Roofing Panels
- FRP Handrails
- FRP Wall Panels



TRANSPORTATION INDUSTRY

- Vehicle Body Panels
- Interior Components
- Structural Reinforcement
- Lightweight Truck
- Car Dashboard

ENERGY SECTOR

- Wind Turbine
- Blades FRP Cooling Towers
- Electrical Insulation Components
- Solar Panel Supports
- Transmission Line Supports



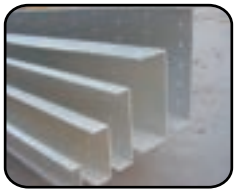


ELECTRONICS INDUSTRY

- FRP Enclosure
- Circuit Board Supports
- Insulating Components
- Antenna Structures
- Heat Shields / Cable Trays







SPORTS AND LEISURE

- Athletic Equipment
  (e.g., tennis rackets, bicycles)
- FRP Skateboards
- Recreational Boat Components
- Surfboards
- FRP Basketball Board





ENTERTAINMENT INDUSTRY

- Water Park Slides
- Amusement Park Rides
- Theatrical Set Components
- Decorative Elements for Theme Parks
- FRP Statues and Sculptures





These lists illustrate the diverse applications of FRP across various industries, emphasizing its versatility and performance advantages. Overall, the adaptability of FRP materials makes them a valuable choice, driving innovation and efficiency in multiple sectors.

Design Codes and Standards for GFRP Reinforcement Here is a summary of design codes and standards related to the use of Glass Fiber Reinforced Polymer (GFRP) reinforcement in various countries:

These design codes and standards outline the guidelines and specifications for utilizing GFRP reinforcement in a variety of structural applications. They present comprehensive details on material properties, design approaches, construction techniques, and performance standards for integrating GFRP composites in concrete structures and bridge decks. By following these codes, engineers and construction professionals can ensure the safe and effective implementation of GFRP materials, fostering the growth of sustainable and innovative construction practices.

COUNTRY NAME	DESIGN CODES AND STANDARDS	DETAILS
INDIA	IS 18255 : 2023	Fibre-Reinforced Ploymer (FRP) Rebars for Concrete Reinforcement - Methods of Test.
INDIA	IS 18256 : 2023	Solid Round Glass Fibre Reinforced Polymer (GFRP) Bars for Concrete Reinforcement - Speci? cation
INDIA	IRC : 137-2022	Guidelines On Use Of Fibre-reinforced Polymer Bars In Road Projects
USA	ACI 440.1R:	Guide for the Design and Construction of Structural Concrete Reinforced with FRP Bars
USA	AASHTO LRFD	Bridge esign Specifications for GFRP-Reinforced Concrete Bridge Decks and Traffic Railing
EUROPE	FIB Task Group	9.3 - Bulletin 40 -FRP Reinforcement in RC Structures
CANADA	CAN/CSA S806:	Design of Buildings with Fibre Reinforced Polymers
CANADA	CAN/CSA S6-06:	Canadian Highway Bridge Design Code
SAUDI ARABIA	ACI 440.1R:	Structural Concrete Reinforced with FRP Bars
PARAGUAY	NP 17 09 1 19	NORMA PARAGUAY
SWITZERLAND	FIB BULLETIN NO. 40	
NORWAY	22-A 98741	Structural-Eurocrete Modifications to Ns3473 when using FRP Reinforcement.
UKRAINE	NBV 2.6-185-2012	Structural-Guidelines for the design and manufacture ofconcrete sructures with non-metallic composite reinforcement on the basis of basalt and glass fiber rovings.
REP. OF BELARUS	1103-98	Structural-Glass-fiber plastic reinforcement. Technical requirements.
JAPAN & CHINA	NO. 30	JAPAN-CONCRETEENGINEERING SERIES 23S tructural- Recommendation for design and construction of concrete structures using continuous fiber reinforcing materials (Design)
RUSSIA	GOST 31938-2012	

Many other countries, including Germany, the Netherlands, New Zealand, Australia, Thailand, Brazil, South Korea, Singapore, Azerbaijan, Mexico, France, Spain, the UK, the Philippines, Malaysia, Israel, the UAE, Hungary, Poland, Slovakia, Cyprus, Croatia, Kazakhstan, Oman, Turkey, Yemen, Libya, Morocco, South Africa, Colombia, Ecuador, Venezuela, and Peru, have been utilizing GFRP for infrastructure construction since the 1990s.


भारतीय मानक
Indian Standard
IS 18256 : 2023

कंक्रीट प्रबलन के लिए काँच रेशा प्रबलित पॉलिमर (जीएफआरपी) के ठोस गोल सरिए -विशिष्ट

Solid Round Glass Fibre Reinforced Polymer (GFRP) Bars for Concrete Reinforcement — Specification

ICS 83.120; 91.100.30

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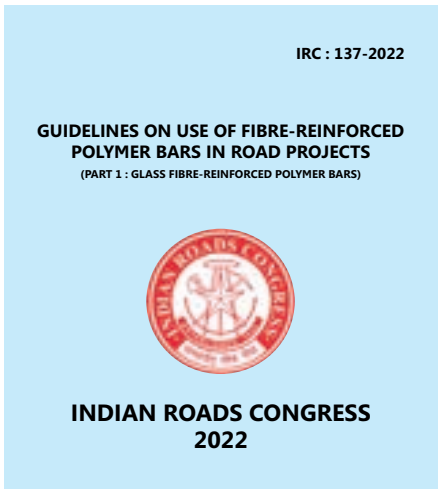
NEW DELHI - 110002


IRC : 137-2022

GUIDELINES ON USE OF FIBRE-REINFORCED POLYMER BARS IN ROAD PROJECTS
(PART 1 : GLASS FIBRE-REINFORCED POLYMER BARS)

INDIAN ROADS CONGRESS
2022

APPLICATION - GFRP REBAR

GFRP (Glass Fiber Reinforced Polymer) finds extensive applications in various industries and environments due to its unique properties. Some of the key application areas of GFRP Rebar include:

Real Estate

- Parking Garages
- Swimming Pools
- Landscaping
- DrainsInternal Roads
- Sewerage Treatment Plants
- Underground Water Tanks
- Flooring
- Boundary Walls
- Concrete Non-Load bearing walls
- Retaining Walls
- Deck slabs

Non-Magnetic Applications

- MRI Facilities
- Nuclear Power Plants
- Research Laboratories
- Hospitals
- Military Installations
- Airport Runways & Control Towers
- Electronics Manufacturing Plants
- Radio and Television Stations
- Underground Rail Systems
- Magnetically Shielded Enclosures

Airports, Ports, Metro and Railways

- Runways
- Tunnel Eyes
- Railway Tracks
- Floorings
- Drains
- Sewerage Treatment Plants
- Underground Water Tanks
- Landscaping
- Retaining Walls
- Noise barriers
- Helipads
- Deck slabs
- Non-Structural Walls
- MSE Wall Panels and Coping

Hospitals, Schools and Research Centers

- Sewage Treatment Plant
- Testing Facilities
- Research Facilities
- Parking Garages
- Underground Water Tanks
- Internal Roads
- Retaining Walls
- MSE Wall Panels
- Flooring
- Deck slabs
- Laboratories

Bridges and Tunnels

- Tunnel Eyes
- Mechanically Stabilized Earth Wall Panels and Copings
- Retaining Walls
- Bridge Decks and Bridge Deck overlays
- Noise barriers
- Concrete Roads including Jointed Plain Concrete Pavement
- Short-Panel Concrete Pavements (both cast-in-situ and precast)
- Bridge Decks and Bridge Deck overlays Crash Barriers and Bridge Parapets

Industrial and Warehousing

- Underground Water Tanks
- Sewerage Treatment Plants
- Flooring
- Research FacilitiesInternal Roads
- Mechanically Stabilized Earth Wall Panels
- Retaining Walls
- Deck slabs
- Storage facilities for chemical & wastewater - treatment plants
- Drains Boundary Walls

Large Infrastructure Projects like Dams, Power Plants, etc.

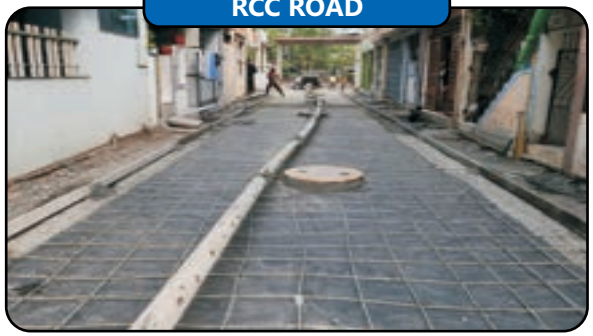
- Internal Roads
- Underground Water Tanks
- Sewage Treatment Plant
- Flooring
- Deck slabs
- Parking Garages
- Retaining Walls
- MSE Wall Panels
- Wastewater treatment plants

Roads and Highways

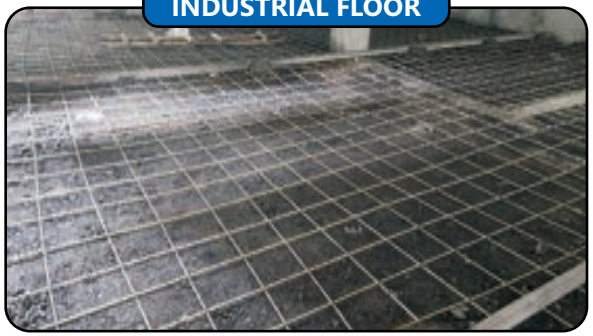
- Approach Slabs
- Walkways of Foot Over Bridge
- Slab Culverts
- Bridge cum Bandhara, including Deck Slabs and Barriers between Piers
- Concrete Roads including Jointed Plain Concrete Pavement
- Continuously- Reinforced Concrete Pavements (CRCP)
- Short-Panel Concrete Pavements (both cast-in-situ and precast)
- Retaining WallsNoise barriers
- Box CulvertsCrash Barriers & Bridge Parapets
- Pedestrian Parapets and Railings
- Bulkheads and Bulkhead Copings
- Mechanically Stabilized Earth Wall Panels and Coping
- Drains

⁘ APPLICATION - GFRP REBAR

RCC ROAD

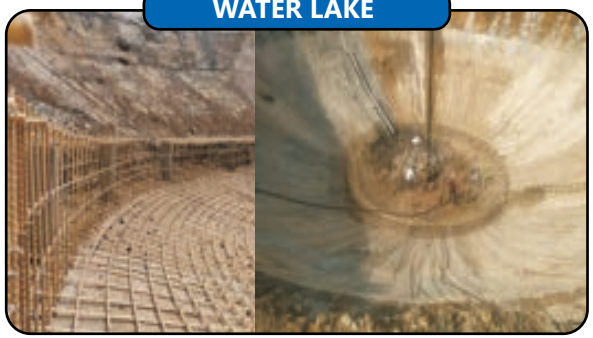


INDUSTRIAL FLOOR



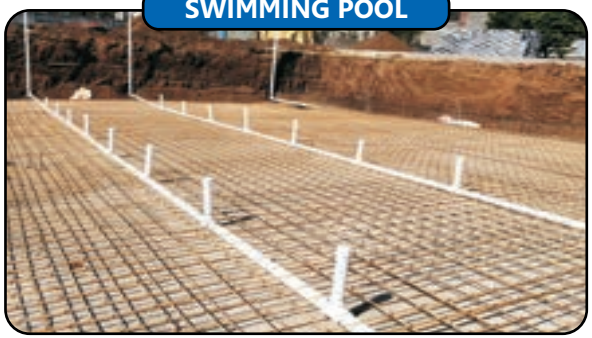
PLINTH RCC

WATER LAKE

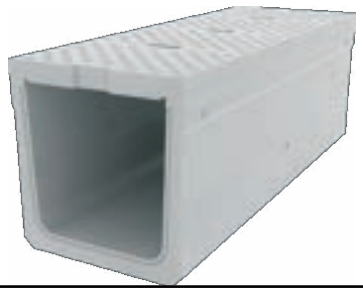


DECORATIVE PRODUCTS

SWIMMING POOL



DRAINS

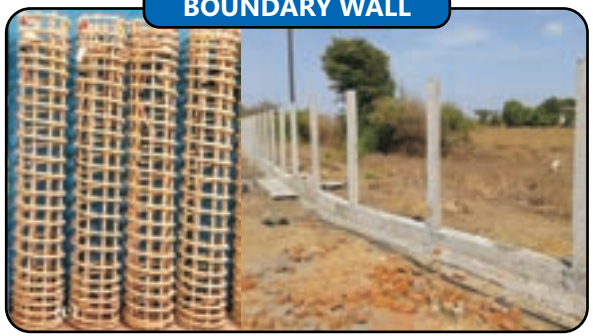


PRECAST MSE WALL COPING

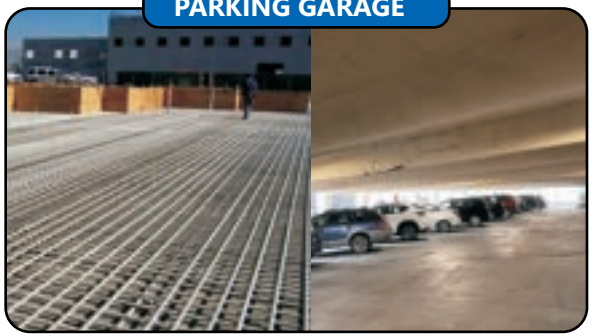
PRECAST MSE WALL

⁘ APPLICATION - GFRP REBAR

BOUNDARY WALL



PARKING GARAGE



BOX CULVERTS & SLAB CULVERTS

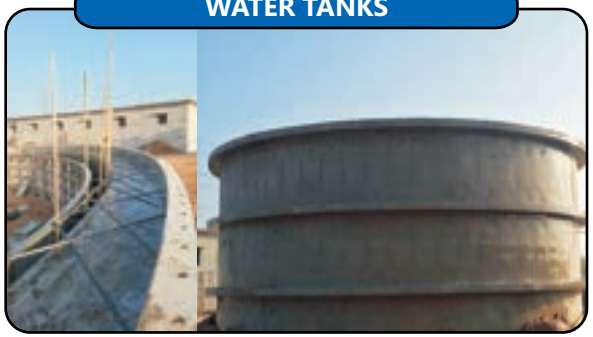
BRIDGE PARAPETS

STORAGE FACILITIES FOR CHEMICAL

GFRP TUNNEL SOFT-EYE

CRASH BARRIERS

WATER TANKS



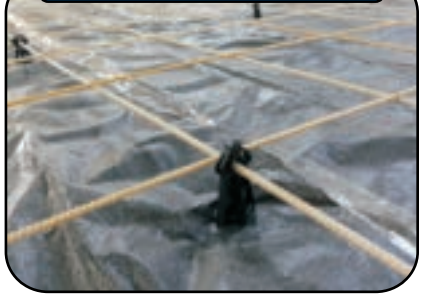
INDUSTRIAL RCC ROAD

APPLICATION - GFRP REBAR

CONTINUOUSLY REINFORCED CONCRETE PAVEMENTS

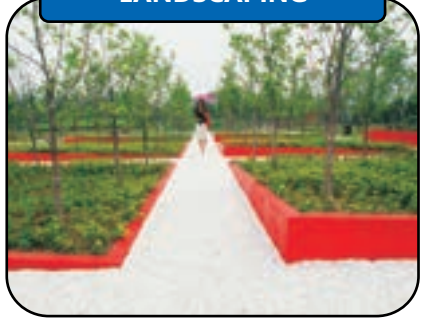
CONCRETE NON LOAD BEARING WALLS

GFRP FLOORING

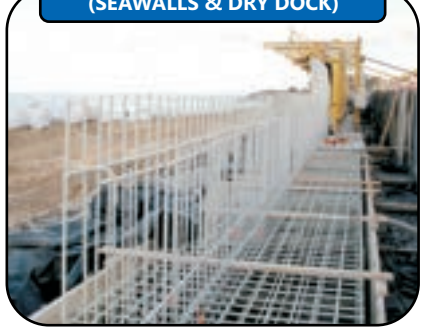


SEWAGE WATER TREATMENT PLANT

LANDSCAPING



MARINE STRUCTURES (SEAWALLS & DRY DOCK)



PRECAST WALL PANELS

NOISE BARRIERS

RAILWAY TRACKS

RETAINING WALLS

RUNWAY

HELIPADS

CASE STUDIES OF GFRP REBAR APPLICATIONS IN INDIA AND WORLDWIDE

SKD COMPOSITE
MORE THAN EXPECTATION

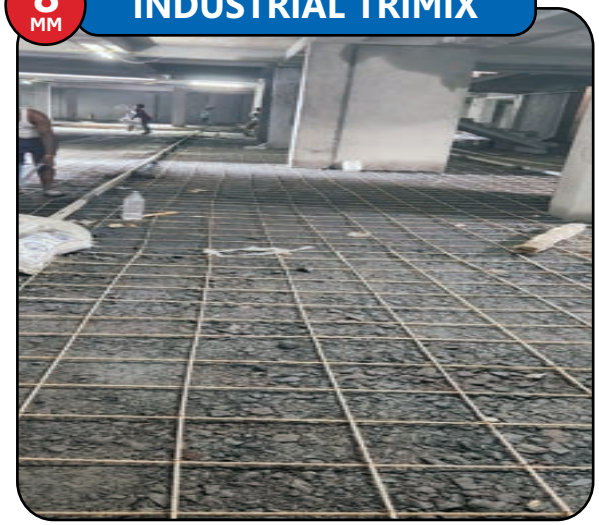
CASE STUDY - SKD GFRP REBAR USED

6 MM RESIDENTIAL RCC ROAD

8 MM RESIDENTIAL OUTER SIDE TRIMIX

12 MM INDUSTRIAL RCC ROAD

8 MM INDUSTRIAL TRIMIX

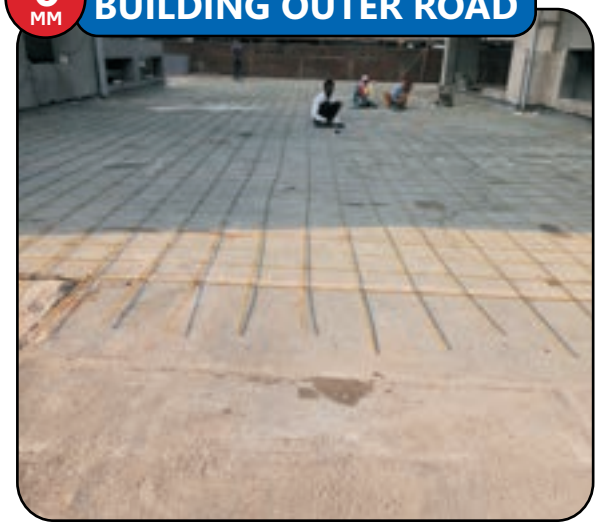


10 MM BASEMENT TRIMIX

8 MM BASEMENT PARDI

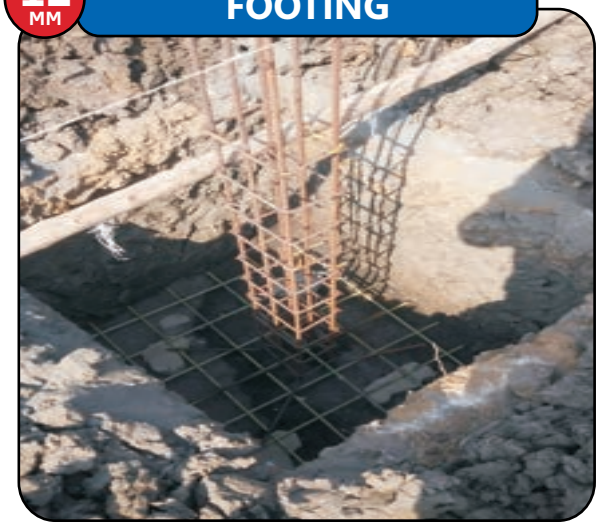
CASE STUDY - SKD GFRP REBAR USED

6 MM BUILDING OUTER ROAD



10 MM SWIMMING POOL

12 MM FOOTING



12 MM COMPOUND WALL

8 MM GODOWN DOME FLOORING

10 MM RCC STORM WATER DRAINAGE

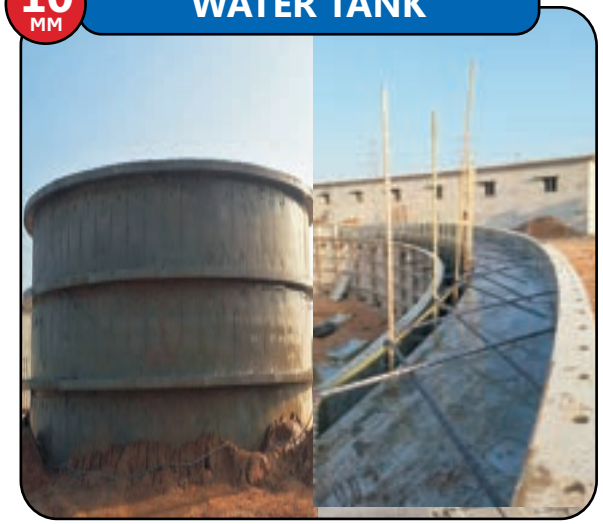
SKD COMPOSITE
MORE THAN EXPECTATION

CASE STUDY - SKD GFRP REBAR USED

8 MM CRICKET BOX RCC

8 MM PLINTH RCC

10 MM WATER TANK



10 MM PRECAST WALL

12 MM AGRICULTURE

6 MM FARM HOUSE RCC

CASE STUDY - METRO

SURAT METRO, INDIA

SURAT METRO, INDIA

GFRP rebar has been used in the Surat Metro project to enhance the durability and longevity of the infrastructure. Given its non-corrosive nature, GFRP rebar is particularly beneficial in the humid and saline environment of Surat, ensuring that the metro's structural components remain strong and maintenance-free for decades. Additionally, its lightweight nature makes it easier to handle during construction, contributing to more efficient project execution. The use of GFRP rebar in Surat Metro exemplifies the city's commitment to adopting advanced materials for sustainable urban development.

PATNA METRO, INDIA

DELHI METRO, INDIA

CASE STUDY - USA

1ST BRIDGE WITH GFRP REBAR
MCKINLEYVILLE, WV (1996)

INTERCHANGE 63, RFID TOLL PLAZA
MAINE, USA

CORROSION-FREE JOINT SYSTEM FOR INTERSTATE 84 HIGHWAY
IDAHO, USA

HARKERS ISLAND BRIDGE REPLACEMENT
NORTH CAROLINA, USA

CASE STUDY - NEW ZEALAND

MATAI BRAIN RESEARCH INSTITUTE
GISBORNE, NEW ZEALAND

POST-EARTHQUAKE STATE HIGHWAY SEAWALL
KAIKOURA, NEW ZEALAND

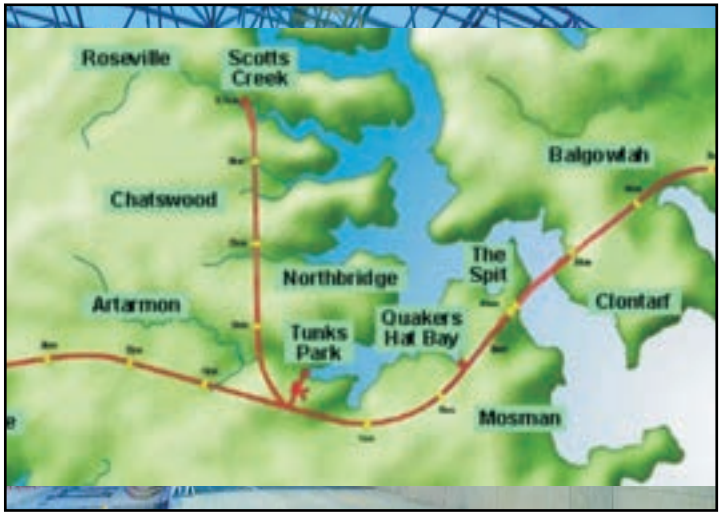
GISBORNE CENOTAPH SEISMIC REPAIR
GISBORNE, NEW ZEALAND

KIKIWA ELECTRICAL SUBSTATION FOUNDATION
KIKIWA, NEW ZEALAND

CASE STUDY - AUSTRALIA

SYDNEY HARBOUR FERRY WHARVES
SYDNEY, AUSTRALIA

NORTHSIDE STORAGE TUNNEL
SYDNEY, AUSTRALIA



KWINANA DESALINATION PLANT
PERTH, AUSTRALIA

ADELAIDE DESALINATION PLANT
ADELAIDE, AUSTRALIA

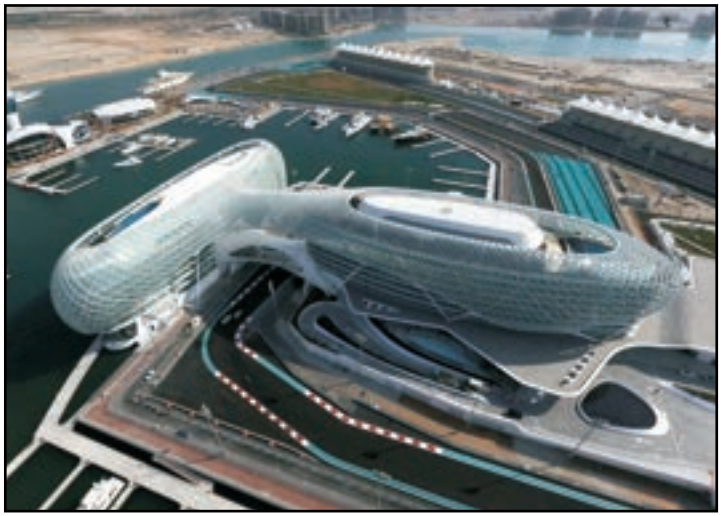
CASE STUDY - UNITED ARAB EMIRATES

DEEP TUNNEL STORM WATER SYSTEM
DUBAI, UAE

SEAWALL STRENGTHENING THE ICONIC BURJ AL ARAB
DUBAI, UAE

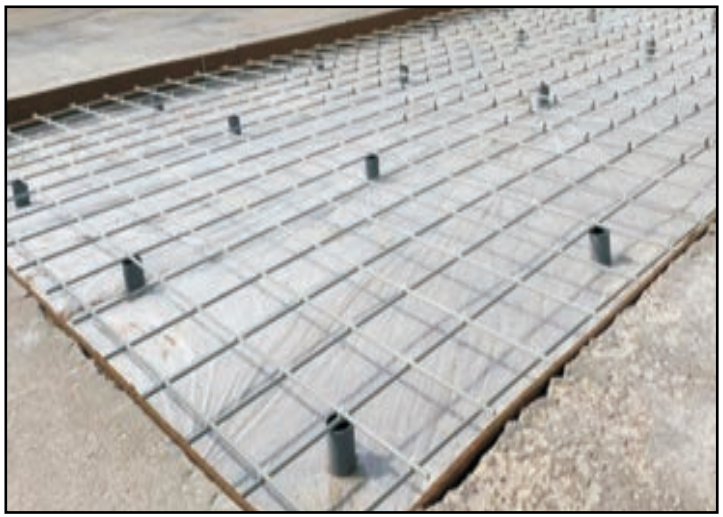
THE GIANT SCULPTURE
ABU DHABI, UAE

YAS ISLAND FORMULA 1 RACETRACK - THE FINISHING LINE
ABU DHABI, UAE



CASE STUDY - MIDDLE EAST

ARAMCO'S QURAYYAH SEA WATER PLANT
ABQAIQ, SAUDI ARABIA



JIZAN FLOOD MITIGATION CHANNEL,
JIZAN ECONOMIC CITY, SAUDI ARABIA

DRAINAGE ARCH CULVERT IN DOWNSTREAM INDUSTRIAL AREA
RAS AL-KHAIR REGION, JUBAIL, SAUDI ARABIA

POTASH PLANT CONCRETE SLAB REPLACEMENT
GHOR EL SAFI, JORDAN

CASE STUDY - EUROPE

GRAND PARIS EXPRESS – LINE 15 SOUTH (T2B)
PARIS, FRANCE

ROTTERDAM PORT TERMINAL UPGRADE
ROTTERDAM, NETHERLANDS

PORT OF ROTTERDAM, NETHERLANDS (CONTAINER TERMINAL UPGRADES)

LARGE POWER STATION (GKM), GERMANY

NHAI (IRC)

IRC : 137-2022

GUIDELINES ON USE OF FIBRE-REINFORCED POLYMER BARS IN ROAD PROJECTS

(PART 1 : GLASS FIBRE-REINFORCED POLYMER BARS)

INDIAN ROADS CONGRESS
2022

SKD COMPOSITE

MORE THAN EXPECTATION

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Surat, Gujarat

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