

GFRP

GLASS FIBER REINFORCED POLYMER





AN INNOVATIVE COMPANY THAT CONSIDERS FUTURE VALUE AND ENVIRONMENT

ASP Inc. is a GFRP(Glass Fiber Reinforced Polymer) manufacturer that creates new value and puts customer needs first.

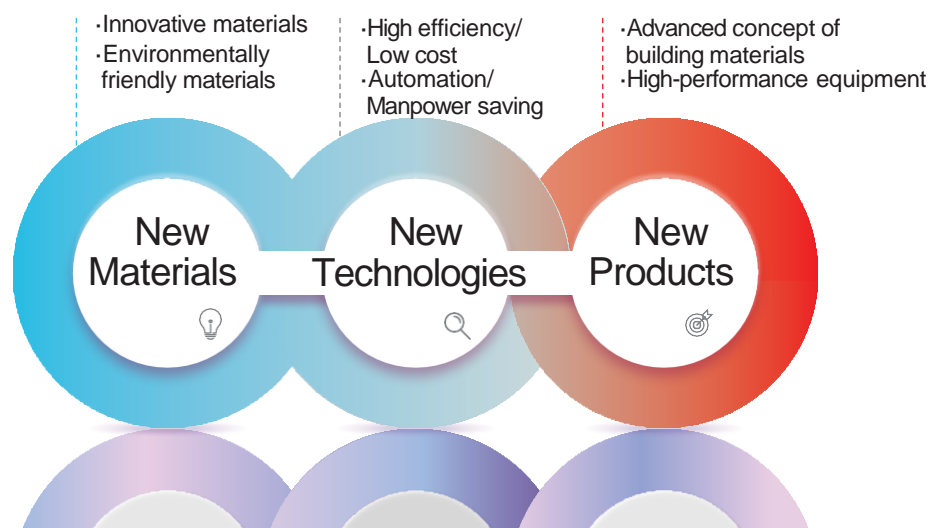
As a leader in the eco-friendly era, we will take the lead in providing services through continuous R&D and investment in the high quality of materials and facilities.

Company introduction

ASP to lead innovative replacement of reinforcing steel materials for GFRP materials

ASP Co., Ltd. developing innovative concrete reinforcing products and facilities to manufacture GFRP rebar (ECOBAR) that are stronger tensile strength, lighter weight than steel. Through continuous research and development, we are developing new composite materials and facilities suitable for bridge, road construction, marine structures, wind structures, components for automotive, ship, aerospace and defense industries.

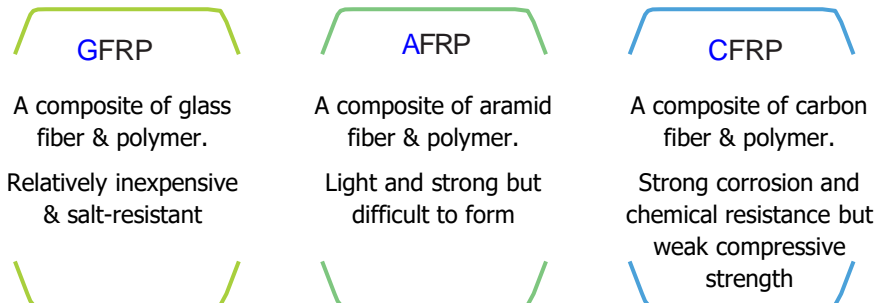
Vision A Leap into a first-rate company based on new materials, new technologies, and new products



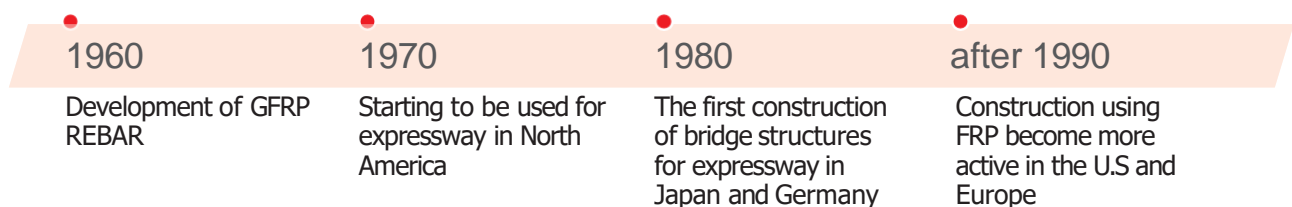
Introduction of FRP

A lighter weight composite materials of glass, carbon fibers and plastics , which are excellent materials with high strength and super corrosion resistance.

Types of FRP

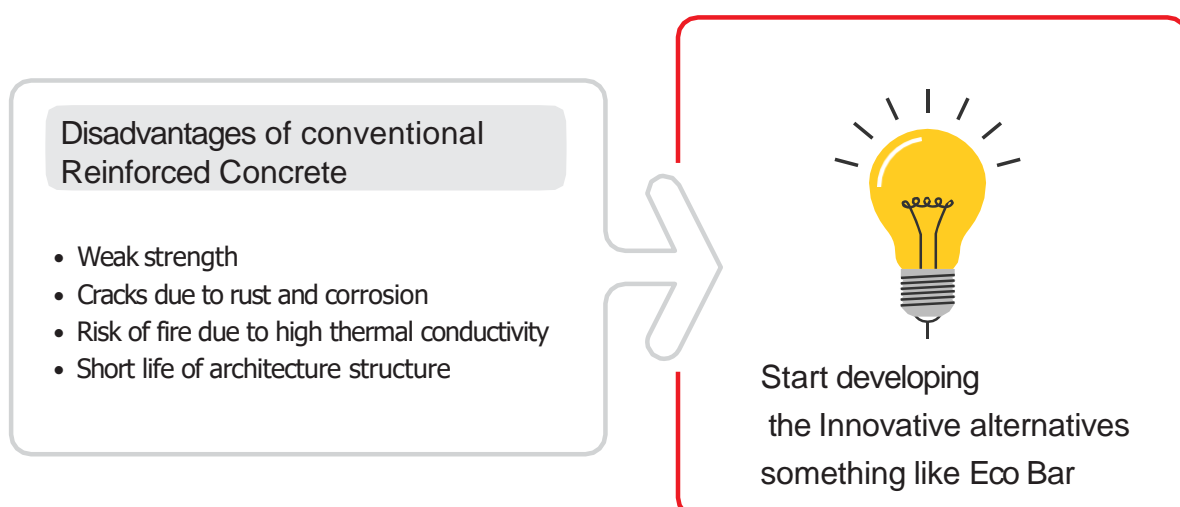


History of GFRP

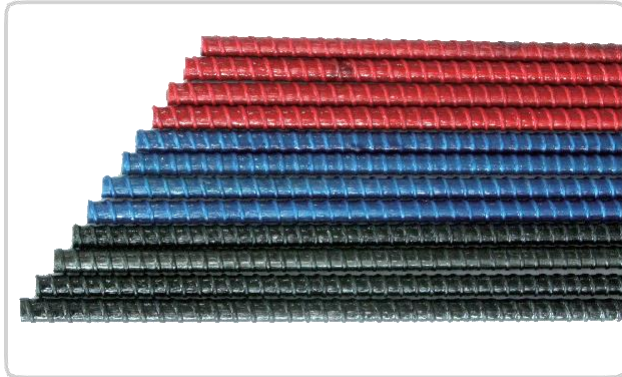


Motivation for development of GFRP

GFRP was developed and started to be used to replace to disadvantages of reinforced concrete corrosion that have been used so far for constructing waterside concrete structures like Seawalls and Dam



What is GFRP-REBAR?



- An innovative concrete reinforcement of Glass Fiber Reinforced Polymer (GFRP) material
- An excellent materials based on plastic composite made from glass fiber, which is lightweight, corrosion-resistant, and high strength

PRODUCT BRAND



Our GFRP-Rebar brand, ECO BAR

ECO BAR is an eco products that cares about the environment because of its remarkably low carbon emission compared to steel rebar.

And it has advantages such as high strength, low weight, corrosion-resistance, extension of life of structure, quality and improvement in productivity compared to steel rebar. It is a new material product that has been actively used in civil engineering, architectures, bridges, tunnels, roads, railways, wind and marine structural constructions in developed countries since the 2000s.

Comparison of ECO BAR and steel rebar.



ECO BAR

VS



Steel rebar

More Stronger	Corrosion resistance	Weak
800~1200 MPa	Tensile Strength	300~500 MPa
240g/m (1/4 of the steel rebar)	Weight	995g/m
Low	Construction costs	High
More longer (semi-permanent)	Life of Structure	Short
0.35 W/m°C	Thermal Conductivity	46 W/m°C
45~55GPa	Modulus of Elasticity	200GPa
High	Price Competitiveness	Low

Features of ECO BAR

Versus Steel



Corrosion Resistance (Excellent corrosion and chemical resistance)	<ul style="list-style-type: none"> • No rust and corrosion, so it can be used for a long time • Excellent for bridge flooring roads where snow removal agents (chloride) are used in winter • It is very advantageous for marine structures exposed to corrosive environments
Strong Tensile Strength	<ul style="list-style-type: none"> • Tensile strength is 2.5 to 3 times stronger than steel rebar
Low Weight	<ul style="list-style-type: none"> • It weighs ¼ times lighter than steel rebar, which increases construction performance and worker stability
Reduction in Construction Costs	<ul style="list-style-type: none"> • It reduces transportation and logistic costs with light weight • It reduce labor costs by shortening the construction period
Extension of life of Structure	<ul style="list-style-type: none"> • It is semi-permanent in life • It reduces maintenance costs of reinforced concrete structures that are vulnerable to corrosion
Electrical Insulation (nonconductor with no thermal conductivity)	<ul style="list-style-type: none"> • Steel rebars extend and expand because they conduct heat, causing cracks in structures • ECO Bar is an insulator and non conductor of heat that is safe for building fires
Resistant to Vibration	<ul style="list-style-type: none"> • Steel rebar transmits vibrations and are vulnerable to earthquakes • ECO BAR is strong against the earthquakes due to shock absorption and has a great effect on noise reduction between floors
Low Price	<ul style="list-style-type: none"> • The Price of ECO BAR is 70 to 80% of steel rebar • Steel Rebars are highly likely to fluctuate in price due to raw material issues and increase in price

Applications

It can be applied to various fields such as civil engineering, aerospace, railways, automobiles, defense, marine, fishing villages, and renewable energy.



Building Construction



Railway Construction



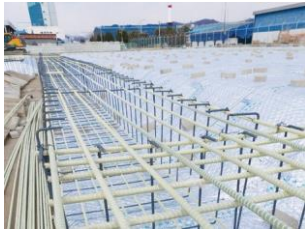
Land and Sea Bridges



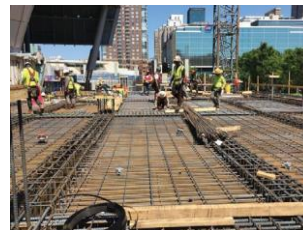
Marine tetra pod

Application case

○Korea



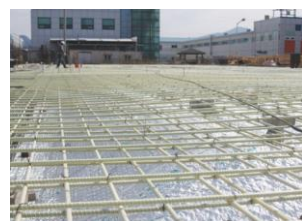
○Overseas



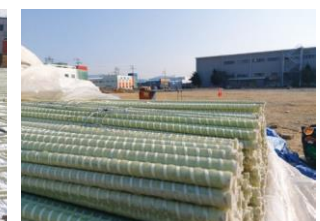
Projects Examples



Factory Site in Gumi(2022.02.07)



Gongdan-dong, Gumi a new construction(2022.02.09)



○Forwarding scheduled

- New construction site of Gumi Industrial Complex (2024.05)
- Hanam Metal Construction Site in Gwangju (2024.06)
- Factory Site New Site in Gimcheon (2024.06)
- Oil Pipeline Corporation New Site (2024.08)
- New Town House Site in Imsu-dong, Gumi (2024.12)

Maunufacturing Technology

ASP Inc. produces innovative products by maintaining stable quality through the use of new composite materials for ECO BAR production and differentiated manufacturing technology and structural design through new processing.

Product Specification	External diameter 10mm to 32mm production possible (special specification)
Application Technology	Products of pultrusion production method patent
Material Features	High-strenth and lower-weight products using glass fiber composites
Product Features	Structure Quality and Life Extension due to no corrosion and high tensile strength
Application Technology	Civil engineering, construction, marine structures, roads, railways, bridges, and tunnel construction, etc.

Mathod and Process of Production



Test report/Certified



Glass Fiber Content Rate



< Muffle furnace >

It is a device for measuring the content of glass fiber. Contents of glass fiber affects the tensile strength and elastic modulus of ECO BAR.

Tensile strength and adhesion strength test (Test : 13mm, 16mm)

○ Tensile strength



○ Adhesion strength





An Innovative company that considers future value and environment



ASP Partners (International)

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