

# HANKUK FIBER

NEW POWER GROUP

Jump to  
Global  
Top tier



# HANKUK FIBER

HANKUK FIBER has independently developed glass fiber and taking the lead in commercialization of glass fiber in Korea.

Based on glass fiber and carbon fiber, HANKUK FIBER operates various business such as defense, aerospace, glass fiber pipe and rolling stock. HANKUK FIBER is challenging the hydrogen storage tank and wind power business in line with the government's Green New Deal policy. HANKUK FIBER aims to be the 'Best composite materials company' under the value of 'The customer first.'

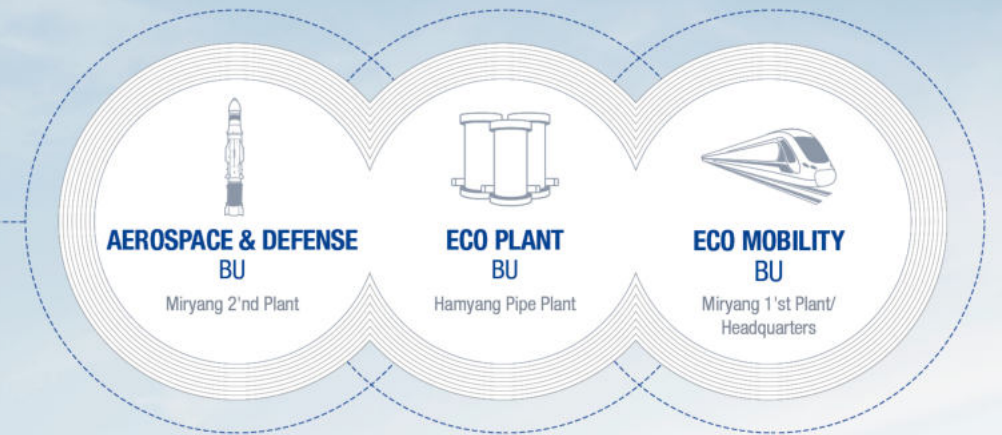
HANKUK FIBER will provide the best solution exceed the customer expectations as well as products and technologies.

Thank You.

CEO Jin-Kwang, Lee



## Business Field



## Company History

### 1970's

- 1972.04** Established HANKUK FIBER CO.,LTD.
- 1978.05** Designated as a 'Nation Defense Company'

### 1980's

- 1980.08** Developed a melting furnace for glass fiber production

### 1990's

- 1992.02** Aerospace Material (BMS 8-79) certified by BOEING
- 1999.10** Obtained ISO 9002 Certification

### 2000's

- 2000.03** Passed the highest fire-resistance grade of BS and NF standards for rolling stock interior materials
- 2002.10** Obtained ISO 9001:2000 certification
- 2006.05** Obtained DQMS(Defense Quality Management System) KDS 0050-9000 certification
- 2006.07** Completed construction of Hamyang Pipe Plant
- 2006.07** First accredited to New Technology certification(NET) for integrated composite rolling stock body manufacturing technology in Korea
- 2007.10** Started construction of Hamyang Regional Industrial Complex
- 2008.08** Obtained Aerospace Quality Management System AS 9100 certification

### 2010's

- 2010.02** Awarded by Minister of Land, Transport and Maritime Affairs for National Green Technology
- 2011.10** Korea Prime-minister Award by DTaQ (Defense Quality Management)
- 2013.02** Awarded by Minister of Science and Technology
- 2013.02** Awarded by President for Achievement of KSLV\* Project (\*KSLV:Korea Satellite Launch Vehicle)
- 2014.07** Established Daejeon Design Technology Center (Structure, Analysis)
- 2015.12** Signed Civil-military partnership for development of composite lattice structure technology and development of carbon composite material for high-temperature insulation heaters

- 2018.04** Performed Solid Rocket Motor Case / nozzle thermal reaction measurement and analysis task (ADD, 2018~2019)
- 2019.07** Started MLRS development project (230mm Launch Tube)
- 2019.11** Listed on the 2019 Top 10 Mechanical technology by Korea Association of Machinery Industry - Design and Manufacturing Technology of Lattice Structures with High Strength Carbon Fiber

### 2020's-

- 2020.12** CEO Jin-Kwang Lee inaugurated



## HANKUK FIBER

# AEROSPACE & DEFENSE BU

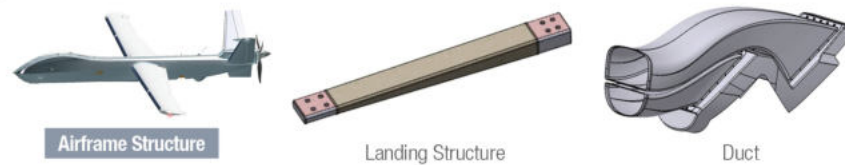
HANKUK FIBER takes a lead of defense industry's advancement and globalization on Marine, Air, Ground with best production technology of composite materials in Korea. Furthermore, HANKUK FIBER had succeeded in Nose payload fairing and Forward compartment of Korea's first space launch vehicle, 'Naro' and second space launch vehicle 'Nuri'. Through that, we are recognized worldwide for its technology with successful manufacturing.

## 01 Aerospace

### ■ KSLV-II (Nuri)



### ■ Next Corps UAV



### ■ KUH



### ■ Military Satellite Communication System II



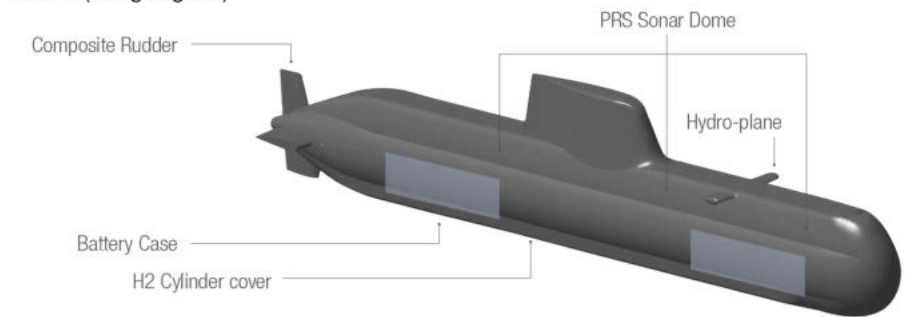
### ■ Long-Range Antenna Radar /Antenna Array



## 02 Radome

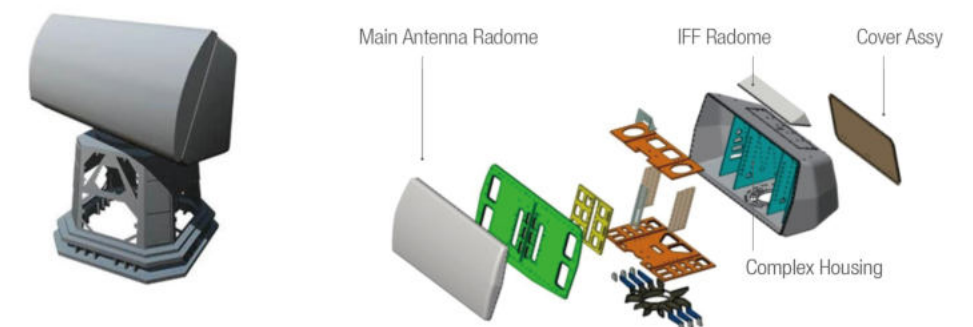
## 03 Navy

### ■ KSS-II (Jangbogo-2)



## 04 Composite Housing

### ■ Ulsan-1 Class Frigate-3D Surveillance Radar



### ■ Raybolt (Hyeongung)



## 05 Guided Weapon

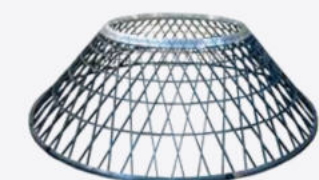
### ■ Pegasus (Cheonma)



## 06 Core Development Task



High temperature insulation and heater composite materials



Development of Lattice Structure Technology



## HANKUK FIBER

## ECO PLANT BU

For the first time in Korea, HANKUK FIBER has produced various products such as glass fiber composite pipe for water supply and sewage, GRP Manholes, pump station manholes and piping materials for plants by using the composite material technology.

HANKUK FIBER increases customer satisfaction level and is expanding into a new business area through the constant research and development.

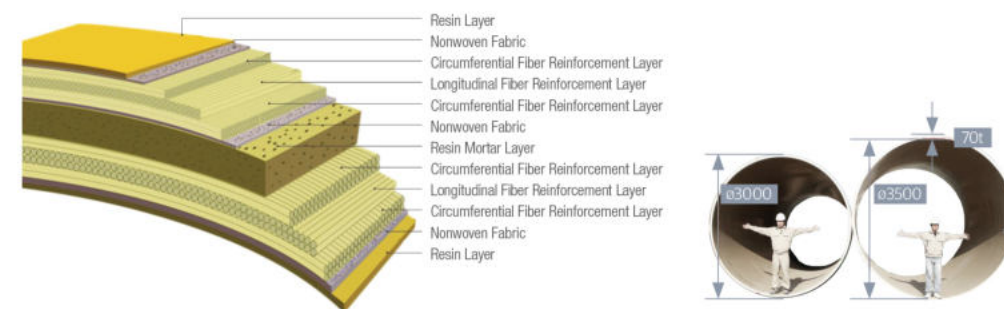
01  
GRP

Glass Reinforced Plastic

## Characteristics of GRP Pipe



## Structure of GRP Pipe



## GRP Pipe &amp; Fitting

02  
GRP  
Manhole

## GRP Manhole

GRP Manhole  
Cast in Place Manhole

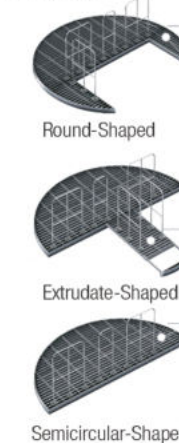
Weight	•No.1 - 960 kg (1.35m) •No.2 - 1,650 kg (1.35m)	•No.1 - 2,707 kg (1.35m) •No.2 - 3,320 kg (1.35m)
Construction Periods	1~2 Hours (Including Refill)	6~7 Days (including Curing Period)
Underwater Installation	Possible	Impossible
Compression Strength	800 kg/cm <sup>2</sup>	180-210 kg/cm <sup>2</sup>
Impact Resistance	High impact resistance with GRP material's elasticity	Easily broken by small crack growth created by the continuous impact.
Characteristics	Shortening the construction period and reducing cost with lightweight / Reducing maintenance cost with its superb water tightness and corrosion resistance	Despite many construction cases and widely used, long curing period causes construction delays and construction quality varies greatly depending on the worker's skill, making it difficult to maintain and manage

03  
GRP  
Pumping  
Station  
Manhole

## Upper Slab (Custom made products possible)



## Grating

04  
Plant-  
Engineering  
[Customer Support  
Scope]

## HANKUK FIBER

# ECO MOBILITY BU

HANKUK FIBER uses glass fiber composite materials to provide interior and exterior products for railway vehicle which light, excellent strength and fire safety. The development of non-combustible interior and exterior FRP panels leads to the advancement of railway parts and is exported to advanced global rolling stock markets such as Europe and US through the railway vehicle manufacturer.

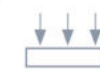
## PRODUCT CHARACTERISTICS



**Superb Lightness**



**Satisfy Domestic**  
International Highest Non-Flammability level



**High-Strength and Durability**



**High-Quality Appearance**



**Flexible Design**

## Rolling Stock Parts Type

Supply to Domestic and Overseas Markets



Exterior Panels



Driver's Cab and dash board



Passenger Room



Vestibule



Toilet Module

01

## Nomex Honeycomb Panel



Passenger Room



Window Mask 01



Side Coving 02

02

## Cab Mask & Driver Console



Cab Mask 06



Driver Room 07



Door Skirt 08

03

## Al. Honeycomb Panel



Ceiling 03



End Locker 04



Partition Panel 05

04

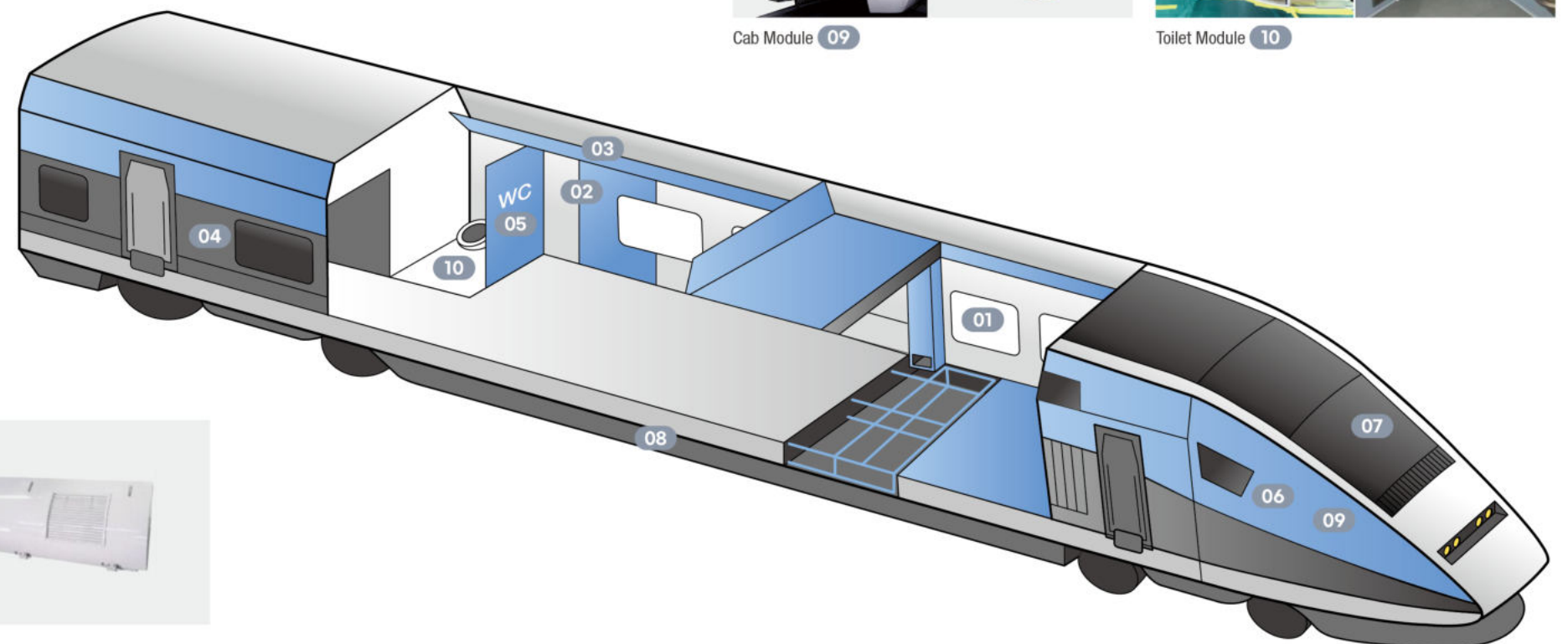
## Module



Cab Module 09



Toilet Module 10



HANKUK FIBER

## COMPOSITE MATERIAL CORPORATE R&D CENTER

### High-tech Lab Equipment

HANKUK FIBER corporate R&D center conducts a material development, basic and applied research for basic industry.  
Based on these research results, We are developing product for commercialization.



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## NEW BUSINESS

Based on Korea's best composite material pressure vessel technology, HANKUK FIBER pushes forward to a renewable energy business like hydrogen storage tank and transportation tank, large wind turbine blade for offshore wind power.  
HANKUK FIBER is committed to sustainable corporate value increasing, social responsibility for carbon neutrality.

Design and manufacture a hydrogen storage tank for automobiles that withstand 700 bar by winding several layers of carbon fiber composite materials on a non-metallic liner.



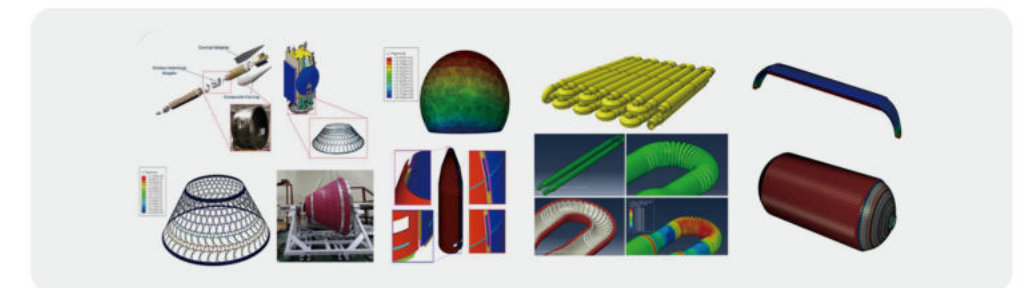
### Hydrogen Storage Tank

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## DESIGN TECHNOLOGY CENTER

### Major Performance Tasks

The Design Technology Center established for research and development performs various tasks for national institutions and relevant organizations and co-working about technology for our company based on designing for composite structure and technology of thermal-structural analysis. Through this, we are putting forth a multilateral effort into Solving a problem of the defense and commercial industry and strengthening professional competence.



- Development of non-cylindrical hydrogen storage tank for FCEV (Fuel Cell Electric Vehicle) & EV(Electric vehicle) platform (Ministry of Trade, Industry and Energy, 2020~2025)
- Measurement and analysis for thermal reaction of composite rocket motor case and nozzle (ADD, 2018~2019)
- Development of the composite lattice structure (Institute of Civil Military Technology Cooperation, 2015~2021)
- Structure design and analysis of composite material for aerospace structure and civil structure (fuel tanks for hydrogen-electric vehicles, drones, Etc.)

HANKUK FIBER

## QUALITY CERTIFICATION

Obtained patents and certificates in various fields through technology and experience.

### Intellectual Property Rights

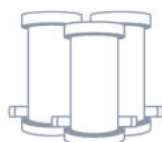


### Quality System Certification



### Product Certification





#### Miryang Headquarters / 1'st Plant

85, Chunhwa-ro, Bubuk-myeon, Miryang-si,  
Gyeongsangnam-do, Korea

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FAX 82-55-353-4924

#### Miryang 2'nd Plant

719-33, Sangnam-ro, Sangnam-myeon, Miryang-si,  
Gyeongsangnam-do, Korea

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FAX 82-55-359-2519

#### Hamyang Pipe Plant

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[www.hfiber.com](http://www.hfiber.com)



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