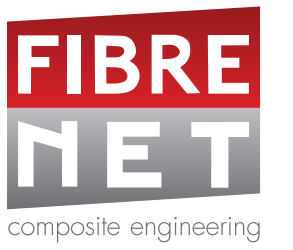




**FIBRE  
NET**

composite engineering

**FIBREFENCE**  
AIRPORT FENCING SYSTEMS





## SAFETY IS OUR CONCERN

ONE OF AIR TRANSPORT INDUSTRY MOST CRITICAL CONCERNS TODAY, IS HOW TO ENSURE THE HIGHEST SAFETY AND SECURITY STANDARDS POSSIBLE THROUGHOUT AIRPORT'S FACILITIES.

AN EFFICIENT, RELIABLE AND DURABLE PERIMETER ENCLOSURE IS THE FIRST, ESSENTIAL STEP TO ACHIEVE THIS GOAL.

FIBREFENCE IS A RANGE OF TECHNICAL FENCES SPECIFICALLY DEVELOPED BY FIBRE NET TO COPE WITH AIRPORT'S MOST DEMANDING NEEDS.





# COMBINING IDEAS MAKES STRENGHT IN ACTION

Fibre Net is specialist designer and manufacturer of FRP (Fiber Reinforced Polymer) composite products.

Taking advantage of this deep experience, Fibre Net developed FIBREFENCE, an innovative range of F.R.P. fences to meet the most challenging airport’s areas needs in terms of radio-transparency and frangibility, combined with high mechanical, chemical and UV-rays resistance.

Fibre Net collaborates with technicians, advisors, engineers to design the most suitable and cost-effective solutions complying with international and local regulations. Furthermore, Fibre Net supplies all documentation, operational tools, certifications and installation support.

FEATURES	STEEL	WOOD	THERMO PLASTIC	F.R.P.	FIBRENET FIBREFENCE
RADIO-TRANSPARENCY	✗	✓	✓	✓	No interferences neither with landing aids devices (ILS) nor with Radars.
FRANGIBILITY	✗	✓	✓	✓	Strong enough to avoid intrusions, but fragile enough to reduce damages to airplanes in case of out-track landing.
VISUAL INTERFERENCE	○	✗	✓	✓	Ease surrounding areas supervision, improve visual safety / security.
WILDLIFE INTRUSION CONTROL	✗	○	○	✓	Differential fence mesh size to prevent small wildlife intrusion without affecting on costs and visual interference.
ELECTRICAL INSULATION	✗	✓	✓	✓	Maximum passive safety in case of installations close to power stations or power lines.
MECHANICAL RESISTANCE	✓	○	✗	○	Resistance-to-weight ratio way better than steel.
CORROSION RESISTANCE	✗	✓	✓	✓	Suitable to face the worst environmental conditions, heavy rain, snow or moisture.
UV RAYS RESISTANCE	✓	○	✗	✓	Strong UV resistance thanks to special additives added to matrix recipe.
HEAT RESISTANCE	✓	○	✗	○	Very low heat dilatation and deformation even at highest environmental temperatures.
INITIAL INVESTMENT	○	○	✓	○	Low cost compared to other radio-transparent fencing solutions. Simple and fast installation.
MAINTENANCE COST	✗	✗	✗	✓	Maintenance likely unnecessary, lifespan virtually unlimited.



# F.R.P. PRODUCTS: DIFFERENT PROBLEMS NEED DIFFERENT SOLUTIONS



GFRP mesh



GFRP pultruded profiles



Steel accessories

Starting from Fibre Net technician’s know-how and skills, and their concern about engineering and installation issues, FIBREFENCE have been developed by using mainly GFRP components, made by chemically resistant glass fibers impregnated with thermosetting resins.

Thanks to GFRP’s well-known properties, FIBREFENCE systems are the best alternative to traditional enclosures to protect areas featuring environmental and functional problems. They guarantee the highest security standards even in particularly aggressive environments, thanks to superior resistance to chemical corrosion, weathering agents and UV-rays.

The intrinsic properties of GFRP’s macro-elements (fibers and resin), improved by mean of special additives selected depending on specific needs, are guarantee of constant, long lasting performances and maintenance reduced likely to zero.

Inherent radio-transparency and programmable frangibility, makes FIBREFENCE systems the perfect solution to cope with most demanding airport areas requirements.

System	Brief description	Main components	Supply
FIBREFENCE MESH	On-site assembled mesh fence	GFRP mesh GFRP pultruded profiles Steel accessories	Loose parts to be assembled on-site
FIBREFENCE PIPEWORK	Self-standing, pre-assembled pultruded profiles fence	GFRP pultruded profiles Steel accessories	Pre-assembled, ready to be installed
FIBREFENCE GATE	Pedestrian and vehicular gates	GFRP mesh GFRP pultruded profiles Steel accessories	Pre-assembled, ready to be installed

GFRP: Glass Fiber Reinforced Polymer







# AIRPORT FENCING SYSTEMS

Modern airfields are literally spread with hundreds of radio-transmitting or radio-receiving devices and antennas used by critical landing aid systems (ILS, MLS, GLS, TLS, NDB, VOR, DME) and meteo or traffic radars. Most of them are extremely sensitive to potential interference generated by any metallic structure within their action range.

Because of the critical role played by these devices, the design and manufacturing of any surrounding premise are regulated by detailed international standards set by ICAO (International Civil Aviation Organization), with possible improvements set by local Civil Aviation Authorities.

Such standards not only forbid the use of any metallic fence and/or structure likely to compromise a full and reliable functionality of these radio devices, but also impose precise frangibility features to any structures near to the runways, with a view to minimizing damages in case of a possible impact with an aircraft.

Meanwhile, airfield protection against intrusions is becoming a topical issue by reason of stunning traffic and passengers growth, multiplying sensitive targets number and raising up their protection level needs.

Where steel fences are washed out since they don't meet neither radio-transparency nor frangibility standards, where wood or thermoplastic fences, despite their compliance with radio-transparency and frangibility requirements, feature heavy draw backs such as limited durability and extremely expensive maintenance costs, FIBREFENCE is the only solution coping with all these apparently opposed requirements.



Fibre Net fences are available in two designs: FIBREFENCE MESH supplied in loose parts to be assembled on-site, and FIBREFENCE PIPEWORK, self-standing pultruded profiles fence supplied pre-assembled. They are both suitable to protect either external perimeter or internal facilities. They meet both ICAO safety and frangibility prescriptions (ref. Aerodrome Design Manual, Part 6, Frangibility, 1st Edition 2006) and Aerodrome Design/Operations, Volume I, 4th Edition July 2004 airport infrastructures recommendations. All fences are supplied complete with radio-transparency, resistance to UV rays, and frost-defrost cycles certificates. Thanks to inherent great durability, maintenance is reduced likely to zero, with great economic benefits. FIBREFENCE systems design can be tailored to meet local Civil Aviation Authority to full comply with national technical specifications, often different from country to country. Furthermore, all FIBREFENCE fences can be equipped with most popular intrusion detection systems on the market.



# FIBREFENCE MESH



Radio transparent

Frangible

Wildlife intrusion control

No visual interference

FIBREFENCE MESH fences are built directly on site by assembling GFRP mesh, profiles, and wind-bracings. This design makes FIBREFENCE MESH one of the most efficient, durable and cost-effective solution among all radio-transparent certified fencing systems available on the market. The installation is very fast and easy, all component are extremely lightweight and they don't need special lifting devices or cranes on site, reducing consistently overall installation costs compared to any other solution. Mesh wide apertures ensure great visibility to improve active and passive security, while its great mechanical resistance is a guarantee against intrusion attempts or impacts with animals. To avoid also small wildlife intrusions, it is possible to bury part of the mesh into the ground, and to use a smaller mesh on fence lower side bottom close to the ground, according to most recent Aviation Authorities recommendations.

FIBREFENCE MESH fences are available in standard heights from 1 to 2.5m, while other dimensions are available on demand. Where necessary, in-line and/or perpendicular wind bracings are installed to improve overall resistance.

To increase security level, vertical rods can be accessorized with special arms to support plastic, barbed or concertina wires. Furthermore, they are compatible with most common intrusion detection and monitoring/control systems.

Design, engineering and manufacturing are tailored according to customer's specifications and needs.

Beside ICAO compliances, Fibre Net FIBREFENCE meets also "Sheet 7 – Types and Requirements of Airport Fences" specifications, and have been approved by Inter-ministerial Committee for Security of the Italian Ministry of Transports.

Thanks to all these benefits and advantages, FIBREFENCE MESH fences have been already installed in many different airports worldwide.

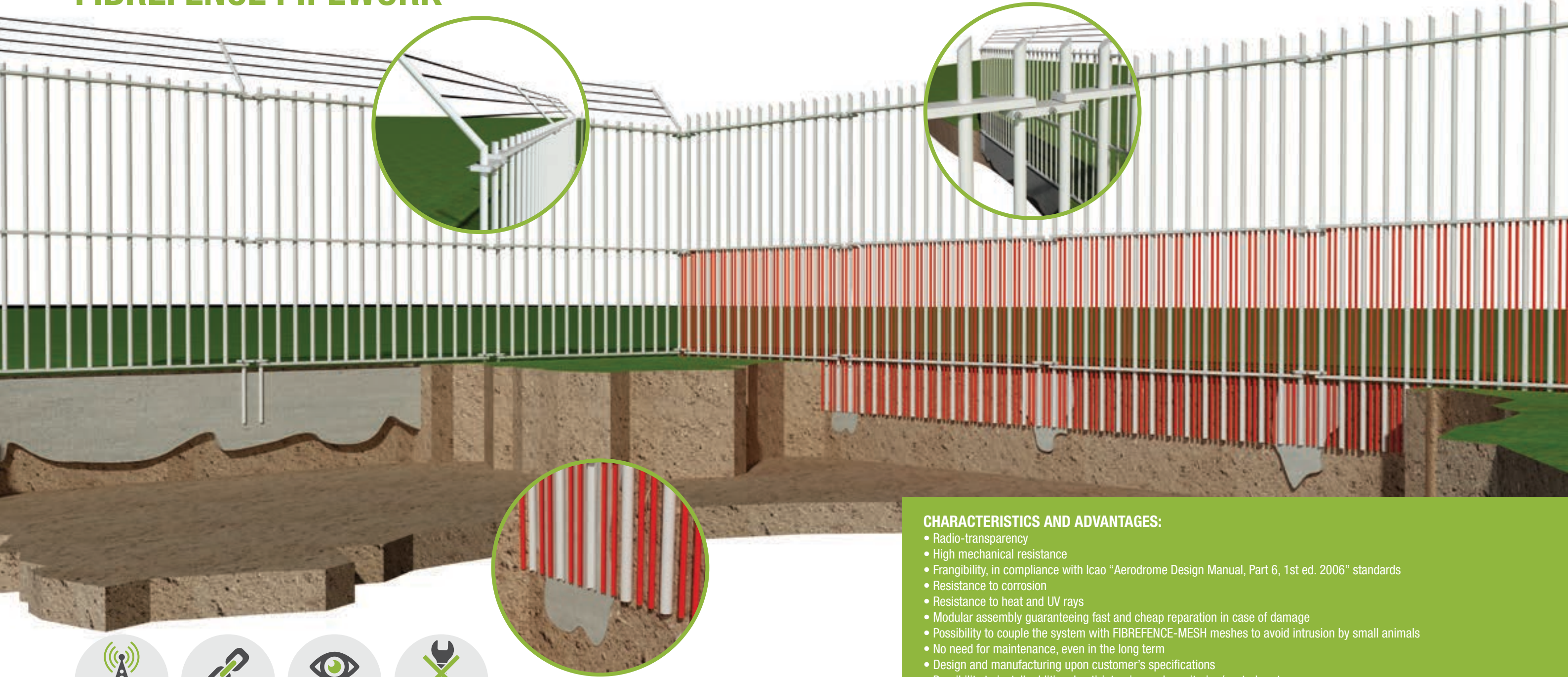
## CHARACTERISTICS AND ADVANTAGES:

- Radio-transparency
- Frangibility, in compliance with Icao "Aerodrome Design Manual, Part 6, 1st ed. 2006" standards
- Resistance to corrosion
- Resistance to heat and UV rays
- Fast and cheap reparation in case of damage
- Possibility to use a small-sized mesh or bury it to avoid intrusion by small animals
- Cheap installation and no need for maintenance, even in the long term
- Design and manufacturing upon customer's specifications
- Possibility to install additional anti-intrusion and monitoring/control systems





# FIBREFENCE PIPEWORK



Radio transparent

Mechanical resistant

No visual interference

Zero maintenance

- CHARACTERISTICS AND ADVANTAGES:**
- Radio-transparency
  - High mechanical resistance
  - Frangibility, in compliance with Icao “Aerodrome Design Manual, Part 6, 1st ed. 2006” standards
  - Resistance to corrosion
  - Resistance to heat and UV rays
  - Modular assembly guaranteeing fast and cheap reparation in case of damage
  - Possibility to couple the system with FIBREFENCE-MESH meshes to avoid intrusion by small animals
  - No need for maintenance, even in the long term
  - Design and manufacturing upon customer’s specifications
  - Possibility to install additional anti-intrusion and monitoring/control systems

FIBREFENCE PIPEWORK fences are built by GFRP pultruded profiles assembled to create self-standing, modular panels, and they are the best solution to combine high mechanical resistance and efficient protection with radio-transparency and frangibility requirements in compliance with ICAO prescriptions.

The extremely sturdy structure and the designed clear span ratio, make these fences perfect suitable to protect areas subject to jet-blast. Upon request, FIBREFENCE PIPEWORK fences can be improved with tiny GRFP mesh to control small wildlife or debris intrusion.

FIBREFENCE PIPEWORK fences are available in standard heights from 1 to 2.5m, other dimensions are available on demand.

To improve global security, fences can be accessorized with special arms to support plastic, barbed or concertina wires. Furthermore, they are compatible with most common intrusion detection and monitoring/control systems.

Design, engineering and manufacturing are tailored according to customer’s specifications and needs.





**CE** FIBREFENCE GATE pedestrian and vehicular gates are CE marked

# FIBREFENCE GATE



## CHARACTERISTICS AND ADVANTAGES:

- Radio-transparency
- High mechanical resistance
- Frangibility, in compliance with Icao “Aerodrome Design Manual, Part 6, 1st ed. 2006” standards
- Resistance to corrosion
- Resistance to heat and UV rays
- Possibility to combine with FIBREFENCE MESH and FIBREFENCE PIPEWORK systems
- No need for maintenance, even in the long term
- Design and manufacturing upon customer’s specifications
- Possibility to motorize the doors
- Possibility to install additional anti-intrusion and monitoring/control systems



FIBREFENCE GATE pedestrian and vehicular gates represent the natural completion of any FIBREFENCE fencing system. They share all GFRP’s intrinsic benefits, i.e. radio transparency, frangibility, great resistance to corrosion, UV rays and weather, mechanical resistance and very limited maintenance.

FIBREFENCE GATES are extremely lightweight compared to any steel equivalent solution, and this makes possible to reach very wide apertures with no need of heavy and complex supporting structures or columns. Moreover, GFRP designed frangibility represent a further guarantee for means of rescue faster and safer access in case of emergency, even at gate closed.

FIBREFENCE GATE pedestrian and vehicular gates are made by GFRP profiles to create a supporting frame, housing a lightweight, strong GFRP mesh, and they are completed with steel accessories such as hinges, latches and bolts. FIBREFENCE GATE gates are available in single or double-leaf layout, with standard height up to 2.5 m and apertures up to 12 m. They are CE marked and UNIEN 13241- class 5 wind resistance compliant.





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