



**FRANGIBLE INTERFERENCE-FREE
FENCING SYSTEMS**

FIBREFENCE

AIRPORT SOLUTIONS



BEST PROTECTION CHOSEN WORK





RLDWIDE

WHY FibreFENCE

FibreFENCE world

FibreFENCE is the range of fences and gates for the airport sector designed and manufactured by FIBRE NET S.p.A. that, thanks to the distinctive radio-transparency and frangibility of FRP (Fiber Reinforced Polymer), unlike traditional materials, guarantees the absence of interference with ILS and Radar devices and limits damage in the event of aircraft impact, greatly improving flight safety.

More than 100 airports worldwide have chosen FibreFENCE systems, both civil and military, granting the highest standards of frangibility and radio-transparency in the sensitive areas of the airfield.



21 +
YEARS OF
EXPERIENCE

100 +
AIRPORTS

105 +
KM OF FENCE
PROVIDED

WHY FibreFENCE? ICAO COMPLIANT FRP FENCES FOR SENSITIVE AREAS

ICAO international standards set **radio-transparency** as mandatory, because of the critical role played by the high number of radio-transmitting devices used by landing aid systems (ILS, MLS, GLS, TLS, NDB, VOR, DME) and radars in the surrounding premise.

Those standards also impose precise **frangibility** features to any structures near the runways, to minimize damages in case of impact with an aircraft.

Last issue concerning airfield protection involves the raising of protection level needs through **anti-intrusion** fences.

FibreFENCE is the innovative range of FRP fencing systems able to cope with all these requirements.

Radio-transparency and frangibility standards are guaranteed.

All our FRP fences are supplied with radio-transparency, resistance to UV rays and frost-defrost cycles **certificates**. FRP material stands out for great durability and zero maintenance needed.



FIBREFENCE MESH

Flexible mesh fence, light but sturdy, to be assembled on site

- FRP mesh ■
- FRP pultruded profiles ■
- Steel, plastic or FRP accessories ■



FIBREFENCE RAILING

Pre-assembled panels fence, ready to be installed on site

- FRP pultruded profiles ■
- Steel, plastic or FRP accessories ■



FIBREFENCE GRATING

Monolithic grating fence, unparalleled resistance-to-weight ratio

- FRP grating ■
- FRP pultruded profiles ■
- Steel, plastic or FRP accessories ■



FIBREFENCE GATE

Radio-transparent & frangible gates and crash gates

- FRP mesh ■
- FRP pultruded profiles ■
- Steel, plastic or FRP accessories ■



FENCING SYSTEMS

Transparent security

Taking advantage of its deep experience in design and manufacture of FRP composite products, FIBRE NET S.p.A. developed FibreFENCE, an innovative range of FRP fences, the best alternative to traditional enclosures.



REFERENCES

From America to Asia, the airport fences speak the language of our long-standing experience

More than 100 airports in the world, from America to Asia, have chosen our systems, well known for granting the highest standards of frangibility and radio-transparency. Our experience in the development of composite materials solutions has been required for the sensitive areas of both civil and military airports, such as **YCC Calgary** and **Chek Lap Kok Hong Kong**, to name but a few and, among the military ones, some of the prestigious airbases of **RAF**, the Royal Airforce Army in Great Britain.

FibreFENCE is the leading Italian company in the design, engineering, and manufacturing of FRP composite materials and systems used in more than 40 countries in the world.



TOP AIRPORTS



Civil Airport



Military airport

-  Hong Kong International Airport - China
-  Tontouta International Airport - New Caledonia
-  Rangiroa Airport - French Polynesia
-  Huahine - Fare Airport - French Polynesia
-  Faa'a International Airport - French Polynesia
-  Sandspit Island Airport - Canada
-  YYC Calgary International Airport - Canada
-  Ministro Pistarini International Airport - Argentina
-  Maribor Edvard Rusjan Airport - Slovenia
-  Sarajevo International Airport - Bosnia Herzegovina
-  Sofia Airport - Bulgaria
-  W.A. Mozart Airport - Austria
-  Baikonur Krayniy Airport - Kazakhstan
-  Leipheim Air Base - Germany
-  Wittmundhafen NATO Air Base - Germany
-  Strasbourg Entzheim Airport - France
-  Calais Dunkerque Airport - France
-  Saint Jean Gustaf III Airport - France
-  Clermont - Ferrand Auvergne Airport - France
-  Bastia - Poretta Airport - France
-  Du Castellet International Airport - France
-  Grenoble - Isere Airport - France
-  Deauville - Normandie Airport - France
-  Paris Charles de Gaulle Airport - France
-  Toulouse Blagnac Airport - France
-  Paris - Le Bourget Airport - France
-  Punt Aeri Vannes Airport - UK
-  RAF Lossiemouth Airbase - UK
-  RAF Marham Airbase - UK
-  Hawarden Airport - UK
-  RAF Fairford Airbase - UK
-  Blackpool Airports - UK
-  Reus Airport - Spain
-  Son Bonet Heliport - Spain
-  Tenerife North Airport - Spain
-  Kazan International Airport - Russia
-  Irkutsk Airport - Russia
-  Khaty-Mansiysk Airport - Russia
-  Warsaw Chopin Airport - Poland
-  Woensdrecht Air Base - Oland
-  Lelystad Airport - Oland
-  Riga International Airport - Latvia
-  Galileo Galilei International Airport - Italy
-  Marina di Campo Airport - Italy
-  Orio al Serio International Airport - Italy
-  Pasquale Liberati Pescara Abruzzo Airport - Italy
-  Riviera del Corallo International Airport - Italy
-  Galileo Galilei International Airport - Italy
-  Valerio Catullo Airport - Italy
-  Raffaello Sanzio International Airport - Italy
-  Giuseppe Verdi Airport - Italy
-  Trieste - Friuli Venezia Giulia Airport - Italy
-  MOVM Cap. Mario Visintini Airport - Italy
-  Guglielmo Marconi Airport - Italy
-  Federico Fellini Pescara Abruzzo Airport - Italy

and many other ...



WHAT MAKES OUR SYSTEMS DIFFERENT

FibreFENCE fencing systems are available in several models designed to satisfy different needs. They are all suitable to serve as external perimeter fence or internal facilities enclosure.

On top, they all meet 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.

Thanks to inherent great durability of the material, maintenance is likely reduced to zero, with great economic benefits in the long term.

FibreFENCE systems design can be tailored to comply with eventual Civil Aviation Authority additional specifications, often different from country to country.

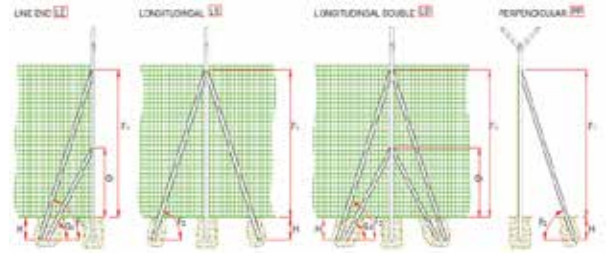
COMPARISON TABLE

FEATURES	STEEL	WOOD	THERMO PLASTIC	FRP 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.

 HIGH PERFORMANCE
  MEDIUM PERFORMANCE
  LOW PERFORMANCE

ENGINEERING AND DESIGN SUPPORT

Our technical department works together with technicians, engineers, and operation officers to design the most suitable and cost-effective solutions complying with international and local regulations. We supply all documentation, operational tools, certifications, and installation support.



ARE YOU A DESIGNER?

Our engineering team provides project consultancy services and support to professionals for the sizing and design of fencing systems, according to different needs, conditions and international regulations. **Our team can also provide wind load and jet blast verifications, to ensure maximum reliability and durability of the structures.**



ARE YOU A CONTRACTOR?

Short-term deliveries are fully guaranteed, both for in-stock and custom products, thanks to the wide selection available. **As manufacturers, we can provide mutual benefit by managing a simple production chain.** All systems are developed to facilitate and fasten installation activities.



ARE YOU AN AIRPORT AUTHORITY?

Thanks to our extensive and in-depth knowledge, we can support airport authorities in the design and installation of fencing systems in full compliance with international standards, such as ICAO and EASA. **We aim to keep the initial investment very low and to reduce maintenance drastically.**

FIBREFENCE MESH



FibreFENCE MESH fences are built directly on site by assembling **FRP** 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 **FRP** components 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 the part closer to the ground, according to most recent Aviation Authorities recommendations.



**RADIO
TRANSPARENT**



FRANGIBLE



**WILDLIFE
INTRUSION
CONTROL**



**NO VISUAL
INTERFERENCE**



Flexible mesh fence, light but sturdy, to be assembled on site

FibreFENCE MESH fences are available in standard heights from 1 to 2,5 m, 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.

Besides ICAO compliances, **FibreFENCE MESH** meets also "Sheet 7 - Types and Requirements of Airport Fences" specifications and has been approved by the 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 numerous airports worldwide.



FIBREFENCE RAILING



FibreFENCE RAILING fences, made by **FRP** pultruded profiles assembled to create self-standing, modular panels, 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 perfectly suitable to protect areas subject to jet-blast. Upon request, **FibreFENCE RAILING** fences can be improved with tiny **FRP** mesh to control small wildlife or debris intrusion.

FibreFENCE RAILING 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.



**RADIO
TRANSPARENT**



FRANGIBLE



**ZERO
MAINTENANCE**



**NO VISUAL
INTERFERENCE**



Pre-assembled panels fence, ready to be installed on site

Furthermore, they are compatible with the most common intrusion detection and monitoring/control systems.

Design, engineering, and manufacturing are tailored according to customer's specifications and needs. Besides ICAO compliances, **FibreFENCE RAILING** meets also "Sheet 7 – Types and Requirements of Airport Fences" specifications and has been approved by the Inter-ministerial Committee for Security of the Italian Ministry of Transports. Thanks to all these benefits and advantages, **FibreFENCE RAILING** fences have been already installed in countless airports worldwide.



FIBREFENCE GRATING



FibreFENCE GRATINGS are made of **FRP** gratings and pultruded profiles assembled to create self-standing, modular panels.

Easy to install **FibreFENCE GRATINGS**, thanks to high mechanical resistance, radio-transparency and frangibility requirements in compliance with ICAO prescriptions, are mostly used to protect sensitive areas in airports.

Compatible with most common intrusion detection and monitoring/control systems, they can be also accessorized with special arms to support plastic, barbed or concertina wires.



**RADIO
TRANSPARENT**



FRANGIBLE



**ZERO
MAINTENANCE**



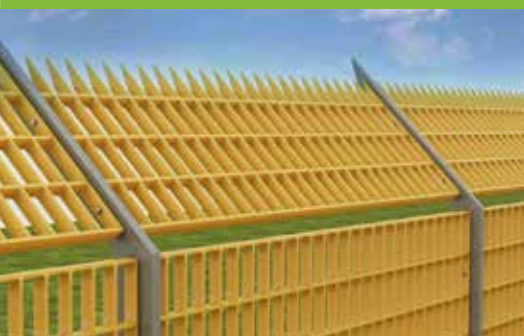
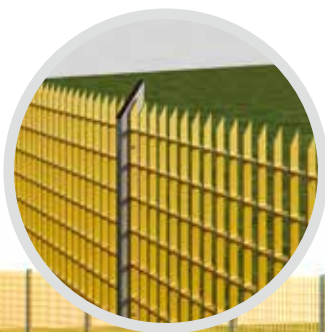
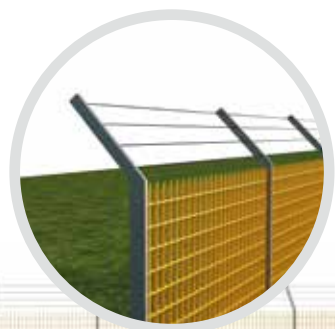
**NO VISUAL
INTERFERENCE**



Monolithic grating fence, unparalleled resistance-to-weight ratio

Designed, engineered and manufactured according to customer's specifications and needs, **FibreFENCE GRATINGS** are available in different mesh dimensions and thickness according to protection requirements and in standard heights from 1 up to 4 m.

Besides ICAO compliances, **FibreFENCE GRATINGS** meets also "Sheet 7 - Types and Requirements of Airport Fences" specifications and has been approved by the Inter-ministerial Committee for Security of the Italian Ministry of Transports. Thanks to all these benefits and advantages, **FibreFENCE GRATINGS** fences have been already installed in numerous airports worldwide.



FIBREFENCE GATE



FibreFENCE GATE pedestrian and vehicular gates represent the natural completion of any **FibreFENCE** fencing system. They share all **FRP**'s intrinsic benefits, i.e. radio-transparency, frangibility, great resistance to corrosion, **UV** rays and weather, mechanical resistance and very limited maintenance. **FibreFENCE GATE** are extremely lightweight compared to any equivalent steel solution, and this makes possible to reach very wide apertures with no need of heavy and complex supporting structures or columns. Moreover, **FRP** designed frangibility guarantees a faster and safer access for means of rescue in case of emergency, even at gate closed.



**RADIO
TRANSPARENT**



**EASY
INSTALLATION**



**ZERO
MAINTENANCE**



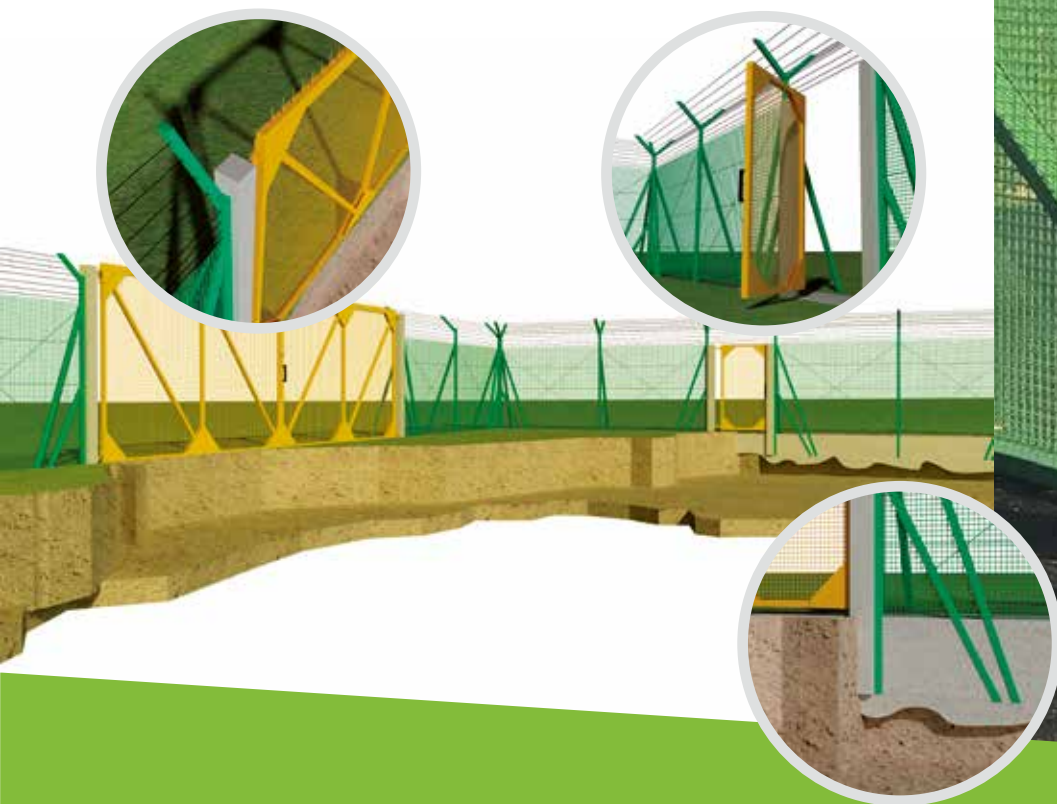
**COST
EFFECTIVE**



Radio-transparent & frangible gates and crash gates

FibreFENCE GATE pedestrian and vehicular gates are made of **FRP** profiles to create a supporting frame, housing a lightweight, strong **FRP** mesh, and they are completed with steel accessories such as hinges, latches and bolts. **FibreFENCE** 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.

CE



SECURITY AND DURABILITY ARE OUR PRIORITIES

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 drawbacks such as limited durability and extremely expensive maintenance costs, **FibreFENCE is the only solution coping with all these apparently opposed requirements.**

FibreFENCE fences are available in different designs, 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.



R&D

Our ongoing commitment to the search for innovative materials and technologically advanced systems has enabled to build partnerships with numerous universities, Italian and foreign research institutes and renowned institutions. **Continual laboratory and on-site testing allows us to improve our products and recommend the most effective technical solutions.**

ENVIRONMENTAL IMPACT

The company's attention is also focused on **saving energy and cutting CO₂ emissions**; all the products are designed to be easy to transport and handle.



RECYCLABLE COMPOSITES

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FibreFENCE is a brand of



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Certified company by
SGS in accordance with
ISO 9001:2015 standard