

# Fire Fighting Equipment

**FIERRE**  
Fire Fighting Equipment



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





**Fire fighting products to protect  
high risk special hazards**



## — ABOUT US

# We are world leader on water-foam and dry chemical fire fighting equipment, since 1996

Fierre is a world leader manufacturing company of water-foam and dry chemical fire fighting equipment present in the market since 1996 with a consolidated position as manufacturer on a global level.

All production phases, from the purchase of raw materials to the testing of the final product are carried out in Fierre facility located in Pavia, in Northern Italy. Each product is individually tested in a test-field near Pavia, to demonstrate its performance. Fierre's products provide the Customer an assured maximum level of quality. We are certified to **ISO 9001 by RINA**.

All products are manufactured according to Directives of the sector. This allowed Fierre to declare, for its products, the **CE conformity**. The company has also obtained a series of important international certifications (**UL, BV, DNV**, etc.) in order to consolidate its position as a manufacturer on a global level.

The main sectors in which Fierre's products find an application are:  
Petrochemical, Oil & Gas;  
Industry (iron and steel, engineering, etc...);  
Power generation; Dumps; Infrastructures (ports, railways);  
Helidecks and airports;  
Warehouses.

Fierre's commercial strategy is addressed to dealers, plants-design and fire fighting systems integrator companies. This precise strategy avoid the Company to be a competitor of its own Customers.





## Our activities



**Design & Engineering:** Fierre can count on its highly qualified technical team with years of experience, able to respond to market and individual Customer's needs. The strength of Fierre is represented by the ability to design and manufacture tailor made products and solutions meeting Client's expectations.

**Production:** Fierre is an equipment manufacturer, transforms raw materials in finished products. All main production activities like welding preparation, welding, NDT tests and assembling are made internally in the company. Several services like high precision machining or surface treatment are carried out in outsourcing from qualified trusted suppliers/partners under the control of the company. This kind of organization let the company maintain a flexible internal structure ensuring the highest level of quality of its products.

**Quality Control & Testing:** Fierre is certified to **ISO 9001** by **RINA** and to **EN 1090** by **Bureau Veritas** keeping the company under control by regular audits. Fierre can trust in its test field facility where its own operators can verify the products performances before each delivery and organize FAT with Clients of specific jobs. The test field is provided with water storage reserve, diesel pump, foam bladder tank, manifold for fire monitors' testing and basins in which executing low, medium and high expansion foam tests. All measurements are got thanks to certified instruments (digital pressure gauges, digital flow meter, conductivity meter, ecc.) in order to guarantee the correct performances of the products. At the test field it is even possible to organize fire fighting simulations on hydrocarbon fires.



## — MARKETS AND AREAS

### The markets we serve

Fire fighting systems sector	Fire truck sector
<ul style="list-style-type: none"><li>• Petrochemical, Oil &amp; Gas</li><li>• Industrial sites</li><li>• Helidecks and airports</li><li>• Oil tankers, Chemical tankers, tugs, boats</li><li>• Power plants</li><li>• Dumps</li><li>• Warehouses</li></ul>	<ul style="list-style-type: none"><li>• Aeroportual vehicles (ARFF)</li><li>• Industrial vehicles</li><li>• Pick-up</li></ul>

### Our work areas

Direct exportation:	Final destination of our products:
<ul style="list-style-type: none"><li>• European market: 70%</li><li>• Middle East &amp; Africa: 20%</li><li>• Far East: 10%</li></ul>	<ul style="list-style-type: none"><li>• European market: 50%</li><li>• Middle East &amp; Africa: 40%</li><li>• Far East: 10%</li></ul>





# Products overview

## Find on our products and solutions



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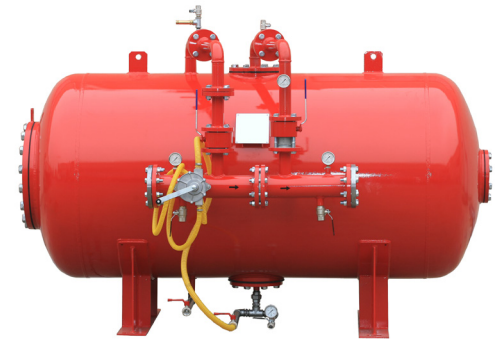
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## Foam bladder tanks and proportioning devices



### Foam bladder tanks.

A foam bladder tank is basically a large container of foam liquid concentrate containing a membrane made of synthetic material resistant to corrosive foam agents and equipped with a foam proportioner. Foam bladder tank serves as a proportioning system through a very simple mechanism: the water coming from the water network pressurizes the tank, pushing the foam concentrate contained in it to a foam proportioner of venturi type.

Here, the foam concentrate is in contact with the water, forming the foam mixture that will be channeled to the pipe of the distribution network. A foam bladder tank may have variable dimensions and consequently different capacities of containment of foam concentrate. It's able to work even with relatively low pressures and ensures minimum pressure losses. Furthermore, the proportioner applied to it can be calibrated according to

the required flowrate and mixing % of the system (usually at 1%-3%-6%). The foam proportioner can be a standard model FI-PM or a wide range type mod. FI-WRM with a huge range between minimum and maximum flowrates that is typically used for foam sprinkler systems.

All Fierre bladder tanks can be CE marked, ASME manufactured and **UL Listed**.





## Inline inductors.

An inline inductor is a proportioning device that, thanks to the venturi principle, is able to aspirate the foam concentrate and mix into the water stream. The pressure loss created by the internal geometry is approximately the 40% of the inlet pressure.

All Fierre inline inductors are available in different MOC (aluminum, stainless steel, brass and bronze) and can be calibrated at different capacities from a min. of 200 lt/min to a max. 6500 lt/min. All inline inductors can be equipped with a ball valve able to change the % of the desired foam mixture (0-1%-3%-6%).





## — PRODUCTS OVERVIEW

# High expansion foam generators

The high expansion foam generator, thanks to its high expansion ratio (Lts foam mixture / Lts expanded foam), is a product able to produce large quantities of foam. For this reason it is used for the saturation of large volumes of enclosed spaces.

High expansion foam generators can be of various sizes and are calibrated to deliver different flowrates. All models are made of a case and a stainless steel mesh, while only some of them have a fan in aluminum or synthetic material that generates the thrust of the foam. They are typically fixed to the wall or ceiling of large enclosed spaces.

Fierre, for its generators, in combination with specific foam concentrates, has obtained by **Bureau Veritas the certificate for inside air installation according to EN 13565** in order to guarantee and certify the correct operation of the generators with polluted and hot air.



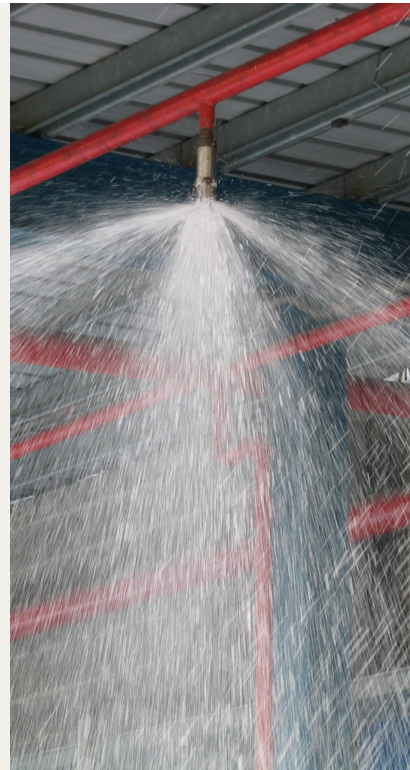
## Medium and low expansion foam generators and nozzles



### Medium expansion foam generators and nozzles

Medium expansion foam makers are characterized by an expansion ratio that can vary between 1:20 and 1:200 and find typical application in case of diffusion of flammable liquids (as hydrocarbon), for protecting containment basins or for emergency intervention in open spaces with portable branchpipes.

Main medium expansion foam makers can be fixed or portable branchpipes and foam nozzles.



### Low expansion foam generators and nozzles

Low expansion foam makers are characterized by an expansion ratio that can reach 1:20, and find typical application on deluge systems, deposits, warehouses, for protecting high risks special hazards with fire monitors that operate from distance. Main low expansion foam makers can be nozzles, foam branchpipes and foam chambers.







## — PRODUCTS OVERVIEW

# Industrial fire monitors

A fire monitor is a product characterized by a certain variety regarding the ways it can be maneuvered. We can identify four main categories: manual monitors, self oscillating monitors, electrical remote operated monitors and oil-hydraulic operated monitors. Anyhow, a fire monitor is always composed of two main joints: one allows the horizontal rotation, the other the vertical ones.

A fire monitor can have different and various sizes: in fact, size, together with the operating pressure, directly influence the capacity and the throw range of the device. Fire monitors, depending on the installed discharge device, can be used for water or foam mixture discharge.

Fierre fire monitors are available in different MOC (carbon steel, stainless steel and Nickel aluminum bronze) and can be welded or casted manufactured. Fierre fire monitors are **CE marked**, **Atex** certified by **Bureau Veritas** and **marine approved** by **DNV**.



## — PRODUCTS OVERVIEW

# Towers and monitor trailers



All Fierre Towers are UNI-EN 1090 certified by Bureau Veritas, the European regulation concerning supporting structures. Platforms, handrails and ladders are designed according to UNI EN ISO 14122.

All Fierre towers are calculated and manufactured according to Eurocode or NTC Rules taking into account all applicable risks (such as seismic, wind and snow risks). Fierre towers can be characterized by different height and different surface treatments (such as hot deep galvanization or specific paint cycles). Fierre towers are provided of a cooling deluge system in order to avoid the collapse of the structure in case of fire exposure, and can be equipped with top fixed or rotating platform.

Fierre Monitor Trailers can take several dimensions and different characteristics:

- they can have a foam tank made of carbon steel or stainless steel
- they can have foam drum supports
- they can have only the monitor and the inlet connection for the water / foam supply

Monitor trailers find a typical application in refineries, heavy industrial plants, hangars, airfields and deposits.





## — PRODUCTS OVERVIEW

# Dry chemical powder and twin agent systems for fixed installation

Fierre dry chemical powder units are custom made, following the specific customer's needs. Different operational ways are available: completely manually operated or electro-pneumatically operated. Fierre powder units are available mounted on skid or inside a cabinet.

Powder tank's capacities can vary on request, from a minimum of 50 kg, to a maximum of 4.500 kg; cylinders are pressurized with nitrogen or Co2 gas. Furthermore, Fierre production includes **Twin Agent systems**, made of a double foam / powder tank, pressurized by the same system.

Fierre powder units are available for safe areas or can be equipped with **ATEX** components for environments with explosive atmospheres. Furthermore, depending on the final destination of the units, they are **2014/68/UE (EX PED 97/23/CE), ASME VIII DIV. I or ASME U-STAMP certified**, and, in the first case (PED), they are directly certified by a **Notified Body**. Moreover, when the final destination regards Countries in which there are specific Regulations for the exportation, (i.e. Algeria) Fierre prepares, for the customer, the technical dossiers to obtain (i.e. ARH/MIM or DPEM documentation, etc.) to obtain the authorization for the exportation.



## — PRODUCTS OVERVIEW

# Dry chemical powder and twin agent systems for vehicles

Fierre dry chemical powder units are tailor made manufactured, following sizes and dimensions of the specific chassis that each time our customers communicate us. This great flexibility allowed the Company to become one of the main manufacturers of dry chemical powder units in the world.

Fierre powder units find a typical application on fire fighting industrial vehicles, and on aeroportual vehicles as ARFF and pick-up. Different operational ways are available: completely manually operated or electro-pneumatically operated. In the first case, the activation of the system is possible thanks to the manual valves installed on the unit; in the second case, thanks to the control panel or through the operative interconnected system present in the cabin of the vehicle.

In any case, all powder units are supplied with a pressurization system equipped with nitrogen cylinders or Co2 cylinders, powder tanks and the control panel equipped with the cleaning and the vent system.

Fierre production includes **Twin Agent systems**, made of a doublefoam / powder tank.

Furthermore, depending on the final destination of the units, powder units are **2014/68/UE (EX PED 97/23/CE), ASME VIII DIV. I** or **ASME U-STAMP** certified, and, in the first case (PED), they are directly certified by a **Notified Body**.

Moreover, when the final destination regards Countries in which there are specific Regulations for the exportation, (i.e. Algeria) Fierre prepares, for the customer, the technical dossiers to obtain (i.e. ARH/MIM or DPEM documentation, etc.) to obtain the autozation for the exportation.







## Monitors for vehicles



Fierre manufactures fire monitors specifically designed for vehicle installation. These fire monitors can be manual or electrical remote controlled such as the bumper and the roof monitor.

All Fierre electrical monitors, thanks to their absolute position sensors, can be completely programmable.

They can be controlled by hardwired input devices via digital or analogic input, or by an optional Radio Frequency.

The control system can be completed with our PLC system or our Canbus modul box, touchscreen, joystick and wireless system.



## Geko monitor

The Geko monitor is equipped with motors that can be powered 12v or 24v. Thanks to its compact dimensions, Geko finds typically installation as bumper truck monitor.

The Geko monitor is available 2" diam. with flows up to 1500 lt/min and 2 1/2" with flows up to 2500 lt/min. The Geko monitor can be equipped with jet/fog electric nozzle or with air aspirating foam branchpipe with electric deflector.



## Firecrow monitor

The Firecrow monitor is equipped with 24v motors and finds typically installation as roof truck monitor.

The Firecrow monitor is available 4" diam. with flows up to 6500 lt/min. The Firecrow monitor can be equipped with jet/fog electric nozzle or with air aspirating foam branchpipe with electric deflector. With this second solution, Firecrow can be equipped with special flow rate cut device 100%-50%.



## — OUR CERTIFICATIONS

### **Company certifications:**

- **ISO:9001 Certificate**
- **EN 1090 Certificate**

### **Products certifications & conformity declarations:**

- **UL Listing on foam bladder tanks and foam proportioners**
- **Inside air Hi-Ex foam generator certification on hydrocarbons, flammable liquids and solid materials fires**
- **Inside air Hi-Ex foam generator certification on alcohol and polar solvent fires**
- **Marine Type Approval Certificate for monitors**
- **CE conformity declarations**
- **Atex certificates**







**Some of our  
projects**



## Some of our projects in oil & gas, industrial and fire truck sectors



**24**

**Projects in oil&gas  
and industrial sector**



**38**

**Projects in fire  
truck sector**

— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



INTERNAL JOB N° 6567

YEAR  
2016

ORDER NUMBER  
2180 + 2422

FINAL DESTINATION/USER  
IRANIAN REFINERY

SCOPE OF SUPPLY  
N° 54 SELF STANDING MONITOR TOWERS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2017

ORDER NUMBER  
24/03

FINAL DESTINATION/USER  
STAR REFINERY A.S. AEGEAN  
REFINERY PROJECT TURKEY

SCOPE OF SUPPLY  
N° 25 TOWERS WITH ROTATING PLATFORM ATEX CERTIFIED



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



INTERNAL JOB N° 6391

YEAR  
2016

ORDER NUMBER  
11/00

FINAL DESTINATION/USER  
STAR REFINERY A.S. AEGEAN  
REFINERY PROJECT TURKEY

SCOPE OF SUPPLY  
N° 842 INLINE INDUCTORS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
**2018**

ORDER NUMBER  
**48**

FINAL DESTINATION/USER  
**SONATRACH ALGERIAN REFINERY**

SCOPE OF SUPPLY  
**N° 44 DRY POWDER SKIDS**



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



INTERNAL JOB N° 7439

YEAR  
2018

ORDER NUMBER  
W0196/17923

FINAL DESTINATION/USER  
SONATRACH ALGERIAN REFINERY

SCOPE OF SUPPLY  
N° 31 BLADDER TANKS  
N° 4 ELECTRIC ATEX MONITORS

N° 102 MANUAL MONITORS  
N° 4 ATEX CONTROL PANELS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR





— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2018

ORDER NUMBER  
0917

FINAL DESTINATION/USER  
SONATRACH REFINERY

SCOPE OF SUPPLY  
N° 10 TWIN DRY CHEMICAL SKIDS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2019

ORDER NUMBER  
PO/0015495 + PO/0017733

FINAL DESTINATION/USER  
REFINERY IN KUWAIT

SCOPE OF SUPPLY  
N° 12 TWIN DRY CHEMICAL SKIDS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2019

ORDER NUMBER  
171012382 + 180627210

FINAL DESTINATION/USER  
REFINERY IN SLOVAKIA

SCOPE OF SUPPLY  
N° 17 ELECTRIC AUTOMATIC MONITORS WITH PLC BASED CONTROL SYSTEM

— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2020

ORDER NUMBER  
22772-10203

FINAL DESTINATION/USER  
INDUSTRIAL PLANT IN GERMANY

SCOPE OF SUPPLY  
N° 24 TOWERS  
N° 24 ELECTRIC REMOTE CONTROLLED MONITORS



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



YEAR  
2020

ORDER NUMBER  
49

FINAL DESTINATION/USER  
INDUSTRIAL COMPLEX IN NORWAY

SCOPE OF SUPPLY  
N° 60 HI-EX FOAM GENERATORS 6000 LT FOAM BLADDER TANK

— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



INTERNAL JOB N° 9204

YEAR  
2021

ORDER NUMBER  
2100733

FINAL DESTINATION/USER  
RUSSIAN PETROCHEMICAL  
COMPLEX

SCOPE OF SUPPLY  
N° 43 50 LT FOAM BLADDER TANKS MADE OF SUPER DUPLEX



— PROJECTS: OIL & GAS AND INDUSTRIAL SECTOR



INTERNAL JOB N° 9410

YEAR  
2021

ORDER NUMBER  
PO/42930

FINAL DESTINATION/USER  
POWER PLANT IN UAE

SCOPE OF SUPPLY  
N° 14 UL LISTED FOAM BLADDER TANKS



— PROJECTS: FIRE TRUCK SECTOR



INTERNAL JOB N° 5959

YEAR  
2015

ORDER NUMBER  
**873034**  
JOB NUMBER  
**5959**

FINAL DESTINATION/USER  
**CIVIL AIRPORT IN ALGERIA**

SCOPE OF SUPPLY  
**N° 25 TWIN AGENT SKIDS FOR TRUCKS**



— PROJECTS: FIRE TRUCK SECTOR



INTERNAL JOB N° 7542

YEAR  
2018

ORDER NUMBER  
18200132

FINAL DESTINATION/USER  
CIVIL AIRPORT IN INDONESIA

SCOPE OF SUPPLY  
N° 4 ROOF FIRECROW MONITORS  
N°4 BUMPER GEKO MONITORS

— PROJECTS: FIRE TRUCK SECTOR



INTERNAL JOB N° 7086 + 9613

YEAR  
2017 - 2021

ORDER NUMBER  
ZD/0853/2017 +  
ZD/2558/2021

FINAL DESTINATION/USER  
INDUSTRIAL PLANT IN POLAND

SCOPE OF SUPPLY  
N° 3 DCP UNITS 3000 KG  
N° 3 MANUAL POWDER MONITORS



— PROJECTS: FIRE TRUCK SECTOR



INTERNAL JOB N° 9198 + 9252

YEAR  
2021 - 2022

ORDER NUMBER  
2021 FF000840 +  
2021 FF000840 +  
2021 FF001979

FINAL DESTINATION/USER  
CIVIL AIRPORTS IN ITALY (MINISTRY  
OF THE INTERIOR)

SCOPE OF SUPPLY  
N° 31 DCP UNITS 250 KG  
N° 31 FIRECROW ROOF MONITORS









**FIERRE**

Fire Fighting Equipment

## Where we are

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## Contact

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