



**Salerno Industry
U.A.E.**



OIL & GAS



PETROCHEMICAL



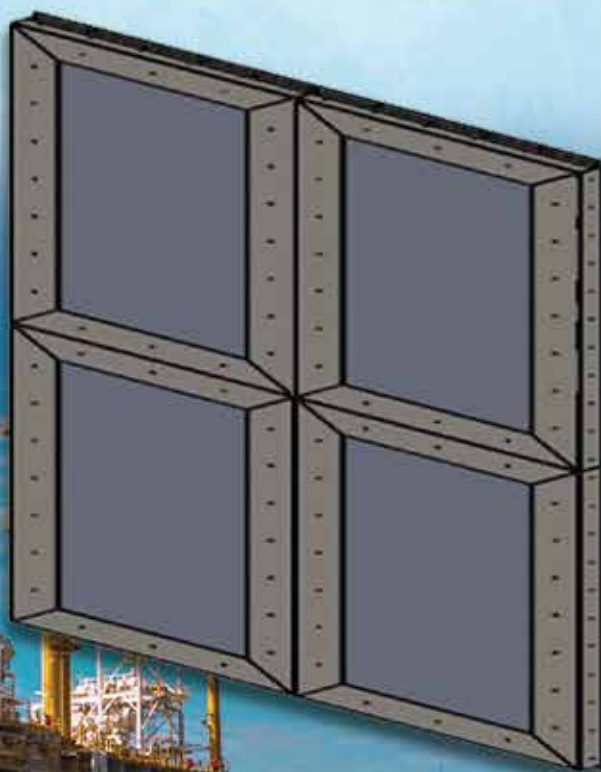
RENEWABLES



LNG

INTEGRATED BLAST & FIRE WALL

ENGINEERING
PERSONALIZED SOLUTION
PRODUCTION
INSTALLATION
AFTER SALES ASSISTANCE
MAINTENANCE
MEASUREMENT IN 3D
PROGRAM FOR GUARANTEE EXTENSION
TRAINING



www.salernoindustry.com

WHY OGBLAST & FIRE WALL

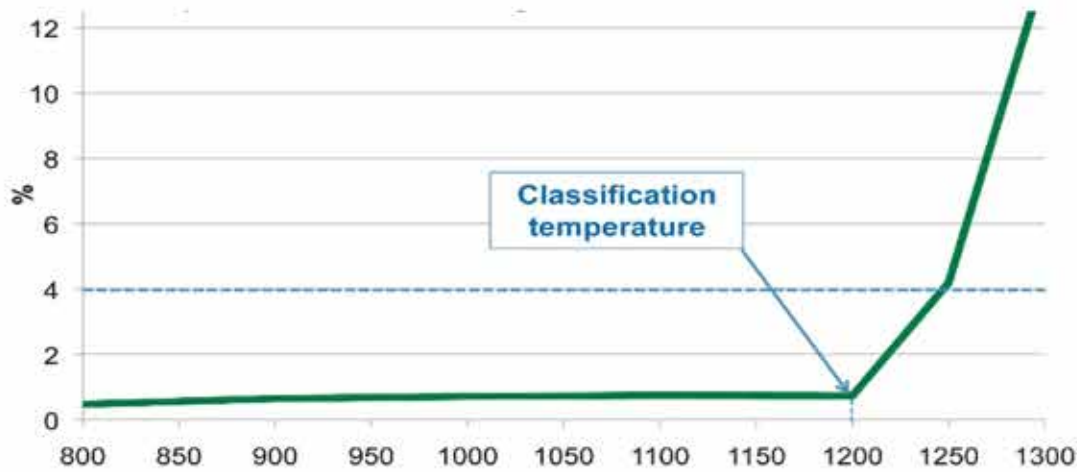
Salerno Industry Industry leader in H class and J class fire & Blast rated solution.

On offshore structures the risk of an explosion and subsequent hydrocarbon pool or jet fire requires that fire divisions are sometimes also required to be resistant to explosion overpressure as well as fire. OGFLEX fire divisions have been subjected to blast testing to provide the required test evidence to support their use in areas where explosion hazards may be present.

SALERNO PASSIVE FIRE PROTECTION INDUSTRY has developed his brand new product defined as a "TYPE APPROVED PRODUCT" to be use outer layer of passive fire protection for onshore and offshore. OGFIRE BLAST & FIRE WALL is the product of years of research and development into composite materials, structural design and finite element analysis and testing. The result is an fully optimized system for a range of blast overpressures up to 1.85 Bar, all of which provide the most efficient performance characteristics.

Application had as target to create a system that will be used not only passive fire protection but even may have faction of Blast resistance overpressure up to 1.85 Bar even more.

INTEGRATED BLAST & FIRE WALL PERFORMANCE



Salerno PFP Industry provides protection of both personnel and equipment from the effects of explosions, fire and impact, in hazardous environments such as offshore oil and gas platforms. We have wide variety of blast resistant and fire rated wall combined with thermal protection for energy preservation components and noise reduction, sound adsorbent, engineered to suit the application.

- ❖ Blast resistance overpressures of up to 1.8 bar
- ❖ Hydrocarbon jet fire protection up to 120 minutes.
- ❖ Hydrocarbon pool fire protection up to 120 minutes.



JET AND POOL FIRE GENERAL ASPECTS IN FIRE BLAST SOLUTION

Jet fire represents an important fire risk especially in offshore installations and might also represent a risk in other circumstances where large amounts of combustible gas are stored under pressure. The potential jet fires may vary with respect to flame length, heat flux and velocities. Important factors are the type, conditions, pressure and availability of the fuel, the geometry of the rupture and the environment.

The aim of the Jet-Fire test is to simulate a reasonable accidental load from a gas line rupture on an offshore or onshore oilrig. If the Jet is ignited, the combined heat load and the erosion effect of high velocity jet may be critical to the integrity and stability of partitions and structural elements. However, the real situation offshore may comprise discharge of gas and oil at higher pressures and leakage rates than simulated in this test procedure, mixed with soil and rock debris from the oil well.

The fire source is an impinging propane jet. The insulation is exposed to the load of 350 kW/m² that is approx. 1370 / 1400°C for 2 hours and results are in our Type Approval certificates for Offshore application where of course just simple Witness certificate doesn't give the right assurance about the effects that are wished to be obtained by a Passive fire protection. A type approval certificate given to the insurance company allows obtaining a consistent reduction of premium.

The image shows two side-by-side Type Approval certificates from TÜV RHEINLAND. The left certificate is for 'JET-FIRE' and the right is for 'POOL-FIRE'. Both certificates contain technical details, test results, and signatures. The certificates are in German and English. The left certificate is for 'JET-FIRE' and the right is for 'POOL-FIRE'. Both certificates contain technical details, test results, and signatures.

Of course even the Pool Fire (UL 1079 standard) situation need a lot of attention for determining the area of intervention selecting at the same time all the components to be protected in that area according even to API 2218 granting that at the end of the period of fire the inside temperature is the one declared as the maximum allowed temperature at the end of the fire cycle.



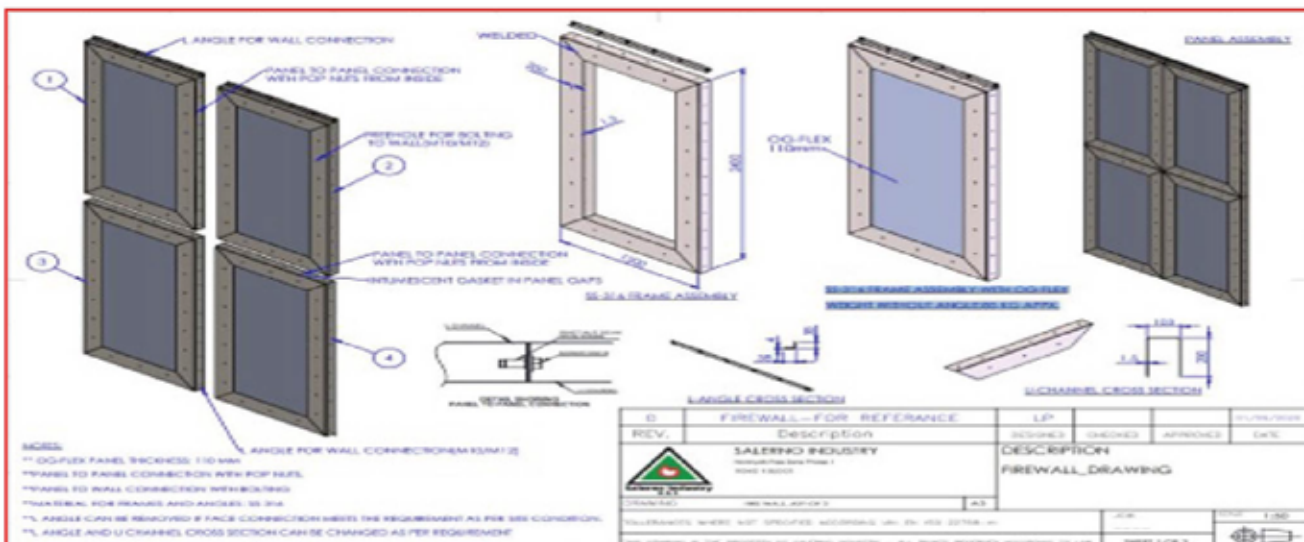
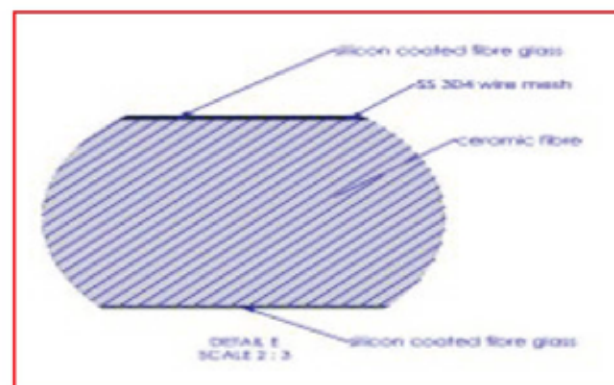
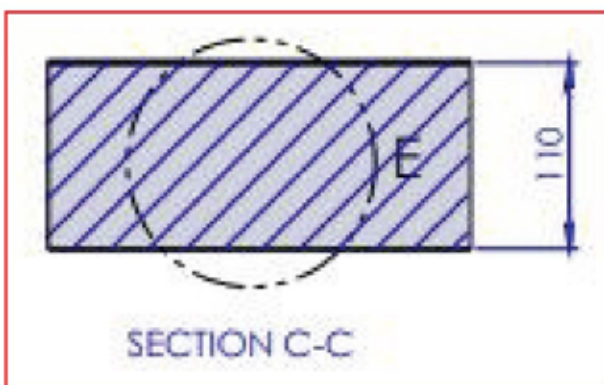
MANUFACTURING OPTIONS & DETAILS

In order to meet requirements of the on-shore and offshore Oil, Gas and Wind industry Salerno PFP Industry has developed their Fire & Blast wall sandwich panel system. Especially set out for harsh offshore environments.

Panel dimensions and sizes are determined, but can be increased in case different project requirements need to be met. Over all panel dimension is 2400X1200, frame assembly with OGFLEX weight 85 kg appx.

Available in several kind of materials, such as:

- ❖ Rigid solution Stainless steel 316L – (Internal – External).
- ❖ Sami Rigid Solution (SS-316 support – Flexible sandwich panel).
- ❖ Flexible Blanket Solution



PENETRATION OPTION, DOORS AND ACCESSORIES

The system also can be incorporated all Doors, Windows and services penetrations upon specification requirement.

Relief for cable entries, pipelines ,cable trays can be provided as per the detailed drawing. Drawing will be send for approval after final design including all these.

A range of accessories are also available:

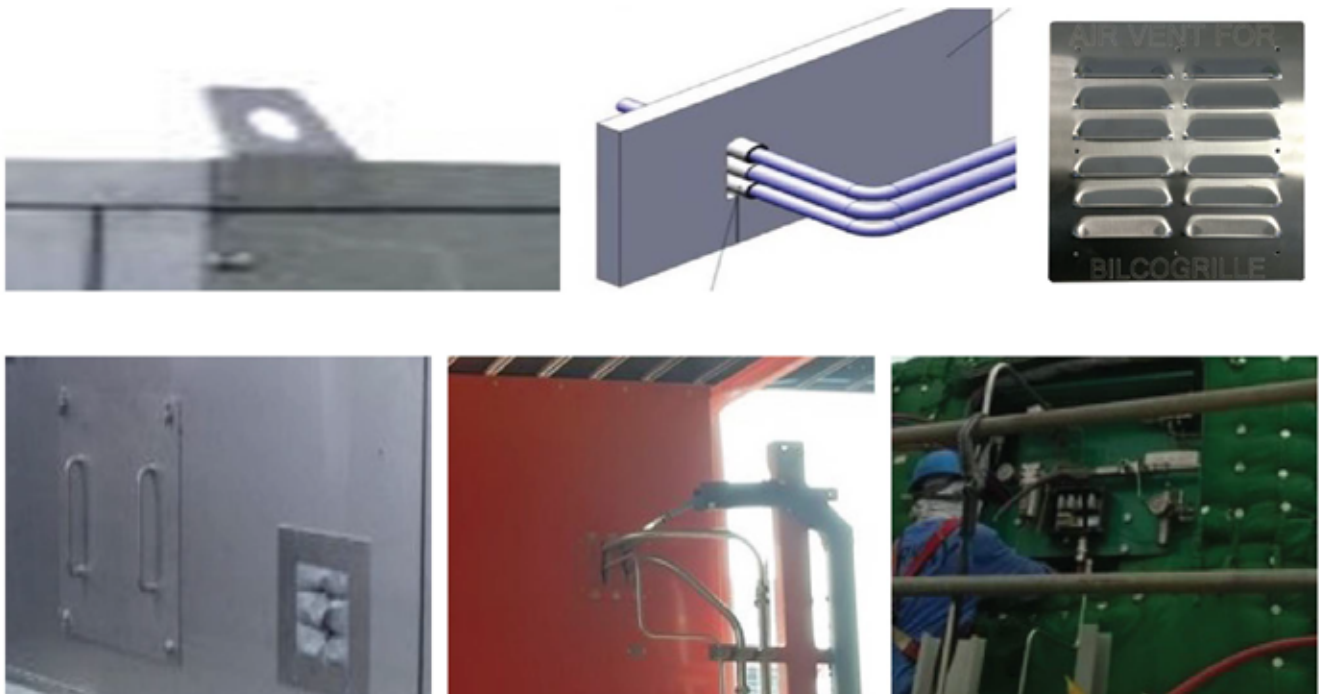
- ❖ Hinges and lifting points
- ❖ Blast rated doors
- ❖ Penetrations and cable entry points
- ❖ Supporting structure
- ❖ Range of decorative finishes

This is an example of cables passage where it is easy to see how.

Thanks to the intumescent gasket (OGSEAL) supplied as start-up spare parts, there is no air entry inside the protection in case of fire.

OG Fire & Blast system can be made bespoke to end user requirements,

Intumescent OGgrill for air exhauster and for cable tray ventilation to preserve the cable life and eliminating the heat generated by the cables.

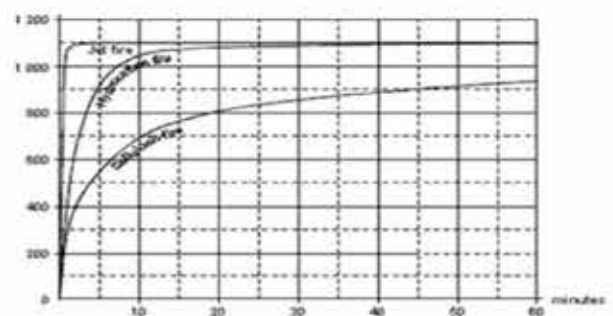


CERTIFICATION

- ❖ Type Approval
- ❖ UL 1709
- ❖ Overpressure blast test up to 1.85 bar
- ❖ Jet fire test up to 120 minutes
- ❖ ISO 9001 quality management system
- ❖ Software for thickness calculation



Comparison of different fire scenarios
Standard fire curves
Temperature in °C Vs. time in minutes



CERTIFICATE OF CORRECT INSTALLATION & GUARANTEE

As always indicated our OG BLAST AND FIRE WALL, protections may be installed by any well trained person.

We want to inform you that the type approval certificate doesn't include only the manufacturing in conformity with all what declared in the same document, but involves even the installation.

In fact, if end users wants to install the unit by themselves, the certificate is related to the construction conformity only, but if it is requested the installation to companies qualified by the manufacturer, then the presence of the manufacturer must be granted for the full conformity and product guarantee and for this reason they make reference even to API 2218.

Then, this arrangement has to be applied and we may assist you with our qualified team or we may participate at the installation with the team selected for the job, or we may do a final survey releasing a special conformity certificate as requested by the standards.

Guarantee : As standard terms indicated in our proposals, our materials and products are guaranteed for 24 months, but we are pleased to inform you that we may grant our customers periodical visits, every two years, when the guarantee is finished, for controlling the situation at site with the purpose of guarantee extension up to 20 years.



ADVANTAGE

- ❖ Increased cost-efficiency.
- ❖ Excellent weather & Corrosion resistance.
- ❖ Pre-finished system available in a range of colour options.
- ❖ Qualified personnel for installation is not required
- ❖ Internationally recognized and certified
- ❖ Completely customized products, both for dimensions and for fire resistance
- ❖ No maintenance
- ❖ Best after sales service
- ❖ Strictest tests passed
- ❖ Less installation time
- ❖ More safety
- ❖ More space
- ❖ More fire resistance
- ❖ Thermal Insulation - keeps equipment temperatures below 45°C whilst jet fire outside is more than 1200°C. NO additional thermal insulation is required.
- ❖ Sound Attenuation – up to 38DB noise reduction
- ❖ A product made with only European product certified for the scope & An well experience engineering backgrounds.
- ❖ FB&F WALL that may have 10 years guarantee through an inspection each two year at site.
- ❖ FB&F that have the easiest way of assembly and disassembly without any tools with dedicated hinged inspection doors.
- ❖ A low linear shrinkage is therefore highly desirable at the maximum continuous use temperature and the material selected by us has lead to the 4% shrinkage temperature rising from >1100°C (2012°F) to >1200°C (2192°F) and the classification temperature of the product used by us is of 1.300°C and may be used even at higher temperature with consequent increase of shrinkage.
- ❖ In case it is requested a component replacement, thanks to the engraved Stainless-steel plate installed on each component of the protection, there is the possibility of an immediate component manufacturing, for direct shipment in 48 hours.
- ❖ Thanks to the low density of the blanket give significant weight savings to the components where are applied and has the above detailed functions integrant part of all the low-density components.



APPLICATION

- ❖ Escape tunnels
- ❖ Control rooms
- ❖ Instrument rooms
- ❖ Stair-towers
- ❖ Accommodation modules
- ❖ Process modules
- ❖ E-houses
- ❖ DCS
- ❖ Process plant
- ❖ Transformers
- ❖ LNG Tanks
- ❖ Generators
- ❖ Fire wall
- ❖ Fire, Blast & Fire Wall
- ❖ Fire, Blast Wall with Stand



INSTALLATION & SITE ASSISTANCE

PRELIMINAR

- ❖ Order receipt
- ❖ Sale confirmation
- ❖ Receipt of the final components drawing
- ❖ Final calculation of thickness using our software Lloyd's certified
- ❖ Issue of drawing for approval
- ❖ Receipt of drawing with comments
- ❖ Issue of final drawing for final approval

OPERATIVE

- ❖ Issue of drawings for manufacturing
- ❖ Issue of time for manufacturing
- ❖ Production of protection blankets
- ❖ Production of steel frames with final painting
- ❖ Internal quality control
- ❖ Information to customer of material ready for delivery
- ❖ Customer inspection if required

COMPLETION

- ❖ Issue of drawing for assembly of blankets
- ❖ Issue of drawing for assembly of the steel frames
- ❖ Preparation of laminated drawings for shipment
- ❖ Handbook preparation for maintenance and installation

FINAL

- ❖ Packing for collection and invoicing
- ❖ End of first project phase

The first phase will be completed with the issue of the certificate of guarantee that the products are manufactured according with the ISO standard & certificate for the Blast and Fire Wall Protections. For the issue of installation conformity and for the two years guarantee renew an inspection at site by manufacturer responsible is required.

INSTALLATION POSSIBILITIES

1

Fully executed
by the
manufacturer

2

By the customer
assisted by one
of manufacturer
engineer

3

By the customer
after a training
course

AS PER SOLUTION 1 & 2 MANUFACTURER WILL RELEASE
A CERTIFICATE OF CORRECT INSTALLATION

OUR WORKSHOP



WE ARE PROUD TO SERVE YOU...



**Salerno Industry
U.A.E.**

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