





CERTIFIED FLEXIBLE ANTIFIRE PROTECTIONS AND THERMAL INSULATION



ENGINEERING
SALES
PRODUCTION
INSTALLATION
AFTER SALES ASSISTANCE





BILCO ANTIFIRE ENGINEERING s.r.l.

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BILCO RAPRESENTATIVE OFFICE IN

- Singapore
- Korea
- Finland
- Poland
- AlgeriaIndia
- Brasil
- Iran
- P. R. China

BILCO MIDDLE EAST

- Saudi Arabia
- U.A.E.
- Bahrain
- Qatar
- Kuwait









BILCO

WHY FIREPROOF PROTECTION

Prevention and fire protection in refineries and petrochemical industry is gaining in importance and requires the application of innovative and cost-effective methods for companies that want or need to invest in "safety".

A fire in a chemical or petrochemical plant which is not possible to contain and extinguish in a short time implies for the company, not only a huge direct economic damage but also indirect, for production stop and image of the company.

The problem of security is therefore related to the hydrocarbons fire time control, allowing the operator to delay and stop the spread by closing the control room of actuated valves.

Valves, actuators, tanks and various kinds of instruments must therefore be protected from flames, so that they can operate for the time necessary to allow the safety of the system and do not allow fire spread in an uncontrolled manner.

WHY BILCO

BILCO ANTIFIRE ENGINEERING s.r.l. is the first Italian company specialized in the field of **Certified Fireproof Flexible Protections**, produced in our two plants in Italy.

The continuous research for new solutions and the choice of innovative materials of European or American quality make BILCO protections an innovative product that can guarantee the most different demands for fire resistance in most critical conditions.

WHAT WE PROTECT

The range of BILCO Flex products is designed for an effective fireproof protections:

- Electric, pneumatic and hydraulic actuators
- Check and control valves, ESDV
- Flange Couplings
- Cable Trays
- Command and Control panels
- Tanks
- All elements in critical areas of the plant

BILCO Flex®



TESTS, CERTIFICATES, RESEARCH AND DEVELOPMENT

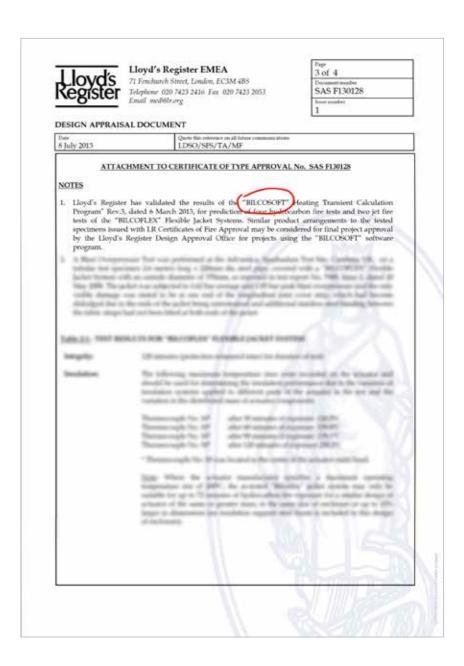
Thanks to an innovative product, BILCO has passed the most severe tests of hydrocarbons fireproof resistance, obtaining the relevant certificates issued by accredited institutions and laboratories in the Oil & Gas fields, such as Lloyd's Register UK and Bureau Veritas.

Tests made on BILCO products are in accordance to the main standards which regulate fireproof protections all over the world, as UL 1709 and ISO 22899-OTI 95 634.

Resistance tests in a "Jet Fire" condition and gas explosion "Blast Overpressure test" were made in laboratories directly credited by Lloyd's Register, while the hydrocarbon test curve according to the standard "UL 1709" was made directly in "Underwriters Laboratories Inc." Chicago – USA.

Our technical department has adapted a software project, certified by Lloyd's Register UK which has been especially studied for BILCO.





CERTIFICATIONS

Lloyd's Register U.K. UL 1709 Bureau Veritas Type Approval



BILCO Flex®



MAIN CHARACTERISTICS

BilcoFlex® is an effective method of protection devices controlling a plant, which allows minimizing the danger and damage caused by fire in a refinery, oil platforms, petrochemical, thermal power, electrical, shipbuilding and defense plants.

BilcoFlex® is based on the assembly of various multilayer "jackets" which are attached to each other only through belts and buckles in stainless steel, no rings, no wires or seams.

The main advantage of a soft and flexible protection is due to easy transport, handling, assembly and disassembly.

This allows a quick access to the protected device operations through appropriate inspection bays, or even to make ordinary and extraordinary maintenance disassembling quickly and without specialized personnel, **BilcoFlex®** protections.

All panels are made with highly performing materials, designed to work in extreme temperatures: from -50° C to about 275° C only for the external coating fabric of the panels, while the entire protection ensures its function up to 1400° C for a different period of time, depending on specific requests. It is possible to create access bays for command buttons, control panels, indicators and automatisms.



BilcoFlex® protections guarantee the complete operation of protected critical systems, for the period of time required by the customer, delaying the damage in a controlled way and preventing further damage to the equipment, products, people and things.

- Simple and light to carry, can be installed quickly and without specific equipment and tools
- Installation may be carried out without stopping the system
- Custom-made products, small size
- Weatherproof, resistant to UV rays, cold, sea environment, chemicals and acids
- No material is harmful, all absolutely free of asbestos offshoots
- Fire resistant up to 2 hours at temperatures up to 1400° C







CUSTOM ENGINEERING

BilcoFlex® systems are designed and tailored to fit the shape of the component to be protected, actuators, valves, tanks and ducts.

As shown in the photos, it is possible to create bays and holes for the release of clutches, stems, frames and buttons;

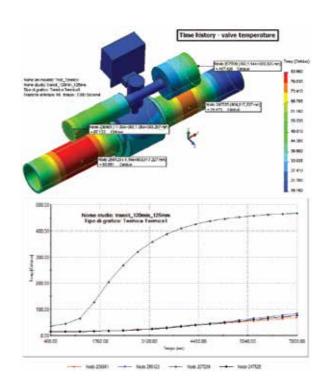
The jackets are specially shaped and notched at power cables passing, in positions required by the customer and can be modified until they are installed. The jackets can also be made with outside fabric of different colours in order to diversify the automations in the various areas of the system and facilitate the operator in emergency cases.

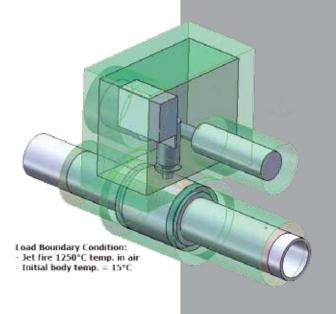


Software certification issued by Lloyd's Register U.K.



Thanks to the software developed specifically for BILCO, we are able to virtually simulate a strength test of our products. Therefore, any **BilcoFlex®** protection can be adapted to the customer's specific requests realizing the internal stratification, following software processing which reproduces tests parameters made in the laboratory.







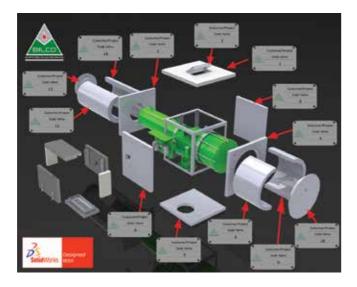
BILCO Flex®



ASSEMBLY SYSTEM OF BILCOFLEX® JACKETS

Along with every jacket, the customer receives an exploded drawing which emphasizes the engineering; each jacket is numbered and coded to allow their identification and then have an outline diagram which allows fast and easy assembly.

Each jacket is provided with a stainless steel AISI 316L label, showing the customer name, the name of the project and the tag of equipment to be protected.





Installation is carried out exclusively by closing fasteners (belts) and special certified buckles to withstand the harsh conditions of the fire generated by hydrocarbons: this operation is quick and easy and you do not need special tools or lifting equipment.

In case of modifications to be made on site, BILCO will provide the assistance of specialized personnel; assistance can also be provided for measuring and installation.











OUR FACTORY

While administrative and sales offices are located in the center of Milan, the entire production of **BilcoFlex®** fireproof flexible jackets is made in Italy at BILCO Cusago, where there is also the technical engineering and product development office, and in another factory just a few kilometers from Milan.

All the production cycle, from purchasing of raw materials up to the packing and shipment, is made according to the quality control system ISO 9001-2008 certified by Bureau Veritas.

The Quality Control Plan which follows all the job development, is included in the technical manual, delivered with jackets.

On request we can forward a copy of "Quality Manual" which the activity of BILCO refers. Also the BILCO management system for health and safety at work is certified OHSAS 18001/2007.









TECHNICAL TEAM

BilcoFlex® fireproof jackets in a few years have achieved a high level of quality allowing BILCO Antifire Engineering to successfully go through demanding tests and be accredited by the most important companies in the Oil & Gas. Much is due to the constant commitment of its technical department in the development of new solutions, searching for more and more reliable materials, with project precision and collaborative and constant contact with the technical departments of our customers.





Our engineering office uses the advanced design system in **3D Solidworks 2012**. They participated to the training courses organized by SolidWorld to expand their knowledge and always be updated with advanced solutions for 3D. Upon delivery, the U. T. will prepare the JOB MANUAL which includes all the assembly instructions, for any modification, storage and maintenance of the jackets provided. We have a young and motivated team, according to the technology and modern systems of industrial design. This is our technical department, brain and heart of BILCO.

OUR CERTIFICATIONS





UL 1709 Pool Fire and JET FIRE - Lloyd's Register U.K.

BilcoFlex® products are designed using a calculation method, a production process and materials suitable to ensure an absolutely negligible temperature increase for the first 30 • 120 minutes of exposure to fire.



POOL FIRE and JET FIRE up to 120' TYPE APPROVAL

Only a few companies in the world have obtained from Lloyd's Register UK the certification at TYPE APPROVAL brand. The Type Approval is an impartial certification system that provides approval and conformity of a product with specific standards or requirements and verification of an adequate system of production quality. It also helps to ensure an adequate level of products' safety and allows us to use the type-approval Lloyds Register brand - a special symbol of approval on the packaging, technical documentation or on the product itself - that can be used for all the products listed in the approval certificate.

These Type Approval tests are much more restrictive and require the use of samples that must reflect the real situation in which they are; for example, in "Pool Fire" condition, after one hour the temperature inside the actuator must not exceed 80° C that is the limit which, normally, the actuators can still operate. For the Jet Fire T.A. after 2 hours the limit is 200°C (compared with 400°C of the "standard" Jet Fire test).



BLAST TEST BilcoFlex® product obtained the blast test certification for overpressure resistance up to 1.82 bar



ISO 9001 Certification

BILCO is certified for quality control management according to ISO 9001-2008



OUR CUSTOMERS







Thanks to continuous commitment on product quality research, reliability of certifications and costs restraint, BILCO Antifire Engineering s.r.l, in a few years, has managed to compete with the few world producers of the same product, and to be classified in the vendor list of world wide major oil and engineering companies of the oil and gas sector. And has become one of the regular suppliers for leading manufacturers for valves and actuators.

BILCO is qualified by:

NCOC, MC DERMOTT, PETROFAC, ADGAS, ADCO, GASCO, ADNOC, ZADCO, METSO, EMERSON, QATAR PETROLEUM, OXY QATAR, QASCO QATAR, TECHNIP, NIOC, TAKREER, ADMA OPCO, KUWAIT OIL COMPANY, BOROUGE, RELIANCE, TECNIMONT.

















Thanks to our references and the product quality BILCO has been listed in the data base of the most important Oil & Gas organizations:





OUR REFERENCES



Raffineria Priolo

SAIPEM GASCO





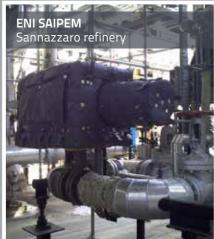












OTHER RANGES OF BILCO PRODUCTS

BILCO Shield®





Flexible jackets are an innovative and future product, however, BILCO does not neglect other types of fireproof protection systems.

For example: The traditional rigid box

BilcoShield® in AISI 304 or 316, certified

UL 1709 also up to 30 minutes by Lloyd's

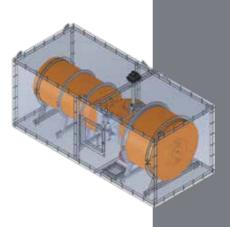
Register, and to which BILCO dedicated special studies and applied innovative solutions making it technologically advanced and equipped with different optional possibilities.

REFERENCES

DVG, LCM, CAM LEDEEN, EMERSON, FLUIDCONTROL OY







If requested we will be glad to send you specific product catalogue





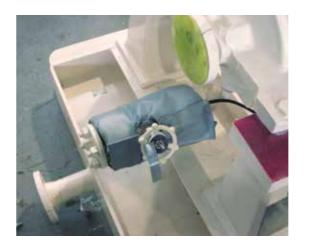


High performance system for thermal insulation up 400 C° and acoustic insulation for industrial, energy, naval and automotive fields; flexible with easy assembling and disassembling.

This protection system can offer customized and economical solution offering high quality requiring minimum maintenance.

REFERENCES

DKTC, TECHNIP, TOTAL, ANSALDO, POLIMERI EUROPA





If requested we will be glad to send you specific product catalogue



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