SPECIAL HAZARDS
PROTECTION

AUTOMATIC FIREFIGHTING SYSTEMS IN

HOSPITALS

siex

Our goal: safety

Possible solutions require a detailed study of the actual conditions and taking stronger measures to protect our hospital infrastructure.

Hospitals are large building and facility complexes that leverage technical and human resources to offer the services they provide, including pharmacies, HVAC, miscellaneous equipment warehouses, etc.

Hospitals grow and adapt to the population they serve, increasing their capacity, medical services and equipment as required. In many cases these adaptations involve extensions. In others, they may involve refurbishing internal areas for other uses or upgrading technology, engineering and architectural elements. Comfort and efficiency are directly correlated to more spacious, more attractive, and more accessible facilities, as well as new engineering solutions.

New conditions result in new needs, including the need to be in safe buildings adapted to hazards that may exist at any given moment. A high-impact factor to consider is the possibility of a fire and having to evacuate the building, since occupants for the most part are unfamiliar with the building and have diminished physical abilities.

In the past, major fires in hospitals have resulted in serious consequences and significant loss of human life and material damage.

Statistics show that the fire brigade response time can be long, around 10 or 15 minutes, so additional protection measures may be required.

Source of fire

Hospital facilities include facilities which can start various types of fires in various places. Some of the potential fire sources are shared with other public buildings, such as boiler rooms, record rooms, etc. and other areas specific to hospital use.

The greatest fire hazards in a hospital, and thus where proper strongest firefighting equipment performance is required are as follows:

- **LABORATORIES**
- **RECORD ROOMS AND WAREHOUSES**
- **TECHNICAL AND SERVER ROOMS**
- **TRANSFORMERS**

The main fire sources in hospitals are:

- Technical faults in electrical, pneumatic and mechanical equipment.
- Arson.

Special Warning

There are other risk factors in each room which equally important and can cause or help spread the fire. These are very different:

- *Combustible gases, used for cooking or heating, generally using LPG, town gas and natural gas.*
- *Medicinal gases, such as oxygen and nitrous oxide, key in sustaining combustion.*

Moreover, HVAC systems may carry smoke from a fire from one area to others.

CUSTOM SOLUTIONS

LABORATORIES

Hospital labs are another area where protection is recommended. Fires can be started by electrical faults or improper use of certain chemical elements or equipment. **Fire can destroy increasingly sophisticated and modern equipment (significant investments) so protection is becoming more and more important.** Fire protection also prevents the loss of relevant patient information.

For these cases, SIEX has different extinguishing systems, depending on the type of risk and existing installation. To protect against electrical fires, common in these facilities, you can use SIEX-HC™ chemical gases, INERT-SIEX™ inert gases or water mist systems, depending on the various conditions and needs.

RECORD ROOMS AND WAREHOUSES

Hospital record rooms are a hazard which do not involve any danger per se, but if the stored documents catch fire, consequences are very significant in the short, medium and long term.

It must be borne in mind that hospital records not only include patient medical records but varied other documents, such as X-rays, video library, medical books, historical and significant files, patient record books, administrative records, relevant journals, etc. Losing these documents would involve cancelling and delaying surgical procedures, repeating medical tests (some of them very expensive), losing information, and so on.

The fire load in this type of location is inherently high, given the high concentration of combustible items such as paper, cardboard and electrical components which may become faulty. Materials on shelves, ceilings, floors and other possible materials represent an additional fire load.

These hazards can be protected by halocarbon gases (SIEX-HC™) or inert gases (INERT-SIEX™).

TECHNICAL AND SERVER ROOMS

Technical and server rooms are strategic areas of the hospital. They store all information related to processes, patients, staff, protocols and general operations.

In case of fire, losses are valued not only by the material value of the equipment, but are significantly greater when the chain reaction that occurs is taken into account: loss of stored information, often irrecoverable; loss of productive time, delays in interventions and treatments and even losses incurred as a result of time spent on reacquiring lost information.

The main causes of fire that may occur in this type of facility are: sparks due to switches, short circuits, overloads, static electricity, dirt or external elements that might cause flaming from overheating, etc. It must also be borne in mind that the vast majority of technical equipment rooms have false ceilings and floors, through which electrical wiring carries both power and information. These must be protected, since they are potential sources of fire with limited potential for visual inspection.

The most appropriate system will be selected based on the size of the hazard(s) to be protected, space available for storage, location of equipment, financial cost, piping installation, as well as various customer needs.

SMALL ROOMS	MEDIUM ROOMS	LARGE ROOMS
INERT-SIEX™	**INERT-SIEX™**	**INERT-SIEX™**
SIEX-HC™ 227	**INERT-SIEX™ CFT**	
SIEX-NC™ 1230	**SIEX-HC™ 227 S-FLOW**	

SIEX-HC™ 227 works in a diverse range of pressures: from 25 to 60 bar.

TRANSFORMER AND GENERATOR ROOMS

These rooms deserve significant specific protection in medical applications. Transformers supplying the precise electrical power required for daily operation and electric generators ensure continuity of critical services in the event of power cuts. This emergency backup supply is critical for the proper performance of operating rooms and life support equipment, among others. The protection of generators and transformers and their enclosure is therefore essential. The enclosure must be isolated by 60-min fire-resistant construction elements.

These are areas with combustible oils, liquids and gases that are highly flammable with fast-spreading flames. They can be protected by local application water mist or CO_2 systems, inert gases (INERT-SIEX™). An analysis of existing openings must be carried out in order to determine the most appropriate system for each application.

OTHER SPECIAL HAZARDS PROTECTED BY SIEX:

- WIND GENERATORS
- ELECTRIC GENERATORS
- TRANSFORMERS
- DATA CENTERS
- SOLAR ENERGY
- OIL AND GAS
- TELECOMMUNICATION
- TURBINES
- ARCHIVES AND LIBRARIES
- HOTELS
- HOSPITALS
- EDUCATIONAL FACILITIES
- STEEL INDUSTRY
- MACHINE TOOLS
- PAINT SPRAY BOOTHS
- ELECTRICAL PANEL ROOMS
- CLEAN ROOMS
- PRINTING INDUSTRY
- TIMBER INDUSTRY
- OFFSHORE PL

C/ Merindad de Montija, 6
P.I. Villalonquéjar
09001 Burgos (SPAIN)

tlfno: +34 947 28 11 08
fax: +34 947 28 11 12

siex@siex2001.com
www.siex2001.com

siex®