AUTOMATIC FIREFIGHTING SYSTEMS IN ARCHIVES AND LIBRARIES
The term “archive” can be used to describe a collection of filed documents or the premises or record rooms which house written, graphic or audiovisual files produced by any public or private institution, preserved with the purpose of ensuring citizens’ rights or serve as sources for research.

Along the same lines, libraries can be defined as places where books are stored. However, this concept has long been overtaken by the concept of the book and audiovisual collections and the institutions that create them and make them available to the public, to meet users’ needs.

Originally they were more like what we know today as archives, since they emerged with the aim of conserving documents, recording events linked to religious, political, economic and administrative activities.

The main purpose for protecting this type of facilities is to protect these assets, given the high value of existing content, although safeguarding human life and building integrity are also important.

They contain elements of untold value—unique and irreplaceable items—hence the need for indefinite preservation.
Sources of fire

The fire load in this type of location is inherently high, given the high concentration of combustible items such as paper (books, documents, maps, etc.), cardboard and electrical components which may develop faults. Materials on shelves, ceilings, floors, paint and other possible materials represent an additional fire load. Other possible fire sources may be human error, attacks or sabotage which are frequent in this type of installation.

Fire can be devastating, not only in terms of fire damage but also due to additional factors such as: smoke, fumes and heat, which can considerably damage existing components and structures.

WHY DO FIRES SPREAD IN ARCHIVES AND LIBRARIES?

• No automatic extinguishing.
• No compartmentalization.
• Old installations.
• Continuity of combustible material.
• Delay in discovery - taking steps.

An emergency procedure is not always a guarantee of success, since a large percentage of losses are produced while the facility if closed (more than half the material damage in libraries and over 70% of the material losses in places of worship).

The chances of fire also increases in refurbishment conditions or installation of new exhibits.

Fire is the greatest threat which cultural institutions face, because consequences are usually irreversible.

A further problem in this type of installation is that most of them have not been built for this purpose, hence the complexity of introducing certain types of protection, for example, in old buildings.
SIEX recommendations

The most effective protection method for spaces of this type is TOTAL FLOODING (as long as leak tightness is guaranteed), involving the release of extinguishing agent into the enclosure at a concentration that ensures that the outbreak of fire is put out and its possible spread is contained.

DESIGN GOALS

In addition to considerations for other hazards, special attention is paid to:

- Building structure - limiting damage to building materials.
- Architectural elements - limiting impact of the fire safety strategy to the architectural design.
- Premise operation - limiting damage to critical equipment and minimizing downtime due to fire activity.

FITNESS BY SIZE

The size of the spaces to be protected is of paramount importance, as well as the location of cylinders with regard to protected hazards. Both will influence both the storage pressure and the choice of agent.

Small rooms
- INERT-SIEX™
- SIEX-HC™227
- SIEX-NC™ 1230

Medium-sized rooms
- INERT-SIEX™
- INERT-SIEX™ CONSTANT FLOW TECHNOLOGY
- SIEX™ WATER MIST SYSTEM
- SIEX-HC™ S-FLOW

Large rooms
- INERT-SIEX™
- SIEX™ WATER MIST SYSTEM

LOCATION OF CYLINDERS

After studying the characteristics of the space to be protected, the type of agent and the storage units, two possible locations can be chosen for the storage units:

As close as possible to the hazard to be protected, if there is sufficient space and if a room has not already been appointed.

In a room has been expressly designated for the cylinders, which could be farther away from the hazard.

SIEX-HC™ S-FLOW

By storing HC-227ea gas at pressures between 50 and 60 bar we ensure that gas is discharged at distances which would be unthinkable with less pressure. This extends the possibility of using selector valves, saving on gas quantity, storage systems and space.

INERT-SIEX™ CFT

Adaptation of all inert agent equipment to systems with a constant pressure valve to ensure a more uniform, safe and controlled discharge.
SOLUTIONS

As market leaders, we offer the widest variety of extinguishing agents and application systems which address the multiple needs of modern buildings. All have been installed in the protection of this hazard and are characterized by:

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<th>QUICK RESPONSE</th>
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<tr>
<td>NON-TOXIC</td>
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<td>NO RESIDUE</td>
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<td>ELECTRICALLY NON-CONDUCTIVE</td>
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Inert gases stand out as one of the most environmentally friendly products, the result of research and development driving us to meet the most demanding expectations.

Our wide range includes:
- INERT-SIEX\textsuperscript{TM} 01 – Argon.
- INERT-SIEX\textsuperscript{TM} 55 – 50% argon and nitrogen.
- INERT-SIEX\textsuperscript{TM} 100 – Nitrogen.
- INERT-SIEX\textsuperscript{TM} 541: 52% N\textsubscript{2} + 4% Ar + 8% CO\textsubscript{2}.

SIEX-HC\textsuperscript{TM} 227 is considered one of the most widely used fire protection equipment with chemical gases.

The HFC-227 extinguishing agent (heptafluoropropane) is an efficient, clean and safe gas, acting through physical and chemical transfer, absorption of flame and fuel heat and interrupting the chain reaction.

Water mist extinguishing systems are those in which water resources are optimized by dividing the volume of drops discharged into tiny droplets, resulting in a very high cooling capacity for a reduced amount of H\textsubscript{2}O.

As an active protection system, it is fast becoming one of the most developed and useful technologies in firefighting industry due to its efficiency and respect for the safeguarded material.

Our commitment

CHOICE OF SYSTEMS

SIEX has the widest range of products and systems to suit different needs, both as regards pressures and extinguishing agents.

COMPETITIVE PRICE

Optimizing all of our processes make us more and more competitive worldwide.

SPECIALIZED ENGINEERING

Our highly qualified staff ensure the best service for customers both as regards technical advice on the choice of system, and solving any problems that might arise after installation. Backed up by our extensive experience and a track record of successful projects.

INNOVATION

At the forefront of innovation in every product we develop, ensuring the technical features offered.

QUALITY GUARANTEE

All products meet the highest quality requirements and internationally recognised official approvals.
OTHER SPECIAL HAZARDS PROTECTING BY SIEX:

SERVICE STATIONS
ARCHIVES AND LIBRARIES
DPCs
PAINT SPRAY BOOTHs
ELECTRICAL PANELS
INDUSTRIAL KITCHEN
TURBINES AND GENERATORS
ROAD TUNNELS
NATURAL GAS PLANTS
CLEAN ROOMS
CABLE TUNNELS
TELECOMMUNICATION CENTRES
HOTELS
HOSPITALS
EDUCATIONAL ESTABLISHMENTS
TRAIN AND UNDERGROUND STATIONS
TRAiNS
TRANSFORMERS
OFFSHORE PLATFORMS
SOLAR THERMAL PLANTS
MACHINE TOOLS
PRINTING INDUSTRY
HISTORIC BUILDINGS
ROBOTIC PARKINGS
WIND TURBINES
STEEL INDUSTRY
BANKS
OFFICES
LARGE VEHICLES
CONVEYOR BELTS
GAS PUMPS
OIL & GAS
TIMBER INDUSTRY

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