

Better solutions in fire protection for maximum density of goods & value concentrations

Highly efficient Automated Compact Storage Systems combine stackable storage systems, which are usually equipped with a robot-assisted **container management for order picking**. These compact storage systems have become an indispensable part of today's intralogistics, as they perfectly serve the needs that e.g. e-commerce and **Click & Collect** create for companies.

Main advantages:

- multiple storage density due to stackable small load carriers
- modular system for individual system design and with flexible extension options
- high energy-efficiency of the battery-powered robots

As with all storage systems, the requirements for **technical fire protection** must be analyzed individually. The essential question is: How can effective fire protection be ensured without disrupting the operating processes?

The **absolute protection goal** is obvious: the risk of fire in the compact storage system must be reduced at all costs: Fire, soot and smoke cause damage to the goods and the storage system. Due to the compact design, accessibility to the source of the fire for targeted fire extinguishing is difficult and inevitably leads to business interruption, impairs the ability to deliver and, in the worst case, endangers the existence of the operator.

Fire risks in Automated Compact Storage Systems

In an Automated Compact Storage System, there are specific fire risks. The use of stackable containers leads to an encapsulated volume and an **extremely high packing density** due to the special storage method, which makes a fire protection solution adapted to the risk necessary. The use of **highly flammable packaging materials** and the use of polypropylene containers lead to **high fire loads**.

Where extinguishing water cannot reach

Water-based extinguishing systems are not an adequate answer to the challenges of fire protection for Automated Compact Storage Systems because, in the worst case, the extinguishing water does not even reach the seat of fire due to the encapsulated container volume. Sprinkler systems are reactive extinguishing systems, which means that they only initiate the extinguishing process once a fire has already started. Damage caused by the fire itself, by soot and smoke contamination to the stored goods as well as to the storage system and the building is thus inevitably accepted. The extinguishing water can cause further con-

sequential damage to goods and equipment. Reliable and effective fire protection for Automated Compact Storage Systems is based on prevention: A fire must be detected as soon as it starts and its spread must be stopped at an early stage.

Protection target	Water-based extinguishing technology	Oxygen reduction
Personal protection	✓	✓
Building protection	✓	✓
Environmental protection	✗	✓
Ensuring the availability of goods	✗	✓
Protection against delivery failures/ business interruptions	✗	✓
Protection of the goods from damage by smoke, soot, extinguishing water	✗	✓
Protection of the automated storage system	✗	✓
Protection against consequential and reputational damage	✗	✓

Individual fire protection solution

Why individual?

Every Automated Compact Storage System must be considered individually with regard to fire protection. How will the storage system be installed in the building? Does fire protection already exist for this building, or not? What goods and packaging materials are stored there? How many containers does the storage system have and what is the number of storage/retrieval operations? These are questions that need to be answered. The multitude of these aspects demands an individually tailored solution.

Your partner in fire protection

We are pioneers. With our many years of expertise in technical fire protection, we accompany you through the entire process consisting of:

- project-specific **risk analysis**
- **definition of protection goals** by the customer
- creation of the **individual fire protection solution**
- installation and commissioning
- holistic support during the operating phase

The specific risk of fire is determined by means of a risk analysis. Among other things, the size and structure of the warehouse, the stored goods, the frequency of storage and retrieval operations, as well as the operator's processes are examined individually and compared with the desired protection goals. Protection goals can be of legal, insurance or business nature. It is important to note that suitable solutions may also require changes to processes or structural adjustments as well as fire tests accompanied by an expert as proof of effectiveness.

We understand, live and control fire. Our customers all over the world trust in this motivation and our competence – as their partner of first choice! Numerous **references** prove this.

So that safe really is safe

Prevent in good time with the right fire protection solution: Active fire prevention by means of oxygen reduction in combination with the earliest possible fire detection, which we realize with highly sensitive aspirating smoke detectors, is the better solution for safely protecting your goods, assets, systems and processes from fires and consequential fire damage. **We are looking forward to your request!**



VdS-approved OxyReduct® system for fire prevention



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 IN FIRE PROTECTION**

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