Tecnofire®
Hi-Tech Fire Alarm Systems

PROTECTING A LOGISTICS SITE

Fire protection of a logistics site, through a fire detection and alarm system (FDAS), must be addressed starting from the assessment carried out by a fire-safety professional, in accordance with current legislation, using CPR certified devices according to EN 54 product standards.

The fire detection control panel (FDCP) must be chosen according to the characteristics of the building, providing an adequate number of detection lines (loops) according to their extension and the number of detection devices required. For structures divided into several compartments or buildings, it will be necessary to use several interconnected control panels in MASTER/SLAVE mode, with a dedicated communication system.

If there is a caretaker with 24-hour supervision, FDAS signals must be addressed there, through a remote management and control panel. It may be useful to integrate the system with a graphic supervision to speed up the location of the event. It is important to underline that a supervision system does not replace the control panel and/or the remote management panel.

If, on the other hand, there is no caretaker with 24-HOUR supervision, it will be necessary to install an alarm and fault transmission system, certified according to EN 54-21, connected to an alarm receiving centre (A.R.C.) certified according to EN 50518.

Considering the typical conformation of logistics environments, often characterised by considerable heights and extended surfaces, it is possible to opt for linear, reflective or optical detectors with a receiver and transmitter. The protection of each detector should not exceed 1600 m^2. This technology is effective up to a height of 12 metres, beyond which it is necessary to install linear optical detectors at intermediate altitudes. In some cases, if the manufacturer approves their use, they can also be used at higher levels.

In situations where storage is nearer the lower altitude, linear optical detectors are not recommended, so it is preferable to resort to smoke extraction detection systems. If the height of the premises exceeds 12 metres, it is necessary to use a system with sensitivity class A. Please note that an extraction system can protect an area not exceeding 1600 m^2, with a maximum of 32 sampling holes, each with a coverage radius equivalent to that of a smoke-source smoke detector.

For "cold logistics", in particular cold rooms, the most suitable technology remains the extraction detection system. In these cases, it is essential to choose devices suitable for the specific ambient temperatures of the stores.

The forklift recharging area, due to its characteristics and following the risk assessment, can be classified as ATEX. For this reason, it is essential to select detectors suitable for these environments, possibly integrating a hydrogen (H_2) detection system to monitor any leaks from the batteries and promptly activate safety measures, such as air extraction.

The entire surface must be equipped with manual signalling buttons, located along all the escape routes. The maximum distance to reach one of these buttons should not exceed 15 or 30 meters, depending on the risk assessment.

Particular attention must be paid to dimensioning of the optical-acoustic signals, ensuring the presence of a sufficient number of warning devices to ensure an increase of at least 5 decibels (dB) with respect to the background noise. It is recommended to integrate the system with high-power sirens to achieve this requirement in each premises. The acoustic signals must comply with the reference standard.

The FDAS system must be interfaced with the smoke and heat evacuation system, designed in accordance with the reference regulations. In the presence of fire doors, these must be equipped with retaining electromagnets and controlled by the FDAS, so that they can be closed automatically in the event of a fire alarm, following the operating logic of the system.

In the compartments used for offices, it will also be necessary to protect these environments with the FDAS system, using smoke-source detectors if necessary. For false ceilings, if difficult to inspect, we recommend the use of extraction detection systems.

In the presence of air conditioning systems, it is essential to check the presence of fire dampers, which must be interfaced with the FDAS system. The air handling units (AHU) must be equipped with detectors for ducts and blocked in the event of a fire alarm.

Finally, an adequate number of additional power supply units certified EN 54-4 must be provided, capable of guaranteeing a service autonomy of at least 24 hours in the event of a lack of primary power supply. These power supply units must be dimensioned to power linear optical detectors, extraction systems, acoustic optical signals, electromagnets, smoke and heat evacuation systems, etc. For smoke evacuation systems, the power supply units must also be certified according to EN 12101-10 standard.

The formal delivery of the system and the subsequent checks must be carried out in accordance with regulations in force.