# Integrated smoke control solutions

- Car parks
- Staircases
- Firefighting lobbies
- Evacuation routes

**EN-12101-3**
Powered smoke and heat exhaust ventilators for use in Construction Works

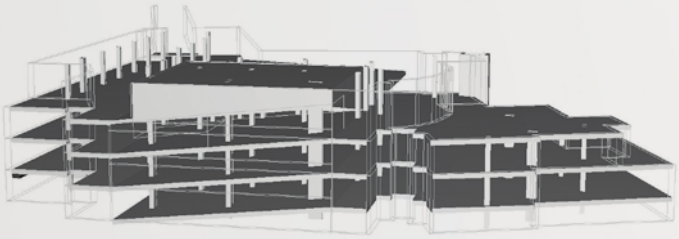
SODECA

## SODECA offers solutions in industrial ventilation, smoke evacuation, staircase pressurisation, tunnel ventilation and indoor air quality improvement.

SODECA has grown looking for the best way forward, always innovating and offering the best customer service, respecting the environment and committed to energy saving. For this reason SODECA wants to be part of the change and focus on a sustainable model.

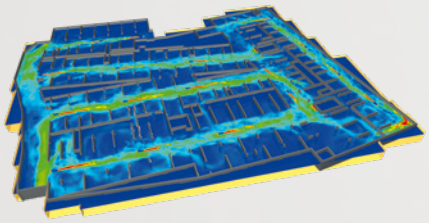
The environmental management system at SODECA's production plant is **certified ISO 14001 by Bureau Veritas**, which endorses the environmental performance and the continuous improvement resulting from the development of activities to mitigate the impact on the environment. At SODECA, sustainable solutions are integrated into the business strategy by manufacturing using clean energy, reducing emissions and working to reduce waste.

# **Experts** in smoke control



SODECA has wide experience in the design and fabrication of equipment for ventilation and smoke exhaust in car parks.

Our projects department distinguishes itself from other companies by offering project design services and best-practise advice. It has specialist technicians who can deliver a comprehensive technical study, including sizing of equipment and required plant space.



They are experienced users of advanced Computational Fluid Dynamics (CFD) software, which they use to validate design parameters and simulate values such as smoke behaviour, temperature, visibility, air velocities and CO concentration.

# Comprehensive **solutions**

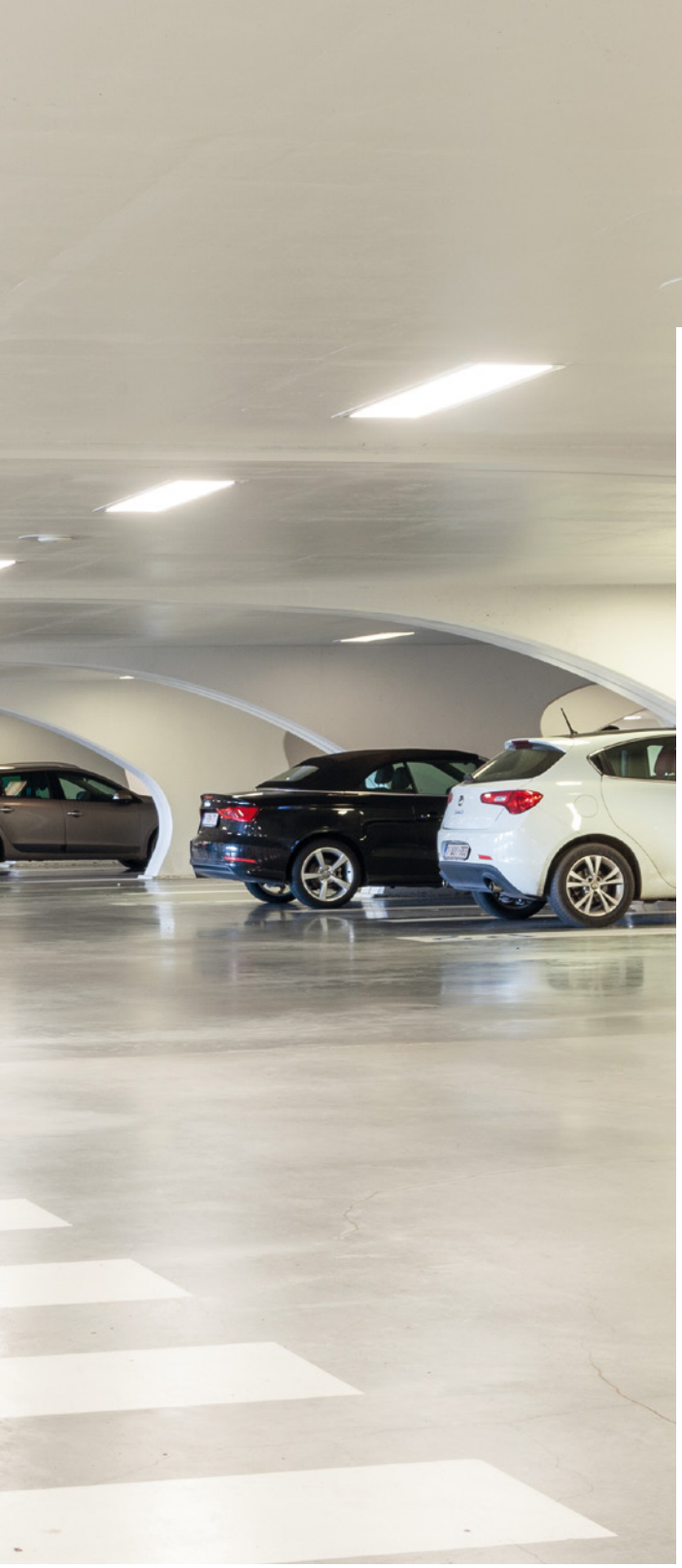
SODECA adapts to the needs of each client, offering comprehensive ventilation and smoke control solutions:

— **CAR PARK VENTILATION.**

— **PRESSURISATION FOR STAIRCASES AND ESCAPE ROUTES.**

— **SMOKE EXTRACT CONTROL SYSTEMS.**

In addition, SODECA **offers the option of testing installations using real** (hot) smoke tests.



# Ventilations for **car parks**

In modern buildings, car parks are now another feature of the building architecture. In many cases, they are the first space visitors enter in buildings such as shopping centres, entertainment complexes, offices and passenger transport hubs.

Correct car park ventilation plays an important role in the first impressions of a visitor. For this reason, they must be designed to satisfy the highest environmental quality standards. In other words, the lowest possible concentrations of contaminant gases must be achieved, whilst at the same time, eliminating foul odours.

But these are not the only factors. A high degree of safety must be guaranteed in the event of fire and car park ventilation is essential for providing adequate conditions for evacuation of occupants and to aid fire-fighting operations.

**VISIBILITY**
Improved visibility in the fire zone

**AIR**
Supply of fresh air to reduce smoke toxicity

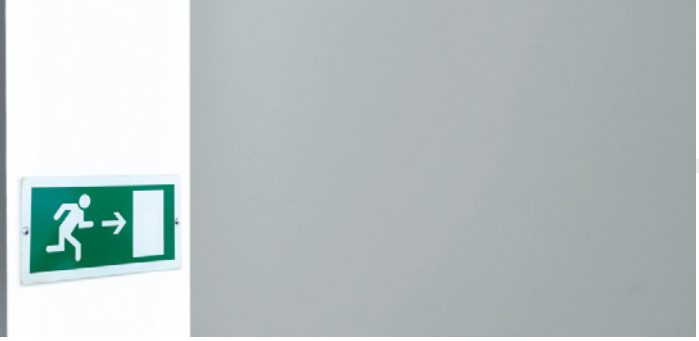
**TEMPERATURE**
Reduction of air temperature in the fire zone

# **Jet fan smoke control** system

Jet fan smoke control systems are considered the most suitable ventilation solution for large, unobstructed spaces such as car parks and tunnels.

Installing this type of fan reduces the need to install air supply and extract ducts, improving visibility in car parks and increasing available clearance height. In the event of fire, the jet fans generate an air current that pushes smoke toward extract points.

| JET FANS | | OTHER | | |
|---|---|---|---|---|
| | | | | |
| **THT/IMP** | **CI** | **THT** | **THT/HATCH** | **THT/WALL**<br>**THT/WALL-F** |
| **Applications** | | | | |
| Ventilation for contaminant gas control. Ventilation in the event of fire. | Ventilation for contaminant gas control. Ventilation in the event of fire. | Ventilation for contaminant gas control. Ventilation in the event of fire. | Ventilation for contaminant gas control. Ventilation in the event of fire. | Ventilation for contaminant gas control. Ventilation in the event of fire. |
| **Installation** | | | | |
| Indoor. Below ceiling | Indoor. Below ceiling | Indoor, in ventilation shafts or plant room. | On the roof | Façade |
| **Safety switch** | | | | |
| Included in L and O versions. C version on request. | Included | On request | Included | On request |
| **2-speed fan** | | | | |
| Yes | Yes | 1 or 2-speed versions | 1 or 2-speed versions | 1 or 2-speed versions |
| **Temperature classification based on EN 12101-3** | | | | |
| F300 / $F400_{120}$ | F300 / $F400_{120}$ | F300 / $F400_{120}$ | F300 / $F400_{120}$ | F300 / $F400_{120}$ |
| **Version without temperature classification** | | | | |
| HCT/IMP | CI-CO | HCT/HGT | HCT/HATCH | WALL/DUCT |
| **Reversible fan version** | | | | |
| Yes | No | Yes | Yes | Yes |



# Pressurisation for **staircases and escape routes**

Pressurisation control systems prevent smoke from entering escape routes by pressurising those spaces. When the system is running, if doors are opened or in the event of air leakage, the system reacts by increasing the airflow rate. This guarantees that escape routes are always free of smoke in an emergency situation.

Escape routes include corridors, staircases, lifts and lobbies.

**VISIBILITY**
Visibility is ensured

**EVACUATION**
Safe evacuation of occupants

**SAFETY**
Easy access for firefighters

When selecting and classifying a system for a specific project, it is necessary to consider the building use, size and evacuation instructions in the event of fire. These criteria will help determine the necessary flow rate delivered by the pressurisation equipment.

The choice of system is very important as, this will also determine flow rates depending on the class.

| | FULL RANGE | | | ADVANCED | | | BASIC | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | KIT HATCH PDS | KIT BOXPDS SMART<br>KIT BOXPDS SMART II | KIT BOXPDS<br>KIT BOXPDS II | KIT BOXSMART<br>KIT BOXSMART II | KIT BOXSMART FLAP | KIT BOXSMART EC | KIT BOXPRES PLUS<br>KIT BOXPRES PLUS II | KIT SOBREPRESIÓN | PRESSKIT |
| APPLICATIONS | Staircases, passageways, lift shafts, lobbies | | | | | | | | Lobbies |
| INSTALLATION | Roofs | Roofs, interiors | | | | | | | Only lobbies |
| NO/NC SELECTABLE ACTIVATION CONTACT | YES | YES | YES | YES | YES | YES | - | - | YES |
| OPERATES IN THE EVENT OF LOSS OF ACTIVATION SIGNAL | YES | YES | YES | YES | YES | YES | YES | - | YES |
| STATUS MEMORY IN THE EVENT OF A LOSS OF POWER | YES | YES | YES | YES | YES | - | - | - | YES |
| EQUIPMENT STATUS INDICATOR LIGHTS | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| EQUIPMENT STATUS INFORMATION SIGNALS | YES | YES | YES | YES | YES | YES | YES | - | YES |
| REMOTE RESET | YES | YES | YES | YES | YES | - | - | - | YES |
| DAILY VENTILATION OPTION | YES | YES | YES | YES | YES | YES | - | - | - |
| BUILT-IN CONTROL PANEL | YES | YES | YES | YES | YES | YES | YES | - | - |
| CONTROL OF MULTIPLE INDEPENDENT LOBBIES | YES | YES | YES | - | - | - | - | - | - |
| REVERSIBLE FOR SMOKE EXTRACTION | - | YES | - | - | YES | - | - | - | - |
| STANDBY FAN | - | YES | YES | YES | - | - | YES | YES | - |
| COMPATIBLE WITH FIRE-FIGHTER CONTROL PANEL | YES | YES | YES | YES | YES | YES | YES | - | - |
| INLET SMOKE DETECTION | YES | YES | YES | YES | - | - | - | - | - |
| INLET MOTORISED HATCH CONTROL | 1 | 3 | 2 | 1/2 | 1 | - | - | - | - |
| SELF-CALIBRATION AND LEAK DETECTION | YES | YES | YES | - | - | - | - | - | - |
| QUICK SETUP | - | YES | - | - | - | - | - | - | - |
| CONNECTION TO BMS SYSTEMS | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| TOUCH SCREEN FOR PROGRAMMING PARAMETERS | YES | YES | YES | - | - | - | - | - | YES |
| MENU FOR CHECKING SYSTEM COMPONENTS | YES | YES | YES | - | - | - | - | - | - |
| TEST SELECTOR FOR STARTING THE FAN | - | YES | - | YES | YES | YES | YES | YES | - |
| ALARMS MENU | YES | YES | YES | - | - | - | - | - | YES |
| DUAL SPACE OVERPRESSURE CONTROL | - | YES | - | - | - | - | - | - | - |
| CONFIGURABLE MODE TO CLOSE EXIT DOOR | - | YES | - | - | - | - | - | - | - |
| VENTILATION OPTION WITH ENVIRONMENTAL SENSORS | - | YES | - | - | - | - | - | - | - |

# **Smoke extract control** systems

For air supply and smoke extract systems in fires, with or without jet fans, SODECA has the **BOXPARK**, which facilitate the integration of the ventilation system with CO and fire detection alarms.

The BOXPARK is adapted to common ventilation system needs in fires, and can also be customised for large projects with the **possibility of adding modules to the system.**

We also supply fire-fighting and maintenance control panels.

## Control system
## **BOXPARK CONTROL MASTER**

| | **BOXPARK ADVANCED PLC** | **BOXPARK ADVANCED** | **BOXPARK BASIC** |
|---|---|---|---|
| **PLC with sequencing and advanced communications** | **Includes PLC** with sequencing algorithm for ventilation systems (ducted or jet fans).<br><br>**MODBUS and WEB communications** for supervision and remote control | **Includes PLC** No advanced communications | **Not included** No advanced communications |
| **Number of zones and damper control** | Can manage a **single zone or multiple zones**.<br><br>**Controls motorised** dampers | Can manage a **single zone or multiple zones**.<br><br>**Controls motorised** dampers | Designed for a **single zone only**.<br><br>Does not **manage motorised dampers** |
| **Option to add a remote panel for firefighters** | Option of remote **operation by firefighters** | Option of remote **operation by firefighters** | **Not available** |

# Smoke extract and **CO control systems**

For automated operation of ventilation systems, depending on the specific needs of the car park.

This equipment controls the ventilation system operation, depending on the CO concentration or through the activation from a fire detection station. It also allows day-to-day programming of the car park ventilation system.

**BOXPARK**

**CENTRAL CO**

| **Applications** | |
|---|---|
| Automated or manual ventilation control | CO concentration control |
| **Installation** | |
| In plant room | In plant room |
| **Automated operating modes** | |
| By fire detection.<br>By CO detection. | Standard automation.<br>Advanced automation with power savings. |
| **Manual operation** | **Programmable activation levels** |
| Speed selection (high/low).<br>Fan selection. | Three levels with digital outputs.<br>Analogue output for variable frequency drive. |
| **Time programming** | **Programmable activation levels** |
| Ventilation system (high/low).<br>Operating periods. | 1, 2 or 3 zones with up to 32 sensors per zone.<br>Independent zone management. |
| **Connection to** | |
| MODBUS, RTU and CAN open systems | MODBUS |
| **Ventilation control** | |
| By contactors.<br>Variable frequency control. | 1, 2 or 3 progressive stages.<br>Proportional control. |

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SODECA Group

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SODECA

CERTIFIED ISO 9001

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