

ORDER

INT/XXX/2024 of XX XXXXXX approving the supplementary technical instructions of the Regulation on Fire Safety in Industrial Establishments (RSCIEI).

Article 132 of the Statute of Autonomy of Catalonia provides that the Generalitat has exclusive competence in matters of civil protection, which includes, in any case, the regulation, planning and implementation of measures relating to emergencies and civil security, as well as the management and coordination of civil protection services, which include fire prevention and fire fighting services, without prejudice to the powers of local governments in this area, in compliance with the provisions laid down by the State in the exercise of its competences in matters of public security.

Article 13 of Law 3/2010 of 18 February 2010 on fire prevention and safety in establishments, activities, infrastructure and buildings provides that the conditions for fire prevention and safety are those laid down in the technical regulations issued for this purpose. The technical regulations currently in force in this area are the Regulation on Fire Safety in Industrial Establishments (RSCIEI) approved by Royal Decree 2267/2004 of 3 December 2004, and the Technical Building Code (CTE) approved by Royal Decree 314/2006 of 17 March 2006 and its subsequent amendments and corrections.

Article 15 of the aforementioned Law 3/2010 of 18 February 2010 provides that technical regulations on fire prevention and safety may be implemented by means of supplementary technical instructions, which shall also be of a regulatory nature.

The second paragraph of said Article 15 provides that the aforementioned supplementary technical instructions are approved by Order of the Regional Minister of the department responsible for fire prevention and fire fighting, and must be published in the Official Journal of the Generalitat de Catalunya.

With Order INT/322/2012, of 11 October 2012, the Department of the Interior approved a series of supplementary technical instructions of the Regulation on Fire Safety in Industrial Establishments (RSCIEI).

Since then, the Directorate-General for Fire Prevention, Fire Fighting and Rescue Services has developed further supplementary technical instructions which it has considered necessary for the deployment of the technical regulations on fire prevention and safety and has published them on the Department of the Interior's website, in order to help resolve and clarify technical issues in this area.

In view of the above, it is therefore necessary to approve and publish these new supplementary technical instructions issued in relation to fire prevention and safety, and to repeal the supplementary technical instructions SP 107 and SP 112 contained in Annexes 2 and 4, respectively, to Order INT/322/2012 of 11 October 2012.

This provision has been subject to the procedure for the provision of information in the field of technical regulations and of rules on Information Society services, pursuant to Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015, as well as to Royal Decree 1337/1999 of 31 July 1999 which transposes the Directive into the domestic legal system.

In accordance with the provisions of Article 132 of the Statute of Autonomy of Catalonia, approved by Organic Law 6/2006 of 19 July 2006 reforming the Statute of Autonomy of Catalonia and Article 40 of Law 13/2008 of 5 November 2008 on the Presidency of the Generalitat and the Government, and by virtue of the aforementioned Article 15 of Law 3/2010 of 18 February 2010 on fire prevention and safety in establishments, activities, infrastructure and buildings, and in exercise of the powers conferred on me,

I HEREBY ORDER:

Sole Article

Approving the supplementary technical instructions of the Regulation on Fire Safety in Industrial Establishments (RSCIEI), as set out in Annexes 1 to 5 to this Order.

Repealing Provision

The supplementary technical instructions SP 107 and SP 112 set out in Annexes 2 and 4, respectively, to Order NT/322/2012 of 11 October 2012 approving the supplementary technical instructions of the Regulation on Fire Safety in Industrial Establishments (RSCIEI), are repealed.

Final Provision

This Order shall enter into force on the day following its publication in the DOGC.

Barcelona, XX XXXX 2024

Regional Minister of the Interior

Annex 1: SP 128 Safety conditions in the event of fire in wineries of wines and cavas
Annex 2: SP 140 Taking into account of floor exits in establishments for industrial use.
Annex 3: SP 145 Performance-based design for temperature control and smoke-disposal systems in industrial sectors with automatic water sprinklers
Annex 4: SP 107 Calculation of the fire load in storage activities
Annex 5: SP 112 Temperature control and smoke-disposal system in industrial establishments

ANNEX 1

SUPPLEMENTARY TECHNICAL INSTRUCTION SP 128: SAFETY CONDITIONS IN THE EVENT OF FIRE IN WINERIES OF WINES AND CAVAS

Purpose

The Regulation on Fire Safety in Industrial Establishments (hereinafter referred to as RSCIEI) specifies that fire sectors of any risk and configuration located on a second floor below ground level are not permitted. The usual constructive typology of establishments dedicated to wineries of wines and cava makes it impossible in many cases to comply with this requirement. The necessary temperature, humidity and vibration conditions often lead to the use of basement locations.

The purpose of this supplementary technical instruction is to determine the equivalent safety conditions in the event of fire in these particular situations in this type of establishment.

Resolution

Safety conditions in the event of fire in wineries of wines and cava (storage of wine and cava in bottles or in bota bags) located at more than one floor below ground level shall comply with the following minimum requirements:

- The use must be exclusively for the storage of bottles or in bota bags without any combustible packaging material. In this respect, dispatch warehouses and other types of warehouses belonging to the activity where packaging materials such as plastic, paper, cardboard or wood may be present must comply with regulatory requirements without exception.
- The intrinsic fire risk level of these basements must be Low-1. The supplementary technical instruction SP-103 *on fire load for establishments dedicated to the production, cellaring and storage of alcoholic beverages* must be considered.
- Each floor must be configured as a fire sector.
- The conditions for the fire stability of structural elements and fire resistance of the fire sector demarcation elements shall be in accordance with the provisions of the RSCIEI depending on the typology of the establishment.
- Ascending evacuation staircases must be subdivided like fire sectors, without the need for smoke control.
- The length of the evacuation routes for each floor must be no more than 100 metres.
- Each floor must have the fire protection installations established by the RSCIEI according to the typology of the establishment and the surface area of the sector, and at least the following must be available:
 - Fire extinguishers, such that the maximum distance from any point to the nearest fire extinguisher is 15 metres, with a minimum of two extinguishers per floor. This need can be replaced by having a mobile 25 kg ABC powder fire extinguisher on wheels, so that the maximum distance from any point to the nearest mobile extinguisher is 30 metres.
 - Fire alarm push buttons, at least at the access to each staircase, and sufficient to ensure that the maximum distance from any point to the nearest push button is 25 metres.
 - Emergency lighting.
 - Fire alarm, audible from all parts of the establishment.

ANNEX 2

SUPPLEMENTARY TECHNICAL INSTRUCTION SP 140: TAKING INTO ACCOUNT OF FLOOR EXITS IN ESTABLISHMENTS FOR INDUSTRIAL USE

Purpose

The purpose of this instruction is to define the conditions to be met by evacuation exits of industrial activities that connect different sectors in order to be able to consider them *floor exits*.

Resolution

In order to consider a change of sector as a floor exit in industrial activities, the following should be taken into account:

1. *Coexistence of industrial use fire sectors with other non-industrial uses of the same ownership:*

- 1.1. In order to consider a doorway to an adjacent fire sector as a floor exit between an industrial use sector and a non-industrial sector of the same establishment, there must be an independent vestibule, in addition to complying with the other conditions laid down in point 3 of the definition of floor exit included in DB-SI Annex A on Terminology.
- 1.2. Where connection between sectors does not need to be considered as a floor exit, it is not necessary to have an independent vestibule. In this case, the door shall have at least half the fire resistance of the compartment element where it is located.¹

2. *Industrial use with evacuation through adjacent sectors, also of industrial use of the same ownership:*

- 2.1 In order to consider a doorway to an adjacent fire sector as a floor exit between two industrial use sectors of the same establishment, there must be an independent vestibule, in addition to complying with the other conditions laid down in point 3 of the definition of floor exit included in DB-SI Annex A on Terminology.

However, the need for the independent vestibule may be disregarded if the door has at least the same fire resistance as the compartment element where it is located and provided that the other conditions laid down in point 3 of the definition of floor exit included in DB-SI Annex A on Terminology are met.

- 2.2 Where connection between sectors does not need to be considered as a floor exit, it is not necessary to have an independent vestibule. In this case, the door shall have at least half the fire resistance of the compartment element where it is located¹.

¹ it is agreed that movable partitioning elements are not assimilated to doors for the purpose of reducing their fire resistance, in accordance with the RSCIEI, and that the width of any door leaf must not exceed 1.23 metres, in accordance with paragraph 4.2 of CTE DB SI 3

ANNEX 3

SUPPLEMENTARY TECHNICAL INSTRUCTION SP 145: PERFORMANCE-BASED DESIGN FOR TEMPERATURE CONTROL AND SMOKE-DISPOSAL SYSTEMS IN INDUSTRIAL SECTORS WITH AUTOMATIC WATER SPRINKLERS

Purpose

Specifying the fire safety criteria to be considered in order to justify that a temperature control and smoke-disposal system (hereinafter SCTiEF) based on a performance design meets the basic requirements of prevention and safety in the event of fire, and to determine the certification models for the adopted solution.

This instruction covers industrial sectors which have an automatic water sprinkler system.

Impulse smoke and heat control systems are removed from the scope of this instruction.

Resolution

According to UNE 23.585:2017 for smoke and heat control systems, requirements, calculation and design methods for temperature control systems and smoke exhaust systems projecting in the case of stationary fire, the SCTiEF must be designed considering one or a combination of the following objectives:

1. Protection of means of evacuation.
2. Protection of properties.
3. Temperature control of hot smoke gases affecting the building structure, façades, glass and other closures.
4. Facilitating fire-fighting operations.

In case the SCTiEF is justified by performance-based design, at least objectives 1 and 4, which are directly related to the safety of persons, must be ensured. When the protection of properties and temperature control of hot smoke gases (objectives 2 and 3) are not guaranteed, the holder must certify that they are aware of this situation and that they accept it.

Technical criteria

In this respect, the following minimum fire safety parameters must be ensured:

Protection of means of evacuation. For 1.5 times the time required for safe evacuation (RSET²), and for at least 10 minutes, the conditions for the occupants at a height of 1.8 m along evacuation routes and outside the area affected by the fire³ shall be at least as follows:

- ☐ Visibility > 20 m.
- ☐ Temperature < 60 °C.
- ☐ Thermal radiation ≤ 1.7 kW/m².
- ☐ O₂ concentration ≥ 18 %.
- ☐ CO₂ concentration: < 0.03 mol/mol.

² RSET (Required Safe Egress Time).

³ Area contained within a circle of 10 metres in diameter centred at the seat of the fire

- ☐ Toxic gas concentrations below the following values:
- ☐ Effective dose of CO < 150 ppm.
- ☐ NH₃ concentration < 300 ppm.
- ☐ HCN concentration < 10 ppm.
- ☐ HCL concentration < 100 ppm.
- ☐ HBr concentration < 100 ppm.
- ☐ HF concentration < 95 ppm.
- ☐ NO₂ concentration < 20 ppm.
- ☐ SO₂ concentration < 0.75 ppm.

Guarantees for the intervention of the fire brigade. For 60 minutes, the conditions for responders, at a height of 1.8 m along the evacuation routes, must be at least the following:

- ☐ Visibility > 10 m.
- ☐ Temperature < 100 °C.
- ☐ Thermal radiation ≤ 3 kW/m².

Alternative criteria

Alternatively, the performance design of the SCTiEF may be based on other confirmed acceptance parameters, provided that a comparative study is carried out between the proposed fire safety conditions and those provided for with a prescriptively designed SCTiEF in accordance with standard UNE 23.585:2017, considering the same design fire. The study must conclude that the safety conditions are at least equivalent to those resulting from the application of the standard.

In particular, at least the following parameters need to be assessed and compared at a height of 1.8 m along the evacuation routes:

- ☐ Visibility for 60 minutes.
- ☐ Temperature for 60 minutes.
- ☐ Thermal radiation for 60 minutes.
- ☐ Oxygen concentration for 1.5 times the time required for evacuation and for at least 10 minutes.
- ☐ Carbon dioxide concentration for 1.5 times the time required for evacuation and for at least 10 minutes.
- ☐ Toxic gas concentration (CO, NH₃, HCN, HCl, HBr, HF, NO₂ and SO₂) for 1.5 times the time required for evacuation and for at least 10 minutes.

When manual activation of SCTiEF is expected, the comparative study should be performed considering the activation of the system in the 20th minute from the beginning of the fire.

Certification of the adopted solution

As in any performance-based design, the technical project must be accompanied by a certificate certifying that the fire prevention and safety analyses, studies and measures provided for in the project guarantee the achievement of the technical conditions and regulatory requirements for fire prevention and safety (PBD-1, model certification of justification for the basic fire prevention and safety requirements).

If the proposed solution incorporates the use of any computer simulation tool, it is necessary for an independent specialised entity to verify and certify the suitability of fire

assumptions and scenarios, the methodology used, the parameters used and the correct fire simulation process, based on the minimum criteria defined in the document 'Criteria for assessment of computer simulations. Simulation of fires in buildings. Simulation of evacuation of persons' (PBD-4, computer simulation assessment certification model).

At the end of the work and prior to the start of the activity or occupation of the building, it is necessary for the project management, or the technical expert to whom it is delegated, to issue a final certificate of achievement of the basic requirements for prevention and safety in the event of fire and the correspondence between the objectives set for the project and the performance finally achieved once the work has been carried out (PBD-3, model certification of achievement of the basic fire prevention and safety requirements).

These certificates shall be included in the relevant legalisation procedure at the industrial establishment, without it being necessary for this reason to process a request for an exemption from compliance with any of the regulatory provisions of the Regulation on Fire Safety in Industrial Establishments (RSCIEI).

ANNEX 4

SUPPLEMENTARY TECHNICAL INSTRUCTION 107: CALCULATION OF THE FIRE LOAD IN STORAGE ACTIVITIES

Purpose

Determining the parameters to be taken into account when calculating the fire load of each of the fire sectors in storage activities, with the aim of adjusting as far as possible the result obtained to the actual risk conditions of the establishment.

Resolution

In order to be able to issue a report on fire prevention for industrial activities and/or storage, technical projects must define the fire load of each of the fire sectors to be implemented.

In order to adjust as far as possible the result of the fire load calculation of the technical project to the actual risk conditions of the establishment, the following parameters which must be considered are defined, complementing the two methods specified in the current Regulation on Fire Safety in Industrial Establishments:

1. Calculation according to Table 1.2 of Annex I to the RSCIEI:

The following expression should be applied:

$$Q_s = \frac{\sum_{i=1}^{i=n} q_{vi} \times C_i \times h_i \times S_i}{A} \times R_a$$

The values of the q_{vi} factor (fire load provided by each m^3 of each area with different types of storage in the sector) already include the surfaces intended for corridors, circulation, etc. Therefore, ***the surface occupied by each area with different types of storage, including corridors and adjoining surfaces, must be used as S_i .***

Reference: *Example 1* and *Example 2*

1. Calculation made taking into account the masses of all combustible products in the fire sector:

The calculation of the fire load must be carried out considering in detail the maximum quantity of the different combustible materials. The technical report must specify the following information:

- Total quantity of stored material under maximum storage conditions.
- Type of package, container, shelves, rounded edges or packaging, as the case may be, specifying the total quantity of these materials. Fire load provided by these materials.
- Maximum number of rounded edges, or units of stored product.

The fire load provided by building materials, such as refrigeration panels, insulation materials, etc. must be incorporated.

The following graphic documentation must be attached:

- Floor plans of the distribution of storage areas and surfaces.
- Sufficient sections reflecting maximum storage heights. Reference:

Example 3

Specific case of logistics warehouses:

- Logistics warehouses intended for products, materials or objects of multiple or undefined typology must be considered to have at least a medium intrinsic risk level.
- Logistics warehouses intended for certain products, materials or objects of a defined typology may refer to their intrinsic risk level using the calculation carried out by the technical designer, in accordance with what is detailed in this instruction.

Examples:

- Example 1:

400 m² fire sector dedicated to the storage of *television sets*. We assume that there are 100 m² occupied by corridors.

$$q_{vi} = 48 \text{ Mcal/m}^3$$

$$C_i = 1$$

$$h_i = 5 \text{ metres (storage height)}$$

$$S_i = 400 \text{ m}^2 \text{ (the 100 m}^2 \text{ occupied by corridors do not need to be deducted from the total surface area)}$$

$$A = 400 \text{ m}^2$$

$$Ra = 1.0$$

The appropriate result of the fire load would be:

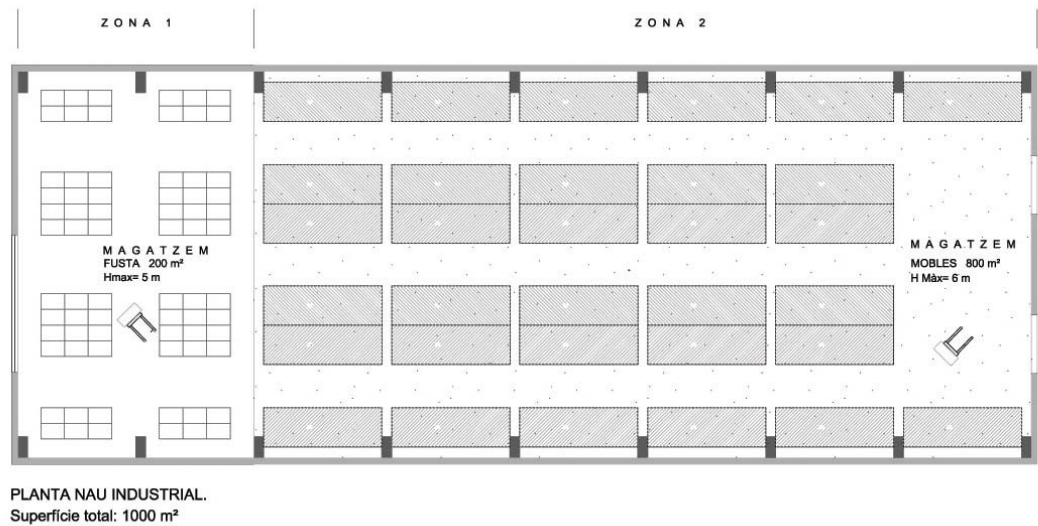
$$Q_s = \frac{48 \text{ Mcal/m}^3 \times 1 \times 5 \text{ m} \times 400 \text{ m}^2}{400 \text{ m}^2} \times 1 = 240 \text{ Mcal/m}^2 \quad \text{MEDIUM RISK 3}$$

The following result **would not comply** with the real risk conditions:

$$Q_s = \frac{48 \text{ Mcal/m}^3 \times 1 \times 5 \text{ m} \times 300 \text{ m}^2}{400 \text{ m}^2} \times 1 = 180 \text{ Mcal/m}^2 \quad \text{LOW RISK 2}$$

Example 2

A single fire sector of 1 000 m² dedicated to storage, but with two distinct areas for material; these areas are not separated by any building element. Area 1 is dedicated to storage of wood and Area 2 to storage of furniture.



For calculating the fire load of the single fire sector according to the tables in Annex I to the RSCIEI, the following expression should be applied:

$$Q_s = \frac{\sum_{i=1}^{i=n} q_{vi} \times C_i \times h_i \times S_i}{A} \times R_a$$

$A = 1\,000\text{ m}^2$ (constructed surface area of fire sector)

- Area 1: storage of wood (*Wood: beams and tables*).
- Surface area of this storage: 200 m^2

$$Q_{vi} = 1\,010\text{ Mcal/m}^3$$

$$C_i = 1$$

$$h_i = 5\text{ metres storage height}$$

$$S_i = 200\text{ m}^2$$

$$R_a = 1.5$$

- Area 2: storage of finished furniture (*Wooden furniture*). Surface area of this storage: 800 m^2

$$q_{vi} = 192\text{ Mcal/m}^3$$

$$C_i = 1$$

$$= 6\text{ metres of storage height } S_i =$$

$$800\text{ m}^2$$

$$R_a = 1.5$$

$$Q_s = \frac{(1\,010\text{ Mcal/m}^3 \times 5\text{ m} \times 200\text{ m}^2) + (192\text{ Mcal/m}^3 \times 6\text{ m} \times 800\text{ m}^2)}{1\,000\text{ m}^2} \times 1.5 = 2897.4\text{ Mcal/m}^2$$

Therefore, the fire sector risk is HIGH 7

• Example 3:

In a warehouse there is a maximum of 286 rounded edges, 256 positions on metal shelves and 30 in the picking area. Each rounded edge of stored material contains:

- Wood: 18 kg
- Pieces of plastic material (polyethylene) specific to the activity: 400 kg
- Plastic packaging material: 5 kg
- Cardboard and paper: 6 kg

In addition, there are other materials in the fire sector:

- 10 unused wooden rounded edges: 180 kg
- Plastic materials from miscellaneous packaging: 1 000 kg
- Cardboard boxes: 1 000 kg
- Other miscellaneous materials (furniture, handling

equipment, etc.): 5 000 kg adding up all materials:

<i>Material</i>	<i>Combustible material in the rounded edges (kg)</i>	<i>Combustible material outside the rounded edges (kg)</i>	<i>Total amount: Gi (kg)</i>	<i>Caloric value qi (Mcal/kg)</i>	<i>Total: Gi x qi (Mc)</i>
Wood	5 1	180	5 328	4	21 312
Polyethylene	114		114	10	1 144
Plastic packaging material	1 4	1 000	2 430	10	24 300
Paper and cardboard	1 7 1	1 000	2 716	4	10 864
Miscellaneous material		5 000	5 000	10	50 000
TOTAL					1 250

Other details:

A = 630 m² (Total constructed surface area of fire sector).

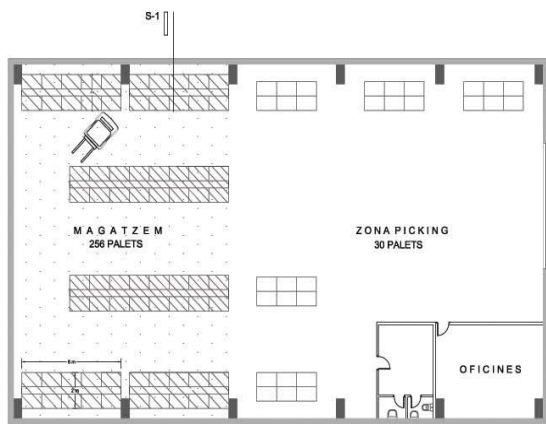
C_i = 1

R_a = 1.5

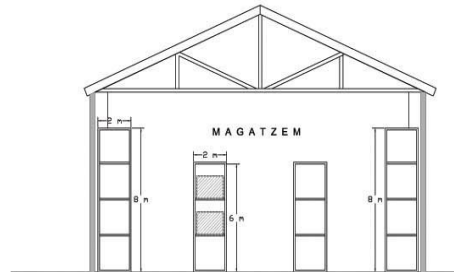
Sector fire load:

$$Q_s = \frac{\sum G_i \times q_i \times C_i}{A} \times R_a = \frac{1.250.476 \text{ Mcal} \times 1}{630 \text{ m}^2} \times 1,5 = 2.977,3 \text{ Mcal/m}^2 \quad \text{HIGH RISK 7}$$

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In the event that there are several activities in the sector, the R_a coefficient corresponding to the activity with the highest activation risk must be chosen, provided that this activity covers at least 10 % of the surface area of the fire sector or area.

ANNEX 5

SUPPLEMENTARY TECHNICAL INSTRUCTION SP 112: TEMPERATURE CONTROL AND SMOKE-DISPOSAL SYSTEM IN INDUSTRIAL ESTABLISHMENTS

Purpose

Specifying the situations in which it is necessary to have temperature control and smoke-disposal systems in industrial establishments, determining the basic information to be included in the technical documentation on fire safety, and establishing the design parameters of these systems in industrial warehouses with automatic water sprinkler systems that prevent the widespread spread of fire.

Resolution

1. Type of smoke and heat control system

The Regulation on Fire Safety in Industrial Establishments, hereinafter referred to as RSCIEI, specifies the cases in which smoke and heat control systems must be provided, and distinguishes when temperature control and smoke-disposal systems, hereinafter referred to as SCTiEF, designed and implemented in accordance with standard UNE 23585, must be provided, and when the installation of ventilation holes to facilitate smoke extraction is sufficient. Ventilation holes have sometimes been misinterpreted as an alternative solution to standardised systems.

1.1. The following fire sectors must have SCTiEF systems fully designed and implemented entirely in accordance with the technical requirements laid down in standard UNE 23585:

- a) Sectors with production activities:
 - Medium intrinsic risk and constructed surface area $\geq 2\,000\text{ m}^2$
 - High intrinsic risk and constructed surface area $\geq 1\,000\text{ m}^2$
- b) Sectors with storage activities:
 - Medium intrinsic risk and constructed surface area $\geq 1\,000\text{ m}^2$
 - High intrinsic risk and constructed surface area $\geq 800\text{ m}^2$

Although the design of the SCTiEF requires a specific project to ensure compliance with standard UNE 23585, the technical documentation for prior administrative intervention by the Generalitat must include the definition of the following minimum design parameters, accompanied by the appropriate plans:

- Design objectives
- Standard design fire dimensions
- Projected smoke-free height
- Intended smoke reservoirs, and location in plans
- Intended method of air intake: replacement air
- Interaction with other building systems
- Intended system operation mechanism

Mechanical aerators must have a minimum F40090 rating in accordance with UNE-EN

12101-3, and must have an emergency power supply in accordance with UNE-EN 12101-10. The power supply and the other components must remain operational for 90 minutes.

1.2. Fire sectors with a medium or high intrinsic risk level and with a lower surface area than those referred to in paragraph 1.1 above, provided that they have a surface area of at least 100 m², must be provided with *ventilation holes that can be opened manually or automatically or which are permanently open, and evenly distributed on the roof or upper part of the façades*, ensuring the following minimum values:

a) Sectors with production activities:

- They are located below ground level: 0.5 m² of aerodynamic surface area for every 150 m² of constructed surface area or fraction thereof.
- They are located on any floor above ground level: 0.5 m² of aerodynamic surface for every 200 m² of constructed surface area or fraction thereof.

b) Sectors with storage activities:

- They are located below ground level: 0.5 m² of aerodynamic surface area for every 100 m² of constructed surface area or fraction thereof.
- They are located on any floor above ground level: 0.5 m² of aerodynamic surface for every 150 m² of constructed surface area or fraction thereof.

In addition to these holes, air intake holes must be provided at the lower part of the sector *in the same proportion as the surface area required for the release of smoke*; holes in access doors to the sector that connect directly to the outside may be counted.

Any technical documentation on safety in the event of fire must include roof and/or façade plans sufficient to show the location of these holes.

If the location of the sector prevents natural ventilation, this can be forced and must guarantee the same performance. With regard to the air supply, when it has to be forced, its activation shall only be manual by the fire brigade from a control point that is easy to access and locate.

2. Determination of smoke-free height in SCTiEF design in industrial storage with automatic water sprinkler system

The SCTiEF may be designed with a smoke-free height $Y_{min} = 2/3$ of the maximum storage height and above the minimum required by standard UNE 23585, provided that:

- a) The developer and the designer ignore the design objective of protecting property, since smoke would be allowed to damage part of the contents of the establishment.
- b) Automatic water sprinkler systems must be designed and installed in accordance with standard *UNE-EN 12845 Fixed firefighting systems* -

Automatic sprinkler systems - for an extra storage risk class and with a double or higher supply system of category I, in accordance with standard UNE EN 23500.

If the design and installation of the automatic sprinkler systems are based on recognised design guidelines or standards different from those indicated, compliance with ITC.SP 131 must be justified.

- c) Enclosures adjacent to the warehouse, such as offices, changing rooms, battery charging room, etc., are subdivided from the warehouse regardless of their surface or, if not, account is taken of the discharge of smoke from these enclosures into the adjacent space.
- d) The projected smoke-free height is less than the height on the upper side of the replacement air supply openings.

3. SCTiEF control panel signalling

The manual control panel shall allow two complete manoeuvres to operate the SCTiEF (two complete opening and closing manoeuvres). In case of power supply, the secondary power supply must allow the two complete manoeuvres to be performed up to 72 hours after the power supply interruption.

The SCTiEF control panel must be signposted so that it can be easily located by the fire brigade and its functionality can be clearly identified. For this purpose, the following pictogram may be used as a reference:

