

Portugal

The building code for Portugal requires sprinklers in several types of building. There are two documents: one classifies buildings and occupancy risks and includes details of the enforcement system, while the other defines the measures to be applied.

Types of Building

- Type I Dwellings
- Type II Car Parks
- Type III Offices
- Type IV Educational Buildings
- Type V Healthcare Buildings
- Type VI Public Buildings except Musea and Art Galleries
- Type VII Hotels (hotels, motels, pensions, cafes, bars, restaurants, barracks, dormitories and student residences)
- Type VIII Commercial Centres and Transportation Centres (Shopping centres, airports, railway stations)
- Type IX Sporting and Leisure (stadia, swimming pools, health clubs, saunas)
- Type X Musea and Art Galleries
- Type XI Libraries and Archives
- Type XII Industrial, Workshops and Warehouses

Risk Categories

For Type II, there are four risk categories, defined by either the height, area or number of below-ground storeys.

Risks

Risk A is an area without special risks, where the occupancy level does not exceed 100, the number of members of the public does not exceed 50 and at least 90% of the occupants are able-bodied and able to respond to an alarm.

Risk B is an area accessible to the public where there may be more than 100 occupants or more than 50 members of the public but with more than 90% of the occupants being able-bodied and able to respond to an alarm.

Risk C is an area with increased risk due to the contents or activities.

type of enclosure. These include:

- Workshops for maintenance and repair where there is printing or carpentry, or where there is the presence of naked flames, devices for making fascias, or readily flammable materials
- Pharmacies, laboratories or other workshops containing more than 10 litres of flammable liquid
- Kitchens containing equipment with a collective power demand of more than 20kW
- Areas for the preparation of food which use solid fuel
- Laundries of more than 50m² containing equipment with a total power demand of more than 20 kW
- Refrigerated areas with a total power demand of more than 70kW
- Storage areas with a volume greater than 100m³
- Copy shops with an area greater than 50m²
- Rubbish collection areas where the volume of stored rubbish is greater than 10m³
- Electrical equipment areas with a total power demand of more than 70 kW

- Areas where paint is stored or varnish applied
 - Incineration centres
 - Covered car parks with an area greater than 50m², except for individual car parks
 - Other areas with a fire load of more than 1000 MJ/m²
- Risk D is an area where there are bed-ridden people or children under six years old or people unable to respond to an alarm due to limited mobility or perception. It also includes buildings of Type V (healthcare facilities) in which circulation is only horizontal
- Risk E is a sleeping establishment in which those present do not exhibit the limitations listed under risk D
- Risk F is an area where systems essential to social activity are run, namely control centres for road, rail and air services, control centres for the emergency services, operation and control centres for public utilities, data processing and storage centres for the public services

Finally, the document separates the different use types into categories of risk depending on their height or the number of occupants.

Sprinklers are required in:

- 1) Car parks higher than 28m, or larger than 9,600m², with one or more underground storeys. Sprinklers are also required in all automatic car parks.
- 2) Storage rooms, kitchens and other high risk areas of offices, public buildings, hotel and shopping centres.
- 3) Offices higher than 28m or with more than 1,000 people.
- 4) Sporting and Public Assembly Buildings higher than 28m or with more than 1,000 people or larger than 15,000m².
- 5) Hotels higher than 28m or with more than 500 people or more than 200 sleeping guests.
- 6) Shopping Centres higher than 28m or holding more than 1,000 people or with two or more storeys.
- 7) Transportation Centres higher than 28m or holding more than 1,000 people or with two or more storeys.
- 8) Industrial buildings with a fire load greater than 5 GJ/m².
- 9) Places adjacent to interior open areas with a height greater than 20m.
- 10) Places which are difficult to access, to be decided on a case by case basis by the fire authorities.

Except where they are already required, sprinklers can be used to double the maximum fire compartment sizes in:

Dwellings, Offices, Educational Buildings, Public Buildings, Hotels, Shopping and Transport Centres, Sporting and Leisure Buildings, Musea and Art Galleries from 1,600m² to 3,200m²;

Car Parks from 6,400m² to 12,800m² above ground and from 3,200m² to 6,400m² below ground;

Educational and healthcare buildings from 1,600m² to 3,200m², or from 800m² to 1,600m² if they include sleeping areas

Libraries and archives from 800m² to 1,600m² above ground and from 400m² to 800m² below ground;

Sprinklers can also be used as a compensatory feature, particularly in industry.