



## Lightning protection systems

Lightning has always impressed Man, who has made it an attribute of divine power. Lightning plays a part in all mythology, constantly and in all of its forms.

Storm clouds are the most vigorous of clouds. We call them cumulonimbus, or king of the clouds.

Cumulonimbus rarely present themselves in isolated forms, but rather aggregate ones. They differ from other rain clouds both because of the scale of their extent, both vertical and horizontal, and their ability to cause electric storms.

### Your tailor-made solution

Lightning which strikes a structure may cause damage to that structure, its occupants or their property, including equipment failure, especially on internal networks.

#### Lightning striking:

- your building's structure directly;
- the ground close to the structure;
- services connected to the structure directly;
- the ground close to services connected to the structure;

#### can cause:

- physical damage to the structure (fire, explosion, mechanical destruction, chemical spills, dangerous discharges) due to lightning current;
- injury to living things due to contact voltage and pace (electric shock);
- internal network failure (electric and electronic) due to the electromagnetic effects of the lightning;
- perforation of electrical equipment, fire and material damage;
- failure of electric and electronic equipment and networks (for example televisions, computers, modems, telephones, etc.);
- secondary risk due to loss of power and the risk of death to people or livestock;
- loss of production;
- irreplaceable losses of cultural heritage;
- unacceptable losses of public services;
- consequences of fire and explosion for the site and its surroundings.

The lightning protection system must be designed and installed by specialist designers and installation engineers. A lightning protection specialist is someone who, according to their training, knowledge and experience, and their ability to apply standards governing lightning protection, is capable of designing, producing and/or inspecting a lightning protection system. The concepts of projects, production and/or inspection require knowledge in different fields.

#### Vinçotte specialists can help you protect against lightning:

- by carrying out a lightning risk assessment in accordance with the new standard NBN EN 62305-2;
- by carrying out an inspection before commissioning external and internal protection to the structure in accordance with the new standard NBN EN 62305;
- by carrying out periodic inspections of lightning protection in accordance with the old standard NBN C 18-100 or the new standard NBN EN 62305.

### Your result

Vinçotte provides you with lightning protection specialists. They have in-depth knowledge of the physical phenomena in question, as well as how to apply the different methods for setting up projects and standardised calculation methods, recommendations for installing the different components of lightning and surge protection systems, and they are familiar with techniques for building and assembling them.

## Please note

Règlement Général sur les Installations Electriques [General Electricity Network Regulations]

- art 270: compliance test before commissioning low voltage electrical equipment
- art 271: inspection of low voltage electrical equipment
- art 136: electrical surge protection

Royal Order dated 7/7/1994 setting basic standards for prevention of fire and explosion, which new buildings must meet.

Royal Order dated 4/12/2012 on minimum safety recommendations for workplace electricity networks.

Royal Order dated 26/3/200. concerning well-being of workers likely to be exposed to the risks posed by explosive atmospheres.

## "LIGHTNING PROTECTION" STANDARDS

NBN EN 62305-1 General principles

NBN EN 62305-2 Risk assessment

NBN EN 62305-3 Physical damage to structures and human risks

NBN EN 62305-4 Power and communications networks in structures

## In which situation?

Structures to be routinely protected:

- Dwellings
- Farms, agricultural and horticultural firms
- Cinemas, theatres, opera houses, discotheques, concert halls, hotels, schools, shops, sporting facilities
- Banks, insurance companies, shopping centres, department stores, exhibition halls
- Hospitals, rest homes, nurseries, prisons, barracks
- Industrial buildings
- Museums and archaeological sites
- Churches, water towers, silo chimneys, buildings
- Communications infrastructures (antennas, radars, control towers, etc.)
- Power stations
- Fireworks factories, munitions factories, chemical plants, buildings posing a risk of explosion
- Refineries, nuclear sites
- Biochemicals sites and laboratories
- SME, Datacentres
- Tertiary sector, purification plants
- Wind farms, airports, windmills
- Sports halls, public swimming pools, stadia, railway stations, public buildings
- Police stations, fire stations, ambulance stations
- etc...