

# TRAINING PROGRAM

## QUALIFOUDRE LEVEL 1 (N1)

### **THE OBJECTIVES OF THE TRAINING ACTION ARE AS FOLLOWS:**

At the end of the training, the trainee will be able to:

- Know the phenomenology of lightning
- Understand the risks and effects of lightning
- Know the normative environment of direct and indirect lightning protection
- Know how to evolve among the different direct protection solutions
- Know the principles of indirect lightning protection
- Master the installation of direct and indirect lightning protection solutions
- Know how to measure the resistance of an earthing system

After individual evaluation of the trainee, he will be given a certificate of completion of Qualifoudre Level 1 professional training.

### **THE TARGET AUDIENCE IS AS FOLLOWS:**

The public concerned by this training action is the following:

- Anyone required to work in the field of lightning protection.

Access conditions (prerequisite, level required) to follow the program:

- Prior experience in the field of lightning protection of 1 year, dating from less than 3 years, in order for the Training Organization to immediately deliver the Qualifoudre Level 1 certificate.

### **TRAINING DURATION :**

The Qualifoudre N1 training action will last 14 hours, spread over 2 days.

**THE TRAINING PROGRAM IS AS FOLLOWS:**

A- Theme « Phenomena »

- The atmospheric discharge,
- Definitions (lightning density, return stroke, ...)
- Precursor phenomena,
- Figures about lightning discharges (current, durations, energy),
- Lightning activity maps,
- History.

B- Theme « Effects »

- Effects on structures,
- Effects on conductors,
- Effects on living beings,
- Thermal effects,
- Effects of potential differences (step voltage, ...),
- Electromagnetic effects,
- Electrodynamic effects,
- Acoustic effects,
- Flash effects.

C- Theme « Standards and Regulations »

- Applicable air terminal standards,
- Applicable air terminal standards.

D- Theme « Structure protection devices »

- Simple rod air terminal,
- Early Streamer Emission Air Terminal,
- Mesh cage,
- Catenary wires,
- Equipotentiality,
- Lightning counters,
- Connection towards earth,
- Resistance of the earthing systems,
- Intrinsic protection of structures.

E- Theme « Devices to protect equipment »

- LV surge protection devices and for telecommunication protection.

F- Theme « Installation rules »

- Air terminal installation,
- Installation of a LV surge protection device and its matching disconnecter,
- Installation of a lightning counter,
- Installation of lightning downconductors,
- Realization of the earthing systems,
- Attaching the conductors,
- Surge protection device wiring rules,
- Matching disconnecter.

G- Theme « Inspection of lightning protection systems »

- Low frequency measurement of an earthing system.

**TEACHING METHODS AND MEANS PLANNED:**

The different means implemented are as follows (in English language) :

- Scenarios with educational models
- Use of a flipchart
- Use of videos
- Theoretical and practical presentations
- Delivery of educational training documentation to trainees

The training will be provided by a trainer certified Qualifoudre by INERIS.

**FOLLOW-UP TERMS AND MEANS FOR APPRAISING THE RESULTS OF THE ACTION :**

- Oral questions
- Assessment questionnaire

After individual evaluation of the trainee, he will be given a professional training certificate Qualifoudre Level 1.

**Rate :**

- Contact us

**Training Quality indicator :**

- 100% success rate (01/01/2023)

**Accessibility for people with disabilities :**

- Training & premises adapted for people with disabilities for other disabilities, contact us.