

# Lightning protection Training

Lightning protection is made by specialists. There are many Standards and they are often complex that lead to difficulties in their application. SEFTIM, based on its experience and its strong participation in writing national and international standards proposes catalogue trainings to help understanding lightning phenomenon and to show how to protect against lightning effects as well as be prepared for qualification scheme dedicated to this domain. We can also build trainings with a specific program dedicated to the needs of the various participants (users, industrial, manufacturer, contractors, study companies or control bureau ...):

- **Lightning Risk Assessment according to IEC 62305-2**
- **Introducing new Lightning Protection standards (IEC 62305 series)**
- **Technical study of lightning protection means**
- **Training to obtain the qualification Qualifoudre level 1 or level 2**
- **Qualifying training : Visual inspection by the user of a Lightning Protection System**
- **Lightning earthing systems**
- **Lightning Protection components**
- **Explosive storage protection**



## 1. Lightning Risk Assessment according to IEC/EN 62305-2 and applications

The Lightning Risk Analysis can either be simple with simplified version of the standard (guide UTE C 17-108 for example) or more complex with standard IEC/EN 62305-2. In fact, with experience and a good understanding of the standard and its rules, the LRA appears as being much more accessible. In order to perform a LRA in a satisfactory way according to IEC/EN 62305-2 it is necessary:

- To have in mind, during the facility survey, all the parameters that need to be used later on
- To study in a detailed way these parameters and especially those related to the services connected to the structure
- To use the standard and its tools in an optimized way in order to reduce the risk with an optimal cost for the protection means
- To use a dedicated software to help introducing and selecting key parameters and to perform the technic-cost balance.

Training is split in 2 parts largely independent from each other. The first part is one day long introduce the basics of the method and apply it on simple cases with a dedicated software. The software can be purchased at a discount cost with the training. The second part, also one day long, is a workshop allowing to go deeper in various topics, selection of parameters and application to real cases..

## 2. New Lightning Protection standards

A lot of national standards have been replaced by European or International standards that are much more complex. New standards have been introduced that change the lightning protection business regarding studies, contracting or inspection. A better definition of the lightning protection need is obtained by applying the new rules. The definition is more optimized compared to previous standards and furthermore, in many cases, leads to a lot cheaper solution.

Then it is necessary to introduce the new standards in a simple way by extracting the main parts of the standard, especially because the standards are pretty thick. It is also necessary to show in a second step how these rules apply to real cases. These application cases must not be specific to some product brands in order to cover all the possible protection solutions and offer to the user the best opportunities.

To meet these goals, the training includes two 1 day long modules (however the second module cannot be selected without having participated to the first one. The first module can be selected alone). Module 1 presents generalities, effect of lightning as well as direct lightning protection. The second module deals with surge Protective Devices and provides an useful summary of basic rules to select an SPD. A real case (even if simple) exercise with group correction allows each participant to appropriate the fundamentals of lightning protection.

## 3. Technical Studies

Selection of protection means depends on many parameters including esthetics, people safety, cost, maintenance easiness etc. The reference standards are standards included in IEC 62305 series (Lightning Protection System) as well as IEC 61643 series (SPD). The 2 days training combine standards requirements and practical experience. Practical cases illustrate the training and exercises are carried out (selection of SPDs, distance of separation calculation ...).

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## 4. Qualifoudre training Q1 and Q2

To meet the Qualifoudre qualification scheme requirements, the member of the qualified company, whatever is their function, must know the various parts of the protection system chain: lightning risk assessment, technical study, setting-up and inspection. Then an installer will know why specific protection means have been requested by the technician and the technician in his office will know what are the difficulties seen by the installer to implement what has been requested. This training allows to:

- Master the basic rules of their activity to minimize the risk of error
- Know the main elements from the standards of the lightning protection domain that apply to their activity

A training in 2 modules Q1 and Q2 of 2 days each (to participate to module 2 it is necessary to have previously participated to module 1. The first module can be selected alone) has been built specifically to meet the requirements of Qualifoudre. Q1 is dedicated to professionals performing actions (study, contracting ...) who will have to pass level 1 of qualification and Q2 is dedicated to professionals who supervises operations and who will have to pass the qualification level 2 or 3 (according to result obtained for the MCQ). A Multiple Choice Questionnaire, independent from Qualifoudre, is proposed at the end of the training for self evaluation.

## 5. Qualifying training Q69 : visual inspection of a Lightning Protection System by a user

For a user, the qualification scheme QUALIFOUDRE proposes to qualify a few members of its team with the task limited to visual inspection of Lightning Protection System. This qualification has a duration of 5 years. This qualification is obtained after a certification form has been filled and accepted and when the Qualifoudre test result is satisfactory. A 1 day training and a dedicated test (Multiple Choice Questions) performed at the end of the training meet these goals.

## 6. Lightning earthing

Lightning earthing systems are specific and involve particular design rules, setting-up procedures and measurement rules. A one day training dedicated to that topic allows to understand the theoretical basis of lightning earthing and to perform low and high frequency measurement in the field.

## 7. Lightning protection components

Lightning protection components (connectors, surge counters, earth enhancers, surge protective devices, storm detectors ...) must fulfill sever requirements. These requirements, standards and application rules are presented during 1 day.

## 8. Explosive storage protection

Explosive storage need specific risk assessment, protection means and procedures. The necessary steps to follow for such an application including various types of storage as well as associated protection means and storm detection rules are presented during 1 day.

## 9. Trainers :

**Alain Rousseau** : more than 30 years of experience in lightning and surge protection,

Qualifoudre Expert level 4 (highest level), author of many international publications, Chairman of French, lightning protection committee, Chairman of European CENELEC and International IEC surge protection standard committee, Chairman of SEE Lightning Club, Chairman of Scientific and Technical Committee of the French Association Protection Foudre (lightning protection association).

**Céline Sainte-Rose-Fanchine** : 6 years of experience in lightning protection, Head of SEFTIM Lightning Group , qualified Qualifoudre level 3. Participate to working activities for new standards and to international publications.



## 10. Information, programs and price

Pascale Clément : ☎ 01 43 28 10 43 - ✉ pascale.clement@seftim.fr

SEFTIM is a registered training center under N°: 11.94.08281.94