



DIPDC Ed.0



INGESCO® ESE LIGHTNING ROD



EARLY STREAMER EMISSION LIGHTNING ROD

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PRODUCT

INGESCO® ESE lightning rod. INGESCO® ESE lightning rod, in compliance with UNE 21186 and NF C-17 102 standards.

HOW IT WORKS?

The specific purpose of the **INGESCO®** lightning rod is to produce ionization directed at the cloud, so that any possible electrical discharge can be channelled from the very beginning. Between the exciter set, which has the

same potential as the surrounding air, and on the other hand, the point and the deflector set, which are both at earth potential, a potential difference is established.

This potential difference will be greater, the higher the atmospheric potential gradient is, and consequently, when the lightning formation is most likely.

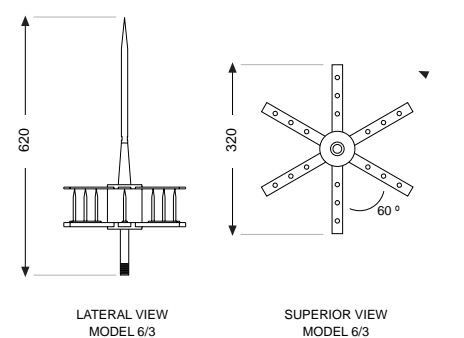
PROTECTION LEVELS

UNE 21186 and NF C-17 102 standards provide an evaluating method, as a result of several studies of lightning protection systems. It compares the early streamer time (Δt) induced by an **INGESCO® ESE** lightning rod, to a simple Franklin type lightning rod in the same environmental and placement test conditions.

A relationship between time, propagation speed and, in consequence, the stroke distance and the protection zone, is obtained in determining the value.

The evaluation of the risk of being struck and the structure's protection needs is obtained following the Appendix B of the standards mentioned above.

MODEL	3.1	3.3	4.3	5.3	6.3
LEVEL I	25m	45 m	54 m	63 m	70 m
LEVEL II	43 m	65 m	74 m	84 m	92 m
LEVEL III	50m	75 m	85 m	95 m	102 m
Reference	101000	101001	101003	10100	101008



LATERAL VIEW
MODEL 6/3

SUPERIOR VIEW
MODEL 6/3

CHARACTERISTICS AND ADVANTATGES

- 100% effective in dealing with discharge
- Electrical continuity guaranteed. Carries lightning current without resistance
- **NON- Electronic** lightning rod ensuring its long life
- Technical qualities remain unaffected after each strike
- With **NO Electronics**, so there is no risk of melting
- NO External Power supply is required
- Ensuring its effective operation after each lightning strike.
- **NO** special **MAINTENANCE** is needed.



EARLY STREAMER EMISSION LIGHTNING ROD INGESCO®ESE LIGHTNING ROD

TECHNICAL SPECIFICATION

The INGESCO® lightning rod is manufactured according to the following technical specifications:

- * It has a double early streamer emission device:
 - an early streamer device
 - an electroatmospheric condenser
- * Materials:
 - Main structure made of stainless steel AISI 316
 - Deflector set made of EPOXY resin

Ensuring its effective operation whatever conditions are.

STANDARDS AND REGULATIONS

UNE 21.185 Standard
UNE 21.186 Standard
NF C-17 102 Standard
1024-1 CEI Standard

INSTALLATION PROCESS

Our company strictly recommends following the International Standards (UNE 21186 and NF C-17 102) to install our INGESCO® lightning rods.

CERTIFICATES AND PATENTS POSSESSED BY INGESCO® ESE

Manufactured since 1984, the INGESCO® lightning rod is the first NON Electronic Early Emission Streamer lightning rod which is in compliance with UNE 21186 and NF C-17 102 Standards.

PATENTS:

- Industrial Registry N° 150032. Ministry of Industrie and Energy
- Function development patent N°: 526.264.

TESTS:

- **Evaluation Test of Air Terminals equipped with an early Streamer Emission device (ESE) . L.C.O.E.**
(Laboratorio Central Oficial de Electrotecnia- Central Official Elechtrotechnical Laboratory) Ministerio de Industria y Energìa (España)
- **Evaluation Tests of Air Terminals equipped with an early Streamer Emission device (ESE) . LABELEC**
(Electrotechnical Laboratory - Spain)
- **Test of High Tension Wave Intensity 10/350 (Lightning Wave). Guarantee of running Continuity after 100 KA Current Impulses. BET** (High Tension Laboratory- Germany)
- **Certificate of Guarantee of INGESCO® EARLY STREAMER EMISSION AIR TERMINALS Insulation (Air Terminals conforming to UNE 21186). LGAI** (Laboratori General d'Assaigs i Investigacions - Test and Investigations General Laboratory - Bellaterra - Spain)
- **INGESCO® EARLY STREAMER EMISSION AIR TERMINALS** homologation certificate by Telefonica España, SA

