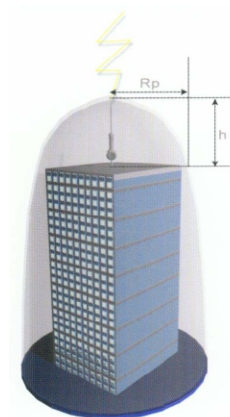


Protection Specifications

Protection offered by Franklin® lightning conductors (NFC 17-102)

Prefential capture

The ability to promote excitation at lower values of the electrostatic field (hence earlier) enhances the capture probability of lightning conductors. This capacity gives them greater efficiency in the role of "preferential capture points" compared to any other point of the building they protect. Therefore these lightning conductors offer superior guarantees during low intensity discharges (2 to 5 KA) compared with simple rod type lightning conductors, which can only intercept them over short distances { $D = 101 \cdot l$, where D is in meters, l in KA }.



Larger zone of protection

The zones of protection of lightning conductors are obtained theoretically by plotting the electrogeometric model, but are comparable in practice, for low heights, to a cone of revolution which apex is the tip of the lightning conductor.

French standard NFC 17-102 deals with early streamer emission (ESE) lightning conductors, and takes into account the levels of protection Np of varying severity (I to III), to be determined previously by an assessment of the lightning risk for each project.

The table hereunder gives the Rp (m) values for the four levels of protection Np depending on the actual height h(m) of the lightning conductor in relation to the different planes considered.

Rp	Active 1D®				SE6				Active 2D®30;SE9				SE12				Active 2D®60;SE15			
	ΔT=12μs				ΔT=15μs				ΔT=30μs				ΔT=45μs				ΔT=60μs			
H(m)	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2	11	16	16	19	13	15	18	20	19	21	25	28	25	28	35	36	31	34	39	43
4	23	32	32	37	25	29	36	41	38	43	51	57	51	57	65	72	63	69	78	85
5	28	41	41	46	32	37	45	51	48	55	63	71	63	71	81	89	79	86	97	107
6	28	41	41	46	32	38	46	52	48	55	64	72	63	71	81	90	79	87	97	107
8	28	41	41	46	33	39	47	54	49	56	65	73	64	72	82	91	79	87	98	108
10	30	45	45	52	34	40	49	56	49	57	66	75	64	72	83	92	79	88	99	109
20	32	51	51	60	35	44	55	63	50	59	71	81	65	74	86	97	80	89	102	113
30	32	55	55	65	35	45	58	69	50	60	73	85	65	75	89	101	80	90	104	116
60	32	57	57	72	35	34	58	75	50	60	75	90	65	75	90	105	80	90	105	120

Active 1D

Principle & operating

The *Active 1D* excitation advance is obtained by a device named, " impulse device ". Its principle consists in storing electrostatic energy present in the Atmosphere at a stormy cloud approach, to release the ascending discharge excitation in good time. This device operates at a stormy activity approach by an integrated sensor which measures the surrounding electrical field value. It provokes then a polarity inversion of the lightning conductor head, creating a sudden amplification of the electrical field on its tip.



Reference	Description	Δt (μs)	Range	Code no.	Price (Rp)
Active 1D	Active 1D-12uS	12	AFB 1012 1D	500111012	17,500,000