

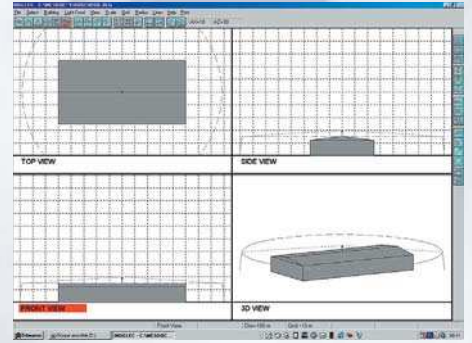
Protection area

The protection area R_p of a PREVECTRON®2 lightning conductor is calculated according to French Standard NF C 17-102, thus:

$$R_p = \sqrt{h(2D-h) + \Delta L(2D + \Delta L)}$$

The protection area depends on a number of factors:

- Gain in triggering time ΔT of the chosen PREVECTRON®2 (see Technical Guide: high-voltage laboratory PREVECTRON® test results), which allows the ΔL value to be determined according to the formula $\Delta L (m) = V(m/_s) \cdot \Delta T(_s)$;
- $D = 20, 45, \text{ or } 60$, depending on the protection level required (I, II, or III) on a given site, according to the lightning risk assessment guide (NFC 17-102 appendix B);
- the actual height of the lightning air terminal above the surface to be protected: h (where $h < 5m$, see table below).



Calculating the protection area using Indelec's **Protec 2001**® software

PROTECTION RADII

Level I : D = 20m
high protection

| h (m) | 2 | 3 | 4 | 5 | 10 |
|----------------|----|----|----|-----------|----|
| S 6.60 | 31 | 47 | 63 | 79 | 79 |
| S 4.50 | 27 | 41 | 55 | 68 | 69 |
| S 3.40 | 23 | 35 | 46 | 58 | 59 |
| TS 3.40 | 23 | 35 | 46 | 58 | 59 |
| TS 2.25 | 17 | 25 | 34 | 42 | 44 |

Level II : D = 45m
medium protection

| h (m) | 2 | 3 | 4 | 5 | 10 |
|----------------|----|----|----|-----------|----|
| S 6.60 | 39 | 58 | 78 | 97 | 99 |
| S 4.50 | 34 | 52 | 69 | 86 | 88 |
| S 3.40 | 30 | 45 | 60 | 75 | 77 |
| TS 3.40 | 30 | 45 | 60 | 75 | 77 |
| TS 2.25 | 23 | 34 | 46 | 57 | 61 |

Level III : D = 60m
standard protection

| h (m) | 2 | 3 | 4 | 5 | 10 |
|----------------|----|----|----|------------|-----|
| S 6.60 | 43 | 64 | 85 | 107 | 109 |
| S 4.50 | 38 | 57 | 76 | 95 | 98 |
| S 3.40 | 33 | 50 | 67 | 84 | 87 |
| TS 3.40 | 33 | 50 | 67 | 84 | 87 |
| TS 2.25 | 26 | 39 | 52 | 65 | 69 |