# SPECIFICATION FOR LIGHTNING PROTECTION SYSTEM (USING STRANDED G.I. WIRES).

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# SPECIFICATION FOR LIGHTNING PROTECTION SYSTEM (USING STRANDED G.I. WIRES).

# 1. GENERAL

A complete lightning protection system shall be supplied and installed in accordance with this section of the Specification, Schedule of Rates & Prices and drawings and shall comply with the British Standard Code of Practice CP 326: 1965 and TNB regulations.

#### 2. AIR TERMINATIONS

Air terminations shall consist of a system of horizontal conductors generally as shown on the drawing. Salient points of the structure shall be incorporated in the air termination network. All metallic projections, chimneys, ducts, gutters, etc. on or above the main surface of the roof of the structure shall be bonded to, and form part of, the air termination network whether or not these are shown on the drawing.

If portions of a structure vary considerably in height, any necessary air termination or air termination network of the lower portions should, in addition to their own down conductors, be bonded to the down conductors of the taller portions.

Air termination network shall consist of stranded galvanised iron wires not less than 0.06 sq.in. section (7/12 swg). Roof conductors shall be supported on G.I supports at intervals close enough to avoid undue sagging, but in any case not exceeding 8 feet, and shall be 9 inches off the roof ridges. Supports shall be cemented into ridges or suitably fixed in an approved manner.

#### 3. DOWN CONDUCTORS

Down conductors shall consist of stranded galvanised iron wires of similar cross-section as the roof conductors. They shall be as direct and vertical as possible, supported on wonpiece insulators which are screwed on to the walls of the structure. Deep re-entrant loops should be avoided. The number and routes of down conductors shall be as shown on the drawing.

# 4. JOINTS AND BONDS

Joints in conductors should be avoided if possible. If these cannot be avoided, they shall be made by splicing, Soldering is not allowed.

#### 5. **TESTING JOINTS**

Each down conductor shall be provided with a testing joint along the route of the down conductor. Unless otherwise specified, each testing joint shall be installed at 8 feet above the ground level and in such a position that, while not inviting unauthorised interference, it is convenient for use when testing.

# 6. EARTH TERMINATIONS

An earth termination shall be connected to each down conductor. Each terminations shall be the same as the roof and down conductors connecting the down conductor at the testing joint to the earth electrodes. The portion of earth termination between testing joint and the ground shall be enclosed in a PVC conduit of suitable size.

Each of the earth terminations shall have a resistance to earth not exceeding the product given by 10 ohms times the number of earth terminations to be provided. The whole of the lightning protection system shall have a combined resistance to earth not exceeding 10 ohms.

# 7. **EARTH ELECTRODES**

Earth electrodes shall consist of G.I pipes 2 1/2 inches diameter not less than 8 feet long. Locations of the earth electrodes shall be determined on site by the Superintending Officer. The minimum spacing between earth electrodes shall be twice the length of an individual earth electrode.

A reinforced concrete inspection chamber c/w reinforced concrete cover shall be provided for each earth electrode. The connection of the conductor to the earth electrode shall be accessible and visible when the cover is removed.

# 8. **RECORD DRAWING**

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A set of negatives and 4 sets of prints showing the locations of the earth electrodes with respect to the structure shall be provided. Where applicable these locations shall also be incorporated in the drawing showing the earthing points for the main switchboard and other installations to be framed up in the main switch room.

AS/ftm..