

securely attached to insulators fixed to the supports. The factor of safety for the suspended wires shall be at least 6, and for all other parts of the structure at least 12, taking the maximum possible wind pressure at 50 pounds per square foot. No addition need be made for a possible accumulation of snow.

Connection of support to earth.

4. Every support, if of metal, shall be efficiently connected to earth, and if of wood or other non-conducting material, shall be protected from lightning by a lightning conductor fastened to the support along its entire length, and projecting above the support to a height of at least six inches, such lightning conductor being efficiently connected to earth.

Efficient earth connection defined.

A support shall be efficiently connected to earth when it is connected to metallic mains for water supply outside of buildings, or, where these are not available, to a mass of metal having a total surface of at least four square feet, buried to a depth of at least three feet in moist earth, provided that in either case the connecting conductor must possess a mechanical strength, and offer a passage to electrical discharges, equal to that of a strand of seven No. 16 galvanised iron wires.

Lightning protectors.

5. Every aerial conductor shall be protected by efficient lightning protectors of pattern approved by the Board of Trade.

Angle of crossing thoroughfares.

6. Where any conductor crosses a street, the angle between such conductor and the direction of the street at the place of such crossing shall not be less than 60 degrees, and the spans shall be as short as possible.

Crossing other wires.

7. Where any aerial conductor is erected so as to cross any other aerial conductor or any suspended wire used for purposes other than the supply of energy, precautions shall be taken by the owners of such crossing conductor against the possibility of that conductor coming into contact with the other conductor or wire, or of such other conductor or wire coming into contact with such crossing conductor by breakage or otherwise.

Maximum working current.

8. The maximum working current in any aerial conductor shall not be sufficient to raise the temperature of the conductor in any part to such an extent as to materially alter the physical condition or specific resistance of the insulating covering, if any, or in any case to raise such temperature to a greater extent than 30° of Fahrenheit's thermometer, and efficient automatic means shall be provided which will render it impossible for this maximum working current to be by any accident exceeded to the extent of 25 per centum, even for short intervals of time; and special care shall be taken that the cross sectional area and conductivity at joints is sufficient to avoid local heating, and that the joints are protected against corrosion.

High pressure conductors to be insulated.

9. Every high pressure aerial conductor must be continuously insulated with a durable and efficient material to be approved by the Board of Trade, to a thickness of not less than one-tenth part of an inch, and in cases where the extreme difference of potential in the circuit exceeds 2,000 volts, the thickness of insulation must not be less in inches or parts of an inch than the number obtained by dividing the number expressing the volts by 20,000. This insulation must be further efficiently protected on the outside against injury or removal by abrasion. If this protection be wholly or partly metallic it must be efficiently connected to earth, so, however, as not to cause undue disturbance to other electric lines or works by electrostatic induction or otherwise.

Specification of insulation.

10. The material used for insulating any high pressure aerial conductor must be such as will not be liable to injurious change of physical structure or condition when exposed to any temperature between the limits of 10° F. and 150° F., or to contact with the ordinary atmosphere of towns or manufacturing districts.

Minimum insulation resistance allowable.

11. The insulation resistance of any circuit using high pressure aerial conductors, including all devices for producing, consuming, or measuring energy, connected to such circuit, shall be such that should any part of the circuit be put to earth, the leakage current shall not exceed $\frac{1}{5}$ th of an ampere in the case of continuous currents, or $\frac{1}{5}$ th of an ampere in the case of alternating currents. Every such circuit containing high pressure conductors shall be fitted with an indicating device which shall continuously indicate if the insulation resistance of either conductor fall below the conditions required by this Regulation.

Suspension of conductors.

12. Every aerial high pressure conductor shall be efficiently suspended by means of non-metallic ligaments to suspending wires, so that the weight of the conductor does not produce in it any sensible stress in the direction of its length, and the insulated conductors and suspending wires, where attached to supports, shall be in contact only with material of highly insulating quality, and shall be so attached and guarded, that in case they break away it shall not be possible for them to fall away clear of the support.

Protection of telegraph and telephone wires from interference.

13. In the case of aerial conductors carrying alternating currents, the two conductors constituting the line and return for any circuit shall be run parallel with each other, and at a distance apart not exceeding eighteen inches.

Owner of conductor responsible for supports.

14. The owner of every aerial conductor shall be responsible for the efficiency of every support to which such conductor is attached, and every support shall be efficiently marked with such mark indicating the ownership of the conductor as the Board of Trade shall approve.

Maintenance.

15. Every aerial conductor, including its supports and all the structural parts and electrical appliances and devices belonging to or connected with such conductor, shall be duly and efficiently supervised and maintained by or on behalf of the owners as regards both electrical and mechanical conditions.