

the supports by a non-metallic ligament. 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 35 lb. per square foot.

6. *Connection of support to earth.*—Every support, if of metal, shall be efficiently connected to earth, and every other support which shall be exposed in such a position as to be liable to be affected by lightning shall be protected by a lightning conductor fastened to the support along its entire length, and projecting above the support to a height of at least 6 inches, such lightning conductor to be efficiently connected to earth, and possess a mechanical strength, and offer a passage to electrical discharges, equal to that of a strand of seven No. 16 galvanised iron wires.

7. *Lightning protectors.*—Every aerial conductor shall be protected by efficient lightning protectors of pattern approved by the constituted authorities.

8. *High pressure conductors laid above ground.*—Where any high pressure conductors, other than aerial conductors, are placed above the surface of the ground, they shall be completely enclosed in brickwork, masonry, or cement concrete, or in strong metal casing efficiently connected to earth, for a height of at least 10 feet above the ground.

9. *Crossing other wires.*—Where any aerial conductor is erected so as to cross one or more telegraph, telephone, or other wires, it may pass over, under, or between such wires, provided precautions are taken to keep such conductor at least 1 foot clear of the other wires in all directions; and both the aerial conductor and the telegraph and telephone wires shall be respectively affixed to separate supports, placed within 6 feet of the point of intersection where practicable, but in no case to exceed 10 feet, and further protected from coming in contact under any circumstances by guard irons or wires; all such guard irons or wires to be efficiently connected to earth.

10. *Service conductors.*—All service conductors shall be laid from the main cable, being joined thereto at a point as near as possible to a pole or support, direct to insulators attached to the building or premises to be served, and lead upward therefrom to tubes or channels of insulating and non-inflammable material, through which they shall pass into the building. Where they run along the outside of any building they shall be kept at least 12 inches apart, and be affixed to insulators. The tubes or channels to be sloped downwards from the inside to the outside of the building.

11. *Maximum working current.*—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° Fahrenheit, 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 properly soldered and protected against corrosion.

12. *High pressure conductors to be insulated.*—Every high pressure aerial conductor shall be continuously insulated with a durable and efficient material, to be approved by the constituted authorities, to a thickness of not less than one-tenth of an inch, and in cases where the extreme difference of potential in the circuit exceeds 2,000 volts the thickness of the insulation shall be increased by one-thirtieth of an inch for every 1,000 volts, or part thereof. This insulation shall be further efficiently protected on the outside against injury or removal by abrasion. If this protection be wholly or partly metallic, it shall be efficiently connected to earth so, however, as not to cause undue disturbance to other electric lines or works by electrostatic induction or otherwise.

13. *Low pressure conductors to be insulated.*—Every low pressure aerial conductor shall be continuously insulated with a durable and efficient material, to be approved by the constituted authorities, and shall be further efficiently protected on the outside against injury by removal or abrasion. If this protection be wholly or partly metallic, it shall be efficiently connected to earth.

14. *Specification of insulation.*—The material used for insulating any 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.

15. *Minimum insulation resistance allowable—Indicator of leakage.*—The insulation resistance of any circuit using high pressure or extra 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 one twenty-fifth of an ampere in the case of continuous currents, or one-fiftieth of an ampere in the case of alternating currents. Every such circuit containing high pressure or extra 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.

16. *Earth return.*—No earth return shall be allowed on any electric light or power circuit.

17. *Suspension of conductors.*—Every aerial conductor having a sectional area greater than 7, No. 18, S.W.G., shall be suspended by means of non-metallic ligaments to a suspending wire, securely affixed to the support and efficiently connected to earth at every point of support. Where the conducting wires shall be crossed, as provided in Regulation 20, the suspending wires shall also be crossed in the same manner. All suspending wires, if of iron or steel, shall be galvanised.

18. *Conductors to be fastened to inside of insulators.*—In all cases where aerial conductors are supported by insulators, such conductors must be fastened to the inside of the insulators, except where guard irons are used, so that in the event of the conductor fastening giving way, the conductor will not fall to the ground.

19. *Minimum sectional area of conductors.*—No single wire less than No. 14, S.W.G., shall be used, and no smaller wire than No. 20, S.W.G., shall be used in any stranded cable. No stranded cable shall have a sectional area less than the equivalent of No. 14, S.W.G.

20. *Protection*