(*g*) Where passing through floors, walls, partitions, or ceilings, they are protected by being enclosed in metal, porcelain, or other non-absorbent not readily combustible conduits the ends of which are bushed or so arranged as to prevent abrasion, such conduits when in damp situations being bitumen-filled; and

(*h*) Where passing through party walls, or fire-resisting floors, walls, partitions,. or ceilings, the conduits referred to in the last preceding paragraph are close-fitting, and the holes through which they pass are plugged with fireclay or similar non-ignitable material, no space through which fire might spread being left around or inside the conduits; and

(*i*) Joints of opposite polarity or phase are kept at least 6 in. apart.

CABLES COVERED WITH TOUGH RUBBER COMPOUND.

44–71. Cables protected in accordance with Regulation 23–71 hereof may be used without the further protection of conduit or casing, provided that they are installed in accordance with paragraph (*d*) of Regulation 44–62 hereof, and provided further that—

(*a*) They are secured at intervals by clips, saddles, or clamps. The intervals shall in the case of surface work be sufficiently short to prevent appreciable sagging of the cable when fixed horizontally; and

(*b*) Where fixed otherwise than horizontally they are secured at the same intervals as when horizontal, save that where they are inaccessible without structural alteration a length not exceeding the length of the wall stud may be allowed vertically between supports provided that the upper support firmly grips the cable and that where there is a change in direction from horizontal to vertically downwards they are brought over a rounded support of a radius not less than six times the external diameter of the sheathing; and

(*c*) Where running parallel with ceiling-joists and not immediately under a floor they are attached to the side thereof. Where laid across such joists at any angle, they are attached to the side of soft-wood strips having an area of not less than 3 sq. in. with a minimum depth of 1 in.; and

(*d*) Where under floors and running parallel with the joists they may be laid flat on the ceiling and where inaccessible without structural alteration need not be secured by clips, saddles, or clamps. Where not running parallel to the joists they may be without support from joist to joist to a distance not exceeding 18 in. and all floor-boards covering such wiring are securely screwed down in such a manner that they will not damage the cable and so that they can be removed for inspection; and

(*e*) Where liable to mechanical injury, under normal conditions, they are protected by wood or metal casing or conduit; and

(*f*) Clips, saddles, and clamps are made of material having smooth or rounded edges which will not indent or damage the sheathing, and where exposed to the weather or otherwise in damp situations they together with their fixings are of non-rusting material; and

(*g*) Where passing through structural metalwork the holes through which they pass are bushed to prevent abrasion; and

(*h*) Where passing through party walls or fire-resisting floors, walls, partitions, or ceilings the holes through which they pass are plugged with fireclay or similar non-ignitable material, no space through which fire might spread being left around the cables; and

(*i*) At all outlet points the sheathing is effectively secured to, or within 2 in. of, the base block or other device.

44–72. Connection boxes when used shall be of an approved type.

METAL SHEATHED AND ARMOURED CABLES.

44–81. Metal sheathed cables specified in paragraph (*c*) of Regulation 23–42 and in Regulation 23–43 hereof are divided into the following two classes for the purposes of Regulations 44–82 to 44–85 (both inclusive) hereof:—

Class I: Cables in which each insulated conductor within the metal sheathing is independent mechanically of any other conductor and where unfilled interstices exist between the cables and the sheathing. Such cables shall contain a bare earthing-lead within such sheathing.

Class II: Cables in which the conductors, insulation, packing or filling and metal sheathing are massed to form a cable with no unfilled interstices between the component parts and each part is mechanically dependent upon the other.

44–82. Class I cables shall, except where run underground, be used only for surface work and where liable to mechanical injury, under normal conditions, they shall be protected by wood or metal casing or conduit.

44–83. In the case of Class I cables—

(*a*) Every junction-box and joint-box shall be of an approved type; and

(*b*) No junction-box or joint-box shall be placed at a less height than 7 ft. above a floor; and

(*c*) No junction-box or joint-box shall be installed in a position where it will be subject to moisture or to any corrosive fume, gas, or liquid.

44–84. Where run underground—

(*a*) Class I cables shall be enclosed in conduit or piping which together with its fittings shall be of incorrodible material or rendered incorrodible by a suitable method:

(*b*) Class II cables shall, where unarmoured, be laid in troughing or be drawn into ducts, but where armoured they may be laid direct in the ground:

(*c*) Where Class II cables may be subject to any corrosive fume, gas, or liquid special protection, such as bitumen or other suitable compound or covering, shall be used.

44–85. Metal sheathed cables may, except where run underground, be installed without further protection, provided that—

(*a*) The metallic sheathings are electrically continuous across all joints; and

(*b*) The electrical resistance of the metallic sheathing of cables in a complete installation measured between such sheathing at a point near the main switch and any other point in the installation does not exceed 2 ohms; and

(*c*) They are secured at intervals by clips, saddles, or clamps. The intervals shall in the case of surface work be sufficiently short to prevent appreciable sagging of the cable when fixed horizontally; and

(*d*) Where fixed otherwise than horizontally they are secured at the same intervals as when horizontal, save that where they are inaccessible without structural alteration a length not exceeding 10 ft. may be allowed vertically between supports provided that the upper support firmly grips the cable and that where there is a change in direction from horizontal to vertically downwards they are brought over a rounded support of a radius not less than six times the external diameter of the sheathing; and

(*e*) Where laid across joists at any angle they are where necessary supported in a suitable manner; and

(*f*) Clips, saddles, and clamps are made of such material as will not be liable to set up electrolytic action with the cable sheathing and having smooth or rounded edges which will not indent or damage the sheathing, and where exposed to the weather or otherwise in damp situations they, together with their fixings, are of non-rusting material; and

(*g*) Where passing through party walls or fire-resisting floors, walls, partitions, or ceilings, the holes through which they pass are plugged with fireclay or similar non-ignitable material, no space through which fire might spread being left around the cables; and

(*h*) Where they pass through any position in which they will be subject to abrasion they are suitably protected; and

(*i*) If liable to corrosive action they are adequately protected; and,

(*j*) In the case of Class I cables,—

(i) The metal sheathing is gripped mechanically at each clip, saddle, clamp, junction-box, and joint-box, and that at all outlet points such sheathing is secured within 2 in. of the base block or other device; and

(ii) The earthing-lead is electrically connected to all junction-boxes and joint-boxes and also to all accessories and fittings where such accessories and fittings are required by these regulations to be earthed; and

(*k*) In the case of Class II cables,—

(i) If liable to vibration, under normal conditions, they are adequately protected having regard to the nature of their sheathing or casing; and

(ii) Where run concealed all connections are made in boxes of ample capacity and of non-absorbent, non-ignitable material.

PART 45.—INSTALLING CONDUCTORS II.

STEEL CONDUITS.

45–01. All classes of cable specified in Regulation 23–42 hereof may be enclosed in screwed steel conduits, provided that the conduits are installed in accordance with paragraph (*h*) of Regulation 44–62 hereof, and provided further that—

(*a*) The conduits are mechanically and electrically continuous across all joints; and