

Reference Sheet - Installation Reference Method Codes

The following table is based around the tables of Appendix 4 of BS 7671:2008 and provides reference method codes appropriate to a given installation type. For further information on these reference methods the BS 7671 should be consulted and should greater clarity be required the IET contacted directly.

Description	Number of cores	Reference Method
Enclosed in conduit in thermally insulating wall	Any	A
Enclosed in conduit or trunking on a wall	Any	B
Clipped direct	Any	C
Direct in ground or in ducting in ground, in or around buildin	Any	D
In free air or on perforated cable tray	Multi-core	E
In free air or on perforated cable tray	Single-core	F or G
4D5 (Twin & Earth) cable above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in	Twin & Earth	100
4D5 (Twin & Earth) cable above a plasterboard ceiling covered by thermal insulation exceeding 100mm in	Twin & Earth	101
4D5 (Twin & Earth) cable in a stud wall with thermal insulation with cable touching the inner wall surface	Twin & Earth	102
4D5 (Twin & Earth) cable in a stud wall with thermal insulation with cable not touching the inner wall surface	Twin & Earth	103

Methods of Installation

Reference Method A

For example, Installation Methods 1 and 2 of Table 4A2, (non-sheathed cables and multi-core cables in conduit in a thermally insulated wall).

The wall consists of an outer weatherproof skin, thermal insulation and an inner skin of wood or wood-like material having a thermal conductance of at least 10 W/m².K. The conduit is fixed such that it is close to, but not necessarily touching the inner skin. Heat from the cables is assumed to escape through the inner skin only. The conduit can be of metal or plastic.

Reference Method B

For example, Installation Method 4 of Table 4A2, (non-sheathed or sheathed cables in conduit mounted on a wooden or masonry wall) and B2, item Installation Method 5 of Table 4A2, (multi-core cable in conduit on a wooden wall).

The conduit is mounted on a wooden wall such that the gap between the conduit and the surface is less than 0.3 times the conduit diameter. The conduit can be metal or plastic. Where the conduit is fixed to a masonry wall the current-carrying capacity of the non-sheathed or sheathed cable may be higher.

Reference Method C

For example, Installation Method 20 of Table 4A2 (single-core or multi-core cable on a wooden wall).

Cable mounted on a wooden wall so that the gap between the cable and the surface is less than 0.3 times the cable diameter. Where the cable is fixed to or embedded in a masonry wall the current-carrying capacity may be higher. NOTE: The term 'masonry' is taken to include brickwork, concrete, plaster and similar (but excluding thermally insulating materials).

Reference Method D

For example Installation Method 70 of Table 4A2, (multi-core un-armoured cable in conduit or in ducts in the ground).

The cable is drawn into a 100mm diameter plastic, earthenware or metallic ducts laid in direct contact with soil having a thermal resistivity of 2.5 K.m/W and at a depth of 0.8 m. The values given for this method are those stated in this Part of BS 7671 and are based on conservative installation parameters. If the specific installation parameters are known, (thermal resistance of the ground, ground ambient temperature, cable depth), reference can be made to the cable manufacturer or the ERA 69-30 series of publications, which may result in a smaller cable size being selected. NOTE: The current-carrying capacity for cables laid in direct contact with soil having a thermal resistivity of 2.5 K.m/W and at a depth of 0.7 m is approximately 10 % higher than the values tabulated for Reference method D.

Reference Methods E, F and G

For example, Installation Methods 31 to 35 of Table 4A, (single-core or multi-core cable in free air).

The cable is supported such that the total heat dissipation is not impeded. Heating due to solar radiation and other sources is to be taken into account. Care is to be taken that natural air convection is not impeded. In practice a clearance between a cable and any adjacent surface of at least 0.3 times the cable external diameter for multi-core cables or 1.0 times the cable diameter for single-core cables is sufficient to permit the use of current-carrying capacities appropriate to free air conditions.