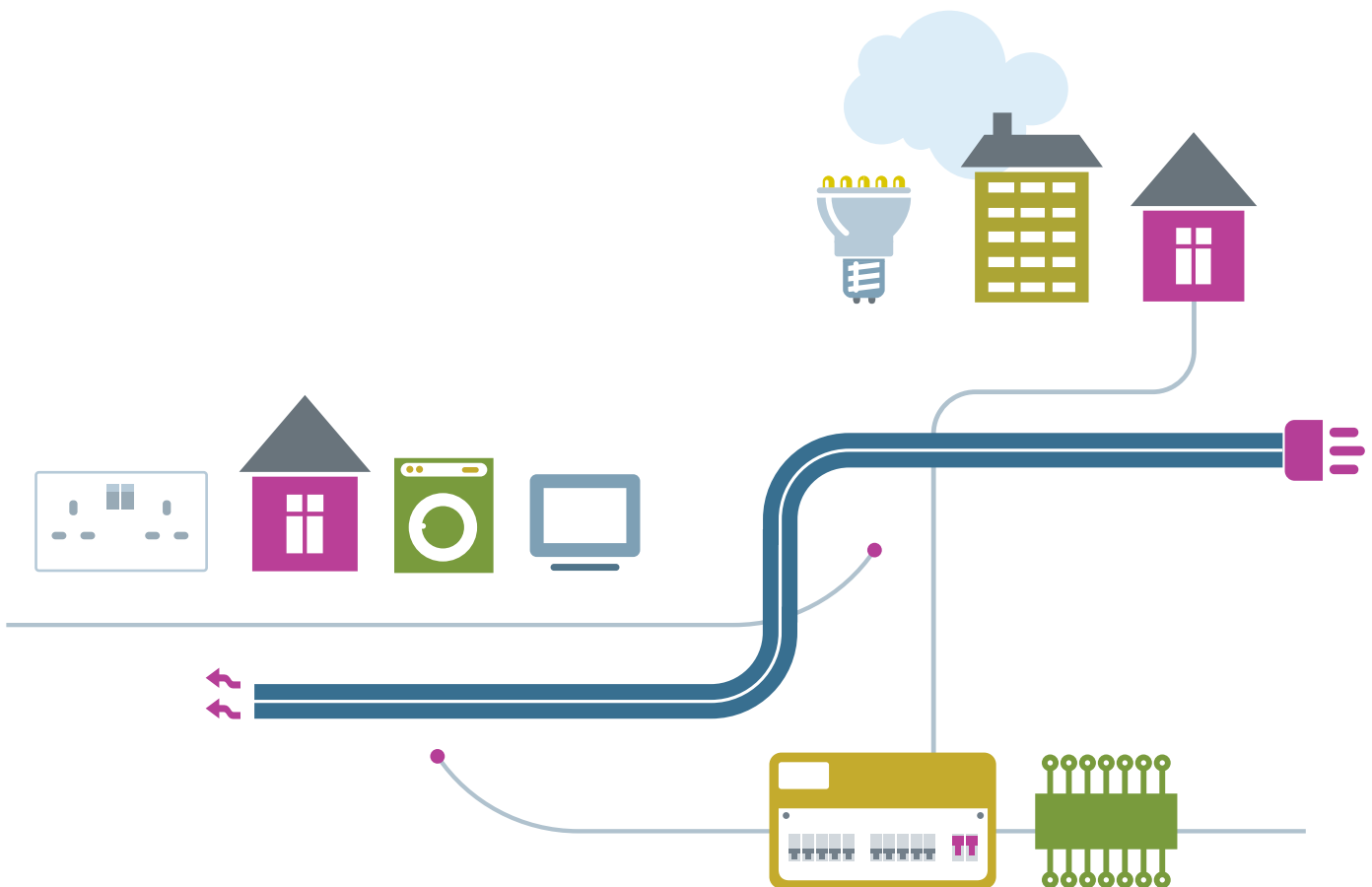


TECHNICAL BULLETIN

COORDINATION OF WIRING ACCESSORIES,
LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR
ASSEMBLIES WITH CONDUCTORS OPERATING AT
A TEMPERATURE EXCEEDING 70 °C e.g. XLPE



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BEAMA is the long established and respected trade association for the electrotechnical sector. The association has a strong track record in the development and implementation of standards to promote safety and product performance for the benefit of manufacturers and their customers.

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OVERVIEW

BS7671 regulation 512.1.5 requires that “Switchgear, protective devices, accessories and other types of equipment shall not be connected to conductors intended to operate at a temperature exceeding 70 °C at the equipment in normal service, unless the equipment manufacturer has confirmed that the equipment is suitable for such conditions”.

BS 7671 regulation; 523.1 (note b) requires that “Where a conductor operates at a temperature exceeding 70 °C, it shall be ascertained that the equipment connected to the conductor is suitable for the resulting temperature at the connection”.

BS 7671 90 °cable tables e.g. Table 4E4, state that; Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory (see *Regulation 512.1.5*).

Low-voltage switchgear and controlgear assemblies include switchboards, panelboards, distribution boards, busbar trunking systems and consumer units.

Wiring accessories include wall switches, socket-outlets, fused spurs and plugs.

The British (BS) and harmonized standards (BS EN) for these products contain test limits that apply to thermoplastic insulation i.e. PVC, and specifically to low -voltage assemblies, where the terminals of the built-in component e.g. MCCBs / MCBs also contain the terminals for external insulated conductors.

Conclusion

Unless specified by the manufacturer, conductors operating at a temperature exceeding 70 °C are not suitable or safe for use with wiring accessories, low-voltage switchgear and controlgear assemblies. However, 90 °C rated cable can be used for external wiring provided the conductor operating temperature does not exceed 70 °C i.e. where the electrical design is based on current ratings given in the equivalent table for 70 °C thermoplastic insulated cables, Regulation 512.1.5 Note 4 refers.

Specifically for a low-voltage switchgear and controlgear assemblies, whenever a declaration states that **built-in components (e.g. MCBs / MCCBs) which also contain the terminals for external insulated conductors**, are suitable for conductors operating at a temperature exceeding 70 °C, then the **components must have been tested in the assembly as part of the appropriate assembly standard.**



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