

LV SWITCHGEAR COMPLIANCE GUIDE

A practical UK guide to the key standards and checks for commercial and industrial LV switchgear, panel boards and power distribution assemblies.

QUEST ELECTRICAL | LV Switchgear • Panel Boards • Installation • Testing & Commissioning

1. The main compliance standards

BS EN IEC 61439-1:2021 sets the general rules, construction requirements, technical characteristics and verification requirements for low-voltage switchgear and controlgear assemblies. **BS EN IEC 61439-2:2021** provides the specific requirements for power switchgear and controlgear assemblies, including typical LV power distribution switchboards.

BS 7671 governs the wider electrical installation, including selection and erection, protection, earthing, isolation, inspection and testing. As of August 2026, BS 7671:2018+A4:2026 is available; the IET states the previous Amendment 3 remains valid until 15 October 2026 during the transition period.

2. Key design considerations

- Rated current and voltage
- Prospective short-circuit current
- Busbar and equipment ratings
- Temperature-rise performance
- Clearances and creepage
- IP rating / enclosure protection
- Earthing and protective circuits
- Internal segregation where specified
- MCCB / ACB suitability and settings
- SPD, metering and CT requirements
- Cable termination and connection arrangements
- Labelling, drawings and schedules

3. Verification — design to handover

Design verification: The assembly design must be verified against the applicable characteristics of BS EN IEC 61439 using the verification methods permitted by the standard. **Routine verification:** the completed assembly is checked to confirm correct manufacture and assembly. Checks can include construction and wiring, protective circuits, insulation properties, dielectric performance and functional/mechanical operation, as applicable.

Installation & commissioning: the installed panel must then be correctly connected and incorporated into the electrical installation. Inspection, electrical testing, protection settings, functional checks, identification and handover documentation should be completed in accordance with the project requirements and applicable standards.

4. Practical project checklist

■ System voltage, earthing arrangement and load established	■ Fault level / short-circuit withstand established
■ Incoming and outgoing protective devices selected	■ Panel rating, busbar capacity and enclosure/IP requirements confirmed
■ Segregation and access requirements agreed	■ Protection, discrimination and settings considered
■ Metering, CTs and SPDs specified where required	■ Design/routine verification and test requirements agreed
■ Drawings, labels, schedules and handover documents prepared	■ Installation inspection, testing and commissioning completed

5. Why compliance matters

A compliant LV switchboard is more than a collection of correctly rated components. The complete assembly must be suitable for its intended duty, correctly designed and verified, safely installed and properly tested. This is particularly important on high-current systems where fault levels, thermal performance, protection coordination and shutdown requirements can be critical.

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From LV panel specification and manufacture through to installation, testing and commissioning, QUEST delivers commercial and industrial LV switchgear projects with a focus on safety, compliance and reliable project delivery.

References: BSI — BS EN IEC 61439-1:2021 and BS EN IEC 61439-2:2021; IET — BS 7671:2018+A4:2026 transition guidance. This guide is an overview and does not replace the full standards, project specifications, manufacturer instructions or competent engineering assessment.