MINIMUM STANDARD

Low Voltage Electrical Work Isolation & Testing

The following Minimum Standard is applicable on all projects

General Unitas Requirements applicable to this standard
To assist in the reference of the correct legislation and guidance to ensure Electrical Safety during all electrical work, especially in live occupied areas e.g. public buildings hospitals, schools and domestic properties.

Planning

- All electrical work must be carried out by electrically skilled persons in accordance with BS 7671 and relevant guidance notes
- Discuss arrangements with the person in control of the premises (Principal contractor/client/duty holder) including any maintenance procedures, remaining occupied areas, essential supplies and power sources
- Before proceeding, identify and familiarise yourself with the circuit or LV equipment, including the switching arrangements or back-up or alternative supply (generator, uninterrupted power supply, photovoltaic etc.)
- Where an electrical "Permit to Work" system is deemed necessary it must be signed by an electrically skilled person prior to isolation and prior to re-connection of isolated supplies.
  NB: Clarification for the use of a "Permit to Work" system must be raised with the relevant local, "electrically skilled person responsible for compliance"
- Before work starts, and where isolation is necessary, checks must be made to ensure that the test instruments are suitable and are in good order and that the cables and equipment being worked on have been isolated and proved dead, in accordance with HSE and Electrical Safety First (ESF) guidelines. An approved voltage detector, compliant with current GS38 standards shall be proved to be working on a known live source or proving unit before and after use.
- Disconnection shall be either by securely locking off and labelled, or by physical disconnection and labelling of cables. It should be ensured that the circuit cables are sufficiently secured, to prevent inadvertent contact with other live parts
- Before re-energising circuits they must be inspected, tested and the relevant certification completed in accordance with the current version of BS 7671
- Where circuits are to be re-energised overnight, they must be inspected, tested and certified as above and the process of isolation repeated when work is resumed

Procurement
Electrical work must only be carried out by electrically skilled persons, employed by a company that is a member of a UKAS Accredited Certification Body approved organisation, e.g. NICEIC, ELECSA, and NAPIT. As a minimum (and in line with Unitas Unitas Electrical Standard Operational Manual) the relevant Unitas Business must obtain suitable copies of up to date Certifications, Insurance Documents, Training Matrix, Quality assurance procedure, test equipment register and SSOW/Risk Assessments relevant to the scope of works, prior to work commencing and or at pre-construction phase. All such documents shall be vetted and accepted by the local, "electrically skilled person responsible for compliance".

Competence/Training
All operatives must also be qualified as a minimum, to City & Guilds 2382 or equivalent, when carrying out isolation and installation work and C&G 2394 or equivalent when carrying out testing and commissioning work. Questions or clarification on the use of and registration of companies, or the qualifications of individuals, must be raised with the relevant local "electrically skilled person responsible for compliance". Copies of relevant qualifications must be available to the local, "electrically skilled person responsible for compliance" before they commence with any electrical work.

An exemption will be given where Gas/Plumbing Operatives carry out central heating component replacement work only (such as replacement pumps, valve and boiler parts etc.) providing they have achieved a current certificate in Electrical training.

Most modern gas appliances and central heating systems incorporate electrics and associated circuits. Gas engineers must be given appropriate training of competence on electrics within their scope of work.

For gas service engineers working on central heating systems repairs, and servicing, a level of electrical competence shall be demonstrated through a current Certificate of Electrical Training:

Suitable electrical training courses for gas service engineers shall include the following minimum training requirements:

Basic Electrical Theory
- Ohms Law
- Circuit and conductor and termination types
- Protective measures
- Termination of cable and accessories

Safe Isolation and Health & Safety
- The Electricity at Work Regulations
- Voltage testing equipment types and compliance
- Safe isolation considerations
- Safe Systems of Work
- Practical safe isolation techniques explained and demonstrated

Basic Fault Finding
- Safe use of a multi-meter
- Questioning techniques

Commissioning, Inspection & Testing requirements
- Earth Fault Loop Impedance Testing
- Polarity testing
- RCD testing
- Recording test results

In order to install system wiring, circuit extensions and alterations, any notifiable work, and boiler installation wiring, an engineer shall be electrically qualified as described within Electrical Operational Standard Manual SHEMS-STD-GR-071.

Documentation
Certification appropriate for work being undertaken shall be completed in accordance with the current standards of BS7671.

Further Guidance/Reference

- HSG85
- HSR 25
- GS 38
- BS 7671 Current edition
- IET Guidance Notes
- Electrical Safety First Best Practice Guides
- NICEIC publications & Pocket Guides
- Unitas Electrical Standard Operational Manual
- Local “electrically skilled person responsible for compliance”

For further specialist advice contact the Unitas Compliance Manager with responsibility for electrical matters in your business unit.