

Checking the compliance of electrical equipment

Overview

This standard identifies the competences you need to carry out compliance checks on electrical equipment, in accordance with approved procedures. You will be required to check that electrical rotating, wound or power control/management equipment complies with specification, on a system with a single phase, three-phase or direct current power circuit. You will be responsible for confirming that the electrical equipment is complete, fit for purpose and meets the operational performance required by the specification. You will also be required to complete any relevant documentation, accurately and legibly.

Your responsibilities will require you to comply with organisational policy and procedures for checking the electrical equipment and to report any problems with the equipment you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to ensure that all tools and equipment used in checking the equipment are correctly accounted for on completion of the activities and returned to the correct location. You will be expected to work with a minimum of supervision, taking personal responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of your work and will provide an informed approach to applying compliance checking techniques and procedures including, where appropriate, to British, European and International quality standards. You will understand the electrical equipment being checked and its application and will know about the tools and equipment used to check the equipment, in adequate depth to provide a sound basis for carrying out the activities to the required specification. You will understand the types of defect that can be found on the equipment and how critical these defects are in determining the satisfactory performance of the equipment.

You will understand the safety precautions required when carrying out the compliance checking activities, especially those for isolating the equipment. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others in the workplace.

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Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety legislation, regulations, directives and other relevant guidelines
2. follow and make appropriate use of the specifications for the product or asset being checked
3. select and obtain correct tools and inspection equipment and check that they are in useable condition
4. carry out the checks in an appropriate sequence using approved methods and procedures, tools and equipment
5. identify and assess any defects or variations from the specification and take appropriate action
6. deal promptly and effectively with problems within your control and report those that cannot be solved
7. ensure that work records are completed, stored securely and available to others, as per organisational requirements
8. leave the work area in a safe condition on completion of the activities, as per organisational and legal requirements

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Knowledge and understanding

You need to know and understand:

1. the specific safety precautions to be taken whilst carrying out the activities (including any specific legislation, regulations or codes of practice relating to the activities, equipment or materials)
2. the health and safety requirements of the work area and the activities, and the responsibility these requirements place on you
3. the hazards associated with the activities, and how to minimise them and reduce risks
4. the personal protective equipment and clothing (PPE) to be worn during the activities
5. voltage ranges, what constitutes a hazardous voltage and how to reduce the risks of a phase to earth shock
6. how to deal effectively with victims of electric shock in the workplace (to include methods of safely isolating the power source and methods of first aid resuscitation)
7. how to use and extract information from engineering drawings and related specifications (to include symbols and conventions to current industry standards and codes of practice)
8. the use of British, European and International standards in determining if electrical equipment is fit for purpose
9. the general principles of quality assurance systems and associated procedures
10. the various stages when the electrical equipment should be checked and to what level
11. preparations that need to be undertaken before the equipment is checked
12. the application of the various tools and equipment used to check the compliance of the electrical equipment
13. the importance of ensuring that tools and equipment are set up correctly and are in a safe and useable condition
14. the procedures and methods used to check that tools and equipment are within their calibration dates
15. the quality control procedures to be followed when checking the compliance of the electrical equipment
16. how to conduct checks to ensure the safety, accuracy, position, security, function and completeness of the electrical equipment
17. the types of defect that can be found on electrical equipment, why they occur and how they can be avoided
18. how to detect assembly defects in electrical equipment and what to do to rectify them
19. the importance of ensuring that all tools and equipment are returned to their correct location on completion of the compliance checking activities

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- 20. the extent of your own responsibility and whom you should report to if you have problems that you cannot resolve
- 21. how to access, use and maintain information to comply with organisational requirements and legislation

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Scope/range related to performance criteria

1. Carry out all of the following during the compliance checking activities:
 1. use the correct issue of drawings, job/order instructions and specifications
 2. check the calibration dates of tools and measuring instruments to be used
 3. ensure that all components are free from foreign objects, dirt or other contamination
 4. use appropriate and safe inspection and checking techniques at all times
 5. check that electrical system wiring and connections are to specification
 6. leave the work area in a safe and tidy condition
2. Check electrical equipment powered by one of the following:
 1. single phase power circuit
 2. three-phase power circuit
 3. direct current power circuit
3. Carry out compliance checks one of the following types of electrical equipment:
 1. rotating equipment (such as single/three-phase motors, alternators)
 2. wound equipment (such as transformers/inductors)
 3. control equipment (such as switchgear, distribution, power management)
4. Use relevant tools, equipment and techniques to carry out of the following checks and measurements:
 1. positional accuracy
 2. equipment completeness
 3. dimensions
 4. freedom from damage and foreign objects
 5. orientation
 6. operating clearance
 7. alignment
 8. electrical continuity
 9. security of component fixing/mounting
 10. resistance/insulation values

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5. Check that the electrical equipment complies with one of the following quality and accuracy standards:
 1. current industry standards, codes of practice and procedures
 2. customer standards and requirements
 3. company standards and procedures
 4. specific system requirements
 5. other international standards

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