

Gas Network Craftsperson

Unit EIM02 Using and Interpreting Engineering Data and Documentation

This assessment specification has been developed as part of the network maintenance craftsperson standard for the electrical and instrumentation apprentice. The specification details the required skills, knowledge and behaviour that a learner should expect to be assessed against during their training programme. This module should be designed to develop an apprentice's skills and knowledge to understand where to obtain data to meet the requirements of the Health and Safety at Work Act and other relevant regulations and working practices. The apprentice will also be expected to accurately interpret the data and apply this in the work place

What does this specification look like?

This is a training unit that could be delivered by the employer or a training organisation. It should cover all relevant regulations and specific organisational safety requirements. Following training the application of this knowledge should be observed in the workplace with such application being recorded as part of a work log.

The assessment specification is the minimum core standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training. The knowledge and performance criteria should be used as the basis for training input.

What do I need to take this module?

There are no pre-requisites to taking this unit.

Candidates to be **assessed** as competent in this area must successfully meet the criteria listed below or have other unitary evidence demonstrating an equivalent level of competence.

Evidence should be gathered from the workplace.

Performance Criteria

To achieve this unit you will need to be able to:

- P1. Use the approved source to obtain the required data and documentation
- P2. Check the currency and validity of the data and documentation obtained
- P3. Ensure due care and control of the documents is maintained at all times
- P4. Extract all necessary data in order to carry out the required tasks in line with procedures
- P5. Obtain additional information where there are gaps, discrepancies or deficiencies in the information obtained
- P6. Act upon or escalate through the appropriate route any problems found with the data and documentation
- P7. Make valid decisions based on the evaluation of the information extracted from the documents
- P8. Ensure all documents are returned to the designated location on completion of the work
- P9. Complete all work related documentation such as production documentation, installation documentation, maintenance documentation, planning documentation
- P10. Extract information that includes three of the following:
 - a) Materials or components required
 - b) Dimensions
 - c) Tolerances
 - d) Installation quality
 - e) Installation requirements
 - f) Customer requirements
 - g) Time scales
 - h) Financial information
 - i) Operating parameters
 - j) Location / orientation of parts
 - k) Dismantling / assembly sequence
 - l) Inspection / testing requirements
 - m) Number / volumes required
 - n) Repair / service methods
 - o) Operations required
 - p) Connections to be made
 - q) Surface finish required
 - r) Fault finding procedures
 - s) Safety / risk factors
 - t) Environmental controls
 - u) Specific data (such as component data, maintenance data, electrical data, fluid data)
 - v) Resources (such as tools, equipment, personnel)

- w) Utility supply details (such as electricity, water, gas, air)
 - x) Location of services, including standby and emergency backup systems
 - y) Circuit characteristics (such as pressure, flow, current, voltage, speed)
 - z) Protective arrangements and equipment (such as containment, environmental controls, warning and evacuation systems and equipment)
 - aa) Other specific related information
- P11. Use the information obtained to ensure that work output meets the specification
- P12. Use information extracted from documents to include one from the following:
- a) Drawings (such as component drawings, assembly drawings, modification drawings, repair drawings, welding / fabrication drawings, distribution and installation drawings)
 - b) Diagrams (such as schematic, fluid power diagrams, piping and wiring / circuit diagrams)
 - c) Manufacturers manuals / drawings
 - d) Approved sketches
 - e) Technical illustrations
 - f) Photographic representations
 - g) Visual display screen information
 - h) Technical sales / marketing documentation
 - i) Contractual documentation
 - j) Other specific drawings / documents
- P13. Use information extracted from related documentation, to include two from the following:
- a) Instructions (such as job instructions, drawing instructions or manufacturer's instructions)
 - b) Specifications (such as material, finish, process, contractual and calibration)
 - c) Reference materials (such as manuals, tables, charts, guides or notes)
 - d) Schedules
 - e) Operation sheets
 - f) Service / test information
 - g) Planning documentation
 - h) Quality control documents
 - i) Company specific technical instructions
 - j) National, international and organisational standards
 - k) Health and safety standards relating to the activity (such as COSHH)
 - l) Other specific related documentation
- P14. Deal promptly and effectively with any problems within their control and report those that cannot be solved
- P15. Report any inaccuracies or discrepancies in documentation and specifications

Knowledge and Understanding

To achieve this unit, you will need to show understanding by:

- K1. Knowing how to use and interpret engineering data and documentation
- K2. Explaining what information sources are used for the data and documentation that they use in their work activities
- K3. Explaining how documents are obtained, and how to check that they are current and valid
- K4. Explaining the basic principles of confidentiality (including what information should be available and to whom)
- K5. Describing the different ways / formats that data and documentation can be presented (such as drawings, job instructions product data sheets, manufacturers' manuals, financial spreadsheets, production schedules, inspection and calibration requirements and customer information)
- K6. Explaining how to use other sources of information to support the data (such as electronic component pin configuration specifications, reference charts, standards, bend allowances required for material thickness, electrical conditions required for specific welding rods, mixing ratios for bonding and finishing materials, metal specifications and inspection requirements and health and safety documentation)
- K7. Describing the importance of differentiating fact from opinion when reviewing data and documentation
- K8. Describing the importance of analysing all available data and documentation before decisions are made
- K9. Describing the different ways of storing and organising data and documentation to ensure easy access
- K10. Describing the procedures for reporting discrepancies in the data or documentation, and for reporting lost or damaged documents
- K11. Describing the importance of keeping all data and documentation up to date during the work activity, and the implications of this not being done
- K12. Explaining the care and control procedures for the documents, and how damage or graffiti on documents can lead to scrapped work
- K13. Explaining the importance of returning documents to the designated location on completion of the work activities
- K14. Explaining what basic drawing conventions are used and why there needs to be different types of drawings (such as isometric and orthographic, first and third angle, assembly drawings, circuit and wiring diagrams, block and schematic diagrams)
- K15. Explaining what types of documentation are used and how they interrelate (such as production drawings, assembly drawings, circuit and wiring diagrams, block and schematic diagrams)
- K16. Explaining the imperial and metric systems of measurement; tolerancing and fixed reference points

- K17. Describing the meaning of the different symbols and abbreviations found on the documents that they use (such as surface finish, electronic components, weld symbols, linear and geometric tolerances, and pressure and flow characteristics)
- K18. Describing the extent of their own responsibility, when to act on their own initiative to find, clarify and evaluate information, and to whom they should report if they have problems that they cannot resolve