



Australian Government

Assessment Requirements for MEM24004 Perform magnetic particle testing

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM24004B Perform magnetic particle testing.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, charts, lists, relative testing standards and other reference documentation for performing magnetic particle testing
- preparing the area for testing and identifying discontinuities in accordance with procedures
- selecting appropriate testing techniques and carrying out magnetic particle testing, checking and confirming basic indicators and identifying all defects in accordance with procedures on at least two occasions
- undertaking numerical operations and calculations associated with performing magnetic particle testing
- reporting test results in accordance with procedures and customer service requirements on at least two occasions.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- cleaning and preparation processes and procedures and work health and safety (WHS) requirements in relation to the preparation process
- established assessment procedures and techniques
- types of discontinuities and their consequences
- magnetic particle testing techniques and procedures
- system verification checks necessary to carry out the magnetic particle tests
- principles, applications, advantages and limitations of magnetic particle testing
- basic maintenance and storage procedures for testing equipment
- types of magnetism including:
 - magnetic properties, materials and circuits
 - relative permeability of common engineering materials

- magnetic discontinuity and leakage fields
- types of equipment and features including portable, stationary and automated
- nature and properties of different types of magnetising current
- current requirements for testing
- media types including advantages and limitations of dry powders and fluid suspensions
- quality control of media and viewing conditions
- disposal procedures and environment care
- preparation of parts
- effect of surface coatings on sensitivity and surface roughness
- dressing of welds
- interpretation of indications
- lighting conditions
- use of magnification
- factors influencing appearance
- common basic defects including spurious indications and false indications
- surface and sub-surface indications
- methods and/or procedures for reporting test results.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing magnetic particle testing at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015 or its replacement* and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>