Australian Government

Assessment Requirements for MEM24010 Perform radiographic testing

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM24010B Perform radiographic 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, relative testing and conformance standards for performing radiographic testing
- preparing the area for testing and identifying discontinuities in accordance with procedures
- applying safety practices and controls for minimising radiation exposure including effectively designing exposure and storage areas and calculating shielding thickness in accordance with procedures
- carrying out radiographic testing using techniques and equipment appropriate for material/s to be tested, calculating and producing optimum quality radiographs on at least two occasions
- interpreting and evaluating radiographs in accordance with applicable codes, standards and specifications and documenting and 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 for test surfaces
- assessment procedures and techniques
- types of discontinuities and their effect on the material
- procedures for carrying out each radiographic test and for specialised radiographic applications
- principal types of X-ray generators and radioisotopes and their effect on radiographic sensitivity
- tools, equipment, techniques and system verification checks
- relevant standards, regulations and codes

- principles of image formation, film and chemical properties and processing techniques
- various types of films and screens, their properties and effects on image quality
- maintenance and storage procedures for test equipment
- common faults and damage
- safety features of radioisotope cameras and X-ray equipment
- production of X-rays and gamma rays and comparison of them on basis of energy and intensity
- absorption of ionizing radiation by matter and the biological effects on living
- X-ray equipment
- gamma ray sources
- shielding thickness
- exposure calculations and techniques
- reciprocity law
- preparation and use of exposure charts and radiographic equivalence charts
- equipment types and set-up procedures
- types of materials and industrial applications
- methods and/or procedures for reporting test results
- implications of test results for the particular material and or application
- the following defects:
  - corrosion
  - metal fatigue
  - deformation in nonferrous alloys, ferrous alloys and steels
  - composite materials
  - fatigue cracks
  - stress corrosion cracking
  - manufacturing defects
  - thickness measurement and fit
  - mechanical and bonded repairs
  - welding defects
  - casting defects.

Assessment Conditions

- Assessors must:
  - have vocational competency in performing radiographic 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