



**Australian Government**

# **MEM24001 Perform basic penetrant testing**

**Release: 1**

# MEM24001 Perform basic penetrant testing

## Modification History

Release 1. Supersedes and is equivalent to MEM24001B Perform basic penetrant testing.

## Application

This unit of competency defines the skills and knowledge required to perform basic penetrant testing procedures and techniques in a range of industrial applications including fabrications, structures and components across a wide range of industries. It is restricted to basic visible dye or process penetrant line methods.

Penetrant testing is performed on critical component or structural zones and actual and potential defects are to be considered, together with ongoing abnormalities.

Materials and chemicals which are subject to codes and regulations - for example, chemicals, explosives, solvents, dangerous materials, acids, or noxious waste products - must be subject to safe work habits and must be stored and used in accordance with safe work practices.

This unit should not be selected when unit MEM24002 Perform penetrant testing has already been selected.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of industrial chemicals is required unit MEM13003 Work safely with industrial chemicals and materials should also be selected.

Where the selection and use of power tools are required unit MEM18002 Use power tools/hand held operations should also be selected.

No licensing or legislative requirements apply to this unit at the time of publication. Certification against Australian Standards may be achieved where assessment in this unit of competency is carried out in conjunction with an examining authority as described in AS ISO 9712 Non-destructive testing — Qualification and certification of NDT personnel.

Band: A

Unit Weight: 2

## Pre-requisite Unit

**MEM11011 Undertake manual handling**

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

MEM18001 Use hand tools

## Competency Field

Non-destructive testing

## Unit Sector

## Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from specifications
2. Prepare inspection areas for basic penetrant testing	2.1 Clean inspection areas and prepare for testing using appropriate procedures and materials 2.2 Carry out preparation processes in accordance with the relevant procedures 2.3 Assess inspection areas visually and identify obvious discontinuities
3. Perform basic tests	3.1 Identify nominated test from SOPs 3.2 Prepare test equipment in accordance with relevant standards and/or procedures 3.3 Select test media and apply in accordance with workplace practices and specifications 3.4 Carry out penetrant test in accordance with relevant work instructions 3.5 Maintain penetrant testing equipment and store in accordance with SOPs
4. Report the results of penetrant test(s)	4.1 Check and confirm basic indications and identify defects in accordance with organisational standards and/or procedures 4.2 Report test results including an accurate identification of location and size of discontinuities in accordance with organisational standards and/or procedures

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Preparation processes includes:	<ul style="list-style-type: none"> <li>• surface cleaning and drying.</li> </ul>
Obvious discontinuities include:	<ul style="list-style-type: none"> <li>• observed changes in material homogeneity.</li> </ul>
Reporting includes:	<ul style="list-style-type: none"> <li>• accurate identification of location and size of discontinuities.</li> </ul>

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM24001B Perform basic penetrant testing.

## Links

Companion Volume implementation guides are found in VETNet -

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