



Australian Government

MSL975007 Supervise sampling, inspections and testing at construction sites

Release: 1

MSL975007 Supervise sampling, inspections and testing at construction sites

Modification History

Release 1. Supersedes and is equivalent to MSL975007A Supervise sampling, inspections and testing at construction sites

Application

This unit of competency covers the ability to supervise and direct the placement of materials, such as soil, concrete and asphalt, at a construction site. The unit involves confirming the requirements of the inspection and testing plans, liaising with site personnel and organising sampling and testing activities, collecting reliable data and reporting results. Personnel are also expected to interpret results in the field, provide reliable advice to construction personnel, recognise and rectify obvious errors or unexpected results and troubleshoot common problems.

This unit of competency is applicable to technical officers working in the construction materials testing sector. This unit of competency is typically performed by experienced technicians or engineering paraprofessionals who often supervise or direct less experienced technical personnel.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

MSL974002 Conduct geotechnical site investigations

MSL954001 Obtain representative samples in accordance with sampling plan

Competency Field

Testing

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|---------------------------------------|---|
| 1 | Prepare for on-site operations | <ul style="list-style-type: none">1.1 Identify the job, consult with the client and obtain relevant information, including the level of supervision required, drawings and specifications1.2 Select equipment and materials required for the job1.3 Identify site hazards and the personal protective equipment (PPE) and safety procedures specified for job1.4 Organise site induction for self and support personnel as required1.5 Record description of the job to be undertaken, compare with specification and resolve any variations1.6 Select suitable transport for site access1.7 Brief support personnel on job-specific requirements |
| 2 | Establish on-site operations | <ul style="list-style-type: none">2.1 Consult with the site superintendent to determine methods of communication, roles, responsibilities and expectations of each party, including identification of potential site problems and conflicts2.2 Set up facilities for supervision, testing and sample storage2.3 Inspect the site to determine the characteristics of the project, including survey control points2.4 Design inspection, sampling and testing program in accordance with specifications |
| 3 | Supervise materials placement | <ul style="list-style-type: none">3.1 Conduct inspection, sampling and testing in accordance with project requirements3.2 Direct and advise the site superintendent based on test results and observations3.3 Record test data and observations in accordance with workplace practices3.4 Send samples to the base laboratory for testing as required3.5 Ensure cleaning of equipment does not cause |

			environmental damage
		3.6	Supervise the removal of equipment and materials from site
4	Analyse project data and report to client	4.1	Report test results to site superintendent at specified intervals
		4.2	Analyse project data and provide reports to client in the agreed format and at agreed times
5	Maintain workplace records	5.1	Ensure site results are documented in accordance with workplace practices
		5.2	Maintain security and confidentiality of workplace information
		5.3	Prepare and issue a final project report detailing supervision and testing carried out, statement of compliance and relevant tables and plans as required
6	Promote a safe work environment	6.1	Promote the use of safe work procedures and protective equipment
		6.2	Minimise environmental impacts of testing/sampling and generation of waste
		6.3	Promote the collection and disposal of all waste in accordance with workplace 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.

Standards, codes, procedures and/or workplace requirements

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian and international standards covering the requirements for the competence of testing and calibration laboratories, laboratory safety, and quality and environmental management
- national work health and safety (WHS) standards and codes of practice, national measurement regulations and guidelines, and environmental legislation and regulations
- standard methods for sampling and testing construction materials, such as soils, aggregates, concrete and asphalt
- specific codes, guidelines, procedures and methods, such as:
 - AustRoads test methods, and State/Territory Road Authority test methods
 - National Association of Testing Authorities (NATA) documents regarding construction materials testing (Field application document)
- workplace documents, such as standard operating procedures (SOPs); quality and equipment manuals; calibration and maintenance schedules; material safety data sheets (MSDS) and safety procedures; material, production and product specifications; production and laboratory schedules; workplace recording and reporting procedures; waste minimisation and safe disposal procedures; maps and site plans
- sampling and testing procedures for specific sites, clients and samples

Site problems

Site problems include, but are not limited to, one or more of:

- uncooperative site personnel
- non-conformances leading to confrontation with other personnel
- delays in obtaining test results
- damage to services, materials and site conditions
- displaced, missing and inaccurate survey markers
- misidentification of samples and sampling locations
- equipment breakdown and breakage
- environmental problems and issues, including site access, inclement weather, traffic, wildlife, vegetation and construction activities

Site hazards

Site hazards include, but are not limited to, one or more of:

- solar radiation, dust and noise

- manual handling of heavy materials and equipment
- working in/on trenches, confined spaces, wet and uneven surfaces, heights and slopes
- vehicular and pedestrian traffic
- underground services, such as gas and electricity
- working close to earth moving equipment, trucks and overhead loads

Safe work procedures Safe work procedures include, but are not limited to, one or more of:

- locating site services before investigations commence
- use of signage, barriers, flashing lights and traffic control
- use of PPE, such as hard hats, hearing protection, gloves, goggles, coveralls and safety boots
- use of material safety data sheets (MSDS)
- use of machinery guards
- recognising and observing hazard warnings and safety signs/barriers
- handling and storing hazardous material and equipment in accordance with labels, MSDS, manufacturer instructions, and workplace procedures and regulations
- labelling of samples, reagents and hazardous materials
- regularly cleaning equipment and vehicles
- following established manual handling procedures

WHS and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL975007 Supervise sampling, inspections and testing at construction sites

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Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- supervising and directing the placement of materials, such as soil, concrete and asphalt, at a construction site on at least two (2) occasions
- interpreting site plans, project specifications and codes to determine level of supervision and resources required, hazards, sampling/testing locations and frequencies
- liaising with site superintendent to establish safe and efficient on-site operations, organise site induction and/or inspect the site
- designing an inspection, sampling and testing program in accordance with specifications
- supervising the safe set-up, use, cleaning and removal of equipment from the site and the minimisation, collection and disposal of waste
- safely directing sampling and testing in accordance with inspection and testing plans and remit of samples for testing as required
- recording and storing reliable data, observations and project information, including accurate sketches and photographs of site features
- accurately interpreting test results and observations in the field to provide timely advice for construction personnel
- recognising, troubleshooting and rectifying obvious errors and unexpected results
- communicating and resolving site problems constructively with appropriate personnel
- seeking advice about problems beyond technical competence from appropriate personnel
- comparing test results with specifications and drawing valid conclusions on compliance
- issuing a final report that clearly sets out the supervision and testing carried out, statement of compliance, site results and other relevant project information
- maintaining accurate, complete and secure project records
- maintaining the confidentiality of client information
- working safely, promoting site safety and minimisation of environmental impacts.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- principles of planning and project management
- identification and classification of construction materials
- engineering properties of civil construction materials

- techniques and plant and equipment used in civil construction relevant to job role
- in situ and laboratory test methods for construction materials relevant to job role
- roles and responsibilities for different levels of site supervision
- typical site problems and recommended corrective actions
- typical hazards at construction sites, relevant work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgment of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event. The timeframe must allow for adequate assessment of operation under all normal and a range of abnormal conditions.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- 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.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL915001 Provide information to customers
 - MSL915002 Schedule laboratory work for a small team
 - MSL925001 Analyse data and report results
- Holistic assessment methods include:
 - review of inspection, sampling and testing programs, test results, analysis, project reports and records completed by the candidate
 - feedback from clients, supervisors and/or peers about the candidate's ability to supervise sampling, inspections and testing at sites safely, efficiently and in accordance with relevant codes and client instructions
 - review of the candidate's responses to simulation and/or a range of case studies/scenarios dealing with issues such as safety, minimising environmental impacts and resolving site problems
 - observation of the candidate supervising on site sampling, inspection and testing tasks
 - oral or written questioning about the preparation and establishment of site operations and supervision of material placement, including technical details of the collection and analysis of data, resolution of common site problems and promotion of a safe work environment.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:

- access to construction sites and relevant site documentation
- workplace procedures, site plans, sampling and test methods/programs and equipment manuals
- consumables; hand tools; field sampling equipment, such as moulds and coring equipment; and test equipment, such as nuclear moisture/density gauge, dynamic cone penetrometers and slumping equipment
- levelling equipment (dumpy and automatic levels) and global positioning system (GPS)
- still/video camera and communication equipment
- safety clothing and equipment, including helmets, boots, gloves, earmuffs and glasses.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

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