



Australian Government

Department of Education, Employment and Workplace Relations

RIIMEX302B Assess ground conditions

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the assessing of ground conditions in the resources and infrastructure industries. It includes: preparing for entry to area to be assessed; inspecting and assessing ground conditions; and recording and reporting on ground conditions.

Application of the Unit

This unit applies to the assessment of underground and surface ground conditions for safe working before entry. It is appropriate for those working in operational roles, at worksites within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for entry to area to be assessed	1.1. Access, interpret and apply compliance documentation relevant to the assessing of ground conditions 1.2. Determine and confirm ground areas to be inspected and assessed 1.3. Obtain information on ground condition of each area to provide an initial assessment 1.4. Arrange communications methods with other workers 1.5. Select personal protective equipment appropriate for work activities 1.6. Select and obtain appropriate support equipment for ground assessment 1.7. Identify, address and report potential hazards 1.8. Ensure that adequate ventilation is flowing into the work area, 1.9. Safely secure working area with barricades or advice to others working in or near the working site 1.10. Ensure that area to be assessed is adequately illuminated
2. Inspect and assess ground conditions	2.1. Conduct visual inspection of work area to identify adverse conditions which could affect ground stability and safety Where area is assessed as being stable, use appropriate equipment/techniques to confirm ground stability and remove loose material before continuing to next area, or commencing work 2.2. Where area cannot be made safe or ground is assessed as unstable, barricade and install warning signs 2.3. Continuously assess ground conditions during work activities
3. Record and report ground conditions	3.1. Record ground condition assessment results and action taken 3.2. Report ground conditions and action taken to relevant personnel for follow-up action

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to assess ground conditions:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply technical and safety information
- communicate with and coordinate activities with others
- apply plant and equipment records keeping requirements
- apply environmental compliance requirements
- apply isolation procedures
- apply scale/bar down procedures

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to assess ground conditions:

- basic geology
- types of ground which are assessed
- unsafe ground conditions
- site preparation procedures
- washing down procedures and equipment
- ground inspection and assessment procedures
- communication procedures and methods
- worksite security methods and equipment
- site recording and reporting systems

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for assessing of ground conditions • implementation of requirements, procedures and techniques for the safe, effective and efficient assessment of ground conditions • working with others to assess ground conditions and meet all of the required outcomes • consistent timely completion of assessment of ground conditions that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues.

	• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the assessment of ground conditions
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation

may include:

- legislative, organisation and site requirements and procedures
- manufacturer's guidelines and specifications
- Australian standards
- codes of practice
- Employment and Workplace Relations legislation
- Equal Employment Opportunity and Disability Discrimination legislation

Type of **ground** to be assessed may include:

- Decline
- ore drive/ ore body
- footwall and quartz margin
- hanging wall
- limestone, quartz, shale, sulphide materials
- major shears or faulting
- damp blocky areas (lubricated)
- unravelling blocky ground
- competent blocky ground
- bedding angle of rock as presents itself in openings
- different types of ground support
- 'bellies' and 'undercuts'
- different mineral or rock contacts
- ground with poor support or bearing capabilities
- washouts

Information may be obtained from:

- cross-shift workers
- supervisors
- survey reports
- training courses
- site-specific information
- industry-based electronic information such as stability monitoring systems
- site-based geotechnical experts

Communications may include:	• hand signals • direct communication • verbal • mine level plans • notice boards
Personal protective equipment may include:	• gloves to be worn when barring • sleeves to be rolled down • safety lanyard if working near edge or in a man-platform
Support equipment for ground assessment may include:	• danger barricades and signage • serviceable, effective spot light for high headings • jumbo lights • lights on loader with platform • hoses with tails • water services and manifolds • torch or stope light for additional lighting • in high headings or openings, a loader with man-platform and lights on • ancillary equipment
Potential hazards may be from crushing by rock falls, and may be caused by:	• commencing scaling work from unsafe or unsupported ground • other people approaching the work area and being allowed to enter un-scaled area • rock as it falls or slides down a scaling bar • barring down directly above self • large spans of unsupported laminated material that falls • having insecure footing and a 'bad' retreat • not reading shears/ block joints and faults correctly to identify rock that can move • not sounding and testing ground where different mineralisation and rock types meet • non-bonding of rock types • advancing into un-scaled areas without scaling the area first (having a quick look) • failing to recognize that dust falling indicates large rocks moving that may fall • shattering rock as it falls from the roof or face
Adverse conditions may include:	• fresh rock falls • bellies and undercuts

	• cracks and fissures • discontinuities • floor heave • three or more discontinuities or cracks with opposite dips (crack angle running into rock) which may form a wedge, block or slab, which is not bolted or otherwise supported • water seeping out of discontinuities that were previously dry • stope pillars that are higher than they are wide • signs of stress such as material that has flaked off walls and pillars • rock bolt plates that have been flattened or are 'doming' in, instead of out (plates that are beginning to turn 'inside out') • where the plate is split or the nut has pulled through the plate • straps that are under tension bowing out under obvious load • evidence that the rock bolt is taking load • rock bolts, plates and straps, which have corroded • timbers which are splitting, bending or have failing headboards • concrete reinforcement that is cracking, flaking or fallen
<i>Appropriate equipment/techniques</i> to confirm ground stability may include:	• varying length scaling bars fitted with centre rubber for rock deflection • manual scaling • hydro scaling • mechanical scaling, for example using an excavator or similar fit-for-purpose machine

Unit Sector(s)

Materials Extraction

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.