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| RIIMPO317A | Conduct roller operations |
| Unit descriptor | This unit covers the conducting roller operations in the civil construction industry. It includes: planning and preparing; conducting machine pre-operational checks; selecting, removing and fitting attachments; operating and relocating the machine; and carrying out operator maintenance and clean up. |
| Employability skills | This unit contains employability skills. |
| Application of the unit | This unit is appropriate for those working in mobile plant operator roles, at worksites within: <ul style="list-style-type: none"> • Civil construction |
| Competency field | Mobile Plant Operations |

| ELEMENT | PERFORMANCE CRITERIA |
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| 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. |
| 1. Plan and prepare | <ol style="list-style-type: none"> 1.1. Access, interpret and apply compliance documentation relevant to roller operations in the civil construction industry 1.2. Obtain, confirm and apply work instructions to the allotted task 1.3. Obtain, confirm and apply safety requirements to the allotted task 1.4. Identify, obtain and implement signage requirements from the project traffic management plan 1.5. Select plant, tools and equipment to carry out tasks that are consistent with the requirements of the job, and check them for serviceability and rectify or report any faults 1.6. Identify, confirm and apply environmental protection requirements to the allotted task |
| 2. Conduct machine pre-operational checks | <ol style="list-style-type: none"> 2.1. Carry out Pre-start, start-up, park and shutdown procedures 2.2. Check, rectify or report roller controls and functions for serviceability and any faults |
| 3. Operate roller | <ol style="list-style-type: none"> 3.1. Identify site hazards and use safe operating techniques to minimise risk 3.2. Identify and apply operating techniques to achieve optimum output while achieving specified tolerances 3.3. Operate roller to work instructions in accordance with procedures |
| 4. Select, remove and fit attachments | <ol style="list-style-type: none"> 4.1. Select attachment for the task 4.2. Remove and fit attachment 4.3. Test attachment to ensure correct fitting and operation 4.4. Use attachment in accordance with recommendations and design limits 4.5. Clean and store removed attachments in designated location |
| 5. Relocate the roller | <ol style="list-style-type: none"> 5.1. Move the roller safely between worksites, observing relevant codes and traffic management requirements 5.2. Prepare the roller for relocation |
| 6. Carry out machine operator maintenance | <ol style="list-style-type: none"> 6.1. Safely park, shutdown and prepare the roller for maintenance 6.2. Conduct inspection and fault finding |

| ELEMENT | PERFORMANCE CRITERIA |
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| | 6.3. Remove and replace defective parts safely and effectively 6.4. Carry out regular <i>programmed maintenance</i> tasks |
| 7. Clean up | 7.1. Clear work area and dispose of or recycle <i>materials</i> 7.2. Clean, check, maintain and store plant, <i>tools and equipment</i> |

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 conduct roller operations:

- apply legislative, organisation and site requirements and procedures
- apply legislative, organisation and site requirements and procedures
- apply site and equipment safety requirements
- apply attachment and roller operating techniques
- interpret drawings and sketches

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 conduct roller operations:

- roller types, characteristics, technical capabilities and limitations
- basic principles of soil technology for civil works
- basic principles of soil compaction
- site and equipment safety requirements
- rolling/compacting techniques related to essential tasks
- processes for interpreting drawings and sketches
- operational, maintenance and basic diagnostic procedures
- site isolation and traffic control responsibilities and authorities
- materials safety data sheet and materials handling methods
- project quality requirements
- civil construction terminology
- methods of changing machine attachments
- safe operating techniques in all terrain
- basic earthworks calculations
- civil construction activity sequences of road construction, earthworks and drainage
- levelling techniques
- JSA's/Safe work method statement

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

| RANGE STATEMENT | |
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| | Discrimination legislation |
| A roller: | <ul style="list-style-type: none"> • is a self propelled or towed machine used for the primary purpose of compacting a variety of types of construction materials • it may be rubber tyred, smooth drum, padded drum or grid/open face type and achieves compaction by one or a combination of the following compactive methods: static weight, kneading, vibration and impact • a grid roller is utilised to breakdown oversized construction materials • padded drums may include sheepsfoot, padfoot, tamping foot or wedge foot |
| Types of rollers may include: | <ul style="list-style-type: none"> • self propelled pneumatic tyred; self propelled smooth drum vibratory roller; self propelled padded drum vibratory roller; self propelled smooth drum roller (including 3 pointers); self propelled double drum vibratory roller; towed pneumatic multi-tyred roller; towed grid roller; towed smooth drum vibratory roller; towed padded drum vibratory roller. |
| Roller operations are to include: | <ul style="list-style-type: none"> • compacting materials to pattern and density, sealing and finishing • earthworks, pavement, bitumen and asphalt works |
| Work instructions may include: | <ul style="list-style-type: none"> • plans, specifications, quality requirements and operational details • quality requirements may include: dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction |
| Safety requirements may be from the site safety plan and organisational policies and procedures and include: | <ul style="list-style-type: none"> • protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of First Aid equipment, hazard control and hazardous materials and substances • safe operating procedures to recognise hazards and prevent risks associated with underground and overhead services, other machines, personnel, restricted access barriers, traffic control, working at heights, working in proximity to others, worksite visitors and the public • emergency procedures, including: emergency shutdown and stopping, extinguishing fires, organisational First Aid requirements and evacuation • hazards and risks, which may include: uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials |
| Environmental protection requirements are obtained from project environmental management | <ul style="list-style-type: none"> • organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management |

| RANGE STATEMENT | |
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| plan and may include: | |
| Attachments are to include: | <ul style="list-style-type: none"> • scraper bars and may include interchangeable drums, spray bars, wheel/drum brooms, drag brooms, padded drum attachments and blades |
| Roller controls and functions include: | <ul style="list-style-type: none"> • implements or other attachments, brakes and manoeuvrability |
| Safe parking practices is to include: | <ul style="list-style-type: none"> • ensuring access ways are clear, equipment/ machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement |
| Programmed maintenance is to include: | <ul style="list-style-type: none"> • cleaning, authorised servicing and the monitoring, recording and reporting of faults |
| Programmed maintenance may include: | <ul style="list-style-type: none"> • authorised minor replacements and the provision of assistance to maintenance personnel during maintenance and repair activities |
| Materials may include: | <ul style="list-style-type: none"> • materials may include but are not limited to clays, silts, stone, gravel, mud, rock, sand, topsoil, blended materials and bituminous mixes • rock types may include metamorphic, igneous and sedimentary |
| Tools and equipment are to include: | <ul style="list-style-type: none"> • hand tools and maintenance equipment relevant to the particular roller |

| EVIDENCE GUIDE | |
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| 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 | <p>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:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for conducting roller operations in the civil construction industry • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of roller operations in the civil construction industry, which are to include: <ul style="list-style-type: none"> ◦ operations performed in a minimum of three different soil types and include the mandatory tasks of: <ul style="list-style-type: none"> - compacting materials to pattern and density - sealing and finishing - the removal and fitting of at least one attachment • working with others to undertake and complete roller operations in the civil construction industry that meet all of the required outcomes • consistent timely completion of roller operations in the civil construction industry that safely, effectively and efficiently meet the required outcomes |
| Context of and specific resources for assessment | <ul style="list-style-type: none"> • 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. |

| EVIDENCE GUIDE | |
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| | <ul style="list-style-type: none"> • 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 | <p>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:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> ◦ implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes, which are to include operations performed in a minimum of three different soil types and include the mandatory tasks of: <ul style="list-style-type: none"> - compacting materials to pattern and density - sealing and finishing - the removal and fitting of at least one attachment ◦ consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> ◦ working with others to undertake and complete roller operations in the civil construction industry |
| Guidance information for assessment | Consult the SkillsDMC User Guide for further information on assessment including access and equity issues. |