

<b>Training Package</b>	<b>Rural Production (RTE03)</b>	<b>HSC Requirements and Advice</b>
<b>Title</b>	<b>Carry out basic electric fencing operations</b>	
<b>Unit code</b>	This competency standard covers the functions required to install and maintain electric fences in a rural enterprise. It requires knowledge of the structure and components of a range of electric fences, and the types of fencing materials, equipment and tools required for the job. It requires an awareness of workplace safety and environmental practices associated with maintenance activities. The work functions in this standard are likely to be carried out under routine supervision within enterprise guidelines.	<b>HSC Indicative Hours</b>  <b>15</b>
	<b>RTE2201A</b>	

### Evidence Guide

#### What evidence is required to demonstrate competence for this standard as a whole?

Competence in this standard requires evidence of the ability to select the correct tools and equipment, and apply appropriate methods to install and maintain electric fences. It also requires the ability to apply task instruction, erect fences to contour, safely install components without damage, and dismantle and transport fences. Also required is an awareness of earthing, current flow, resistance and leakage.

The skills and knowledge required must be **transferable** to a different work environment. For example, if competence is evident in carrying out electric fencing maintenance in an agricultural enterprise, it must also be evident in the installation of an electric fence in a horticultural enterprise.

<b>What specific knowledge is needed to achieve the performance criteria?</b>	<b>What specific skills are needed to achieve the performance criteria?</b>	<b>Are there other competency standards that could be assessed with this one?</b>	<b>Assessment guide</b>	<b>HSC Requirements and Advice</b>
<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:</p> <ul style="list-style-type: none"> <li>• uses and structures of a range of electric fence types</li> <li>• uses and types of standard fencing tools and materials</li> <li>• common electric fencing hazards and safety precautions</li> <li>• dangers posed by electricity to personnel and livestock</li> <li>• difference between portable and mains power</li> <li>• OHS legislative requirements</li> </ul>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complimentary skills are required. These include the ability to:</p> <ul style="list-style-type: none"> <li>• minimise environmental impact</li> <li>• interpret and apply task instruction</li> <li>• complete work efficiently within timeframes</li> <li>• maintain physical fitness</li> <li>• read and interpret work plans</li> <li>• communicate with work team and supervisor</li> <li>• calculate and measure fencing wire requirements.</li> </ul>	<p>This competency standard <u>could</u> be assessed on its own or in combination with other competencies relevant to the job function.</p>	<p>There is essential information about <b>assessing this competency standard for consistent performance and where and how it may be assessed</b>, in the Assessment Guidelines for this Training Package. All users of these competency standards must have <b>access</b> to the <b>Assessment Guidelines</b>. Further advice may also be sought from the relevant <b>Sector Booklet</b>.</p>	<p><b>Key Terms and Concepts</b></p> <ul style="list-style-type: none"> <li>• clearing and tidying</li> <li>• electric fence components</li> <li>• enterprise requirements</li> <li>• environmentally responsible manner</li> <li>• fencing operations</li> <li>• hazard</li> <li>• occupational health and safety (OHS)</li> <li>• personal protection equipment (PPE)</li> <li>• portable and mains power</li> <li>• pre-operational checks</li> <li>• recording and reporting</li> <li>• reusable materials</li> <li>• risk assessment</li> <li>• routine maintenance and repairs</li> <li>• safe work practices</li> </ul>

What specific knowledge is needed to achieve the performance criteria?	What specific skills are needed to achieve the performance criteria?	Are there other competency standards that could be assessed with this one?	Assessment guide	HSC Requirements and Advice
<ul style="list-style-type: none"> <li>• relevant codes of practice with regard to protection of the environment.</li> </ul>				<ul style="list-style-type: none"> <li>• safety and pre-operational checks</li> <li>• standard fencing materials</li> <li>• Standard Operating Procedures (SOP)</li> <li>• sundry electric fences</li> <li>• use, maintenance and storage of standard fencing tools</li> <li>• work plan.</li> </ul>

Element	Performance Criteria	Range of Variables	HSC Requirements and Advice
1 Prepare for fencing operations	1.1 <b>Tools and materials</b> appropriate to meet job requirements are selected and checked against the <b>work plan</b> .	<p>The Range of Variables explains the range of contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment may depend on the work situations available.</p> <p>For more information on contexts, environment and variables for training and assessment refer to the Sector Booklet.</p> <p>What tools and materials might be used?</p> <p>Tools may include post driver, post hole borer, wire strainers and fencing pliers, wire cutters, wire spinners, shovel, crowbar/rammer, brace and bit, drill, earth stakes, and cut out switches. Wire may include live wire, earth wire and electric ribbon tape.</p> <p>What information may be included in a work plan?</p> <p>This may include designated work tasks, tools and materials for use, procedures for pre-start and safety checks of tools, timeframe for work completion, and supervisors instructions and reporting requirements.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Fencing operations including:</p> <ul style="list-style-type: none"> <li>• new structures</li> <li>• maintenance</li> <li>• repairs.</li> </ul> <p>Knowledge of the range of tools and materials for fencing operations including:</p> <ul style="list-style-type: none"> <li>• post driver</li> <li>• post-hole borer</li> <li>• wire strainers</li> <li>• fencing pliers</li> <li>• wire cutters</li> <li>• wire spinners</li> <li>• shovel</li> <li>• crowbar/rammer</li> <li>• brace and bit</li> <li>• drill</li> <li>• energiser</li> <li>• earth stakes</li> <li>• cut out switches.</li> </ul> <p>Types of wire including:</p> <ul style="list-style-type: none"> <li>• live wire</li> <li>• earth wire</li> <li>• electric ribbon-tape.</li> </ul> <p>Information provided in a work plan including:</p> <ul style="list-style-type: none"> <li>• designated work tasks</li> <li>• tools and materials for use</li> <li>• procedures for pre-start and safety checks of tools</li> <li>• timeframe for work completion</li> <li>• supervisor's instructions and reporting requirements.</li> </ul>
	1.2 Routine <b>pre-operational checks</b> of tools are carried out and adjustments made according to manufacturers specifications.	<p>What may be involved in routine pre-operational checks of tools?</p> <p>This may include routine safety and pre-start checks and preparatory procedures including</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Safety and pre-operational checks.</p> <p>Routine maintenance and repairs of tools as</p>

Element	Performance Criteria	Range of Variables	HSC Requirements and Advice
		cleaning, lubricating, hand sharpening, priming pumps, clearing filters, tightening, basic repairs and adjustments.	<p>appropriate including:</p> <ul style="list-style-type: none"> <li>• cleaning</li> <li>• lubricating</li> <li>• hand sharpening</li> <li>• basic repairs and adjustments according to the manufacturer's specifications.</li> <li>• cleaning filters</li> <li>• tightening.</li> </ul> <p>Awareness of reasons for pre-operational checks and maintenance including:</p> <ul style="list-style-type: none"> <li>• increase the life of the tool or equipment</li> <li>• reduce risks of mechanical faults or malfunctions</li> <li>• increase efficiency of operation of the tool or equipment</li> <li>• compliance with guarantees and warranties.</li> </ul>
	1.3 Faulty or unsafe tools are identified and segregated for repair or replacement according to <b>enterprise requirements</b> .	<p>What enterprise requirements may be applicable to this standard?</p> <p>SOP, industry standards, production schedules, MSDS, work notes and plans, product labels, manufacturer's specifications, operator's manuals, enterprise policies and procedures (including waste disposal, recycling and re-use guidelines) and supervisor's oral and written instructions.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Identification of faulty or unsafe tools including:</p> <ul style="list-style-type: none"> <li>• visual inspection</li> <li>• routine maintenance</li> <li>• operator's appraisal commenting concern</li> <li>• tagging</li> <li>• supervisor's communication.</li> </ul>
	1.4 Potential and existing <b>hazards</b> in the workplace are risk assessed and minimised according to <b>OHS</b> and enterprise requirements.	<p>What existing and potential hazards may be relevant to this standard?</p> <p>This may include exposure to hazardous noise, dust solar radiation and adverse weather conditions. It may also include electricity associated with powered tools, portable live posts and energisers.</p> <p>What <b>OHS</b> requirements may be applicable to this standard?</p> <ul style="list-style-type: none"> <li>• Safe systems and procedures for:</li> <li>• the use of fencing tools and materials</li> <li>• the operation of vehicles</li> <li>• hazard and risk control</li> <li>• lifting, carrying and handling techniques</li> </ul>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Potential hazards in the workplace including:</p> <ul style="list-style-type: none"> <li>• exposure to <ul style="list-style-type: none"> <li>- noise</li> <li>- dust</li> <li>- solar radiation</li> <li>- adverse weather conditions</li> </ul> </li> <li>• electricity associated with <ul style="list-style-type: none"> <li>- powered tools</li> <li>- portable live posts</li> <li>- energisers.</li> </ul> </li> </ul> <p>A basic understanding of risk assessment:</p> <ul style="list-style-type: none"> <li>• identify hazards</li> <li>• assess associate risks</li> </ul>

Element	Performance Criteria	Range of Variables	HSC Requirements and Advice
		<ul style="list-style-type: none"> <li>• particular with regard to electric fence components</li> <li>• manual handling especially when handling posts and coils of wire</li> <li>• the use of personal protective equipment</li> <li>• outdoor work including protection from solar radiation</li> <li>• protection from dusts</li> <li>• administering first aid.</li> </ul>	<ul style="list-style-type: none"> <li>• strategies to control/eliminate risks.</li> </ul> <p>Safe work practices for:</p> <ul style="list-style-type: none"> <li>• use of fencing tools and materials</li> <li>• operation of vehicles</li> <li>• hazard and risk control</li> <li>• lifting, carrying and manual handling</li> <li>• working with live wire and posts</li> <li>• use of personal protective equipment (PPE)</li> <li>• outdoor work</li> <li>• administering first aid.</li> </ul>
2	<p>Carry out fencing operations</p> <p>2.1 Suitable <b>personal protective equipment</b> is selected, used and maintained according to OHS and workplace procedures.</p>	<p>What <b>personal protective equipment</b> may be relevant to this standard?</p> <p>This may include boots, overalls, gloves, protective eyewear, hearing protection, respirator or face mask, and sun protection.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Selection, use, maintenance and storage of PPE appropriate to work task.</p> <p>A range of PPE including:</p> <ul style="list-style-type: none"> <li>• footwear</li> <li>• head protection – hard hat, sun hat and helmet</li> <li>• gloves</li> <li>• overalls</li> <li>• apron</li> <li>• respirator</li> <li>• face mask</li> <li>• hearing protection</li> <li>• eye protection – goggles, safety glasses and face guard</li> <li>• sunscreen</li> <li>• waterproof clothing.</li> </ul> <p>Importance of correct fitting PPE.</p> <p>Maintenance of PPE according to manufacturer’s instructions and enterprise Standard Operating Procedures (SOP):</p> <ul style="list-style-type: none"> <li>• cleaning and decontamination</li> <li>• correct storage</li> <li>• regular checks for damage</li> <li>• repair/replacement of worn, malfunctioning or damaged equipment/parts</li> <li>• disposal of single-use equipment.</li> </ul>

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	<p>2.2 Dismantling operations are carried out, as required, with a focus on minimising unnecessary damage and recovering all <b>re-useable materials</b>.</p>	<p>What <b>re-useable materials</b> may be recovered?</p> <p>This may include wire, hinges, supports and posts.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Reasons for dismantling including:</p> <ul style="list-style-type: none"> <li>• change of enterprise fencing plan</li> <li>• installation of new and/or permanent fence.</li> </ul> <p>Reuseable materials from a dismantled fence including:</p> <ul style="list-style-type: none"> <li>• wire</li> <li>• hinges</li> <li>• supports</li> <li>• posts</li> <li>• insulators</li> <li>• wire joiners</li> <li>• earth pins.</li> </ul>
	<p>2.3 <b>Repair</b> requirements are identified and carried out according to work plan procedures.</p>	<p>What <b>repairs</b> may be carried out?</p> <p>This may include replacing posts, rejoining and restraining wires, gate hinges, gate chains and gates, and other repairs to gates. Knots that may be used in joining fence wire may include figure eight, pin and loop, Donald, post tie and double loop.</p> <p>What information may be included in a <b>work plan</b>?</p> <p>This may include designated work tasks, tools and materials for use, procedures for pre-start and safety checks of tools, timeframe for work completion, and supervisors instructions and reporting requirements.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Range of repairs including:</p> <ul style="list-style-type: none"> <li>• replacing posts</li> <li>• rejoining and restraining wires</li> <li>• gate hinges</li> <li>• gate chains</li> <li>• gates.</li> </ul> <p>Types of knots used in joining fence wire including:</p> <ul style="list-style-type: none"> <li>• figure eight</li> <li>• pin and loop</li> <li>• post tie</li> <li>• double loop.</li> </ul> <p>Suitability of knot for the required task.</p>
	<p>2.4 <b>Sundry electric fences</b> are erected to contour according to work plan and OHS requirements.</p>	<p>What may be included in <b>sundry electric fences</b>?</p> <p>Sundry electric fences include strip grazing systems.</p> <p>What information may be included in a <b>work plan</b>?</p> <p>This may include designated work tasks, tools and materials for use, procedures for pre-start</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Sundry electric fencing for a given task including:</p> <ul style="list-style-type: none"> <li>• restriction of stock movement</li> <li>• improved pasture utilisation (strip grazing)</li> <li>• environmental concerns regarding soil erosion</li> <li>• separation of stock.</li> </ul>

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		<p>and safety checks of tools, timeframe for work completion, and supervisors instructions and reporting requirements.</p> <p>What <b>OHS</b> requirements may be applicable to this standard?</p> <ul style="list-style-type: none"> <li>• Safe systems and procedures for:</li> <li>• the use of fencing tools and materials</li> <li>• the operation of vehicles</li> <li>• hazard and risk control</li> <li>• lifting, carrying and handling techniques particular with regard to electric fence components</li> <li>• manual handling especially when handling posts and coils of wire</li> <li>• the use of personal protective equipment</li> <li>• outdoor work including protection from solar radiation</li> <li>• protection from dusts</li> <li>• administering first aid.</li> </ul>	
	<p>2.5 Electric fence <b>components</b> are installed neatly according to manufacturers specifications.</p>	<p>What may be included in <b>electric fence components</b>?</p> <p>This may include portable live posts, insulators, energiser and wire.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Electric fence components including:</p> <ul style="list-style-type: none"> <li>• posts</li> <li>• live posts</li> <li>• energisers</li> <li>• wire/ribbon</li> <li>• earth spike/s</li> <li>• gate switch</li> <li>• lightning diverter</li> <li>• cut-out switch.</li> </ul>
	<p>2.6 All work is carried out safely according to OHS and enterprise requirements.</p>	<p>What <b>OHS</b> requirements may be applicable to this standard?</p> <ul style="list-style-type: none"> <li>• Safe systems and procedures for:</li> <li>• the use of fencing tools and materials</li> <li>• the operation of vehicles</li> <li>• hazard and risk control</li> <li>• lifting, carrying and handling techniques particular with regard to electric fence components</li> </ul>	

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		<ul style="list-style-type: none"> <li>• manual handling especially when handling posts and coils of wire</li> <li>• the use of personal protective equipment</li> <li>• outdoor work including protection from solar radiation</li> <li>• protection from dusts</li> <li>• administering first aid.</li> </ul> <p>What <b>enterprise requirements</b> may be applicable to this standard?</p> <p>SOP, industry standards, production schedules, MSDS, work notes and plans, product labels, manufacturer's specifications, operator's manuals, enterprise policies and procedures (including waste disposal, recycling and re-use guidelines) and supervisor's oral and written instructions.</p>	
3 Complete fencing operations	3.1 Post holes are firmly filled to remove potential hazards and minimise environmental impact.		
	3.2 Work site is <b>cleared and tidied</b> and all non-reusable materials are disposed of in an environmentally responsible manner.	<p>What may be involved in <b>clearing and tidying</b> a work site?</p> <p>This may involve replacing dirt and the removal and safe disposal of non-reusable materials.</p>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Procedures for minimisation of impact on the environment including:</p> <ul style="list-style-type: none"> <li>• replacing disturbed or removed soil</li> <li>• removal and safe disposal of non-reusable materials in a responsible manner</li> <li>• safe storage of re-useable materials.</li> </ul>
	3.3 Tools and re-usable materials are transported safely from the work site and stored according to enterprise and manufacturers recommendations.	<p>What <b>tools and materials</b> might be used?</p> <p>Tools may include post driver, post hole borer, wire strainers and fencing pliers, wire cutters, wire spinners, shovel, crowbar/rammer, brace and bit, drill, earth stakes, and cut out switches. Wire may include live wire, earth wire and electric ribbon tape.</p> <p>What <b>re-useable materials</b> may be recovered?</p> <p>This may include wire, hinges, supports and posts.</p>	

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	3.4 Further identified work or repair requirements are reported according to enterprise requirements.	<p>What <b>repairs</b> may be carried out?</p> <p>This may include replacing posts, rejoining and restraining wires, gate hinges, gate chains and gates, and other repairs to gates. Knots that may be used in joining fence wire may include figure eight, pin and loop, Donald, post tie and double loop.</p> <p>What <b>enterprise requirements</b> may be applicable to this standard?</p> <p>SOP, industry standards, production schedules, MSDS, work notes and plans, product labels, manufacturer's specifications, operator's manuals, enterprise policies and procedures (including waste disposal, recycling and re-use guidelines) and supervisor's oral and written instructions.</p>	

### What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where

0 = not required      1 = perform the process      2 = perform and administer the process      3 = perform, administer and design the process

1. How can <b>communication of ideas and information (1)</b> be applied?	Information with regard to the correct installation of portable electric fencing for topography and livestock may be discussed with the supervisor.
2. How can <b>information be collected, analysed and organised (1)</b> ?	Information with regard to the performance of tools and any identified faults may be reported to the supervisor for repair, and organised by records.
3. How are <b>activities planned and organised (1)</b> ?	Activities involving filling in post holes may be planned and co-ordinated with repair activities to minimise potential hazards and environmental impact.
4. How can <b>team work (1)</b> be applied?	In the application of methods and procedures to maintain and install portable electric fencing within timeframes.
5. How can the use of <b>mathematical ideas and techniques (1)</b> be applied?	Basic mathematical techniques may be applied in the calculation and measurement of fencing wire and other materials to complete tasks.
6. How can <b>problem-solving skills (1)</b> be applied?	Faulty tools or malfunctions may be reported for repair, and arrangements made for replacement in order to minimise disruption to repair and maintenance schedules.
7. How can the <b>use of technology (1)</b> be applied?	Technology may be used to communicate and calculate information with regard to fencing requirements.