Modification history

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| Release | Comments |
| Release 1 | This version released with FWP Forest and Wood Products Training Package Version 5.0. |

| FWPSAW3XXX | Sharpen tipped circular saw blades |
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| Application | This unit of competency describes the skills and knowledge required to assess the tipped circular saw blade condition, set up for sharpening and sharpen saw blades with an automated grinder.  The unit applies to individuals who sharpen tipped circular saws in saw technician workshop or sawmill.  All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.  No occupational licensing, legislative or certification requirements apply to this unit at the time of publication. |
| Prerequisite Unit | Nil |
| Unit Sector | Sawmilling and Processing |

| Elements | Performance Criteria |
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| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Prepare for sharpening | 1.1 Review work order to determine job requirements and where required seek clarification from appropriate personnel  1.2 Review environmental protection procedures and workplace health and safety requirements including the use of personal protective equipment, equipment lockout and safe manual handling techniques  1.3 Identify, assess and take actions to mitigate risks and hazards associated with sharpening tipped circular saws  1.4 Identify and implement workplace procedures for minimising waste material and maximising energy efficiency  1.5 Select appropriate tools and equipment to sharpen tipped circular saw blades and check for operational effectiveness according to manufacturer recommendations |
| 2. Assess tipped circular saw blade condition | 2.1 Apply lockout procedures according to manufacturer instructions before removal of tipped circular saw blade  2.2 Assess cutting performance of blade and determine need to replace or sharpen  2.3 Remove and replace tipped circular saw blades in designated machine or fit appropriate equipment to be sharpened in the machine  2.3 Assess condition of prior repairs, teeth, keft of the tips, and straightness of blade |
| 3. Set up sharpening equipment | 3.1 Select sharpening machine with suitable grinding wheel diameter and change or dress grinding wheel as required  3.2 Adjust machine settings to suit required blade geometry  3.3 Set saw blade in the machine to ensure tooth profile and geometry are maintained  3.4 Prepare grinding coolant system according to manufacturer instructions |
| 4. Sharpen tipped circular saw blade | 4.1 Select saw blade and grinding wheel angles, speeds and feeds to suit  4.2 Sharpen tips to achieve required finish, maintaining original profile and pitch, according to industry standards  4.3 Ensure variations in tooth height and depth of cut are within industry tolerances for concentricity  4.4 Set stock removal rate, wheel speeds, and saw tooth feed rate to achieve industry standards of sharpness  4.5 Dispose of unserviceable tipped circular saw blades according to environmental protection practices  4.6 Identify routine processing and equipment faults and resolve or report to appropriate personnel |

| Foundation Skills  This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria. | |
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| Skill | Description |
| Reading | * Extract essential information from operational manuals to determine safe operating procedures for equipment |
| Writing | * Prepare routine written reports using the required format, language and structure |
| Oral Communication | * Employ active listening and questioning to clarify content of work orders |
| Numeracy | * Complete precise calculations to determine angle, pitch, height and depth to which machine teeth are to be machined * Apply standard units of measurement in describing a correct angle, pitch height and depth of machine teeth |
| Navigate the world of work | * Identify main tasks, responsibilities and boundaries of own role |
| Interact with others | * Use modes of communication suitable to purpose to confirm and clarify understanding |
| Get the work done | * Recognise and respond to routine problems |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| FWPSAW3XXX Sharpen tipped circular saw blades | FWPSAW3212 Sharpen tipped circular saws | Revised workplace health and safety requirements; split Element 2 into 2 elements; added new Knowledge Evidence; updated unit code and title for clarity and compliance. | Non-equivalent |

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| Links | Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47 |

| TITLE | Assessment requirements for FWPSAW3XXX Sharpen tipped circular saw blades |
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| Performance Evidence | |
| An individual demonstrating competency must satisfy all the elements and performance criteria in this unit. There must be evidence that, on at least one occasion, the individual has:   * followed workplace health and safety procedures relevant to sharpening tipped circular saw blades * sharpened tipped circular saw blades according to a work order and workplace requirements * removed and replaced tipped circular saw blades from equipment * assessed the condition of blade teeth for: * sharpness of each tooth * damage to teeth * pitch * kerf width * set up the sharpening machine. | |

| Knowledge Evidence |
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| An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:   * basic knowledge of physics of sawing including: * saw blade material and properties * impact of timber properties on saw blades * direction of cut * forces on a blade * heat removal * sawtooth configuration * purpose, features and operation of circular saws for which tipped blades are sharpened: * circular saws for timber processing * cold saws for ferrous and non-ferrous alloys * features and names of different parts of circular saw blades * purpose, features and operation of tools and equipment used to sharpen tipped circular saw blades: * manually or automatically adjustable grinding machines * abrasive wheels * coolants used in sharpening process and impact on efficient sharpening * importance of sharpening and tension to match requirements for: * characteristics of various materials sawn * speed of the sawing process * direction of the sawing process * cutting angle for sawing * saw blade specifications * methods for: * removing saw blades from plant and equipment * assessing saw blade condition * sharpening blades to specified requirements * setting teeth to a specified kerf * maintaining concentricity of teeth * tooth pitch and tooth angles at which blades are sharpened (blade geometry) * range of speeds at which abrasive wheels can be operated without damaging blades * types of risk and hazards and mitigation measures associated with sharpening tipped circular saw blades * workplace procedures specific to sharpening tipped circular saw blades: * workplace health and safety with particular emphasis on equipment lockout, safe manual handling and use of personal protective equipment (PPE) * communication reporting lines * recording and reporting processing and equipment faults * environmental protection practices for repairing and maintaining tools and equipment in sawmills: * reducing water and energy use * cleaning plant, tools and equipment * disposing of, recycling and reusing materials. |

| Assessment Conditions |
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| Assessment of the skills in this unit of competency must take place under the following conditions:   * physical conditions: * skills must be demonstrated in a saw technician workshop, sawmill or an environment that accurately represents workplace conditions * resources, equipment and materials: * tools and equipment used to sharpen tipped circular saw blades including manually or automatically adjustable grinding machines, abrasive wheels and measuring equipment * circular saws for which blades are to be sharpened including circular saws and cold saws * tipped circular saw blades for sharpening * PPE suitable for sharpening tipped circular saw blades * specifications * template documents for recording processing and equipment faults * manufacturer instructions for use, repair and maintenance of equipment * work order with specific instructions for sharpening tipped circular saw blades * workplace procedures for sharpening tipped circular saw blades.   Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and / or standards. |

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