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**FOREST ESTABLISHMENT**  
**Prepare steep terrain for forest**  
**establishment using excavator**  
**windrowing**

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<b>level:</b>	4
<b>credit:</b>	15
<b>final date for comment:</b>	April 2005
<b>expiry date:</b>	December 2006
<b>sub-field:</b>	Forestry
<b>purpose:</b>	People credited with this unit standard are able to: select and prepare equipment and machinery for preparing land; identify constraints to preparing steep terrain for forest establishment using excavator windrowing; prepare steep terrain for forest establishment using excavator windrowing; and maintain equipment and machinery after land preparation.
<b>entry information:</b>	Recommended: Unit 1232, <i>Demonstrate knowledge of forest planting site preparation</i> , or demonstrate equivalent knowledge and skills.
<b>accreditation option:</b>	Evaluation of documentation and visit by NZQA and industry.
<b>moderation option:</b>	A centrally established and directed national moderation system has been set up by Forest Industries Training.
<b>special notes:</b>	<ol style="list-style-type: none"><li>1 <i>Company requirements</i> refers to instructions to staff on policy and procedures (including the application of legislation to worksite situations) which are formally documented, or have otherwise been brought to the attention of staff. Examples are standard operating procedures, specifications, and manuals.</li><li>2 Reference in this unit standard to the <i>Code of Practice</i> refers to the <i>Approved Code of Practice for Safety and Health in Forest Operations</i> published by the Occupational Safety and Health Service, Department of Labour, Wellington (1999) and any subsequent amendments.</li><li>3 Reference to <i>industry best practice</i> in this unit standard refers to minimum standards for forest operations as</li></ol>

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described in: *Forest Industry Best Practice Guidelines*, published by Forest Industries Training (2000) and available from Forest Industries Training, PO Box 6216, Rotorua; and the environmental standards contained in the *Forest Industry Code of Practice* published by the Logging Industry Research Organisation (LIRO) (1993) and available from LIRO, Private Bag 3020, Rotorua. The purpose of these documents is to plan, manage and carry out forestry operations in a manner which is sustainable, environmentally and socially acceptable, physically achievable, and economically viable.

- 4 Legislative requirements in this unit standard include but are not limited to the: Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, the Resource Management Act 1991, and their subsequent amendments.

## **Elements and Performance Criteria**

### **element 1**

Select and prepare equipment and machinery for preparing land.

Range: excavator, root rake, line rake.

### **performance criteria**

- 1.1 Equipment and machinery chosen are appropriate for the work to be carried out.
- 1.2 Pre-start check procedures for damage, wear, and faults are carried out on equipment and machinery, problems are identified, and corrective action is taken in accordance with manufacturer's recommendations.

Range: tracks, track tension, bearings, nuts and bolts, hydraulics, alignments, couplings.

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**element 2**

Establish constraints to preparing steep terrain for forest establishment using excavator windrowing.

**performance criteria**

- 2.1 Work area is checked for historic sites and action to protect the site is taken in accordance with the job prescription and industry best practice.
- 2.2 Hazards are identified in terms of underground services, surface obstacles, and contours.
- 2.3 Work pattern is developed that minimises empty running, and takes into account the terrain, identified hazards, and job prescription.
- 2.4 Ground conditions are checked for suitability for operation.  
Range: soil type, soil conditions, terrain, underrunners.
- 2.5 Equipment and machinery adjustments made are appropriate for the work to be carried out.  
Range: top link adjustment, couplings, alignments.

**element 3**

Prepare steep terrain for forest establishment using excavator windrowing.

**performance criteria**

- 3.1 Slash is cleared for forest establishment in accordance with predetermined work pattern, the requirements of the job prescription and industry best practice.
- 3.2 Equipment and machinery are monitored during use, and required adjustments are made in accordance with manufacturer's specifications.  
Range: top link adjustment, rake depth, ground speed, implement alignment.

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3.3 The machine is operated and controlled within safe operating limits to suit conditions in accordance with the Code of Practice and legislative requirements.

Range: monitoring engine performance, manoeuvring, turning, use of hydraulic equipment, rake depth, ground speed, ground conditions, avoidance of obstacles (eg stumps).

3.4 The machine is operated at a work rate that meets manufacturer's specifications and the requirements of the job prescription.

**element 4**

Maintain equipment and machinery after land preparation.

**performance criteria**

4.1 Equipment and machinery are stored in accordance with company requirements.

4.2 Machine shut-down procedures are carried out in accordance with manufacturer's specifications.

4.3 Damage to equipment and machinery is identified, and is corrected in accordance with company procedures and manufacturer's specifications.

Range: missing, bent, broken parts.

4.4 Working surfaces are cleaned, oiled and/or greased in accordance with manufacturer's specifications.

4.5 Equipment and machinery are lubricated in accordance with manufacturer's specifications.

**Comments on this unit standard**

Please contact Forest Industries Training Organisation [training@fitec.co.nz](mailto:training@fitec.co.nz) if you wish to suggest changes to the content of this unit standard.

**Please Note**

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Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0173 which can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.