



ASSESSMENT GUIDELINE

Demonstrate basic movement skills and the use of ice axe and crampons

Unit Standard: 18132

**Level: 2 Credit: 3 Version: 2
Published by Sfrito 2005**

Purpose:

People credited with this unit standard are able to demonstrate mountain movement skills to maintain safety of self and others and use mountaineering equipment to maintain personal safety.

Special Notes:

1. For the purposes of this unit standard the assessment should be conducted on a variety of non-avalanche terrain, including low angled (up to 20-degree) terrain, and short, steep terrain.
2. For technical standards necessary for climbing a mountain, refer to Unit 20140, *Demonstrate technical mountain craft skills*.
3. All activities must comply with any relevant environmental, legislative and/or regulatory requirements set out in *New Zealand Environmental Care Code*, Health and Safety in Employment Act 1992, Injury Prevention, Rehabilitation, and Compensation Act 2001, and their subsequent amendments. The *New Zealand Environmental Care Code* is available from the Department of Conservation, Head Office, PO Box 10420, Wellington.
4. There are minimum assessor requirements for the assessment of this unit standard. The details of these requirements are available on the Sfrito website <http://www.sfrito.org.nz/>.

Overview of assessment:

This assessment has 3 tasks

Task 1: Walk on varied alpine terrain using an ice axe

- a. Without crampons
- b. Using crampons

Task 2: Self-arrest from a variety of positions

Task 3: Cut steps in hard snow using an ice axe

Resources for all tasks:

Each candidate will need to have available the gear required for alpine walking (ice axe, helmet, boots, personal clothes and waterproof gear, pack, food, ...).

The group may need additional safety equipment. The equipment carried will depend on the nature of the trip but could include emergency shelter, first aid kit, mountain radio, cellphone, spare warm clothing, cooker...

NZMSC Alpine Skills Manual

Mountaineering: Freedom of the Hills, 6th ed, edited by Don Graydon; published by The Mountaineers, Seattle, WA.

- <http://syndication.getoutdoors.com/go/golearn/450> step-cutting
- <http://syndication.getoutdoors.com/go/golearn/451> crampon technique
- <http://syndication.getoutdoors.com/go/golearn/168> using an ice axe, self-belay
- <http://syndication.getoutdoors.com/go/golearn/169> ascending snow
- <http://syndication.getoutdoors.com/go/golearn/170> descending snow
- <http://syndication.getoutdoors.com/go/golearn/171> self-arresting

Task 1: Walk on varied alpine terrain using an ice axe

a. Without crampons

b. Using crampons

Overview of Task 1: the focus of the assessment is to show safe and efficient movement skills in an alpine environment using an ice axe, and crampons when they are needed

Instruction to candidate:

During the task you are required to:

- Walk on rock and scree
- Walk on snow using an ice axe only
- Walk on hard snow using an ice axe and crampons
- Walk in a safe, balanced and efficient way

Element 1: Demonstrate mountain movement skills

Element 2: Use ice axe and crampons

Performance criteria	Evidence/Judgement
<p>1.1 Walking techniques are applied taking into account the terrain and snow conditions.</p> <p>Range: walking techniques - traversing, down hill, up hill; terrain and snow conditions - rock, scree, surface snow conditions, snowpack, run-out, visibility</p>	<ul style="list-style-type: none"> • Balance is maintained • Sliding is avoided • Avoids slopes where a self-arrest would be required to avoid a hazardous runout • Route or technique is altered based on: <ul style="list-style-type: none"> - Runout e.g. takes a different route if snow conditions are hard and runout is hazardous - Poor visibility such as whiteout or night time e.g. slows pace • Uses ice axe on snow for balance and security: <ul style="list-style-type: none"> - As a walking stick - As a self-belay • When using ice axe on steeper snow: <ul style="list-style-type: none"> - Keeps axe in uphill hand - Maintains 2 points of contact with snow (2 feet, or 1 foot and axe) - Changes direction on slope using axe and feet to create a solid stance • Efficiently stows ice axe when not needed e.g. stows between back and pack <p>While walking without crampons:</p> <ul style="list-style-type: none"> • Walks up, down and across 15° to 20° angled slopes of: <ul style="list-style-type: none"> - Rock - Scree - Soft snow e.g. fresh snow or slush - Hard snow (less than 2cm foot penetration)
<p>1.2 Steps are kicked, and provide secure footing for climbing, descending or traversing a snow-slope.</p> <p>Range: edging, pigeonholing, plunge steps.</p>	
<p>2.1 Ice-axe techniques are applied taking into account the terrain and snow conditions.</p> <p>Range: techniques - step-cutting, walking stick, self-arrest; terrain and conditions may include - surface snow conditions, snowpack, run-out, visibility.</p>	

<p>2.2 Crampons are fitted and adjusted to the boot size.</p>	<ul style="list-style-type: none"> • Walks up, down and across 25° to 35° slopes of soft snow using:
<p>2.3 Correct application of crampon techniques is demonstrated taking into account the terrain and snow conditions.</p> <p>Range: traverse, climb, descend; techniques -10 point, front point.</p>	<ul style="list-style-type: none"> - Edging - Pigeonholing - Plunge steps • Edge, heel, toe and full sole of boot are used to maximise grip in different situations • Movement is efficient e.g. a single kick produces a good step; use of changing leader in a group to kick steps.
<p>2.4 Ice axe and crampon techniques are applied correctly in combination.</p>	<p>While walking with crampons:</p> <ul style="list-style-type: none"> • Crampons are securely fitted to boots, with long straps tucked away • Gaiters or overtrousers are snug around legs • Manages balling up proactively • Walks up, down and across snow slopes of at least 25° using flat-footed technique, keeping all downwards-facing points in contact with snow • Ascends and descends snow slopes of at least 25° using front points

<p>Task 2: Self-arrest from a variety of positions</p>
<p>Overview of task: The focus of this assessment is to show an ability to stop a slide on moderate angled snow</p> <p>Notes to the Assessor Self-arresting with crampons on can be very hazardous. The technique can be covered in a static situation.</p> <p>Instruction to candidate: During this task you are required to self arrest using good technique from 4 positions:</p> <ul style="list-style-type: none"> • On belly head uphill • On belly head downhill • On back head uphill • On back head downhill

Element 2: Use ice axe and crampons	
Performance criteria	Evidence/Judgement
<p>2.1 Ice-axe techniques are applied taking into account the terrain and snow conditions.</p> <p>Range: techniques - step-cutting, walking stick, self-arrest;</p> <p>terrain and conditions may include - surface snow conditions, snowpack, run-out, visibility.</p>	<p>Self arrests from 4 positions:</p> <ul style="list-style-type: none"> - On belly head uphill - On belly head downhill - On back head uphill - On back head downhill <ul style="list-style-type: none"> • Rolls towards the adze • Turns head away • Keeps axe under shoulder • Keeps weight on axe and knees/feet • Stops in an appropriate time given the slope and surface conditions

Task 3: Cut steps in hard snow using an ice axe	
<p>Overview of task: The focus of this assessment is to show the ability to move on hard snow without crampons</p> <p>Instruction to candidate: During this task you are required to cut steps using an ice axe while walking up and down a slope</p>	
Element 1: Demonstrate mountain movement skills	
Performance criteria	Evidence/Judgement
<p>1.3 Steps are cut on a snow slope using ice axe, taking into account terrain and snow conditions, and steps are used for ascending and descending.</p> <p>Range: terrain and snow conditions include - surface snow, snowpack, run-out.</p>	<p>Candidate cuts steps while walking up and down hard snow slopes.</p> <ul style="list-style-type: none"> • On low-angled slopes with a good runout a single blow gives enough of an edge to maintain grip • On steeper slopes, or slopes with poor runout, steps are big enough for whole boot • Steps are cut efficiently e.g. use of straight arm pendulum technique; adze doesn't get stuck in the snow • Steps are cut on slopes of above 15°

Candidate Name _____ NSN _____

**Unit 18132 (v2) Checklist
Demonstrate basic movement skills and the use of ice axe and crampons**

Assessor name: _____

Organisation name: _____

C/NYC

Comments

Task 1: Walk on varied alpine terrain using an ice axe

a. Without crampons

b. Using crampons

		Using crampons	
		Without crampons	
<ul style="list-style-type: none"> • Balance is maintained • Sliding is avoided • Avoids slopes where a self-arrest would be required to avoid a hazardous runout • Route or technique is altered based on runout; poor visibility • Uses ice axe on snow for balance and security: as a walking stick; as a self-belay • When using ice axe on steeper snow: <ul style="list-style-type: none"> - Keeps axe in uphill hand - Maintains 2 points of contact with snow - Changes direction on slope using axe and feet to create a solid stance 			
<ul style="list-style-type: none"> • Efficiently stows ice axe when not needed e.g. stows between back and pack <p>While walking without crampons:</p> <ul style="list-style-type: none"> • Walks up, down and across 15° to 20° angled slopes of: <ul style="list-style-type: none"> <li style="width: 50%;">- Rock <li style="width: 50%;">- Soft snow <li style="width: 50%;">- Scree <li style="width: 50%;">- Hard snow • Walks up, down and across 25° to 35° slopes of soft snow using edge, heel, toe and full sole of boot to maximise grip <ul style="list-style-type: none"> - Edging - Pigeonholing - Plunge steps • Movement is efficient e.g. a single kick produces a good step; use of changing leader in a group to kick steps. <p>While walking with crampons:</p> <ul style="list-style-type: none"> • Crampons are securely fitted to boots, with long straps tucked away • Gaiters or overtrousers are snug around legs • Manages balling up proactively • Walks up, down and across snow slopes of at least 25° using flat-footed technique • Ascends and descends slopes of at least 25° using front points 			

