



Australian Government

Assessment Requirements for SISOCVE005 Establish ropes, ladders and belays for caving

Release: 1

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Modification History

Not applicable.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- select and set up belay systems and ropes suitable for single pitch abseiling and laddering in caves for four different pitches
- collectively set up the following types of systems:
 - cave ladders
 - doubled rope technique
 - single rope
 - releasable abseil line
 - rope systems suitable for single rope techniques, including rigs for redirections and re-belays
 - top rope top belay
 - top rope bottom belay
 - bottom brake belay
 - self-belay
- collectively select and use these different types of anchors:
 - fixed artificial
 - naturally occurring
 - artificial removable
- collectively select and tie at least four different types of knots suitable for the system type established, and appropriate for the intended load and function
- identify and tag three different types of faulty equipment.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- organisational procedures for safety and serviceability checks
- how the following factors affect selection of descent and ascent routes for caving environments:
 - season of operation, weather and environmental conditions

- participant characteristics including age, size, weight, fitness and abseiling or climbing skill level
- group objectives and size
- environmental hazards specific to abseiling and climbing in caves and how these affect:
 - safe access to and egress from the pitch
 - choice of descent and ascent routes for safety of abseiler or climber
 - positioning of top or bottom belay systems for safety of belayer
- features, functions, advantages and disadvantages of different types of anchors used in caves:
 - fixed artificial:
 - threads
 - bolts
 - chains
 - naturally occurring:
 - trees
 - in cave natural bollards and jug handles
 - artificial removable:
 - spring loaded camming devices
 - nuts, wires and hexes
 - pitons
- issues that are assessed when selecting anchors and likely impacts of poor condition on performance under load:
 - wear and abrasion due to age and use
 - corrosion
 - decay
 - dislodgment
 - underlying stability of structural features and presence of:
 - cracks
 - deformities
 - fissures
- meaning of the following terms, and principles which apply when rigging anchors and ropes:
 - equalisation of load
 - single point of failure
 - anchor redundancy
 - angle of separation
 - shock loading
 - cross loading and cyclical loading of carabiners
 - miss-alignment of carabiners
 - closing the system, including advantages, disadvantages and methods used

- types of forces (upwards, downwards) generated during abseiling, climbing and belaying, and how to calculate load on anchors and ropes for these circumstances:
 - top rope top belay
 - tope rope bottom belay
 - bottom brake belay
 - self-belay
 - abseiler or climber descending under control
 - abseiler or climber fall
 - belayer arresting falls
- the effects of rope stretch during operations and implications if not minimised:
 - abrasions
 - rope bounce
 - undue stress on the anchor system
 - potential for abseiler or climber to impact with hazards, or become entangled
- features, functions, advantages and disadvantages of laddering, abseiling and belay equipment used in caves:
 - abseiling, climbing and belay systems for:
 - cave ladders
 - doubled rope technique
 - single rope
 - releasable abseil line
 - rope systems suitable for single rope techniques
 - top rope top belay
 - tope rope bottom belay
 - bottom brake belay
 - self-belay
 - descending devices:
 - assisted locking
 - inline
 - plate
 - figure 8
 - tubular
 - improvised
 - belay devices:
 - assisted locking
 - inline
 - plate
 - figure 8
 - tubular
 - improvised

- harnesses of different types
- carabiners
- maillon rapides
- static and dynamic rope and when each might be used
- rope protectors
- caving ladders
- tape
- sewn sling
- personal attachment systems, including cow's tails
- Prusik cord
- foot loops
- mechanical ascenders
- how the following factors affect the selection and rigging of above equipment:
 - site characteristics including position of rub points
 - weather and environmental conditions
 - participant size, weight, and abseiling or climbing ability
 - belayer to climber weight ratio
 - cumulative load for group size and number of abseils or ladder climbs
 - abseiling and laddering techniques to be used
 - distance, height and angle of anchor relative to abseil or climb position
- manufacturers' specifications for equipment use
- techniques used to establish belay systems for safety of belayer:
 - rigging belays for performance of rescues
 - attaching to anchor or self belay safety system
- techniques used to establish descending and ascending equipment for redirections and re-belays
- situations requiring back up belay systems
- when different knots are used, advantages and disadvantages, and how to tie them:
 - fixed eye
 - mid line tied in the bight
 - end to end joining
 - termination
 - load control hitches
 - slide and grip hitches
- types of safety checks completed for rigging of equipment
- how to care for abseiling and laddering equipment when rigging to avoid damage, and promote long lifespan
- potential environmental impacts of rigging for abseiling and laddering in caves and techniques used to minimise damage.

Assessment Conditions

Skills must be demonstrated in a natural cave where rigging is completed for recreational single pitch abseiling and laddering.

The following resources must be available to replicate industry conditions of operation:

- first aid equipment
- communication equipment for emergency response
- rescue equipment.

Assessment must ensure use of:

- personal protective equipment to include:
 - gloves
 - caving helmets
 - headlamps
 - harnesses
- anchors to include:
 - fixed artificial
 - naturally occurring
 - artificial removable
- abseiling equipment to include:
 - carabiners
 - maillon rapides
 - rope which can include static and or dynamic rope
 - rope protectors
 - caving ladders
 - tape or sewn sling
 - personal attachment systems, including cow's tails
 - Prusik cords
 - foot loops
 - mechanical ascenders
 - descending devices
 - belay devices
- template safety checklists
- organisational procedures for safety and serviceability checks.

Assessors must satisfy the Standards for Registered Training Organisations requirements for assessors, and:

- have a collective period of at least three years' experience as a canyoning activity leader or rigger, where they have applied the skills and knowledge covered in this unit of competency; the three years' experience can be part time or full time experience.

Links

Companion Volume Implementation Guides -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1ca50016-24d2-4161-a044-d3faa200268b>