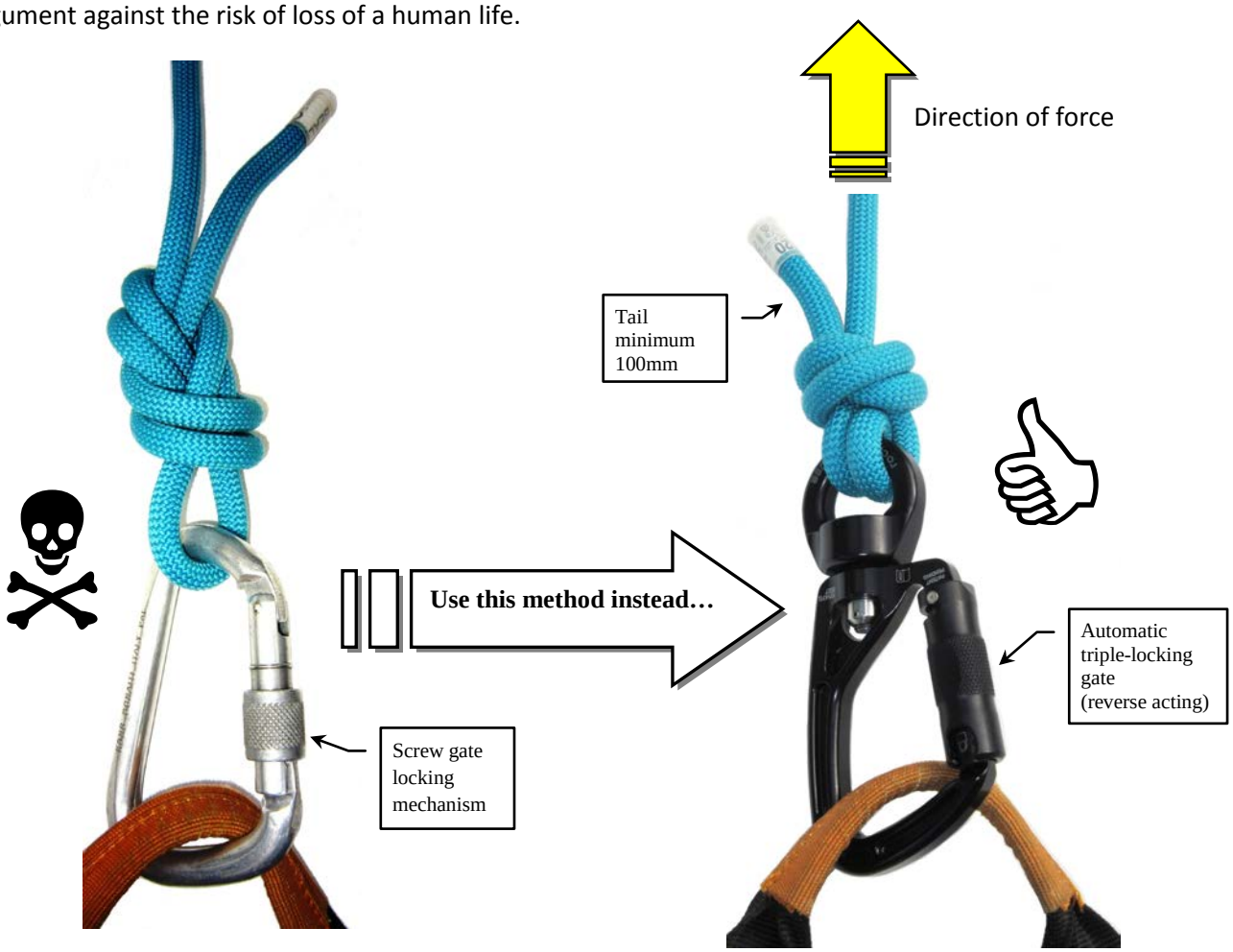
CHALLENGE ROPES COURSE ACTIVITIES

Protocols for selection and use of connective systems in fall protection applications

Before deciding on an appropriate rope attachment method, the person in charge of the workplace must identify the hazards and assess the risks associated with the various options available.

Participant safety must be at the forefront of the decision making process – particularly where children are involved. Although courts do give some consideration to the expense and difficulty of implementing new changes to existing systems, these expenses and difficulties must be significant. A judge would not – for example – accept excuses that the cost of implementing more secure connective systems might be measured in the hundreds of dollars. The cost of the change would have to be to the extent that it would financially *ruin* the business or result in the *complete cessation* of trading. The judge would weigh this argument against the risk of loss of a human life.

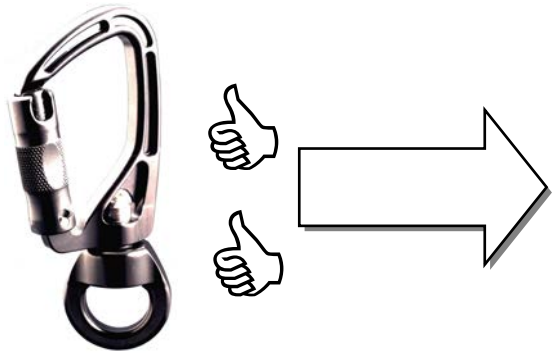


Because of the decision in Inspector Victor Page v 4 in 1 fitness Pty Ltd (14 April 2000), the prosecution would have good grounds to argue that this method is *reckless* and constitutes *gross negligence*.

If a single clip-in method is desired, it is important to choose a connector that is resistant to misalignment and/or accidental disconnection.

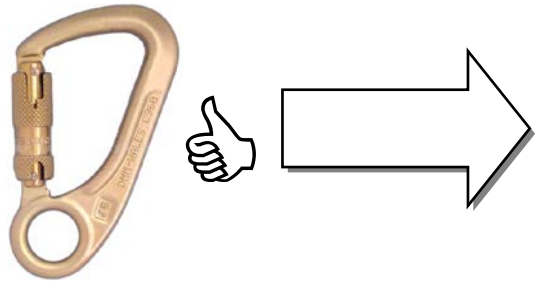
CONNECTORS

Proper consideration must be given to the type of carabiner used to provide the connective interface to the users harness.



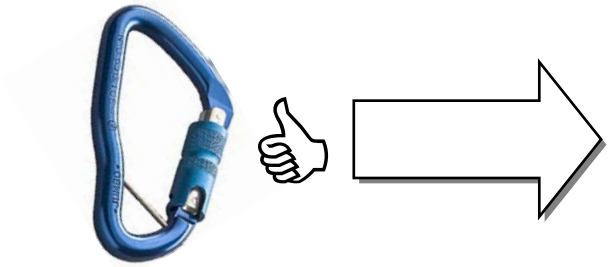
Self-locking carabiner with swivelling captive eye:

This type of connector provides the highest level of security and resistance to misalignment. The eye can swivel 360 degrees and this significantly reduces the risk of roll-out. The eye is circular and this means it is strong in all loading profiles. The triple action (auto-locking) gate is resistant to accidental opening due to gravitational and vibrational energy. The gate is *reverse acting*. Human errors are also unlikely due to the fact that the gate self-locks.



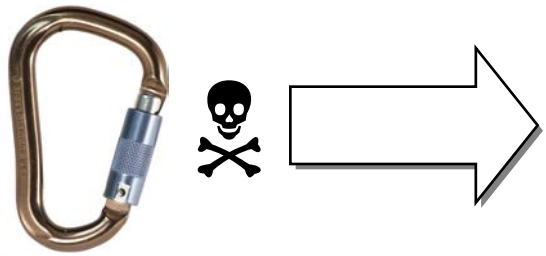
Self-locking carabiner with captive eye:

This type of connector provides a robust combination of security and resistance to misalignment. The eye is circular and this means it is strong in all loading profiles. The triple action (auto-locking) gate is resistant to accidental opening due to gravitational and vibrational energy. Human errors are also unlikely due to the fact that the gate self locks.



Self-locking carabiner with captive pin:

This type of connector provides an acceptable combination of security and resistance to misalignment. The captive pin is a cheaper alternative to carabiners with a captive eye. The triple action (auto-locking) gate offers the same benefits as above.



Self-locking carabiner:

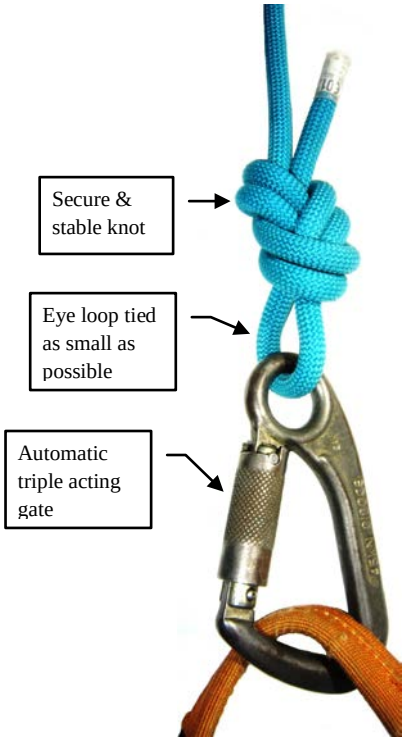
The lack of a captive pin or captive eye means that relative risk levels are higher. The triple action (auto-locking) gate offers higher security than a traditional screw-gate mechanism.

Screw-gate locking carabiner:

The traditional screw-gate locking mechanism is susceptible to becoming unlocked due to vibrational and gravitational energy. The lack of a captive pin or captive eye means that the carabiner is also susceptible to misalignment.

ALTERNATIVE CONNECTIVE SOLUTIONS

Although carabiners that have a swiveling captive eye offer the highest level of security, there are other acceptable solutions.

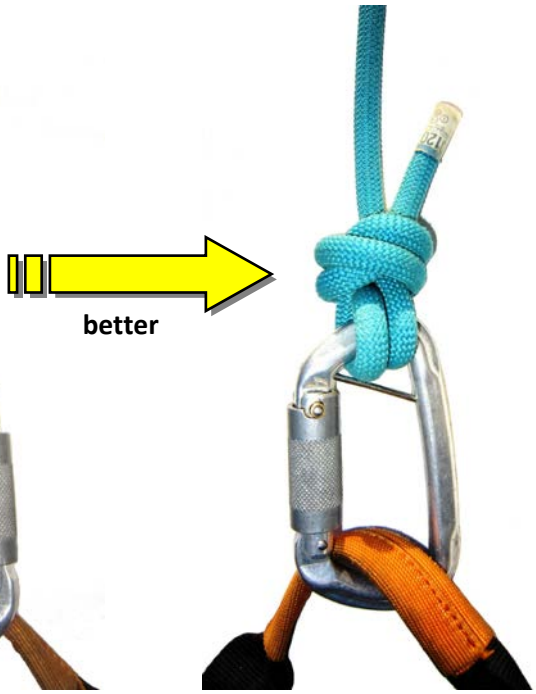


Acceptable method:

The captive eye ensures resistance to misalignment.

Acceptable method:

The captive pin ensures resistance to misalignment.



Acceptable method:

The knot (ABoK #419) prevents risk of loop fold-over across the gate.

THE IMPORTANCE OF USING APPROPRIATE CONNECTIVE KNOTS

PACI protocols forbid the use of an over-sized connective eye loop. Loop fold-over can occur – and this failure mode led to a fall from height at Old Petrie Town in Brisbane where a young child sustained horrific injuries.

ROOT CAUSE:

1. Eye loop tied too large.
2. Poor checking procedures
3. Incompetence

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Catastrophic failure

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Protocols for performing a belay rope change-over at height

Participants who are traversing from one 'element' to another at height will need to transfer from their current rope to another safety belay rope. Participants are often *children* or people who are not roping experts. For this reason, safety systems must adhere to the ALARA principle (As Low As Reasonably Achievable) to reduce confusion and risk of mishap.

<u>Mandatory protocols include:</u>

1. The use of carabiners that are resistant to misalignment; and
2. The use of carabiners with triple-acting self-locking gates.
   NOTE: The use of different coloured ropes is recommended, but not mandatory.