

## **PAL (Personal Adjustable lanyard)**

PACI Head Office  
PO Box 362, Hyde Park  
Townsville QLD 4812  
Australia  
Tel +61 7 4721 4746  
Email: [info@paci.com.au](mailto:info@paci.com.au)  
Web: [www.paci.com.au](http://www.paci.com.au)



### **USER INSTRUCTIONS**

**Foreword:** Written instructions can never replace competent instruction. These instructions are not intended to replace a competent and experienced trainer.

You must carefully read and understand these instructions before using your PAL for the first time. The PAL is intended for expert use only (eg by ERT rescue personnel and rope access technicians). The PAL is a specialised item of PPE (personal protective equipment). Always check the condition of your PPE before each use. You are responsible for your own safety.

#### General product warnings:

- Activities at height are inherently dangerous and carry significant risk or injury or death that cannot be 100% eliminated. The effects of gravity cannot be isolated.
- It is the users responsibility to obtain specific product training and to use it within its intended design parameters and applications. These instructions do not cover every conceivable scenario and are not a substitute for gaining real experience under the guidance and control of a competent and experienced trainer.
- Any device or component is subject to failure – always check carefully before each use.
- All persons using this product must be given an opportunity to read and understand these instructions before use.
- Never trust your life to a single anchorage point where the structural integrity or reliability of that anchor point cannot be verified or proven. Use a backup anchor whenever reasonably practicable.
- Do not use this product around energised or live electrical hazards – take precautions to de-energise or isolate the electrical hazard before approaching.
- There are certain inherent risks when working alone – particularly in emergency conditions. There is no one to consult with and no one to check you. You must be able to apply judgment and due diligence when selecting anchor points and using your PAL. You should also have a backup rescue plan in case of mishap. If you are operating alone, you accept full responsibility for your own actions.
- To the maximum extent permitted under Australian law, we are not responsible for any direct, indirect or accidental consequences or damage resulting from the use of this product.

**The principal intent of the PAL – and indeed all lanyards – is to prevent falls.**

**The first priority should always be to use the PAL as a travel restraint system. Your intent should never be to deliberately use the product as a fall-arrest system.**

#### Legal statement under Section 54 and 55 of the Australian Competition and Consumer ACT 2010:

*The supplier hereby declares that the product is of acceptable quality and gives a guarantee that the product is fit for its disclosed purpose. The disclosed purpose is for use as a travel restraint device to prevent falls.*

**PAL COMPONENTS:**

The PAL consists of an integrated assembly of high quality components. Each component is manufactured to conform to specific international and local standards.

European and American standards are recognised in Australia by way of international ISO agreements with Standards Australia including the World Trade organisation code of practice which requires member nations to remove technical barriers to trade.



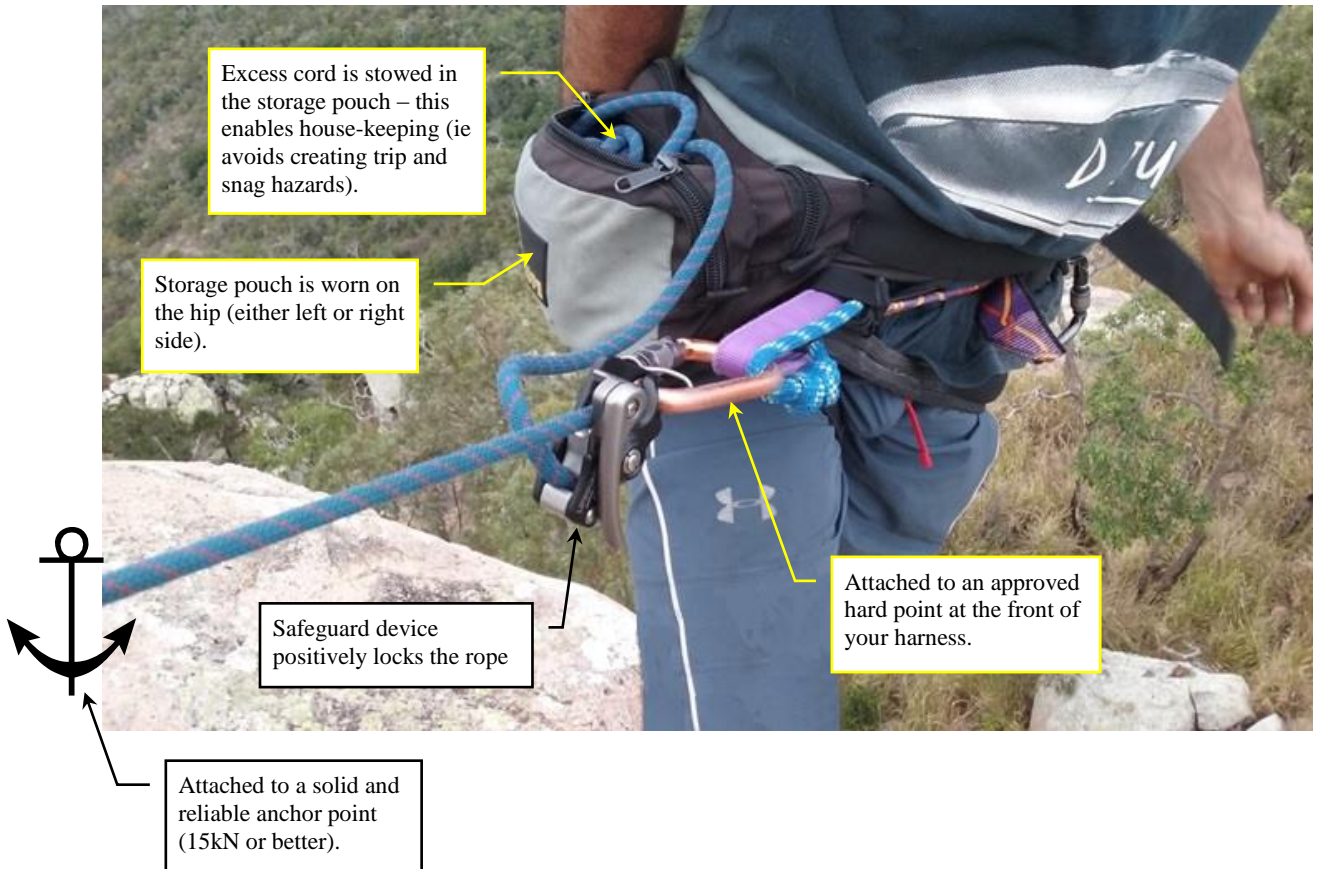
Component Standards:

- EN 362: Connectors
- EN 892: Dynamic fall-arrest rope
- Individual component manufacturers ISO 9001 quality assured
- CE: Certified to European PPE directives

Individual manufacturers include: Rock Exotica USA and Beal France.

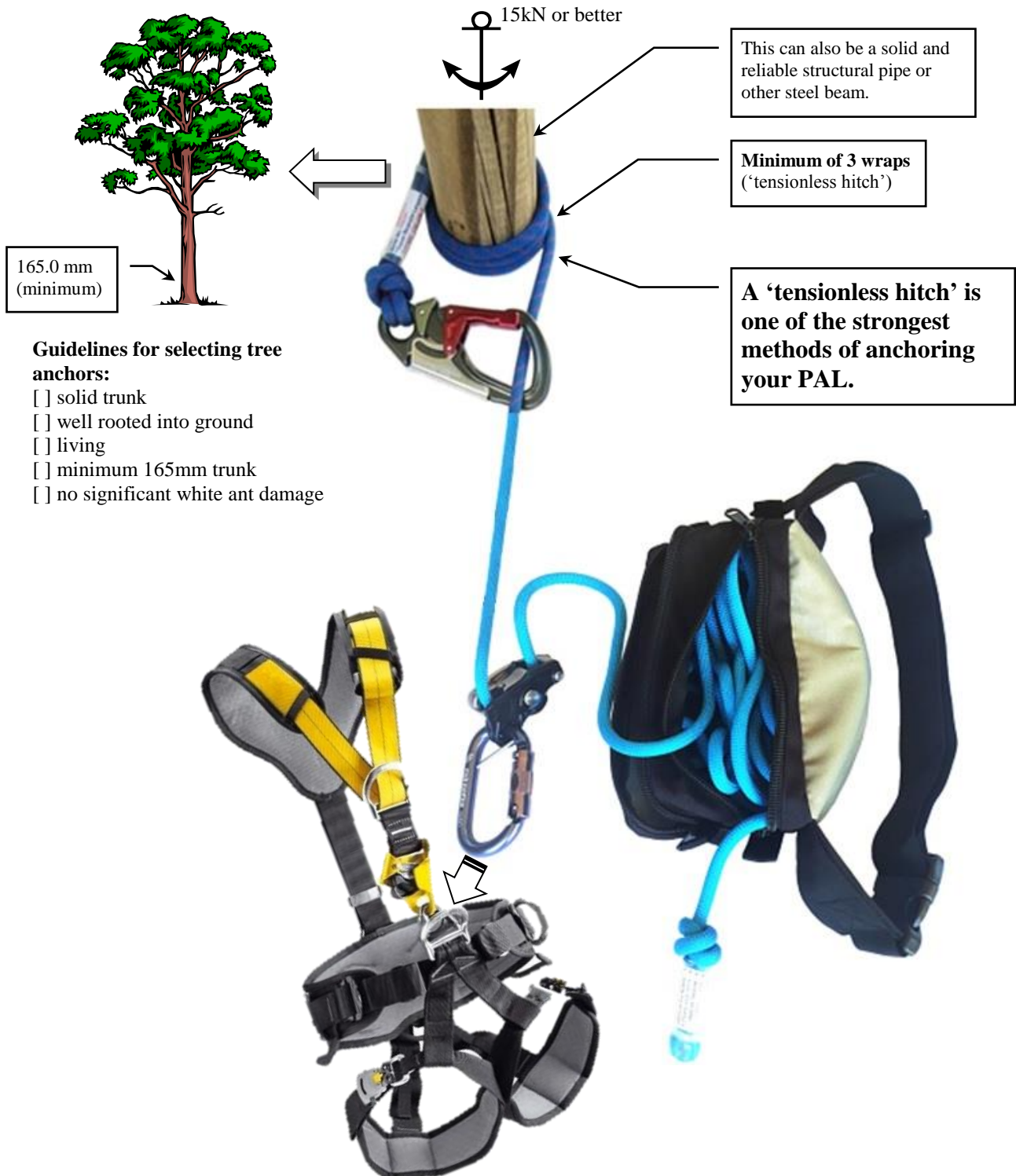
## FITTING / WEARING YOUR PAL

It is recommended that users wear a rescue harness with certification for both *work positioning* and *fall-arrest* applications. The PAL is a fully self-contained lanyard system – all components fit conveniently inside one storage pouch. The PAL is worn on your hip, and the black 'safeguard device' is attached to the front of your harness (to an approved attachment point).



## ANCHORAGE – General guidelines

The PAL must be secured to a solid and reliable anchor. Australian standards specify 15kN for a single person anchorage. Within an emergency context, any solid anchorage can be used. For example, in natural outdoor environments (eg a cliff), a sturdy tree can be used. It is not possible to obtain an engineering rated breaking strength of every possible tree in the field under emergency conditions. The rescuer will need to apply his/her own judgment as to the reliability of a tree anchor.



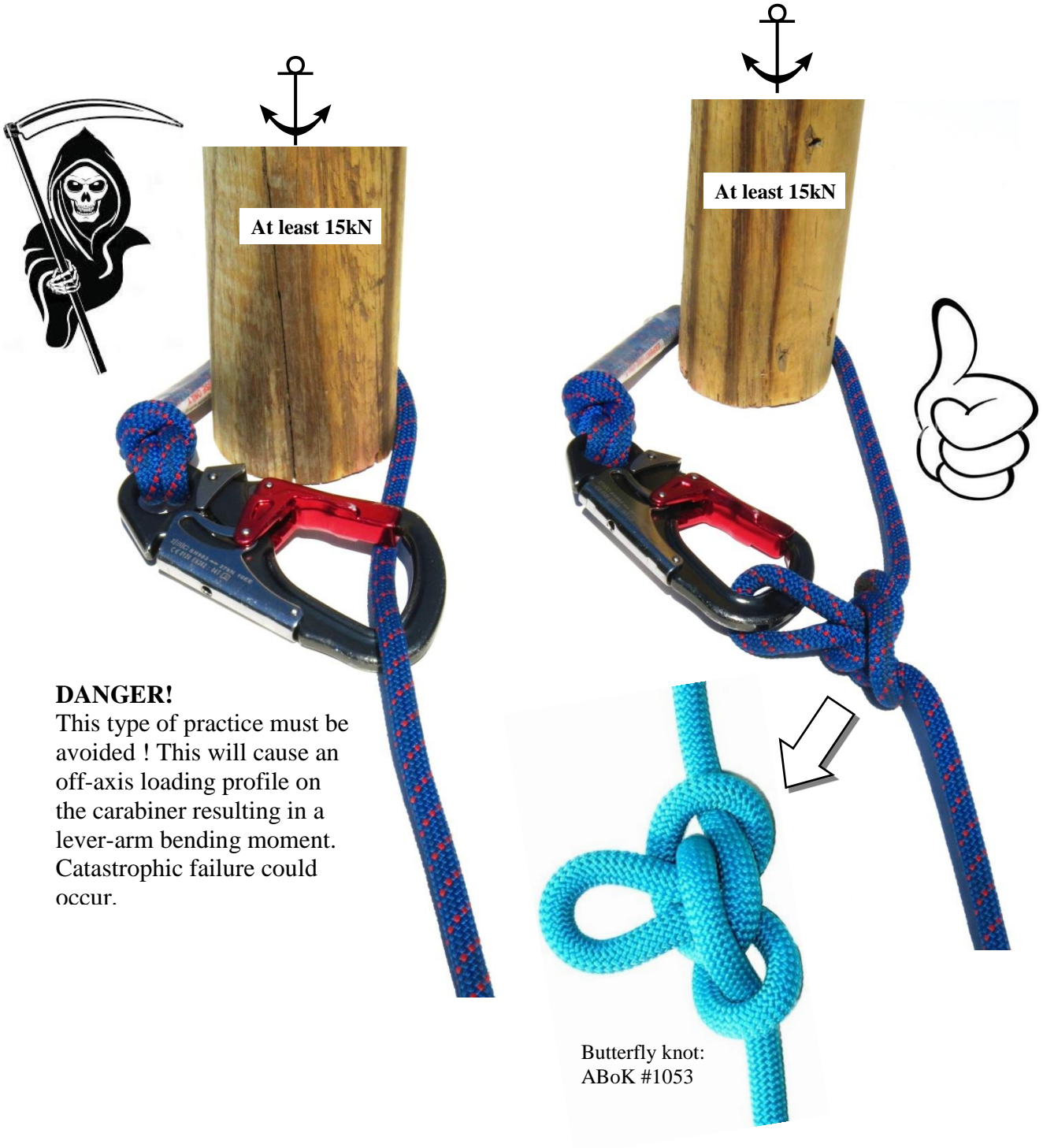
### Guidelines for selecting tree anchors:

- solid trunk
- well rooted into ground
- living
- minimum 165mm trunk
- no significant white ant damage

## ANCHORAGE – General warnings

The following images provide general warnings and guidance. Rescue team members and rope access professionals must be able to tie a range of life support knots accurately and consistently. One very useful knot is 'ABoK #1053' (Butterfly). Knots must be practiced in a safe environment to the extent that operators are proficient in their use.

**If for some reason you can't use a tensionless hitch, an alternative solution is to pass the rope and connector around a solid anchorage and then link back to a butterfly eye knot.**

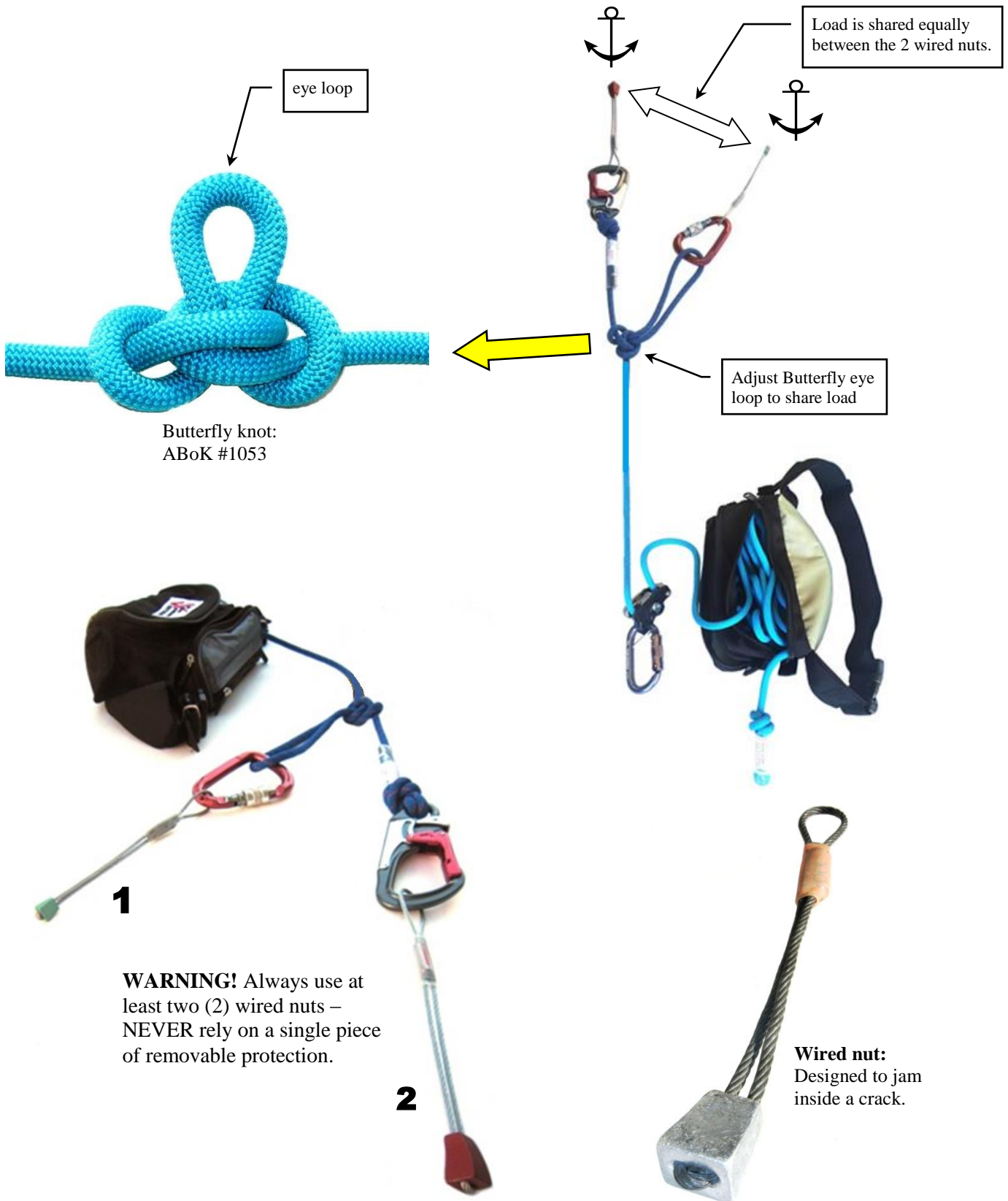


### **DANGER!**

This type of practice must be avoided ! This will cause an off-axis loading profile on the carabiner resulting in a lever-arm bending moment. Catastrophic failure could occur.

**ALTERNATIVE ANCHORAGE TECHNIQUES ON CLIFFS / MOUNTAINS – Using removable protection devices (wired nuts)**

If a sturdy tree cannot be located, an alternative anchoring method is to insert wired ‘nuts’ into cracks in hard rock formations. This type of device is known and used by climbers and mountaineers and is termed ‘removable protection’. A degree of skill is required to properly insert wired nut protection. NEVER rely on a single wired nut! Always apply the principle of ‘no single point of failure’.



**WARNING!** Always use at least two (2) wired nuts – NEVER rely on a single piece of removable protection.

## THE ROPE IS DESIGNED TO ACT AS A SHOCK ABSORBER

The rope is certified to the EN892 standard.

This standard requires the rope to be capable of sustaining at least 5 consecutive falls using an 80kg drop mass. Within the standard, each test fall is designed to reach 'factor 1.77'. The rope manufacturer sends a representative batch sample of rope to the testing authority. Testing is carried out in lab conditions according to the EN892 standard.

However, the EN892 standard does not include test falls over sharp edges. Any rope – no matter how well designed – will catastrophically fail if it is subjected to a fall over a sharp edge!



### WARNING!

Although the rope is certified to EN892, this does not mean it is safe to fall in the workplace. All falls have potential to cause death or serious injuries with potential for lifelong paralysis. Your best option is to avoid falling!

## PAL INSPECTION CHECKLIST:

Always check your PPE before each use. Your life may depend on your diligence in checking your PPE!

Checks involve a combination of observation and tactile methods.

Observation means: You will visually check components

Tactile means: You will use touch and feel

**Warning!** Never exposure any PPE to acids or acidic substances. Acid has an immediate destructive effect on ropes and harnesses and any PPE made from textiles. If your PPE is suspected of having come into contact with acids or acidic substances (including acid fumes) – it must be immediately condemned and withdrawn from service.

	CHECK STEP	ACTION
1	Check condition and operation of both carabiners	<input type="checkbox"/> confirm gate function <input type="checkbox"/> gates must snap closed and self-lock when released ('CRC' lubricant may be used to restore gate function – wipe excess lubricant away) <input type="checkbox"/> check for structural cracking <input type="checkbox"/> check for severe corrosion/exfoliation <input type="checkbox"/> check 8.0mm cord is securely attached to eye of snap hook (tail 100mm)
2	Check operation of safeguard device	<input type="checkbox"/> perform a function test <input type="checkbox"/> when the handle is released, the device should immediately lock on to the rope <input type="checkbox"/> rope should not be slipping through the device while it is loaded <input type="checkbox"/> check for cracks <input type="checkbox"/> check for deformity <input type="checkbox"/> check for evidence of severe corrosion
3	Check condition of rope	<input type="checkbox"/> check rope is free of cuts and significant fraying ( <i>Note: significant fraying is indicated when the sheath has been penetrated and underlying core component has become exposed</i> ) <input type="checkbox"/> check for evidence of acid attack <input type="checkbox"/> check rope diameter is uniform and consistent with no sudden changes in diameter (eg a <i>flat spot</i> indicates the rope has suffered internal damage)
4	Check end termination stopper knot	<input type="checkbox"/> check stopper knot is present <input type="checkbox"/> check knot is stable and firm
5	Check condition of storage bag	<input type="checkbox"/> check buckle function <input type="checkbox"/> check zippers <input type="checkbox"/> check for mildew or rot on bag fabric
6	Age	<input type="checkbox"/> maximum lifespan is 10 years for all synthetic / nylon materials (eg the rope has a maximum theoretical lifespan of 10 years) <input type="checkbox"/> metal components have no fixed lifespan

If any condition is detected that indicates a non conformity or defect, do not use your PAL. Isolate it from use and report the matter to your supervisor or a responsible person.