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FALL ARREST QUESTIONS

Questions for assessment of climbing with a twin (Y-shaped) fall arrest lanyard

Candidates need to know what they **should not do** as well as what they **should do**.

Candidates going away with an IRATA approval of competence for climbing with a Y shaped fall arrest lanyard should know the answers to the following **basic questions**. Also useful for trainers, who could brief candidates, that they will be asked these questions.

It is not important whether they expect a particular question, **it is** important that they understand what to do [or not] for safety reasons.

- 1
 - a) What do you understand by “clearance distance” in relation to using fall arrest equipment? You may use manufacturer's information if you need to.
 - b) Have you read the manufacturers information for this product?
- 2 How is it possible to climb the lower few metres safely, if the manufacturer's information says the clearance distance is over 4 metres?
- 3 Is it acceptable to clip the unused leg/ tail/arm of a Y-shaped fall arrest lanyard back to a hard point on the harness? Why not?
- 4 What is the problem with:-
 - a) Adding an extra length to a fall arrest lanyard?
 - b) Climbing above anchor slings?
 - c) Climbing above a vertical or diagonal anchor?
- 5 Have you done a pre-use check of the fall arrest lanyard?

Answers

- 1 The clearance distance is the amount of free fall space between the anchor and an obstacle or the ground and should be sufficient to prevent the user hitting anything. Manufacturer's information will give the clearance distance for the product; it is made up of:
 - a) Fall distance - possibly from above the anchor e.g. fall factor 2
 - b) Energy absorbing lanyard length
 - c) Energy absorber extension or deployment distance after a shock load
 - d) Distance from the worker's harness attachment to worker's feet [1.5m]
 - e) Distance below worker's feet – to prevent impact with ground or structure [1m]
- 2 The length of the fall must always be minimised by attaching the lanyard as high as possible, preferably above head height [see fall factors], especially when working lower than the manufacturer's stated clearance distance. A minimal fall will cause minimal deployment of the energy absorber, reducing the likelihood of impact with a structure and force related injury.
- 3 No - because this would bypass the energy absorber and offer minimal energy absorption.
- 4
 - a) This will increase fall distance without adding energy absorption, which in the event of a fall, could exceed the 6kN maximum allowed in EN 355 [8kN in U.S.], as well as greater chance of hitting something. The maximum length of energy absorbing lanyard allowed in EN 355 is 2m, but note that manufacturers may design and produce a shorter lanyard and specify that it must not be extended.

b) This effectively increases the length of the fall arrest lanyard as in (a) above, without adding energy absorption, and in the event of a fall could exceed the 6kN maximum allowed in EN 355.

c) This could allow the connector to slide, which in the event of a fall could exceed FF2 and the maximum design parameters, increasing likelihood of injury or equipment failure.

- 5 **Pre-use check** – Tactile & visual - run through hands to check for cuts, abrasion, damaged stitching, softening or hardening of fibres, chemical contamination, effect of heat, U/V, dirt, partly deployed energy absorber, age etc. e.g. a 1mm cut in some types of lanyard could result in 5-40% loss of strength.

See “*Inspecting fall arrest equipment made from webbing or rope*” [Ref INDG367] <http://www.hse.gov.uk/pubns/fallindx.htm> - this details various levels of inspection.

EN 363 states this equipment should be examined **at least** 12 monthly, but textile manufacturers usually recommend more frequently. Other types of inspection are:

Detailed inspection - recommended at least 6 monthly, but at least 3 monthly in arduous environments

Interim inspection – following risk assessment

Employers should get a competent person to produce an inspection regime detailing:

Frequency & type of inspection [pre-use, interim or detailed examination], I.D. of lanyard, designated competent person to inspect, action to be taken on finding defect, recording inspections, training users, monitoring system to verify inspections are carried out.