

This is a brief summary of the contents of the relevant SANS standard. The intention of the summary is to make easily understandable to product users and management the otherwise complex contents of the standard. Only a selection of content that may be useful to the user or management is included here. A complete copy of the relevant standard can be purchased at www.sabs.co.za

Summary

1. Scope: Specifies material requirements and testing of full body harnesses used as components in fall arrest systems as specified in SANS 50363. A work positioning belt as specified by SANS 50358 may be incorporated into the full body harness design.
2. Definition of a full body harness: A body support device used primarily for fall arrest purposes. Typically used with either a lanyard set (lanyards and energy absorber) or retractable type fall arrestor. Comprises webbing straps, buckles, connectors and other elements suitably constructed to support the whole body of a person during a fall and after the arrest of a fall.
3. Definition of primary straps: The straps on the harness which directly support the weight of the body during a fall and after the arrest of a fall. Typically the shoulder straps, sit strap and leg straps on the harness.
4. Definition of secondary straps: All of the harness webbing not directly supporting the weight of the body during a fall and after the arrest of a fall. Typically, the chest strap and waist strap.
5. Definition of attachment element: Designated connecting point for components like the energy absorbing lanyard set or the work positioning lanyard.
6. Materials: Webbing and thread used in sewing must be made from virgin filament or multifilament synthetic fibres with a breaking tenacity of at least 0,6N/tex.
7. Materials: Thread used in sewing together the components of the full body harness webbing must be of a contrasting colour to the webbing used to facilitate visual inspection.
8. Design: The full body harness must fit the wearer and suitable means of adjustment must be provided. However straps may not loosen by themselves.
9. Design: Primary straps must be at least 40 mm wide, and secondary straps at least 20mm wide.
10. Design: The fall arrest element (D-ring) to which the fall arrest system is attached must be placed in such a way when worn by the user that it remains above the centre of gravity of the user. For example at the chest in front or dorsal position (shoulders) at back.
11. Design: It must always be possible to visually inspect every component of the full body harness.
12. Static strength test: The full body harness is attached to an apparatus that allows a test load of 15kN (approximately 1500kg) to be applied to that harness between the attachment element for fall arrest and the harness webbing worn by a test dummy.
13. The static test is passed if the full body harness does not release the test dummy.
14. Dynamic performance drop test: The full body harness is fitted to a drop test dummy of 100kg in mass and dropped a free fall distance of 4 metres while attached to a static lanyard at the fall arrest attachment element.
15. One drop test is conducted with the dummy oriented feet first and a second test with the dummy oriented head first to simulate a worst case scenario fall.
16. To pass the dynamic test the full body harness may not release the dummy.
17. In addition when the fall is arrested and the dummy at rest the dummy must have come to rest in a head up position (the angle between the longitudinal axis of the dorsal plane and the vertical must not exceed 50 degrees).

Reference: SANS 50361:2003 Personal protective equipment against falls from a height – Full body harness