

Specification for

Sit harnesses for rock climbing

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Personal Safety Equipment Standards Policy Committee (PSM/-) to Technical Committee PSM/33, upon which the following bodies were represented:

- Association of Wardens of Outdoor Education Centres
- British Leather Confederation
- British Mountaineering Council
- British Narrow Fabrics Association
- Camping and Outdoor Leisure Association
- Department of Trade and Industry (Standards and Quality Policy Unit, Quality, Design and Education Division)
- Industrial Safety (Protective Equipment) Manufacturers' Association
- University of Leeds

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Foreword

This British Standard has been prepared under the direction of the Personal Safety Equipment Standards Policy Committee.

At the time of publication of this British Standard, no corresponding International Standard exists.

There exists a demand from some climbers particularly in the UK and certain countries outside the continent of Europe for a type of harness, hereinafter referred to as a sit harness, that will support the body of a conscious person in a sitting position. Such harnesses fit principally around the upper thigh, seat and waist and are provided with the means of attaching the wearer to a climbing rope.

It is recognized that a sit harness offers a lesser degree of protection than a “full body” harness in which the characteristics of a sit harness are combined with those of a chest harness, thereby providing suitable support for the chest as well as for the thighs of a climber, even if he is injured or unconscious after a fall.

In the preparation of this standard the technical committee have taken the view that it would be helpful to manufacturers and users if constructional, materials and performance requirements for sit harnesses were, where appropriate, to take account of those already developed for “full body” harnesses by the International Union of Alpine Associations [Union Internationale d’Associations d’Alpinisme (UIAA)]. This British Standard thus includes in Appendix C a subjective method of test for the comfort and safety of the suspended wearer.

In selecting materials of construction for sit harnesses, care should be taken to ensure that their ageing characteristics are suitable for the environment in which the equipment is intended to be used and to its required lifetime in service.

This British Standard calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

It has been assumed in the drafting of this British Standard that the procedures are to be carried out by appropriately qualified or experienced people for whose guidance it has been prepared.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies constructional, design, performance and marking requirements and methods of test for sit harnesses constructed from straps made from tape, webbing or rope, for use in rock climbing.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1

sit harness

a harness which will support the body of a conscious person in a sitting position

2.2

load-bearing parts

parts of the sit harness that transmit load during the suspension of the wearer

2.3

non-load-bearing parts

parts of the sit harness that do not transmit load during the suspension of the wearer

2.4

adjusting device

any device that allows the sit harness to be adjusted to fit the individual wearer

3 Materials

NOTE If the load-bearing materials are not protected against abrasion by a covering layer of a suitable material, the following recommendations may apply.

a) The abrasion resistance of materials specified in items c) and d) of 3.1 should be comparable with that of the materials specified in items a) or b) of 3.1.

b) The abrasion resistance of materials specified in items b) and c) of 3.2 should be comparable with that of the materials specified in item a) of 3.2.

3.1 Ropes

Ropes used in the construction of load-bearing parts of the sit harness shall be made from one of the following materials.

a) High tenacity continuous multifilament bright polyamide (nylon) filament yarn.

b) High tenacity continuous multifilament bright polyester filament yarn.

c) Homopolymers or copolymers of virgin high tenacity polypropylene processed as continuous filaments having a relative density of approximately 0.91. A polypropylene rope either shall be protected by a covering layer of a material that prevents the passage of ultraviolet radiation, or shall be stabilized against solar degradation by the addition to the polymer of an additive or additives. The choice of additives shall be such that the rope shall have a percentage retained strength of not less than 70 % of the retained strength of the control, when tested as described in clause 21 of BS 5053:1985.

d) Any other suitable man-made material that is made from virgin high tenacity continuous filament and that either shall be protected by a covering layer of a material that prevents the passage of ultraviolet radiation, or shall be stable against solar radiation, so that the rope shall have a retained strength of not less than 70 % of the retained strength of the control, when tested as described in clause 21 of BS 5053:1985.

3.2 Webbing

Webbing used for the construction of the load-bearing parts of the sit harness shall be made so as to comply with one of the following.

a) The yarn used for the webbing shall be of polyamide (virgin bright high tenacity continuous filament) or polyester (virgin bright high tenacity continuous filament) having a uniform breaking strength.

b) The webbing shall be woven from virgin high tenacity continuous filament polypropylene yarns. Polypropylene webbing either shall be protected by a covering layer of a material that prevents the passage of ultraviolet radiation, or shall be stabilized against solar degradation by the addition to the polymer of an additive or additives. The choice of additives shall be such that the webbing shall have a percentage retained strength of not less than 70 % of the retained strength of the control, when tested as described in clause 21 of BS 5053:1985, except that paragraph 2 of 21.3.1 does not apply.

c) The webbing shall be made of any other suitable man-made material that is made from virgin high tenacity continuous filament and that either shall be protected by a covering layer of a material that prevents the passage of ultraviolet radiation, or shall be stable against solar radiation so that the webbing shall have a retained strength of not less than 70 % of the retained strength of the control, when tested as described in clause 21 of BS 5053:1985, except that paragraph 2 of 21.3.1 does not apply.