Designation: F1772 – 99 (Reapproved 2005)

Standard Specification for Climbing Harnesses[1]

This standard is issued under the fixed designation F1772; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers climbing harnesses for use in the sports of rock, ice, and snow climbing. It establishes requirements for the testing, performance, and marking of climbing harnesses and for the instructions that are supplied with them.

1.2 This specification may contain test methods that do not entirely simulate real-life climbing situations. The test methods are designed to give reproducible results in a laboratory and, thereby, a means for product comparison.

1.3 Three types of harnesses are covered by this specification: full body harnesses, sit harnesses, and chest harnesses.

1.4 The values stated in SI units are to be regarded as the standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E4 Practices for Force Verification of Testing Machines

F1773 Terminology Relating to Climbing and Mountaineering Equipment and Practices

F1775 Specification for Labeling of Climbing and Mountaineering Equipment

2.2 *Other Standard:*

International Union of Alpine Associations (Union Internationale d'Associations d'Alpinisme (UIAA)) Standard for Full Body Harnesses

3. Terminology

3.1 Definitions—Terms defined in Terminology F1773 shall be applicable to this specification.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *adjusting device*, *n*—any device that allows adjustment to be made to the harness to the requirements of the wearer.

3.2.2 *belay/rappel loop*, *n*—a loop intended for attaching a belaying or rappelling device to the harness using a carabiner.

3.2.3 *belt*, *n*—the part of the harness that is around the waist.

3.2.4 *buckle*, *n*—a connector used for attaching webbing segments together.

3.2.5 *load-bearing parts*, *n*—parts of the harness that transmit load during testing in accordance with Section 11.

3.2.6 *nonload-bearing parts*, *n*—other parts of the harness.

3.2.7 *rope attachment points*, *n*—parts of the harness intended for the attachment of the climbing rope.

3.2.8 *performance rating for a harness*, *n*—a pass/fail designation indicating if the harness has passed all required tests presented in this specification.

4. Summary of Specification

4.1 Representative samples of climbing harnesses are tested for minimum strength.

5. Significance and Use

5.1 The strength of climbing harnesses is one of the properties used to evaluate their suitability for climbing.

5.2 Marking and instructions aid in the selection and use of climbing harnesses.

6. Performance Requirements

6.1 During each of the tests described in Section 11, no load-bearing part shall break completely. In addition, the harness shall not be released from the torso.

6.2 The webbing in all buckles and adjusting devices shall slip no more than 20 mm.

6.3 If there are multiple independent rope attachment points, the tests shall be repeated using a new sample as defined in 8.1, for each combination of rope attachment points specified in the manufacturer's instructions.

6.4 If the harness has a belay/rappel loop, the test described in 12.3 shall be repeated using a new sample as defined in 8.1, with the belay/rappel loop as the load attachment point. No load-bearing part shall break completely nor shall the harness be released from the torso.

[1] This specification is under the jurisdiction of ASTM Committee F32 on Search and Rescue and is the direct responsibility of Subcommittee F32.01 on Equipment, Testing, and Maintenance.

Current edition approved Oct. 1, 2005. Published October 2005. Originally approved in 1997. Last previous edition approved in 1999 as F1772 – 99. DOI: 10.1520/F1772-99R05.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

7. Apparatus

7.1 *Body Shaped Torso* (see Fig. 1),

7.2 *Tensile Test Machine,* used to apply loads to the harness, and

7.3 *Load Cell,* for measuring the tensile force applied to the harness.

8. Sampling, Test Specimens, and Test Units

8.1 Harness test specimens shall be new and in unused condition, selected randomly from a production lot of a given model of harness. They shall conform in all respects to the manufacturer's specifications for the model to be tested and shall be the proper size to fit the test torso.

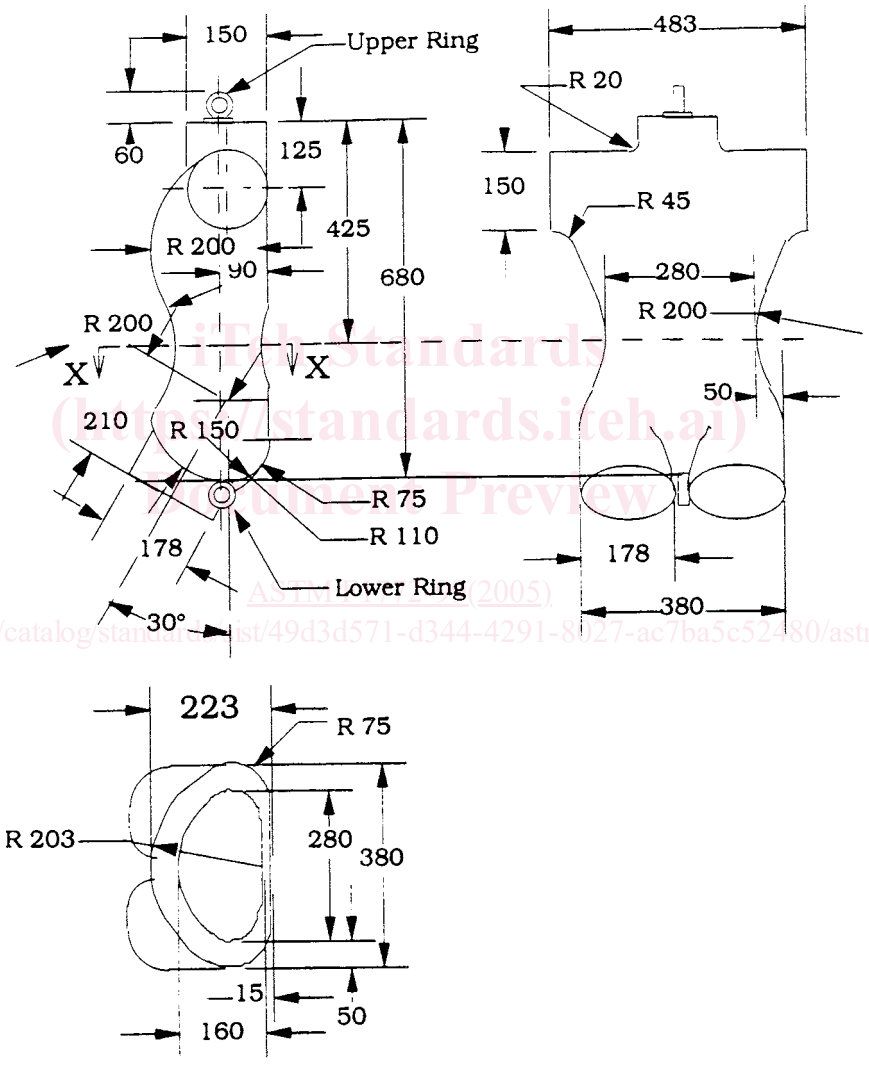
9. Calibration and Standardization

9.1 Test equipment is to be in compliance with Practices E4 and other requirements specific to the equipment.

10. Conditioning

10.1 Tests may be completed under ambient conditions. In cases of dispute, harness samples will be conditioned in accordance with 10.2.

10.2 The harness samples are first dried in an atmosphere with a relative humidity of less than 10 % for a period of 24 h. Then they are placed in an atmosphere of 50 ± 5 % relative humidity, 20 ± 2°C for a period of 72 h. Tests may then be done outside the conditioning room, but the temperature shall



Section X-X

NOTE 1—All linear dimensions are in millimetres, ±5 mm.
NOTE 2—The dimensions are those of a torso developed by the UIAA for testing harnesses.
NOTE 3—Waist circumference at X-X is 850 mm.

FIG. 1 Outline of the Torso