
**Protective equipment for martial
arts —**

**Part 5:
Additional requirements and test
methods for genital protectors and
abdominal protectors**

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Équipement de protection pour les arts martiaux —

*Partie 5: Exigences et méthodes d'essai complémentaires relatives aux
coquilles et aux protections abdominales*

ISO 21924-5:2017

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 6, *Martial arts*.

A list of all parts in the ISO 21924 series can be found on the ISO website.

Protective equipment for martial arts —

Part 5:

Additional requirements and test methods for genital protectors and abdominal protectors

1 Scope

This document specifies additional requirements and test methods for genital protectors and abdominal protectors used in unarmed martial arts such as taekwondo, karate, kick-boxing and similar disciplines.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21924-1:2017, *Protective equipment for martial arts — Part 1: General requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21924 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

genital protector

device worn to protect genitalia from impacts

3.2

abdominal protector

device worn to protect the abdomen below the waist from impacts

4 Requirements

4.1 General

The general requirements for genital protectors and abdominal protectors shall be the same as those given in ISO 21924-1.

Edges of hard materials shall be covered with soft padding materials.

Genital protectors for females shall be so designed that they adapt to the body shape of the wearer.

Abdominal protectors and genital protectors may be used as a single piece or in combination (see 4.4).

4.2 Sizing

4.2.1 Genital protectors for females and males

A sizing system shall be used to define genital protectors as small (S), medium (M), large (L) or extra large (XL). If additional sizes are available, their size declaration shall be related to this sizing system.

4.2.2 Abdominal protectors for females and males

Abdominal protectors shall be sized in relation of the size of the users in accordance with [Table 1](#).

Table 1 — Sizing of abdominal protectors in relation to the size of the user

Dimensions in centimetres

Size	Body height	
	Females	Males
S	<152	<164
M	152 to 164	164 to 176
L	164 to 176	176 to 188
XL	>176	>188

Dimensions shall be graded linearly in case of additional sizes.

4.3 Zone of protection

4.3.1 Genital protectors

4.3.1.1 Genital protectors for females

The dimensions of the zone of protection of genital protectors for females shall be as given in [Figure 1](#) and [Table 2](#). Dimensions shall be graded linearly in case of additional sizes.

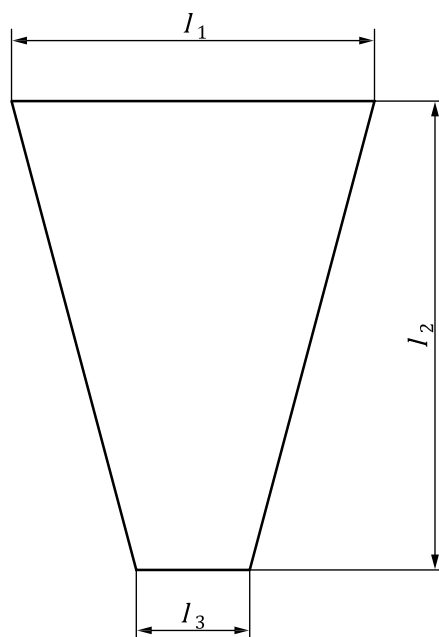


Figure 1 — Zone of protection of genital protectors for females

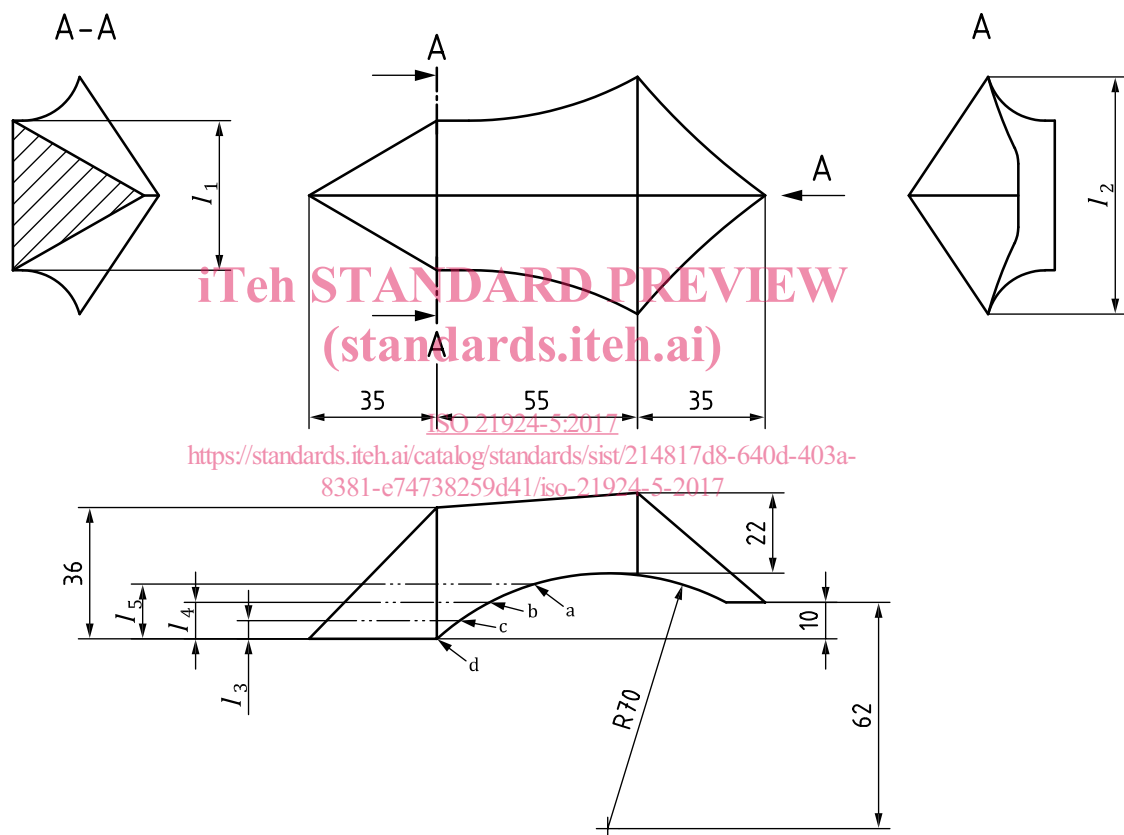
Table 2 — Dimensions of the zone of protection of genital protectors for females

Dimensions in millimetres

Size	l_1 min.	l_2 min.	l_3 min.
S	25	150	15
M	35	170	19
L	45	190	23
XL	55	210	27

4.3.1.2 Genital protectors for males

The minimum volume protected by the genital protector shall be as given in [Figure 2](#) and [Table 3](#). Dimensions shall be graded linearly in case of additional sizes.



- a Size S.
- b Size M.
- c Size L.
- d Size XL.

Figure 2 — Minimum volume protected by the genital protectors for males

Table 3 — Dimensions of the minimum volume protected by of genital protectors for males

Dimensions in millimetres

Size	l_1	l_2	l_3	l_4	l_5
S	30	52	—	—	15
M	34	55	—	10	—
L	38	61	5	—	—
XL	41	65	—	—	—

4.3.2 Abdominal protectors

4.3.2.1 General

Abdominal protectors shall have a zone of protection covering the abdominal surface.

If an abdominal protector is continuous with a compatible genital protector, no gap shall exist between the zone of protection of both protectors.

4.3.2.2 Dimensions

The dimensions for the zone of protection of abdominal protectors shall be as given in [Figure 3](#) and [Table 4](#). Dimensions shall be graded linearly in case of additional sizes.

**Figure 3 — Zone of protection of abdominal protectors****Table 4 — Dimensions for abdominal protectors**

Dimensions in millimetres

Size	l_1 minimum	l_2 minimum
S	230	55
M	250	60
L	270	65
XL	290	70

4.4 Combinations

If combined use is allowed, the requirements specified for the individual protectors shall also apply.

If combined use is not intended by the manufacturer, this restriction shall be clearly indicated in the information supplied by the manufacturer.

Possible combinations shall be indicated in the information supplied by the manufacturer.

4.5 Restraint

A restraint system shall be supplied by the manufacturer which enables the user to attach genital protectors and abdominal protectors without any assistance.

The restraint system shall meet the requirements defined in ISO 21924-1:2017, 4.3.

For genital protectors for males, the third paragraph of ISO 21924-1:2017, 4.3 does not apply. After each individual test, the displacement of genital protectors for males from their original position shall be less than 20 mm.

4.6 Impact performance

4.6.1 Genital protectors for females and abdominal protectors for females and males

Genital protectors for females and abdominal protectors for females and males conform to this document if the maximum peak force is below 3 kN when tested in accordance with [5.6.1](#).

4.6.2 Genital protectors for males

Genital protectors for males conform to this document if they meet the following requirements when tested in accordance with [5.6.2](#).

- a) No part of the genital protector shall break or split.
- b) The plasticine cylinder used for testing shall not be deformed more than 2 mm after contacting the genital protector.
- c) The maximum peak force is below 3 kN.

5 Test methods

5.1 General

If no special test methods are specified, the requirements of this document are to be tested by measurement, visual inspection, tactile examination, etc.

For the tests, new, unused protector shall be used.

5.2 Sampling

Sampling shall be carried out in accordance with ISO 21924-1:2017, 5.1.

5.3 Conditioning

Conditioning is carried out in accordance with ISO 21924-1:2017, 5.2.

5.4 Restraint

Restraint testing of genital protectors and abdominal protectors for females and males shall be carried out as defined in ISO 21924-1:2017, 5.4. When testing the restraint, the protector(s) shall be attached to the body of a test person or a dummy.

The test force to be applied in any test position and test direction shall be 20 N.

Test positions shall always be as close as possible on the limits of the zone of protection. They are defined in [Figures 4, 5 and 6](#).