
**Protective equipment for martial
arts —**

**Part 1:
General requirements and test
methods**

iTeh STANDARD PREVIEW
*Équipement de protection pour les arts martiaux —
Partie 1: Exigences et méthodes d'essai générales*
(standards.iteh.ai)

[ISO 21924-1:2017](https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017>



iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 21924-1:2017

<https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	2
4.1 General	2
4.2 Innocuousness	2
4.3 Restraint	2
4.4 Sizing	2
4.5 Zone of protection	2
4.6 Impact performance	3
5 Testing	3
5.1 Sampling	3
5.2 Conditioning	3
5.3 Colour fastness to perspiration	3
5.3.1 Textile materials	3
5.3.2 Non-textile materials	4
5.4 Restraint	4
5.5 Zone of protection	5
5.6 Impact performance	5
6 Marking	5
7 Information supplied by the manufacturer	6

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 6, *Martial arts*. ISO 21924-1:2017

[https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-](https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-8486385412d1/iso-21924-1-2017)

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

Introduction

Protective equipment for martial arts (hereinafter referred to as protectors) protect the wearer against contusion, abrasion, laceration, fractures and physical injuries.

Protectors covered by this document will not necessarily prevent any serious injury caused by the execution of martial arts.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 21924-1:2017](https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 21924-1:2017

<https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-848638feab2e/iso-21924-1-2017>

Protective equipment for martial arts —

Part 1: General requirements and test methods

1 Scope

This document specifies the general requirements and test methods for innocuousness, ergonomics, restraint, zone of protection, impact performance, as well as provisions for marking and the information supplied by the manufacturer for protective equipment used in martial arts.

The protectors covered by this document are mainly designed for use in unarmed martial arts such as taekwondo, karate, kick-boxing and similar disciplines.

Additional requirements and test methods for components of protectors for specific kinds of martial arts are specified in further parts of this document.

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 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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

protective equipment for martial arts

equipment worn on the body which mainly provides protection against the effect of external forces and energies in martial arts

3.2

zone of protection

zone of protectors primarily intended to ensure the protection of the wearer of martial arts equipment

4 Requirements

4.1 General

Protectors shall be so designed and manufactured that in the foreseeable conditions of use for which they are intended, the user can perform the sporting activity normally while enjoying protection at the specified limit.

It shall be possible to clean the protectors in accordance with the manufacturer's instructions without the loss of the ability to fulfil the requirements of this document.

4.2 Innocuousness

Protectors shall be designed and manufactured to provide protection when used in accordance with the information supplied by the manufacturer, without any harm to the user or others when so used. Materials, incorporated substances, seams and edges and particularly those parts of the protectors in close contact with the user shall not impair the user's health and hygiene.

The colour of protectors or parts of them shall be resistant to perspiration.

For textile materials, when tested in accordance with [5.3.1](#), this requirement is considered as fulfilled if, using an alkaline and acid solution according to ISO 105-E04,

- a fastness grade 3 to 4 according to ISO 105-A02 by the change in colour, and
- a fastness grade 3 to 4 according to ISO 105-A03 by staining

will be reached.

For other materials, these requirements are considered as fulfilled if no staining of the used strips of filter paper is observed when they are tested in accordance with [5.3.2](#).

4.3 Restraint

The design of the protectors shall enable secure fixation to the body of the user, so that they will remain in place during the normal use for which they are intended. If secure fixation is not provided by restraint systems which are integrated elements or permanently attached to the protector, instructions shall be provided by the manufacturer describing a method of secure fixation.

If rigid, sharp edges and abrasive elements are part of the restraint system, they shall be completely covered by a soft padding.

The displacement of the protector from its original position shall be after each individual test less than 15 % of the linear dimension of the zone of protection (see [4.5](#) and [Clause 7](#)) measured in the line with the force supplied as specified in [5.4](#).

When tested according to [5.4](#), no parts of the restraint system shall break, split, be released or fail in any other way.

4.4 Sizing

Protectors shall be supplied in a number of different sizes to meet the requirements according to different body dimensions of wearers. The size shall be marked on the protector.

The specific sizing is defined in the relevant parts of this document.

4.5 Zone of protection

The dimensions of the zone of protection shall be as defined in the relevant parts of this document.

The manufacturer shall mark the zone of protection on the protector or in the information supplied by the manufacturer.

The zone of protection shall be measured as specified in [5.5](#).

4.6 Impact performance

When tested according to [5.6](#), no part of the protector shall break, split or be deformed irreversibly.

Specific requirements are defined in relevant parts of this document.

5 Testing

NOTE This clause specifies test conditions that apply to all types of protectors. Test methods for particular types of protectors are as defined in the relevant parts of this document.

5.1 Sampling

Where the protectors are normally supplied as single items, then two single protectors of each size shall be provided for testing.

Where the protectors are normally supplied in pairs, then two pairs of protectors of each size shall be provided for testing.

Where only one size of a protector is manufactured then four pairs, if normally supplied in pairs, or four singles, if normally supplied in singles, of that protector shall be provided for testing.

If six or less sizes are manufactured, samples of each size shall be provided for testing. If more than six sizes are manufactured, the sizes to be provided for testing shall be agreed with the test house to be representative of the whole size range. [ISO 21924-1:2017](https://standards.iteh.ai/catalog/standards/sist/d3df963e-c80c-4278-98e6-61868861276c/iso-21924-1-2017)

The samples shall be supplied to the test house with the information supplied by the manufacturer according to [Clause 7](#).

5.2 Conditioning

Before a test is carried out, the samples shall be cleaned three times in accordance with the cleaning instructions as detailed in the information supplied by the manufacturer (see [Clause 7](#)).

All tests shall be carried out at an ambient temperature of (20 ± 2) °C and at a relative humidity of (65 ± 5) %.

Before testing, the samples shall be stored at this temperature and humidity for at least 4 h.

5.3 Colour fastness to perspiration

5.3.1 Textile materials

Carry out the test in accordance with ISO 105-E04.

If different textile materials or colours are used for protectors, test each material and each colour separately.