

Second edition
2023-09

Sports and recreational facilities — Probes for entrapment/entanglement on playground equipment — Collection of data

*Installations sportives et récréatives — Gabarits d'évaluation du
coincement/happement sur les équipements d'aires de jeux — Recueil
de données*



Reference number
ISO/TR 24666:2023(E)

© ISO 2023



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a preview of ISO/TR 24666:2023. [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Rationale for anthropometrics and scoping of intended user groups in developing safety standards to reduce serious injury	1
4.1 ASTM F1487-21 (US) standard consumer safety performance specification for playground equipment for public use.....	1
4.1.1 Reference document for anthropometry.....	1
4.1.2 Defined age groups.....	2
4.2 ASTM F2373-11(2017) (US) standard consumer safety performance specification for public use play equipment for children 6 months to 23 months.....	2
4.2.1 Reference document for anthropometry.....	2
4.2.2 Defined age groups.....	2
4.3 U. S. consumer product safety commission handbook for public playground 2010 (US).....	2
4.3.1 Reference document for anthropometry.....	2
4.3.2 Defined age groups.....	2
4.4 EN 1176-1:2017 (European Union) Playground equipment and surfacing.....	3
4.4.1 Reference document for anthropometry.....	3
4.4.2 Defined age groups.....	3
4.5 AS 4685.1:2021 (Australia) Playground equipment and surfacing.....	3
4.6 CSA Z614-20 (Canada) Children's playspaces and equipment.....	3
4.6.1 Reference document for anthropometry.....	3
4.6.2 Defined age groups.....	3
4.7 JPFA-SP-S: 2014 (JAPAN) standard on playground equipment safety and its annex 2: playground equipment for toddlers aged under 3.....	3
4.7.1 Reference document for anthropometry.....	3
4.7.2 Range of age and size.....	3
4.8 SS 457:2017 (Singapore) Specification for playground equipment for public use.....	4
4.8.1 Reference document for anthropometry.....	4
4.8.2 Defined age groups.....	4
4.9 MS 966:2017 (Malaysia) Playground equipment – Safety performance for public use – Specification.....	4
4.9.1 Reference document for anthropometry.....	4
4.9.2 Defined age groups.....	4
5 International inventory of probes/gauges and test method procedures used to identify specific playground equipment safety hazards	4
5.1 International inventory of probes/gauges and test method procedures.....	4
5.2 Probes and gauges figures.....	7
6 Summary	7
Annex A (informative) Completely bound opening head entrapment	8
Annex B (informative) Partially bounded opening head/neck entrapment	13
Annex C (informative) Protrusion hazard impalement	15
Annex D (informative) Impalement from projections on suspended components	17
Annex E (informative) Common crush and shear hazard (between one or more moving accessible components)	18
Annex F (informative) Finger entrapment (gaps, opening and holes)	19

This is a preview of ISO/TR 24666:2023. [Click here to purchase the full version from the ANSI store.](#)

Annex G (informative) Entanglement hazards	20
Annex H (informative) Hazard Test for Toddlers	23
Annex I (informative) Finger entrapment (gaps, opening, hinged objects, and holes)	26
Bibliography	27

This is a preview of ISO/TR 24666:2023. [Click here to purchase the full version from the ANSI store.](#)

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of 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 www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO/TR 24666:2022), which has been technically revised.

The main changes are as follows:

- amendment of [Table 1](#);
- amendment of [Clause 6](#);
- amendment of [Table A.5](#);
- amendment of [Table B.2](#);
- amendment of [Table C.2](#);
- amendment of [Table F.1](#);
- amendment of [Table G.3](#);
- inclusion of new [Annex I](#);

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document summarizes information about different regional and national standards on playground safety in order to provide a reference point for different types of entrapments and probes/gauges.

Some standards apply to entrapment tests universally, regardless of the intended user age group, on the basis that it is very difficult to control users when products are installed in a free access environment. Other standards apply to specific entrapment probe tests related to specific intended user age groups. For cases where user age references are provided in the standard, see [Annex A](#) to [Annex I](#).