PD ISO/TS 24667:2020

BSI Standards Publication

Sports and recreational facilities — Impact surfacing testing device

bsi.

National foreword

This Published Document is the UK implementation of ISO/TS 24667:2020.

The UK participation in its preparation was entrusted to Technical Committee SW/136, Sports, playground and other recreational equipment.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2020

ISBN 978 0 539 13767 5

ICS 97.220.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 October 2020.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/TS 24667:2020

TECHNICAL SPECIFICATION

ISO/TS 24667

First edition
2020-09-30

Sports and recreational facilities — Impact surfacing testing device

Installations sportives et récréatives — Dispositif d'essai de revêtement d'impact

Reference number
ISO/TS 24667:2020(E)

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

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 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*.

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

Impact attenuating surfacing has been shown to be fundamental to the prevention of 60 % to 75 % of the injuries in playgrounds from impacts with the surface after a fall. The surface materials can be sourced and installed locally such as sand, wood chips or rounded gravel, while others could be sourced from materials around the world and assembled on site such as poured in place rubber, tiles, mats or synthetic turfs and installed at local playgrounds. The performance of installed surfacing materials should be comparable from playground to playground no matter where this playground is situated. The equipment used to measure the performance of playground surfacing is internationally consistent, repeatable and reproducible.

The field of impact attenuation measurement as it applies to playground safety surfaces is very small, resulting in a limited market for potential manufacturers of such equipment. While a small number of reputable manufacturers do exist, organizations needing playground impact test equipment, such as test laboratories and university researchers, often have to rely on their own technical abilities or those of related engineering departments to create the needed equipment from scratch.

A wealth of information is available to aid in the effort to build one's own instruments. Of particular note is ISO 6487, which details impact measurement particularly of anthropomorphic test dummies in automotive environments. But as ISO 6487 deals with automotive situations, some of the information is not relevant and could confuse the reader. This document uses the pertinent details from ISO 6487 and also provides a concise reference for test device parameters unique to the playground sector such as the dimensions of the missile (headform). This document also introduces procedures for ensuring the integrity of the test equipment which are not applicable to the automotive sector.

Sports and recreational facilities — Impact surfacing testing device

1 Scope

This document gives the specifications for impact attenuation testing equipment used to evaluate the impact performance characteristics of playground surfacing. Its specifications are aimed at ensuring that developers and manufacturers of such instruments meet minimum performance characteristics to allow repeatable, reproducible and accurate results.

This document does not specify a test method.

NOTE Such test methods are covered in other standards, e.g. EN 1177, ASTM F1292, ASTM F3313, AS 4422, CSA Z614.

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 6487, *Road vehicles — Measurement techniques in impact tests — Instrumentation*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Apparatus

4.1 Missile (headform)

The missile shall have the following specifications:

a) machined from solid billet of 6061-T6 or equivalent aluminium;

b) impacting surface of the missile to be spherical or hemispherical in shape with diameter of (160 ± 1) mm;

c) final mass of missile assembly (including any moving part of a possible guiding system) to be (4,6 ± 0,02) kg;

d) accelerometer (see 4.2) mounted at centre of mass (±5 mm in the vertical or horizontal axis);

e) no gaps or voids between the mounting face of the accelerometer and the impacting face of the missile;

f) for non-guided systems, a tri-axial accelerometer shall be used;

