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Playground equipment and surfacing - Part 7: Guidance on installation, inspection, maintenance and operation

Spielplatzgeräte und Spielplatzböden - Teil 7: Anleitung für Installation, Inspektion, Wartung und Betrieb

Équipements et sols d'aires de jeux - Partie 7 : Guide d'installation, contrôle, maintenance et utilisation

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Playground equipment and surfacing - Part 7: Guidance on installation, inspection, maintenance and operation

Équipements et sols d'aires de jeux - Partie 7 : Guide d'installation, contrôle, maintenance et utilisation

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 1176-7:2019) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1176-7:2008.

EN 1176, *Playground equipment and surfacing*, consists of the following parts:

- Part 1: *General safety requirements and test methods*
- Part 2: *Additional specific safety requirements and test methods for swings*
- Part 3: *Additional specific safety requirements and test methods for slides*
- Part 4: *Additional specific safety requirements and test methods for cableways*
- Part 5: *Additional specific safety requirements and test methods for carousels*
- Part 6: *Additional specific safety requirements and test methods for rocking equipment*
- Part 7: *Guidance on installation, inspection, maintenance and operation*
- Part 10: *Additional specific safety requirements and test methods for fully enclosed play equipment*
- Part 11: *Additional specific safety requirements and test methods for spatial network*

This part should be read in conjunction with EN 1176-1 and EN 1177, *Impact attenuating playground surfacing — Methods of test for determination of impact attenuation*.

The following European Standards and Technical Reports may also apply:

- EN 14960, *Inflatable play equipment — Safety requirements and test methods*
- EN 14974, *Facilities for users of roller sport equipment — Safety requirements and test methods*
- EN 16630, *Outdoor fitness equipment*
- CEN/TR 16598, *Collection of rationales for EN 1176 — Requirements*
- CEN/TR 16879, *Siting of playgrounds and other recreational facilities*
- CEN/TR 16598, *Collection of rationales*
- EN 16899, *Sports and recreational equipment — Parkour equipment — Safety requirements and test methods*

For requirements on the maintenance of fully enclosed play equipment, see EN 1176-10, *Playground equipment and surfacing — Part 10: Additional specific safety requirements and test methods for fully enclosed play equipment*.

The principal change from the previous edition of EN 1176-7 is that the guidance given in this part of EN 1176 has been updated in the light of experience of use of EN 1176-7:2008, for example by referring to other parts of EN 1176 when carrying out an inspection.

prEN 1176-7:2019 (E)

1 Scope

This document is applicable to playground equipment, surfacing and ancillary items, eg., gates, fences, benches, bins, shades, etc.

Note 1 The scope of the inspection and inclusion of the ancillary items will vary from country to country

Note 2 Ancillary items are not included in EN 1176 and are not assessed for compliance with EN 1176.

This document establishes requirements on the installation, inspection, maintenance and operation of playground equipment and surfacing around the equipment. It is intended for use by playground operators (see definitions 3.4) to assist them in developing an inspection and maintenance regime for each playground.

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.

EN 1176-1:2017, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

EN 1177:2018, *Impact attenuating playground surfacing — Methods of test for determination of impact attenuation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1176-1 and the following apply.

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

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

3.1

inspection

check to ensure the continuous safe use of a playground

Note 1 to entry: The purpose of an inspection is to assess the overall level of safety of the equipment and/or surfacing and the extent of the playground. The outcome of an inspection is reported in an inspection report and can result in preventive measures such as extra maintenance, repairs, etc.

3.2

maintenance

intervention that is required and/or undertaken to conserve, as nearly and as long as possible, the original condition of the equipment and surfacing while compensating for normal wear and tear

Note 1 to entry: The maintenance instructions are provided by the supplier as stated in EN 1176-1:2017, 6.1.4.

3.3

competent person

designated person, suitably trained, qualified by knowledge and practical experience to carry out the required task

3.4

operator

person or organization that own, operate, oversee and/or are responsible for the playground in its entirety

Note 1 to entry: The owner/operator may be different legal entities but for the purpose of this document they are referred to as operator.

3.5

risk assessment

overall process comprising a risk analysis and a risk evaluation and which is part of a risk management process

Note 1 to entry: Risk management in playgrounds does not require the removal of all risks.

4 General

4.1 When the level of safety of the equipment and or surfacing pose an unacceptable risk, access and use of playground equipment shall be prevented.

NOTE Some examples of situations where the level of safety is insufficient:

- the installation of the equipment is not complete;
- when impact attenuating surface is not yet installed;
- where maintenance cannot ensure a continuing level of safety.

4.2 Maintenance and inspection records shall be kept by the operator.

5 Installation

5.1 Playground equipment and surfacing shall be installed in a safe way, also to meet, for example, national or local building and safety regulations.

5.2 Playground equipment shall be installed in accordance with the manufacturer's instructions (see EN 1176-1:2017, Clause 6). Alterations to parts of a piece of equipment or structure that could affect the essential safety of the equipment should only be carried out after consultation with the manufacturer or a competent person. If installation is not possible according to the instructions of the manufacturer, only the manufacturer can allow an alternative installation.

5.3 On completion of a new playground or after significant modifications on equipment or surfacing, a post installation inspection shall be carried out by a competent person to assess the overall level of safety.

NOTE Examples for such modifications are:

- changes and renewal on equipment or their positioning;
- changes and renewal of impact attenuating surfacing;
- structural modifications on equipment, e.g. new platforms, posts, etc.

prEN 1176-7:2019 (E)**6 Inspection****6.1 General**

NOTE 1 Inspections are the basis for preventive and corrective maintenance. The frequency of the inspection might vary from the frequency given in this document when an assessment of the frequency has been made by a competent person.

Playground equipment and surfacing shall be inspected as follows:

a) Post installation inspection;

inspection usually undertaken prior to the opening of a playground for public use, intended to assess the equipment and its environment for the overall level of safety on the playground;

b) Routine visual inspection;

inspection intended to identify obvious hazards that can result from normal use, vandalism or weather conditions;

NOTE 2 Typical hazards can take the form of broken parts or broken bottles.

NOTE 3 For playgrounds subject to heavy use or vandalism, daily inspection of this type can be necessary.

NOTE 4 Examples of visual inspection points are cleanliness, ground surface finishes, missing parts, etc.

c) Operational inspection;

inspection, more detailed than routine visual inspection, to check the operation and stability of the equipment;

This inspection shall be every 1 month to 3 months, or as indicated by the manufacturer/in the manufacturer's instructions.

NOTE 5 Examples of visual and operational inspection points are cleanliness, equipment ground clearances, ground surface finishes, exposed foundations, sharp edges, missing parts, excessive wear (of moving parts) and structural integrity.

d) Annual main inspection;

inspection intended to establish the overall level of safety of equipment, foundations and playing surfaces;

e.g. compliance with the relevant part(s) of EN 1176 and/or risk assessment, including any changes made as a result of the assessment of safety measures (see 8.2.1), effects of weather, presence of rotting or corrosion, and any change in the level of safety of the equipment or surfacing as a result of repairs made or added or replaced components.

NOTE 6 The annual main inspection might involve excavation. If excavation is not possible, other methods can be used, e.g., the Resistograph method for detecting rotting of wood. Additional measures might be necessary to detect other possible deterioration of the structure and the surfacing (e.g. retesting the HIC according to EN 1177). Maintenance intervention can be required where components require dismantling to assess their condition

The equipment shall be inspected by competent persons (see CEN/TR 17207 or national regulations/standards for obtaining the level of competence).

NOTE 7 The level of competence required will vary with the task performed in the inspection and the need for specific competence using measurement equipment (e.g., for HIC measurement according to EN 1177).

6.2 Specific recommendations

6.2.1 Securing unsafe situations

If serious defects that put safety at risk are discovered during inspection, these shall be notified to the operator without delay. If the operator cannot make the equipment safe it shall be secured against access and use, e.g. immobilisation, removal or fencing the equipment and its surrounding impact area.

Where a piece of equipment is to be removed from the site, any anchorages or foundations left in the ground shall be removed or safeguarded and the site made safe.

6.2.2 Personnel performing the inspection

The person and or company performing the annual main inspection or post installation inspection shall be independent. (See CEN/TR17207:2018 code of conduct.)

When play equipment relies on one post for its stability, special attention shall be paid at the inspection, e.g. by monitoring degradation and, if necessary, decommissioning the item before the end of its operating life.

6.2.3 Impact attenuating surfacing

Special attention shall be paid on possible degradations or the loss of impact attenuating properties and possible reduction in the critical fall height, e.g. from heavy use, vandalism, coastal location, air pollution, or by the effects of ageing (exposure to UV, heat, cold etc.). For artificial impact attenuating materials, this shall be done by performing a test in accordance with EN 1177:2018, Method 2. The inspector/operator shall jointly determine if additional testing is required to ascertain the level of impact attenuation the surface provides.

6.2.4 Inspection protocol

In order to prevent accidents, the owner or operator shall ensure that an appropriate inspection protocol is established and maintained for each playground. This shall take into account local conditions, the manufacturer's instructions that can affect the necessary inspection frequency and the possible different types of inspections. The protocol should list the equipment to be inspected at the various inspections and the methods of carrying out the inspections, in accordance with 6.1.

Surfacing might require a separate inspection protocol (including periodic verification of the compliance of the impact attenuating properties in relation with the maximum free height of fall of the equipment), which will vary with the type of material.

7 Maintenance

7.1 Routine maintenance

To reduce accidents and to maintain the necessary levels of safety of the equipment and surfaces, the owner or operator shall ensure that an appropriate routine maintenance schedule is established, implemented and maintained. This shall take into account local conditions and the manufacturer's instructions that can affect the necessary maintenance frequency. The schedule shall list the components of equipment as well as the way of the surfacing to be maintained and shall also give procedures for dealing with complaints and breakdowns.

The routine maintenance of playground equipment and surfacing shall consist of preventative measures to maintain their level of safety. Such measures should include:

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- a) tightening of fastenings;
- b) maintenance of equipment surfaces;
- c) maintenance of any impact attenuating surfacing;
- d) lubrication of bearings;
- e) marking of equipment to signify loose fill material finished surface level;
- f) cleaning;
- g) removal of broken glass and other debris or contaminants;
- h) restoring loose fills material to the correct level;

7.2 Corrective maintenance

Corrective maintenance shall include measures to correct defects, or to re-establish the necessary levels of safety of the playground equipment and surfacing. Such measures may include:

- a) replacement of fastenings;
- b) welding or welding repairs;
- c) replacement of worn or defective parts;
- d) replacement of defective structural components;
- e) replacement of defective impact attenuating surfacing.

7.3 Personnel performing maintenance

Only competent personnel shall perform maintenance tasks. The personnel shall have adequate knowledge about their tasks, the materials they use and proper procedures (see CEN/TR 17207 or national regulations/standards for obtaining the level of competence).

7.4 Specific requirements for reinforced materials

Parts which comprise glass fibre reinforced plastics (GRP) shall be replaced or repaired once the glass fibres become visible due to wear or damage. This particularly applies to slides.

8 Operation**8.1 General requirements**

8.1.1 In all steps in the design, installation, inspection, maintenance and operation of the play area, the operator or owner shall take into account the manufacturer's information, e.g. pre-information/catalogue, installation instructions and maintenance instructions, together with the requirements of the relevant part(s) of EN 1176 and any other relevant information.

8.1.2 The operator shall set up a system for the safety management of the playground.

NOTE For the purposes of this document, the term 'safety management' is the organization established by the operator of the playground to assess, maintain and, if necessary, improve the safety of the playground as a whole, including playground equipment and surfaces.