

# Playground equipment and surfacing —

## Part 7: Guidance on installation, inspection, maintenance and operation

ICS 97.200.40

## National foreword

This British Standard is the UK implementation of EN 1176-7:2008. It supersedes BS EN 1176-7:1998 which will be withdrawn on 31 May 2009.

The UK participation in its preparation was entrusted to Technical Committee SW/65, Children's playground equipment.

Attention is drawn to BS EN 1176-1:2008, Clause 4.2.8.5.2 Note 1 and the use, within the UK, of natural grass as playground surfacing. The UK committee, following representation from the national Play Safety Forum, offer the subsequent guidance. This guidance is drawn from the experiences of the UK committee, and the experiences of other European organizations, in the application of BS EN 1176-1:1998 over the past ten years.

Grass is a low cost, readily available and environmentally friendly surface that is liked by children. It is visually attractive, easy to maintain and importantly for children, can, by increasing the uninterrupted playing surface of a playground, enhance opportunities for incidental and unstructured play.

Grass can, on playgrounds with a low intensity of use, be successfully used below and around play equipment, removing the necessity to install specialist Impact Attenuating Surfaces. The suitability of grass has to be determined locally by risk assessment. The following criteria can form part of this assessment and will provide guidance as to whether grass is suitable for use.

- The maximum fall height of the equipment is less than 1,5 m.
- It should be assessed whether the grass has at least 150 mm of soil beneath it. (A reasonable evaluation may be made by pushing vertically by hand into the ground a thin probe, such as a screwdriver, to a depth of 150 mm, at regular and frequent locations, without it being impeded by a high proportion of solids, such as stone, brick or tree roots.)
- It should be ensured that the grass remains throughout the year and does not become mud or bare earth. Its impact absorbency is dependent upon the roots maintaining an uncompacted soil structure. This will need to be continually assessed following installation of equipment.

Following completion of a satisfactory risk assessment including the three principal criteria above, grass is suitable for use. However, operators may want to use other criteria they believe necessary to ensure the suitability of grass.

Grass, even in low usage playgrounds, will not sustain intensive use; for example: beneath the central arc of a swing; the run out area of a slide; below a fire fighters' pole; around the outside of a carousel; equipment access and exit points. For these relatively small high-wear areas, in order to meet the requirements of this standard, other surfaces to replace or prevent erosion of the grass are needed, taking care that no trip points or hard edges occur.

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### Amendments/corrigenda issued since publication

Date	Comments
30 September 2008	Correction to national foreword

Operators and providers are advised that equipment conforming to EN 1176 require regular maintenance. Guidance on this and appropriate inspection, maintenance and operation schedules are contained within BS EN 1176-7:2008.

National standards have been published by BSI on children's playground equipment since BS 3178 was first issued in 1959, this standard concentrated on specifications for specific types of equipment. It was replaced in 1979 by BS 5696 which switched focus to a design and safety approach.

With the increasing introduction of overseas equipment BSI led the way by calling for a European Standard to address the conflicting safety advice and standards from other countries. This was published in 1999 as BS EN 1176 and further focused on the safety of playground equipment.

All standards published by BSI are regularly assessed and this revision is part of the process, it takes into account new design concepts and the operating experience available to the standards committees.

It is advised that the previous version of BS EN 1176 will not be withdrawn until 31 May 2009 to give manufacturers time to amend their product lines.

Playground equipment not complying with this revision should not automatically be considered as being unsafe or to require replacement. A risk assessment by competent persons should be used to determine what action, if any, is necessary. Manufacturers and Inspectors of the Register of Play Inspectors International (RPII) are amongst those that will be able to assist in this.

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

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

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



EUROPEAN STANDARD

**EN 1176-7**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2008

ICS 97.200.40

Supersedes EN 1176-7:1997

English Version

## 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

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

This European Standard was approved by CEN on 25 April 2008.

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## Foreword

This document (EN 1176-7:2008) 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 European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by May 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1176-7:1997.

This European Standard consists of a number of parts as follows:

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

EN 1176-2, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*

EN 1176-3, *Playground equipment and surfacing — Part 3: Additional specific safety requirements and test methods for slides*

EN 1176-4, *Playground equipment and surfacing — Part 4: Additional specific safety requirements and test methods for cableways*

EN 1176-5, *Playground equipment and surfacing — Part 5: Additional specific safety requirements and test methods for carousels*

EN 1176-6, *Playground equipment and surfacing — Part 6: Additional specific safety requirements and test methods for rocking equipment*

EN 1176-7, *Playground equipment and surfacing — Part 7: Guidance on installation, inspection, maintenance and operation*

EN 1176-10, *Playground equipment and surfacing — Part 10: Additional specific safety requirements and test methods for fully enclosed play equipment*

EN 1176-11, *Playground equipment and surfacing — Part 11: Additional specific safety requirements and test methods for spatial network*

This part of EN 1176 should not be used in isolation, but in conjunction with EN 1176-1 and EN 1177.

For inflatable play equipment see

EN 14960, *Inflatable play equipment — Safety requirements and test methods*.

For guidance on the maintenance of fully enclosed play equipment, see EN 1176-10.

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 1176-7:1997, for example by referring to other parts of EN 1176 when carrying out an inspection.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.



## 1 Scope

This document gives guidance on the installation, inspection, maintenance and operation of playground equipment, including ancillary items, e.g. gates, fences, and surfacing.

## 2 Normative references

The following referenced documents are indispensable for the application 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 1176-1:2008, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1176-1:2008 apply.

## 4 General

**4.1** If equipment is not safe, access by the public, including children, should be prevented.

NOTE Examples of situations where the equipment is not safe are as follows:

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

**4.2** A book, inspection and servicing sheets or computer records should be kept by the owner/operator in charge of the equipment maintenance and inspection.

## 5 Installation

**5.1** Equipment should be installed in a safe way, also to meet, for example, national or local building and safety regulations.

**5.2** Equipment should be installed in accordance with the manufacturer's instructions (see EN 1176-1:2008, Clause 6).

**5.3** On completion of a new playground, a post-installation inspection should be carried out by a competent person to assess compliance with the relevant part(s) of EN 1176.

## 6 Inspection and maintenance

**6.1** Equipment and its components should be inspected and maintained in accordance with the manufacturer's instructions at a frequency not less than that given by the manufacturer (see EN 1176-1:2008, Clause 6).

**6.2** Equipment and its components should be inspected as follows.

a) Routine visual inspection

Routine visual inspection enables the identification of obvious hazards that can result from vandalism, use or weather conditions, e.g. hazards such as broken parts or broken bottles.

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

b) Operational inspection

The operational inspection is a more detailed inspection to check the operation and stability of the equipment, especially for any wear. This inspection should be every 1 to 3 months, or as indicated by the manufacturer's instructions.

Special attention should be given to 'sealed-for-life' parts.

NOTE 1 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.

c) Annual main inspection

The annual main inspection is carried out to establish the overall level of safety of equipment, foundations and surfaces, e.g. compliance with the relevant part(s) of EN 1176, 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 as a result of repairs made, or of added or replaced components.

Special attention should be given to 'sealed-for-life' parts.

NOTE 2 The annual main inspection may involve excavation or dismantling of certain parts. Additional measures might be necessary to detect other possible deterioration of the structure.

The equipment should be inspected by competent persons in strict accordance, at least, with the manufacturer's instructions.

NOTE 3 The level of competence required will vary with the task.

## **6.3 Specific recommendations**

### **6.3.1 Reinforced materials**

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

### **6.3.2 One post equipment**

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

## **7 Inspection schedule**

7.1 To prevent accidents, the owner or operator should ensure that an appropriate inspection schedule is established and maintained for each playground. This should take into account local conditions and the manufacturer's instructions that can affect the necessary inspection frequency. The schedule should list the components to be inspected at the various inspections and the methods of inspection, in accordance with 6.2.

**7.2** If serious defects that might put safety at risk are discovered during inspection, these should be corrected without delay. If this is not possible, the equipment should be secured against use, e.g. immobilization or removal.

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

## **8 Operation**

### **8.1 General recommendations**

**8.1.1** In all steps in the design, installation, inspection, maintenance and operation of the play area, the operator or owner should 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 appropriate information.

**8.1.2** The operator should set up an appropriate system for the safety management of the playground.

**NOTE** For the purposes of this European Standard 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 equipment and surfaces.

### **8.2 Specific recommendations**

#### **8.2.1 Assessment of safety measures**

The operator of a playground should periodically, at least once a year, systematically assess the effectiveness of all safety measures used (including the recommendations given in this European Standard and any published amendments) and alter them if it is found necessary on the basis of experience, or if circumstances have changed.

#### **8.2.2 Personnel**

Personnel performing tasks as a part of safety management, such as inspection, repair and maintenance, should be competent. The level of competence will vary with the task and training might be necessary. The personnel should have adequate information about their tasks and adequate information about their responsibilities and authority. Only qualified personnel should carry out any work, such as welding parts of a structure, that is deemed to affect the safety of the equipment.

#### **8.2.3 Documentation**

Records should be kept of all actions taken as part of safety management.

The documents relating to a playground should include:

- a) the certificate of inspection and testing, if applicable;
- b) inspection and maintenance instructions;
- c) operating instructions, if applicable;
- d) operator's records, all inspection and maintenance records, e.g. log book; and
- e) specific design and tender documents.

These documents should be accessible when needed for maintenance, inspection, repair and in the event of an accident.

#### **8.2.4 General safety measures**

On the playground there should be a sign (pictogram) giving the following information:

- a) general emergency telephone number;
- b) telephone number to contact maintenance personnel;
- c) name of the playground;
- d) address of the playground; and
- e) other relevant local information, if applicable.

The entry, exit and emergency paths to and from a playground, intended for use by the public and emergency services, should be accessible and free of obstacles at all times.

NOTE Attention is drawn to local regulations.

#### **8.2.5 Procedures**

Defects that occur during operation and which put safety at risk should be corrected without delay. If this is not possible, the equipment should be secured against use e.g. by immobilization or removal.

There should be written operational procedures covering the measures to be taken in the event of accidents, fire and the like.

Until unsafe equipment is repaired and released for use, access by the public should be prevented. Information about accidents brought to the attention of the manager should be recorded on a form that includes the following details:

- a) date and time of accident;
- b) age and sex of victim and clothing worn, including footwear;
- c) equipment involved;
- d) number of children on site at the time of the accident;
- e) description of accident;
- f) injury sustained including part(s) of body affected;
- g) action taken;
- h) witness statements;
- i) any subsequent equipment modification;
- j) weather conditions; and
- k) any other relevant information.

This information should be used to improve the safety of the playground and be retained for reference purposes.

### 8.2.6 Routine maintenance

To reduce accidents, the owner or operator should ensure that an appropriate routine maintenance schedule is established, implemented and maintained. This should take into account local conditions and the manufacturer's instructions that can affect the necessary inspection frequency. The schedule should list the components to be maintained and should also give procedures for dealing with complaints and breakdowns.

The routine maintenance of playground equipment and surfaces should consist of preventative measures to maintain their level of safety, performance and compliance with the relevant part(s) of EN 1176. Such measures should include:

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

### 8.2.7 Corrective maintenance

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

- a) replacement of fastenings;
- b) welding or welding repairs;
- c) replacement of worn or defective parts; and
- d) replacement of defective structural components.

### 8.2.8 Personal safety

Repairs during operation, that could put the safety of maintenance personnel or of the public at risk, should be avoided.

NOTE Other safety regulations could also apply.

### 8.2.9 Equipment alterations

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.

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