

## Relevant Legislation and Appropriate Standards

*The Management of Health and Safety at Work Regulations 1999*

*BS EN 1176:2008 1-7 Playground Equipment and Surfacing*

*BS EN 1177:2008 Impact attenuating playground surfacing – Determination or critical fall height.*

## General

Play is essential for the development of each and every child. It is a vital means by which children learn about themselves, their environment and other people. The freedom to explore, to experiment, to interact with peers and to be creative is a necessary ingredient of a child's physical, emotional and intellectual growth.

This document is concerned both with outdoor play equipment where items of equipment are permanently installed and where there is formal full-time supervision of play activities as well as equipment in public areas where there is no formal supervision.

Safety should permeate every stage in the provision of play equipment from planning, designing, choosing and installing equipment to monitoring and maintaining the facilities. This document provides practical advice and guidance on the provision of outdoor play equipment for all establishments in the Council.

## Play Equipment Standards

There are two European standards for play equipment, as identified above.

There are many minor differences between the above standards and previous British Standards they have replaced. Three are particularly relevant:

- the area of impact absorbing surfacing
- the spacing between play structures
- the height at which barriers with guard rails to prevent falls need to be provided.

When purchasing new or replacing existing outdoor play equipment it is important that Managers of establishments satisfy themselves as to the level of safety afforded by the design, construction and installation of particular items of equipment.

These standards are not designed to eliminate risk from play. The purpose is to ensure that young people can engage in adventurous and challenging play without coming to harm as the result of poorly designed equipment and badly planned facilities.

These standards represent best practice and provide a basis for a defence should a claim for compensation arise against the Council, following an incident or accident involving play equipment. The advice given in this document draws heavily on the content of the above standards and the advice provided by The Royal Society for the Prevention of Accidents (RoSPA) in their booklet: *A Guide to the European Playground Equipment and Surfacing Standards, 4th Edition 2004*.

## Risk Assessment

All British Standards now include the statement '*Compliance with a British Standard does not of itself confer immunity from legal obligations*'. This statement has arisen following the outcome of a consumer protection case, which established that compliance with a relevant standard was not enough. It is therefore not sufficient to rely on compliance with BS EN 1176 and BS EN 1177 alone to determine the safety of equipment.

Under health and safety legislation the establishment should carry out a risk assessment of play equipment to determine what precautions are needed. Part of this assessment will involve deciding whether the equipment complies with the relevant standards.

Sometimes it may be necessary to do something more, for example, if the equipment predates recent standards, there may be a need to make some modifications or replace certain items. The playground's location may attract unauthorised use and/or abuse, in which case more frequent maintenance may be required because damage might occur more often and the consequences of using damaged equipment might be more serious.

This risk assessment should be carried out by a person who has knowledge and experience of such equipment. It may be necessary for the school to obtain specialised advice from a play equipment manufacturer who is a member of The Association of Play Industries (024 7641 4999). General advice is available from the Corporate Health and Safety Team.

## Safety versus Challenge

Challenge and adventure are natural aspects of play. Young people will become bored very quickly with equipment that does not offer a range of challenging

experiences. As a result they might either stop using the equipment or use it in such a way which compromises their safety.

From research and studies into accidents which occur in play areas, it has been possible to identify the following factors which appear to contribute to accidents:

- poorly designed equipment
- poor location and layout
- inadequate maintenance procedures
- incorrect installation of equipment
- lack of facilities appropriate for the age of the child
- inappropriate use of equipment.

It is essential that all Council establishments should consider such factors in developing their arrangements for the use of outdoor play equipment.

## Planning For Safe Play

In planning the development of the provision of outdoor play equipment and considering how best to maintain and improve existing equipment, establishments will need to consider the following:

### **1. Location**

Careful consideration should be given to the location of equipment. Safe access to the play area is essential and the needs of young people with reduced mobility should be taken into account. Consideration should be given to positioning the site away from car parks and access routes used by parents and visitors.

### **2. Layout**

A variety of play needs should be considered when planning the layout of the equipment. It may be possible to create different sectors within the play area, such as:

- a quiet area
- a social play area
- a climbing area
- an agility area.

This may also minimise the risk of accidental collision while at the same time enabling young people to enjoy a range of experiences.

Paths, fencing and natural landscaping of the site can be used to guide young people between activities via a safe route. However, these features can also present

risks because they are part of the play environment. Any screening features or planting must be appropriate for use in the play area.

### 3. Playground Surfaces

Injuries in playgrounds occur for a variety of reasons. The most severe of these are likely to be injuries to the head. Consequently, priority has been given to establishing criteria for surfacing materials, which are intended to assess the ability of the surface to reduce the likelihood of head injuries. The requirements of these criteria are contained in *BS EN 1177* cited above.

The installation of impact absorbing surfaces will not eliminate accidents. They may, if correctly installed and maintained, reduce the seriousness of an injury. **Impact absorbing surfaces must be installed underneath and around equipment from which falls from a height of 600 mm or greater may occur.**

There are a range of products supplied for use as 'impact absorbing surfaces'. Each type of material has its own advantages and disadvantages. Loose-fill materials such as, tree bark, wood chips or sand tend to be popular because of their more 'natural' appearance in the play environment and the relatively low initial cost, when compared to rubber based products. Pea gravel is not recommended by RoSPA.

**Loose-fill material used as an impact absorbing surface must be installed to a minimum depth of 300 mm.** An additional 100mm should be added to this minimum depth to compensate for displacement of the material. Rubber materials, such as individual tiles, mats or surfaces formed 'in-situ', should be installed by a contractor registered with the Association of Play Industries. A supplier of such materials should provide confirmation of appropriateness for the equipment concerned, together with advice on maintenance and inspection schedules.

All impact absorbing surfaces must be provided with a test certificate. This certificate confirms that the product's impact absorbency properties have achieved the required 'critical fall height' test.

However, in addition to the test certificate, with any loose-fill impact absorbing material there is a general safety requirement that: *'The surface shall be free from any sharp edged parts or hazardous projections'* (*BS EN 1177- section 4.2.8.5.1*).

A test certificate **will not** make reference to this specific safety requirement. Therefore, before making a purchase, all establishments are recommended to obtain a sample of the product from the supplier in order to satisfy themselves that the product is free from any sharp edged parts or hazardous projections. In addition, the establishment should require the supplier to provide written confirmation that the product conforms to the aforementioned general safety requirement.

The impact absorbing surface should extend at least 1.5m around elevated parts of the equipment; this is not a fixed measurement, it will need to increase depending upon the height of equipment in the area. A calculation is provided BS EN 1176 - section 4.2.8.2.4. All of these considerations should be adequately addressed by those involved in the design and layout of the equipment.

Where loose fill materials such as tree bark or woodchips are used as an impact absorbing surface, regular maintenance and inspection procedures in accordance with the supplier's instructions are essential to retain the materials' safety properties. For example, where an area receives heavy use it should be raked daily, especially where equipment is above the critical fall height of 600 mm.

It is also important to ensure that synthetic materials, tiles, wet pore surfacing, matting and the like are checked regularly and maintained in accordance with the supplier's instructions. With age, rubber products cease to be as efficient and do not yield sufficiently to provide the absorbency required under equipment. All surfaces should be examined regularly for vandalism and wear.

#### **4. Inspection and Maintenance**

It is essential that establishments have effective monitoring and maintenance programmes for all play areas. If equipment is found to be in need of repair, it must be removed, replaced or repaired immediately. If this is impractical, steps must be taken to ensure that it presents no danger to children by immobilisation, or erecting protective fencing around it. Repairs should then be completed as soon as possible.

All inspections and maintenance programmes should cover the whole play area and not just the play equipment or the impact absorbing surface. Fences, gates, seating and open areas of play should also be assessed.

Equipment and its components should be inspected and maintained according to the manufacturer's instructions at a frequency not less than that given by the manufacturer. It is Council policy that all their establishments adopt the hierarchy of inspection as recommended in BS EN 1176 - Part 7.

Adopting this standard will enable the establishment to identify hazards which require remedial action and to assess the overall condition of sites and equipment. It is recommended that an inspection and maintenance log book is kept. This log should include:

- details of all the equipment, including each manufacturer
- the inspection and maintenance records
- details of appropriate contacts for advice and assistance
- details of reported accidents involving the equipment.

## BS EN 1176 - Part 7: Inspection and Maintenance schedules

Equipment and its components should be inspected as follows:

### 1. *Routine Visual Inspection:*

The routine visual inspection enables the identification of obvious hazards that can result from vandalism, use or weather conditions, for example the hazards can take the form of broken parts, broken bottles or exposed foundations. For playground equipment which may be subject to heavy use or vandalism, daily inspections of this type are recommended. **This type of inspection can be undertaken by staff in the establishment.**

### 2. *Operational Inspection*

The operational inspection is a more detailed inspection to check the operation and stability of the equipment, and also look for evidence of wear. Special attention should be given to 'sealed for life' parts and equipment where stability relies on one post. This should be carried out every one to three months, or as indicated by the manufacturer's instructions. **Again, this can be undertaken by staff in the establishment and a record should be kept.**

### 3. *Annual Main Inspection*

The 'annual main inspection' is undertaken to establish, at intervals not exceeding 12 months. Its purpose is to establish the overall condition of the equipment, foundations and surfaces. It will cover the effects of weather, evidence of rotting or corrosion and any change in the level of safety of the equipment that has resulted from repairs, modifications or replaced components. The annual main inspection can require excavation or the dismantling of certain parts.

The 'annual main inspection' should be carried out by a competent person in strict accordance with the manufacturer's instructions. The level of competence of the person carrying out the inspection will vary with the level of risk associated with the complexity of the equipment.

For example, in the case of a play area with a limited number of low risk activities, for example low level balance beam, log walk, sandpit, playhouse, all without any moving parts, **a member of the establishment's staff** who has been given adequate information about the equipment and their responsibilities, would be considered appropriately qualified to carry out this task.

However, where a play area contains equipment which has moving parts, a fall height of 600mm or more, slides, stairs or guard rails, it is essential

that the annual main inspection is carried out by a registered Playground Equipment Inspector, who is suitably experienced and trained for the task. Organisations, such as the NPFA, RoSPA or the equipment manufacturer, will provide an annual main inspection service for an individual establishment. Further advice can be obtained from the Health and Safety Team.

## 5. Unauthorised Use of Outdoor Play Equipment: Safety Information

All establishments must anticipate the use of their outdoor play equipment by unauthorised users and, therefore, take suitable precautions. Providing that both the equipment and the impact absorbing surfaces are safe for the intended use and comply with relevant BS EN Standards, it will be sufficient to display a suitable notice. There should be at least one notice in the play area which gives the following information:

- the location of the nearest telephone to contact the emergency services
- the telephone number and name of the person to whom any accidents and damage should be reported **and**
- a statement to the effect that:

*The equipment is intended for use by children from the ages of (for example) 5-9 years, that play activities should be supervised by an adult and that the agreement of the Manger of the Establishment has been given.*

## 6. Vandalism

Unfortunately, there is as risk that some sites will be vandalised. It must be recognised that poor maintenance procedures are likely to increase the possibility of vandalism. It is therefore important that any graffiti is removed promptly and damaged equipment is repaired as quickly as possible to prevent it from deteriorating and enticing people to vandalise it.

## 7. Use of Chemicals

On occasion chemical substances are used in playgrounds, for example, to remove graffiti. Water based fungicides or preservatives must be used as alternatives to creosote. Further information on the use of chemicals can be obtained by referring to the COSHH information in section H1.

## 8. Dogs

Establishments should take effective action to ensure that the outdoor play equipment areas are not fouled by dogs. Dog fouling is unpleasant, unhygienic and can cause serious illness, particularly to young children.

A range of practical measures can be taken if dog fouling is likely including the provision of the following:

- dog-proof fencing
- self-closing gates.
- signage

## Installation of New Play Equipment

The provision and installation of play equipment is a complex task, requiring specialist expertise and knowledge. There are many reputable manufacturers of play equipment that offer advice and a range of services to establishments which are seeking either to improve existing facilities or install new equipment.

However, where competence can be demonstrated, the expertise and knowledge required to undertake a project may be found from among the staff, volunteers and parents of the establishment.

Before undertaking any practical work on the grounds of a Council establishment, Property Services and the Asset Management Group will need to be notified to ensure that the appropriate safety measures can be invoked.

A sketch plan of the area in question and a written Action Plan for the project will need to be submitted, along with the Property Services Division's Form N1 (*Notification of intent to carry out building works and/or install fittings/services*). A sample of this form is contained within section J2.

The Action Plan should identify relevant health and safety issues which need to be considered and should:

- identify the hazards involved with carrying out the work, and assess the risk to the employees installing the equipment, the Council's own employees, children and members of the public
- select a play equipment installer who is competent to deal with these risks
- discuss safe methods of work with them



- highlight any particular hazards on the work site
- monitor the work throughout the duration of the project

## Use of Non-specialist Staff and Volunteers

Key factors to consider where an establishment undertakes a 'self-build' or 'self-assembly' project using non-specialist staff/volunteers are given below:

The design and layout of an outdoor play area can be a very involved task, requiring a detailed understanding of the requirements of the appropriate standards. For 'low risk' installations, such as sandpits, playhouses and low level balance features, the key factors to consider are:

- the dimensions and degree of difficulty of the equipment should be suitable for the intended age group.
- the provision of sufficient space between play structures to avoid accidental collisions.

When planning to design, build and install 'high risk' pieces of play equipment, such as swings, slides or climbing frames with a fall height of 600 mm or more, establishments must refer to the appropriate standards, BS EN 1176 and BS EN 1177. The RoSPA booklet: *A guide to the European Playground Equipment and Surfacing Standards, 4th Edition 2004*, provides an easily accessible interpretation of the requirements of these standards. Further advice can be obtained from the Health and Safety Team.

In order to reduce the initial cost to an establishment some play equipment manufacturers offer a self-assembly option, whereby the manufacturer delivers the parts to the establishment and the assembly is undertaken by staff or volunteers. In such cases, establishments must ensure that they receive detailed plans and assembly instructions.

## Independent Post-installation Inspection

Whether an establishment has equipment installed by the equipment manufacturer or staff and volunteers, it is Council policy that a 'post-installation inspection' is carried before young people are allowed to use the equipment.

The 'post-installation inspection' certifies that the equipment and surfacing conforms to the requirements of the appropriate standards, BS EN1176 and BS EN 1177. This must be carried out by independent registered Playground Inspector. Establishments are strongly advised to arrange for an independent inspection of an installation, to include the play equipment itself and the play surfaces. They should also make it a condition of the contract between the establishment and the company installing the equipment that payment for any works is conditional upon the equipment being approved by this independent inspection. Further advice can be obtained from the Corporate Health and Safety Team.

## Arrangements within Each Directorate

For clarity, the projects which are likely to be undertaken by establishments to provide play equipment have been separated into two types:

1. Major Projects: (usually undertaken by an outside contractor).
2. Minor Projects: (possibly undertaken by the establishment as a 'self build' project).

### 1. Major Projects

Major projects are those: for which specialised skills are required, where the contractor or volunteer must demonstrate competency to carry out the task, which may involve the following:

- Building masonry walls, laying paving slabs or continuous surfaces (such as Tarmac); installing play equipment, fences, seating or tables with concrete foundations.
- Projects which involve hazardous materials or equipment, for example: the use of electrical power tools, cement, concrete or epoxy adhesives; or any plant vehicles (such as diggers, sit-on mowers, generators)

*Owing to the increased levels of skills required it is not generally suitable for young people to be directly involved with major projects.*

### 2. Minor Projects.

These are projects for which specialised skills are not required and which could be safely undertaken by young people or volunteers. Such minor projects may include:

- digging footpaths for bark chips, gravel or other loose fill surfaces
- laying stepping stones
- planting trees, shrubs, and most habitat creations
- installing or erecting structures, such as seats and tables which do not require concrete foundations
- painting games and pictures onto play area surfaces or walls
- building raised planters which do not require foundations.

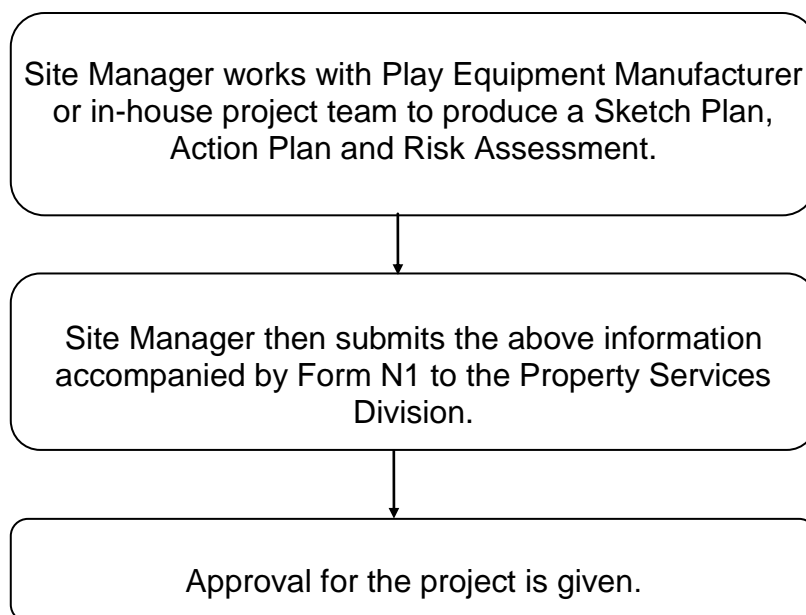
## Key Factors in Selecting a Play Equipment Manufacturer

The reputable Play Equipment Manufacturer should:

- confirm that the company is a registered member of the Association of Play Industries.
- offer a site inspection and present a free design service for plans and layout perspectives without any obligations on the establishment to buy equipment.
- provide written confirmation that all equipment provided is appropriate for the intended age range and the installation of such equipment will comply with BS EN 1176.
- supply test certificates for all impact absorbing surfaces, confirm its appropriateness for the equipment concerned and confirm that it will comply with BS EN 1177.
- provide guarantees for the projected life-span of the equipment provided and the impact absorbing surface.
- confirm that the products are suitable for the area taking into account climatic conditions and anticipated usage and vandalism.
- provide written confirmation that the main contractor will be fully responsible for the total contract including the work of any sub-contractor.
- provide minimum public liability insurance of £5 million.
- provide minimum product liability insurance of £5 million encompassing design and specification risks.
- confirm that the contractor will arrange for a post-installation inspection to be undertaken to check the completed installation against the European standards BS EN 1176 and BS EN1177.
- provide a maintenance and inspection schedule for all the equipment.

## Planning Flow Chart

The flow chart and pro-forma is provided to guide the establishment's Site Manager through the health and safety issues the establishment will need to consider before starting work on the installation of play equipment.



**Throughout the project, the establishment's Site Manager will be responsible for health and safety on site.**

Throughout the project, advice can be obtained from:

- Asset Management Group
- Health and Safety Team
- Property Services

## Project Planning pro-forma

Action	Progress
Prepare a sketch plan of proposed play area detailing all selected equipment. Carry out risk assessment on the equipment and layout.	
Prepare a health and safety plan for the proposed works - consider manual handling, personal protective clothing etc. Where a contractor is being brought in to carry out the work, refer to Section J2.	
Submit plans, with Form N1(2008) to Property Services.	
Hold a pre-start meeting with those involved. Use Form HSC1 to exchange information, invite appropriate officers to attend.	
Organise monitoring arrangements for duration of works, if necessary consult in the Property Services.	

Action	Progress
Identify participants and workers on the project.	
Ensure equipment and materials are stored securely to prevent access to young people or intruders.	
Project site to be separated from the rest of the grounds by a clear visible barrier to restrict access.	
Ensure all helpers know how to carry and use equipment and materials safely before they start.	
Seek parental authorisation (for illnesses or allergies) before children take part in practical activities.	