

AN OPERATORS GUIDE TO BS EN 14960:2006

Since 2002 there have been numerous discussions surrounding the PIPA testing scheme. Some operators have accepted the scheme others remain hostile towards it. There are many misconceptions about what PIPA is or is not so Inflated News decided to try and offer further clarification to assist owner/operators in the decision making process. All further print in blue is taken directly from BS EN 14960:2006, the European Standard for manufacture, operating and testing of inflatable play equipment.

There is a misconception that PIPA is a 'membership scheme', that it is run by 'a committee' and that it has produced a set of regulations for the industry. It most definitely is not a membership scheme and whilst it has an 'advisory group' that meet during the year, they are not elected but invited by the Performance Textiles Association to present views from across the industry. PIPA evolved following the release of a draft European document prEN 14960.

In 2002 a European Committee SW65 was set up to look at the manufacture/operation and testing of inflatable play equipment. The committee was represented by members from Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom. From the original committee a working group (WG9) from the UK, Belgium, Austria, Germany and Italy was set up to produce a draft standard. The appointed UK representatives are Ken Lawrence and John Simmons. The committee convener, Sharon Sheather, is also from the UK. The working group produced the first draft in January 2003. Following this draft a technical committee CEN/TC 136 was appointed to produce a draft standard.

In May 2004 the committee produced a draft consultation standard which was given the number prEN 14960. In November 2006 the draft standard was finalised and released as a European Standard. In March 2007 the European Standard was released in the UK through the British Standards Institute (BSI) and given the number BS EN 14960:2006. A full copy can be purchased directly from BSI bookshops at www.bsi-global.com.

The standard states the scope as being:

"This standard is applicable to inflatable play equipment for intended and foreseeable use by children of fourteen years and under, individually and collectively.

This standard specifies safety requirements for inflatable play equipment on or in which the intended or foreseeable primary activities are bouncing and sliding. It sets out appropriate measures to address the risks and minimize accidents to users for those involved in the design, manufacture and supply of inflatable play equipment. It specifies information to be supplied with the equipment. The requirements have been laid down bearing in mind the risk factor based on available data.

This standard specifies the requirements that will protect the child from hazards that he or she may be unable to foresee when using the equipment as intended, or in a manner that can be reasonably anticipated.

This standard is not applicable to inflatable water-borne play and leisure equipment, domestic inflatable toys, air-supported buildings, inflatables used solely for protection, inflatables used for rescue, nor other types where the primary activity is not bouncing or sliding".

The major part of the 47 page document refers to the technical manufacture of inflatable play equipment and is therefore of little interest to owners and operators of equipment. However, it is well worth taking the time to read the full document as testing requirements then make more sense. There are a number of paragraphs that do apply specifically to owner/ operators. There follows the relevant paragraphs from the document.

'4.2.8 Siting

The inflatable shall be sited well away from possible hazards such as overhead powerlines or other obstacles with hazardous projections (e.g. fences and/or trees).

The inflatable shall not be erected on a site with more than 5% slope in any direction.

The site shall be cleared of debris and/or sharp objects on, or embedded in, the surface.

If, for crowd-control purposes, a perimeter fence is used, it shall be at least 1,8 m from walled sides and at least 3,5 m from open sides. A gateway shall be 1,0 m wide (see figure 12)

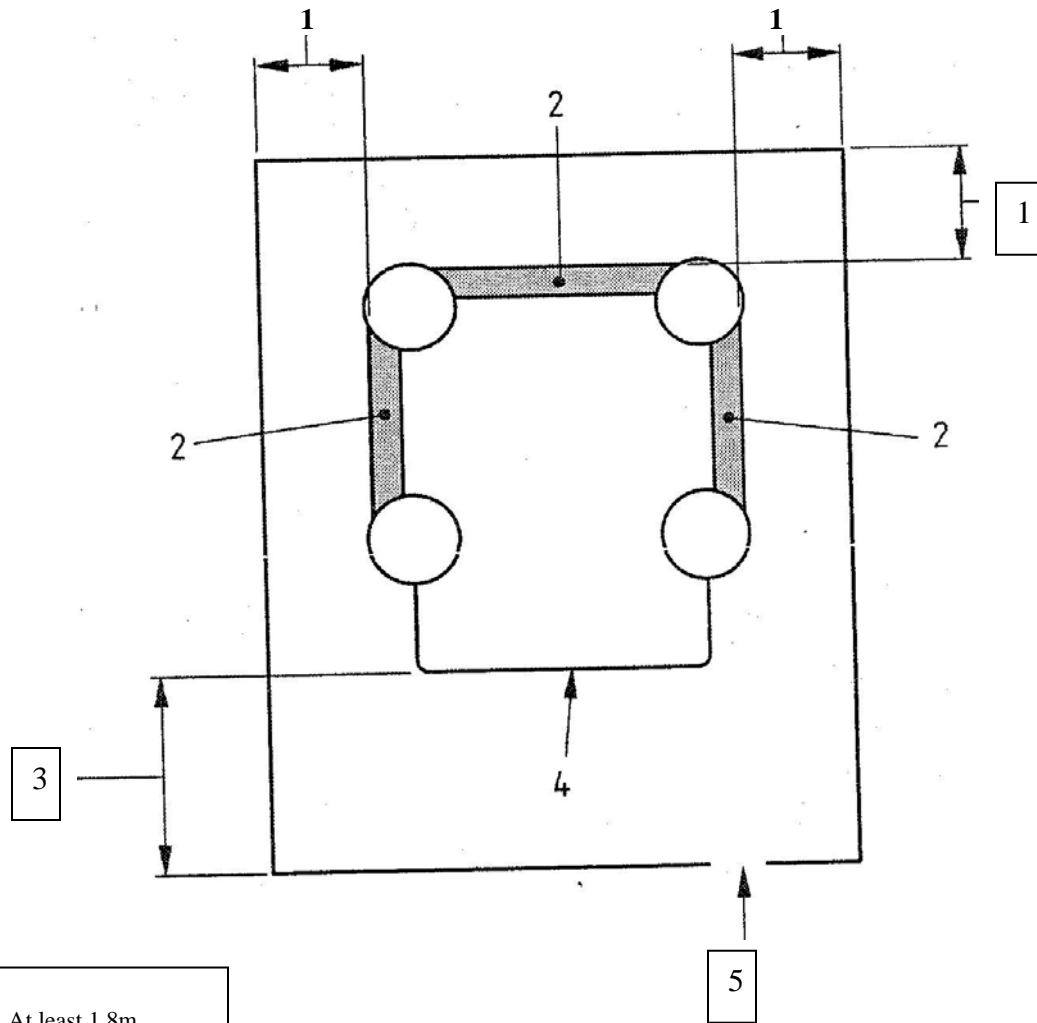


Figure 12 – Positioning of perimeter fence

A clear area, free of any obstacle which could cause injury, shall be maintained around the inflatable. The extent of this clear area shall be established by dividing the height of the highest platform by 2. The minimum clear area shall be 1,8 m. see figure 13

Key
 X height of highest platform
 Y extent of clear area

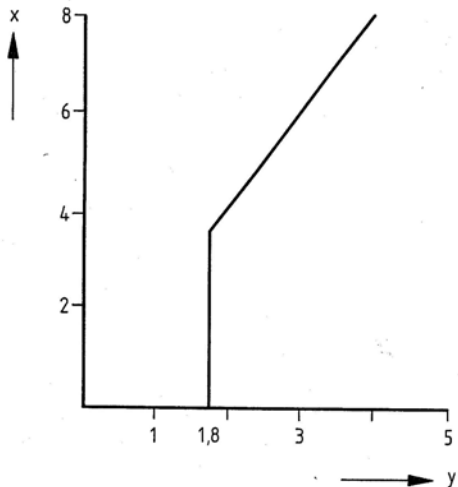


Figure 13 – Clear area around inflatable

An exception to this rule is when an inflatable with inflated walls is sited directly against a solid wall or walls, for example the walls of a building. In such a case, the solid wall(s) must be 2 m higher than the highest platform height. Use of this exception must not result in the creation of additional hazards.'

4.4 Supervision

An inflatable shall not be used without supervision.

When an inflatable is unattended, it shall be deflated and the power source disabled.

The controller shall determine the number and suitability of supervisory personnel required to operate the inflatable safely by considering matters such as the maximum number of users marked on the inflatable, the age of the users, the environment in which the inflatable is being used and the information provided by the manufacturer/supplier. Supervisory personnel consists of one operator and as many attendants as determined by the controller. Supervisory personnel shall be easily recognized.

5 Test Methods and Reports

Before testing, the equipment shall be assembled according to the manufacturer's/supplier's instructions. Testing shall be carried out using the most appropriate method – e.g. measurement, visual examination, practical tests.

Test reports shall be prepared in accordance with EN ISO/IEC 17025 and shall include, at least, the following:

- a) number and date of this European Standard.
- b) details of the equipment tested.
- c) details of the condition of the equipment including any defects observed.
- d) test result.

Test reports shall be supplied upon request to owners/controllers/operators.

6 Information to be provided by the supplier/manufacturer

6.1 General product information

The supplier/manufacturer shall provide information in the appropriate language(s) of the country in which the equipment is to be installed and used. The information shall:

- a) be printed legibly and in a simple form.
- b) be conveyed using illustrations wherever possible.
- c) include, at least, details of installation, operation, inspection and maintenance.

6.2 Pre-information

The supplier/manufacturer shall provide information concerning the safety of the equipment prior to the acceptance of the order. This information shall include, at least, the following where relevant:

- a) an height clearance and space required to operate the equipment safely;
- b) surfacing requirement;
- c) overall packed dimensions and weight;
- d) intended age range or height range;
- e) certification of conformity with this standard.

6.3 Installation information

The supplier/manufacturer shall provide installation information which shall include, at least, the following:

- a) list of equipment;

- b) method of anchorage and number of anchor points;
- c) maximum safe wind speed;
- d) siting, height and space requirement;
- e) maximum allowable slope of the site;
- f) crowd control measures;
- g) need to keep users off of the inflatable during inflation and deflation;
- h) type and size of blower required.

6.4 Operating information

The supplier/manufacturer shall provide operating information which shall include, at least, the following information and instructions:

Need for/to

- a) constant supervision;
- b) admit users to the inflatable in a controlled and safe manner;
- c) restrict the maximum height of the user to the design height;
- d) restrict the maximum number of users at one time to the design number;
- e) use at least the minimum number of operating personnel;
- f) users to remove their footwear;
- g) users to remove hard, sharp or dangerous objects from their person;
- h) users to remove glasses when practicable;
- i) prohibit the consumption of food, drink and gum;
- j) keep the entrance free from obstruction;
- k) prohibit the users from climbing or hanging on the containing walls;
- l) prohibit somersaults and rough play;
- m) operator and/or attendants to watch the activity on the inflatable constantly;
- n) operator and/or attendants to use a whistle or other signal to attract the attention of the users;
- o) operator and/or the attendants to separate larger, more boisterous users from smaller ones;
- p) inflatable shall to be evacuated during re-fuelling of a blower powered by an internal combustion engine.

The supplier/manufacturer shall also provide information on what to do in the event of an emergency or accident.

6.5 Inspection and maintenance information

The supplier/manufacturer shall provide information on the inspection and maintenance of the equipment. The information shall specify the type and frequency of inspections.

7 Inspection, maintenance and alteration

7.1 Inspection

Inflatable play equipment shall be inspected at suitable intervals to ensure that deterioration in the equipment is detected and remedied in good time.

7.1.1 Routine inspection

The controller shall carry out, or appoint a person to carry out, routine inspection.

Routine inspection shall be carried out before use each time the equipment is to be made available for use. The check shall include that:

- site is suitable;
- all anchorages are secure and in place;
- ancillary equipment is in position (e.g. impact-absorbing mats);
- there are no significant holes or rips in the fabric or seams;
- correct blower is being used;
- internal air pressure is sufficient to give a firm and reliable footing;
- there are no exposed electrical parts and no wear on cables;
- plugs, sockets, switches etc. are not damaged;
- connection tube and blower are firmly attached to each other;
- blower is safely positioned and its mesh guards are intact.

The equipment shall not be used by the public until any defects identified in the routine inspection have been rectified.

7.1.2 Annual inspection

The controller shall ensure that an annual inspection is carried out by an inspection body which shall include any part of the inflatable and its ancillaries, which may affect safe operation of the equipment. It shall include checks of:

- previous inspection reports and certificates where appropriate;
- identification of the inflatable and blower (e.g. serial numbers);
- anchorage system for wear, rips or chafing;
- type and number of ground anchors or ballast for conformity with the design specification;
- inflatable structure for wears or rips in the fabric;
- walls and towers (when fitted) for firmness and uprightness;
- internal air pressure to be sufficient to give a reliable and firm footing;

- internal ties for wear and tear, particularly at loose or exposed ends;
 - bed seams, wall-to-bed seams and wall-to-tower connections;
 - mesh guards at the inlet and outlet of the blower;
 - condition of the impellor and fan casing;
 - condition of electrical wiring and/or installations;
 - presence of the fuel cap (petrol-engined blowers);
- Inspection of some of these items may need to be done inside the inflatable. The above list is not exhaustive.

7.2 Maintenance

7.2.1 General

The carrying out of repairs while the equipment is in use shall be avoided.

7.2.2 Routine maintenance

Preventative measures to maintain levels of safety and performance. Such measures include:

- cleaning the inflatable;
- removal of debris and contaminants;
- rust control on the blower;
- cleaning the blower air intake.

7.2.3 Corrective maintenance

Measures to correct defects or to re-establish the necessary levels of safety, such measures include:

- replacement of worn or defective parts
- repair of splits or delaminated seams
- repair of holes or cuts
- repair or replacement of defective structural components

7.3 Alteration

Alteration to any part of the equipment that could affect its essential safety shall only be carried out after consultation with the supplier/manufacturer or a competent person. The equipment shall only be put back into use again when alterations have been inspected and passed by an inspection body.

8 Marking

Each inflatable shall be legibly and permanently marked with, at least, the following:

- type and size of the blower;
- maximum height of the user;
- maximum number of users;
- unique identifying number(s);
- year of manufacture;
- name and address of one or either the supplier/manufacturer, importer or authorized representative;
- number and date of this European Standard;

Connection tube(s) shall be clearly marked so as not to be confused with any other tube(s) e.g. inspection tubes, deflation tubes.

These markings shall be clearly visible when the equipment is in use.

Each blower shall be legibly and permanently marked with, at least, the following:

- type and size;
- unique identifying number;
- year of manufacture;
- name and address of the supplier/manufacturer;
- number and date of this European Standard.

These markings shall be clearly visible when the equipment is in use.

9 Documentation

The controller shall keep available documentation and records relating to the safety of the equipment.

These shall include:

- information provided by the supplier/manufacturer;
- certificate of inspection and testing;
- records of inspection;
- records of maintenance;
- records of alteration;
- accident reports.'

Most UK, some European and some Far East manufacturers are already using the BS EN 14960:2006 document as a basis for their new designs and manufacturing techniques. Others who have taken a 'wait and see' approach could find themselves way behind their competitors in what is already an increasingly competitive industry. IPMA and AIMODS have stated that all manufacturers should be fully complying by 1st January 2008.

In order to comply with the testing aspects of the 'Standard' there would be a need for trained testers and this task was undertaken by the Register of Play Inspectors International (RPII). A full list of registered testers can be found at www.playinspectors.com/rpiimembers/inflatables/index.asp.

In 2003 the Health & Safety Executive were investigating alternatives for the testing of inflatable play equipment. Initial thoughts were that this testing would be carried out by the Amusement Device Inspection Procedures Scheme (ADIPS). Inflatable Play Equipment is considered as a 'Fairground Amusement' and tests on fairground equipment is normally carried out by an ADIPS inspector. Following lengthy discussions little progress was made and the HSE asked the inflatable play industry to come up with alternative proposals. It was at this point that the prEN 14960 document was tabled together with PIPA testing. Following further discussions HSE announced that any owner/operator of inflatable play equipment who has his equipment tested by either an ADIPS inspector or PIPA tester would be deemed to have followed 'best practice' and therefore be complying with the relevant sections of the Health and Safety at Work Act. HSE also produced a revised information sheet EIS7 (www.inflatednews.co.uk/eis7.pdf) to assist operators in complying with their requirements under the various items of legislation.

Owner/operators need to comply to BS EN 14960:2006 whether or not they decide to use PIPA as their testing body.

For owner/operators to comply with the testing requirements of the document they will have to have their units tested by an RPII inspector. A full list of registered testers qualified to test to the standard can be seen on the RPII web site.

Although most manufacturers have adopted the standard as the basis for their manufacturing processes, not all will issue PIPA tags and certificates. However, all should be issuing the documentation as listed in paragraph 6 of BS EN 14960:2006. Owner/operators purchasing new equipment would be advised to ensure that it complies with the standard.

Disclaimer:

This document is for general guidance and research purposes only, and does not purport to give professional or legal advice.

Sources:

[Inflated News](#) / [Performance Textiles Association](#) / [CEN](#) / [HSE](#) / [RPII](#) / [BSI](#)

Released December 2006

Revised January 2007

Revised March 2007

Revised October 2007

Revised January 2008