

Inflatable Amusement Devices

Version: 1.4

Date: 30th October 2024

Inflatables such as bouncy castles are a popular amusement at events. However, there are certain hazards associated with their use that you should be aware of if offering them as an attraction to the public.



Inflatable Amusement Devices



Introduction

Inflatable amusement devices (inflatables) are flexible air-filled structures designed for users to bounce, slide, or climb on. The fabric framework is inflated using blowers, relying on air pressure to maintain its shape. They come in a variety of designs with assorted uses, ranging from the traditional bouncy castle to slides and mazes, bungee runs, obstacle courses **and more**. **Increasingly, they're also** being used to provide enclosed spaces for light shows and other displays.



Hazards

A number of hazards are associated with the operation and use of inflatables, including:

- Wind, e.g. by distorting or blowing the whole inflatable over
- Failure of seams or splitting of the fabric under pressure
- Air loss due to blower disconnection or failure or interruption of the power supply
- Zip failure
- Accidental injury to users caused by:
 - themselves or others, e.g. through overcrowding
 - spilling out of, or falling from, the inflatable
 - mounting and dismounting, i.e. entry or exit
 - disregard of large users for smaller users
- Tripping, e.g. over ground anchors
- Access to unguarded or inadequately protected parts of equipment, e.g. blower units
- Electrical hazards, e.g. shocks and burns
- Inadequate means of escape in the case of a fire or other emergency
- Dangerous siting of equipment

The most significant risks are those that could cause injury to the user, and escape of the inflatable due to strong winds.

Selecting a Suitable Supplier

When considering using an inflatable it's important to hire it from a competent and reputable supplier. Industry trade body PIPA runs an equipment inspection scheme and authorises individuals and bodies to carry out inspections on inflatables. It also maintains a list of suppliers whose equipment has been inspected, known as the *Operators List*.

Anyone hiring an inflatable should use an approved operator and ensure the device they're hiring carries a PIPA mark.

Using and Operating Inflatables

In most cases an inflatable is hired, and the operator will usually deliver and inflate the device. They may also supply attendants whose role is to supervise users and ensure the inflatable is used and operated safely.

However, some contracts assign responsibility for supervising the inflatable to the person hiring it. In these cases, **it's vital that the operator supplies clear guidance and instructions for safe use. The hirer should also appoint a sufficient number of mature and responsible people to act as attendants and provide training where necessary.**

Controlling Risk – Injury to Users

As with any equipment, an inflatable should only be used for its intended purpose. Seek assurance from the supplier that the inflatable you hire is appropriate for your intended use.

Safety Barriers

With outdoor events where the inflatable is the main or only attraction and where crowds are present, a perimeter fence should be used. It should be at least 1 metre high and completely surround the device, with the exception of an access gateway. The barrier may also need an alternative means of escape in case of emergency.

The area to the front of the step or front apron should be kept clear of onlookers so that the attendant has a clear line of sight, including of the interior, and can ensure that users are able to mount and dismount the inflatable safely.

Landing Mats

Gym mats or similar soft-landing material, with a minimum thickness of 25 mm and a maximum thickness of 125 mm, should be used to cover any hard surfaces which are adjacent to entrances, exits, and any open sides, covering an area that extends at least 1.2 metres from the inflatable. If the inflatable is indoors, mats should be made of fire-resistant material.

Blower Location

The blower(s) should be located at least 1.2 metres away from the device.

Attendants

There might be a minimum number of attendants required at all times to ensure safe operation, and this may be identified by the operator or the hirer. In the event of an insufficient number of available attendants, the inflatable should be taken out of use until the requisite number are available. Entrance and exit points should always be covered by an adequate number of attendants, depending on the device.

Attendants must know and understand the rules pertaining to the safe operation of the inflatable, including the maximum safe number of users at any one time. In particular, they must:

- Ensure that users
 - remove their footwear and any other hard, sharp, or dangerous objects
 - do not consume any food or drink, or chew gum, while using the device
 - remove glasses, where possible
 - do not bounce on the step or front apron of the device
 - do not climb or hang on the exterior walls
- Keep anyone that is taller than the exterior walls while standing on the device from using it
- Ensure that the entrance and exit remain free from obstructions

Attendants should be mature enough to be confident enforcing the safety rules and prevent horseplay or other inappropriate use, through constant monitoring of the activity on the inflatable. The first sign of misuse or horseplay should be corrected by use of a whistle or similar means of attracting attention. The attendants should prevent overloading of the device.

Boisterous or larger children should be kept separate from smaller ones, and the number of users should be restricted to allow users sufficient room to play safely.

Deflating the Device

Inflatable equipment should never be deflated while in use. If the blower fails, attendants should clear the structure as quickly as possible.

The inflatable should always be deflated after use to prevent people using it without supervision.

Controlling Risk – Effects of High Winds

When using outdoors, you must ensure that any inflatables are always securely anchored to the ground.

It's the operator's responsibility to identify to what extent an inflatable requires anchoring. If they are the one to erect the device, they should ensure that a sufficient number of suitable anchor points are used. Alternatively, they may supply the hirer with information about proper anchoring.

It's not possible to anchor inflatables with stakes when using indoors. Although there'll be no risk of overturning due to high winds, it may still be necessary to secure it, to prevent 'creep' during use.

Ground Conditions

It may be necessary to carry out an assessment of ground conditions where the inflatable is to be sited, to determine the suitability of anchor points. For example, more anchors may be needed for soft or sandy ground.

If the inflatable is erected on hard standings or impenetrable ground where pegs or pins can't be used, anchoring to vehicles (or a similar method) should be used.

Adverse Weather Conditions

You should check weather conditions for the duration of the event at which the inflatable will be used. If high winds are expected it may be necessary to stop use of the device, or even deflate it. Inflatables must not be used during periods of strong or gusty winds.

Key Actions

- Hirers should only select suitably competent operators when they wish to use inflatables
- All hirers should receive full and sufficient training in the working of inflatables if they're responsible for erection and control, including:
 - method of operation
 - safe loading of the inflatable
 - safe system of work
 - training requirements for attendants
 - safe methods of assembly and dismantling of the device
 - inspections
- Attendants should receive suitable and sufficient training, which should include:
 - safe anchoring arrangements
 - crowd control enclosures or barriers
 - control of the public
 - safe loading of the device
 - associated risks and precautions
 - defect and breakdown procedures
 - emergency procedures
- Rules and procedures for safe operation should be available to hirers and attendants, and should be adhered to at all times both when erecting or dismantling, and using the inflatable
- Each inflatable device should be thoroughly examined at regular intervals and at least annually by a competent person
- The inflatable should not be used until any defects, adjustments or repairs have been carried out
- The hirer should inspect the inflatable before first use on any day. This should include:
 - crowd control measures
 - anchorage points
 - ropes and stakes
 - inspection of the material for defects
 - adequate pressure upon inflation
 - blowers
 - electrical cables
- Use of the inflatable should not be allowed during high winds
- Operators should ensure:
 - maintenance of the inflatable is carried out in accordance with the manufacturer's guidelines and schedules
 - records of all examinations and daily inspections are either kept with the device or are readily available for inspection

Checklist

A generic Inflatable Amusement Devices checklist is presented in Appendix 1 which can be tailored to your own organisation.

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Sources and Useful Links

- [HSG 175](#) – Fairgrounds and Amusement Parks – Guidance on Safe Practice: Health and Safety Executive
- [PIPA](#) – Guidance from the Inflatable Play Inspection Scheme

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

Email us at riskadvice@aviva.com or call 0345 366 6666.*

*Calls may be recorded and/or monitored for our joint protection.

Appendix 1: Inflatable Amusement Devices – Safe Operation Checklist



Location	
Date	
Completed by (name and signature)	

	Safe Operation of Inflatables Checklist	Y/N	Comments
1.	Has the equipment been sourced from a suitably competent supplier and is it appropriate for its intended use?		
2.	If hiring equipment, is it from a PIPA approved operator and does the inflatable carry a PIPA mark?		
3.	Has a risk assessment of the equipment been completed by a competent person?		
4.	Does the risk assessment include all aspects of storage, pre-use checks, erection, use, supervision, weather, dismantling and inspection (by a PIPA or ADIPS approved company)?		
5.	Have the hirers and attendants received suitable training in the working of the inflatable? Is this recorded?		
6.	Are clear rules and procedures available? Does this include a before first use on any day user guide? Are the rules and procedures adhered to?		
7.	Is the inflatable inspected prior to use and thoroughly examined at least annually by a competent person? Is this audited?		
8.	Is maintenance carried out in accordance with the manufacturer's guidelines and schedules?		

9.	Additional comments:		
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30th October 2024

Version 1.4

ARMSGI872021

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