



# AALARA™

Australian Amusement, Leisure  
and Recreation Association Inc.

## **Safe Operation of Landborne Inflatables Guideline**

## **IMPORTANT INFORMATION REGARDING THE SAFE OPERATION OF INFLATABLE AMUSEMENTS**

As an industry, Association and parents we were devastated to learn of the tragedy surrounding the hire of an inflatable device in Tasmania in December 2021.

In an effort to further our industry's commitment to continual safety improvement, this *Guideline* provides industry best practise guidelines for businesses and workers on managing hazards and general risk controls for land-borne inflatable devices.

Compliance to this *Guideline* should be considered as the minimum that any owner and/or operator of a land-borne inflatable amusement device should achieve for any hire or use of that device by the general public.

For the purposes of this Guideline, an Owner and/or Operator means those individuals who are directly involved in the provision of the device for hire or use by the general public.

### **As a minimum an inflatable owner and/or operator must be able to provide;**

- a) AS 3533 4.1 2018 compliance documentation for each year
- b) Completed safe installation check list for each hire/use
- c) Completed operational management check list for each hire/use
- d) A logbook for each individual inflatable device that includes the name and serial number of that device

A land-borne inflatable device is one that is fabricated from flexible materials and relies on internal air pressure to maintain its shape.

Inflatable amusement devices can be a deadly hazard if they are not set up and operated according to relevant instructions. Poor inflatable set-up or operation can lead to:

- the amusement device becoming airborne during strong wind gusts due to inadequate anchoring or excessive winds.
- the amusement device collapsing and trapping patrons, and injury to patrons on amusement devices where they can move freely without supervision e.g. an inflatable device (continuously blown) like a jumping castle.

Inflatable devices should be:

- secured and anchored with anchor points provided according to the manufacturer's instructions and relevant technical standards.
- evacuated when wind gusts approach the lower of the manufacturer's guidelines or over 35km per hour to ensure there is sufficient time to evacuate all patrons.
- installed with suitable impact absorbing mats if they are in areas where patrons can fall off the unfenced platform of the inflatable e.g. entrance, exits and open sides.
- supervised at all times by people who are competent to operate the device safely monitored so a device is not used at the same time by more than the recommended maximum number of patrons.
- monitored so electrical or other powered components of the inflatable cannot be interfered with by patrons, in particular children, and inspected regularly for wear or rips in the fabric.
- patrons should be monitored so only those of similar size and weight are on the amusement device at the same time. This will reduce the risk of injury to smaller patrons. Somersaults, flips or tackling other patrons should not be permitted.

If the land-borne inflatable device is continuously blown with a platform height of 3 metres or more, plant design and plant (item) registration is required. Plant (item) registration is not required in Victoria.

## **LAND-BORNE INFLATABLE DEVICES SAFETY CONTROLS**

The Guidelines for owners and operators of land-borne inflatable amusement devices are in three separate areas:

- 1/ Compliance of device, all equipment and materials to Australian Standards AS3533 4.1 2018**
- 2/ Complete and compliant placement and installation and inspection of the device prior to handover to the operator for public use**
- 3/ Complete and compliant operational management of the device during all times that it is inflated and when accessible for public use**

### **1/ Compliance of inflatable device, all associated operating equipment and materials to Australian Standards AS3533 4.1 2018**

This first requirement for these LIBIP Guidelines is that the Land-borne inflatable devices and all associated operating equipment and materials comply with AS 3533 4.1 2018.

The enclosed Appendix 1 to this document provides a check list that covers these requirements under the Australian Standard AS3533.

Owners and operators of land-borne inflatable devices must ensure they have completed this checklist for each individual device and its associated name and serial number before hiring and operating that device. This check is required to be completed every 12 months.

### **2/ Complete and compliant placement and installation and inspection of the device prior to public use**

The second compliance requirement for these LIBIP Guidelines is the completion and compliant placement, installation and inspection of the device prior to public use.

The owner and/or operator of the device must first complete an inspection of the site where the hire has been requested and then complete a thorough risk assessment of that site.

Once the site has been assessed as being suitable and safe the owner and/or operator must complete the installation.

Installation must be completed according to the manufacturer's instructions and the owner and/or operator must complete a check list certification of that proper installation prior to handover of the inflatable for operation to the public.

An example of a check list is attached as Appendix 2 but it is also the owner and/or operators responsibility to develop their own installation check lists for each individual inflatable device. That check list should incorporate any specific installation instructions from the manufacturer.

## **IMPORTANT CONSIDERATIONS PRIOR TO INSTALLATION**

### **WEATHER**

The weather plays a huge part of inflatable safety. Under no circumstance should an inflatable device be operated in high wind or significant rain.

#### **Rain**

The electric components of the inflatable or amusement also pose a safety risk if operated in the wet. In the event of rain remove all riders from the hire equipment. Shut off the equipment at the blower and powerpoint.

#### **Heat**

Operating in temperatures over 38 degrees will depend on their location, time of hire and their structure in relation to sun protection. Inflatables made from PVC can become extremely hot if exposed to high temperatures and full sun.

#### **Wind: IMPORTANT**

All inflatables must not be operated in wind speeds above what they are rated for or permitted by the manufacturer! · The maximum wind speed for inflatable devices is typically 40km per hour. There may also be a maximum in-service and out-service wind speed specified by the manufacturer.

It is important to regularly monitor the wind and the wind speed forecasts for the duration of the hire. It is important to take into account the direction of the wind and the speed of the gusts which can often be quite irregular and much higher than the wind speed. It is recommended that an on-site wind speed meter (anemometer) is used, as this will provide more accurate wind speed monitoring than regional weather updates. If monitoring indicates that the inflatable's maximum rated wind speed is likely to be exceeded, it should be deflated safely and immediately.

Persons operating an inflatable device should be trained in procedures to safely inflate and deflate the device.

#### **Electrical Storms**

The operation of all inflatables should be suspended should there be the development of any electrical storms in the hire area.

#### **Anchoring**

All owners and operators of Land-borne inflatable devices need to have a comprehensive understanding of the potential uplift loads that can occur with relatively light weight inflatable amusement devices. These loads are much greater than those that typically occur for tents and shade structures and even small wind gusts can be hazardous.

Land-borne inflatable devices need to be properly anchored, even when low winds are forecast, or the inflatable device is not operational. Refer to the manufacturers' recommendations relating to appropriate anchorage for each inflatable device. The manufacturers' operations manual should provide instructions on how to securely anchor an inflatable device onto turf or a hardstand (for example, asphalt) and the maximum wind speed for which an anchoring system is rated.

The manufacturer's operations manual should also clearly describe the exact details of the steel anchoring pegs and ropes that need to be used at each anchoring point. Included in this detail should also be the dimensions of the anchoring pegs and the grade of steel that they are manufactured with. The penetration dimension of these pegs into the ground as well as the angle and rope knots used to connect the device should also be provided in the manufacturer's operations manual.

Where the inflatable's anchorage system is not known or has been determined to be inadequate, guidance must be obtained from a competent person (for example, a professional registered engineer with knowledge of inflatable devices and anchorage systems).

Owners and operators of land-borne inflatable devices are also responsible to ensure that any manufacturer's anchor points, anchor pegs and technical instructions are properly examined and assessed to ensure that they meet AS3533 4.1 2018 as this is the minimum requirement.

### **3/ Complete and compliant operational management of the device during all times that it is inflated and when accessible for public use**

This third requirement under these LIBIP Guidelines can only proceed if the previous two requirements have been achieved.

A signed off check sheet completed by the device installer to handover to the operator must also be co-signed by that operator.

An example of an operators check list is attached as Appendix 3 but it is also the owner and/or operators responsibility to develop their own operational checklists for each individual inflatable device. That checklist should incorporate specific operational instructions from the manufacturer.

Some manufacturers provide minimum details for operational management. If this detail isn't available, or if it isn't comprehensive enough, assistance should be sought out from a qualified engineer or competent person.

#### **Monitoring wind speed**

A system of work for regularly monitoring wind speed should be established to ensure that there is sufficient warning and detection of the maximum wind speed. It is recommended that an on-site wind speed meter (anemometer) is used, as this will provide more accurate wind speed monitoring than regional weather updates. Regional weather updates may differ from the wind speed on-site and may not provide sufficient warning of the wind speed or weather conditions. For these reasons, relying on regional weather updates alone may not be sufficient.

Wind speed tests should also be regularly conducted at all locations and sides around the device and not just at the entry area.

If monitoring indicates that the inflatable's maximum rated wind speed is likely to be exceeded, all patrons should be evacuated and the inflatable should be deflated.

Persons operating the inflatable device should be trained in procedures to safely evacuate all patrons and deflate the inflatable.

The device should only be re-inflated following an assessment that the wind speed will not exceed the maximum rating. Re-inflation should only be conducted by a suitably trained person. If the person has not been trained on safe re-inflation procedures, the device should remain deflated.

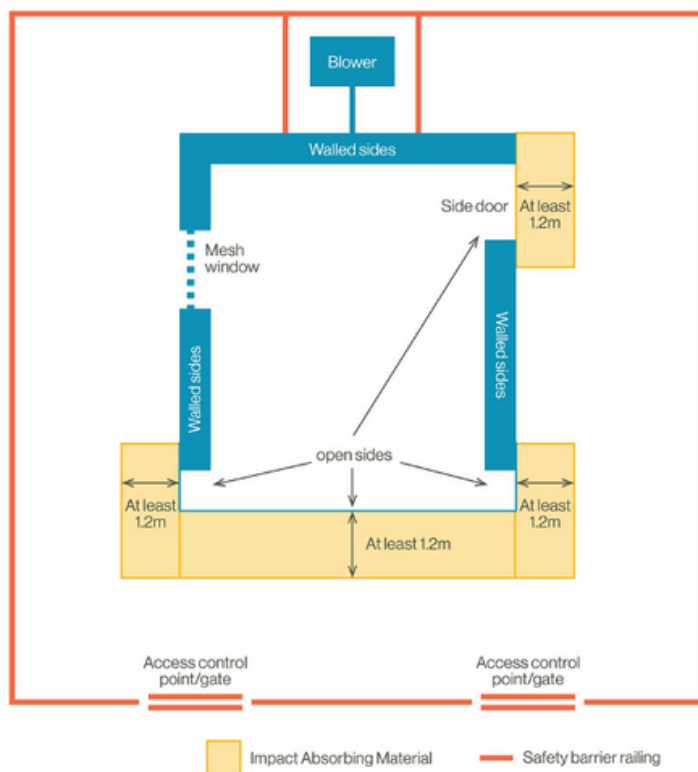
### Providing safe access for patrons

Safe access and egress points must be provided to ensure that patrons are not exposed to risks to their health or safety. This includes making sure the various components of the inflatable device (such as window mesh or screening) do not cause a hazard as a result of entrapment of patrons' clothing or parts of their body (eg fingers, hands, feet, head).

Procedures should be established for the retrieval of patrons in the event of a loss of power.

Persons operating the inflatable device should be trained on the procedures.

Impact absorbing material that complies with AS4422 or AS3533.4.1:2018 should be installed around any open sides of the inflatable device. The material should be appropriate for the surface the inflatable device is located on, and extend at least 1.2 metres from the open sides.



*Image: Schematic diagram showing a well planned inflatable device. Impact absorbing material should extend at least 1.2m from any open side.*

### **Preventing unauthorised access to non-patron areas**

Systems should be implemented to prevent unauthorised access to non-patron areas (such as where the blowers and anchor stakes are located) of the inflatable device.

Mechanical and electrical components should be protected (for example, by using adequate guarding) to ensure that patrons cannot interfere with or be injured by them.

Electrical blowers which inflate the device should be located in a position to ensure that they cannot be accessed by patrons or members of the public. The blower fans must be appropriately guarded and fenced off to prevent unauthorised access, and weather protected where required.

Electrical connections should be protected from mechanical damage and inclement weather.

A residual current device (RCD) or similar electrical safety device must be used. Maintenance on electrical equipment (eg blowers, temporary electrical leads, RCD units) should be conducted by qualified electrical persons.

### **Monitoring and supervision**

To ensure that inflatable devices are safe and without risks to health and safety, appropriate supervision and monitoring should be undertaken while the device is in operation, including when the device is being inflated or deflated.

Monitoring and supervision should be undertaken by persons who have been trained in the safe operation of the device. The immediate environment surrounding the inflatable device should also be monitored, including non-patron areas.

Measures should be put in place to ensure patrons using the device do not expose other patrons to injury. This includes providing supervision to ensure vulnerable patrons such as younger or smaller children are not exposed to injury from other patrons using the inflatable and ensuring that the maximum number of patrons is not exceeded.

**If you have any queries, please feel free to contact us.**

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