



Trampoline park facilities

Part 1: General safety requirements and test methods



This Australian Standard® was prepared by Committee SF-051, Trampoline Parks. It was approved on behalf of the Council of Standards Australia on 4 October 2018. This Standard was published on 22 October 2018.

The following are represented on Committee SF-051:

- Australian Amusement Association
 - Australian Chamber of Commerce
 - Australian Industry Group
 - Australian Trampoline Park Association
 - Centre for Accident Research and Road Safety—Queensland
 - Consumer Federation of Australia
 - Christian Venues Association
 - Engineers Australia
 - Kidsafe
 - Neuroscience Research Australia
 - SafeWork SA
 - The Sydney Children's Hospital Network
 - WorkSafe Victoria
-

This Standard was issued in draft form for comment as DR2 AS 5159.1:2018.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting **www.standards.org.au**

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at **mail@standards.org.au**, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

Trampoline park facilities

Part 1: General safety requirements and test methods

First published as AS 5159.1:2018.

COPYRIGHT

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 76072 197 8

PREFACE

This Standard was prepared by Standards Australia Committee SF-051, Trampoline Parks.

This Standard is Part 1 in a proposed series of standards on trampoline park facilities. The Committee intends to publish a test method for dismount pits as Part 2 of this series.

The objective of this Standard is to provide designers, manufacturers/suppliers, proprietors and operating personnel with requirements and guidance specific to the design, operation and maintenance of trampoline park facilities. This Standard provides minimum safety thresholds so that the likelihood of spinal and other traumatic injuries is reduced as far as reasonably practicable.

Based on the existing injury data, Committee SF-051 recognized that current dismount pit design knowledge and evidence is insufficient. Therefore, further research is required in order to develop evidence-based design requirements and test methods. In the meantime, due to the risk of serious injury it is strongly recommended that a risk assessment of dismount pits, foam pits and/or airbags is conducted by a competent person.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
FOREWORD.....	5
 SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	6
1.2 NORMATIVE REFERENCES	6
1.3 DEFINITIONS.....	7
 SECTION 2 DESIGN AND INSTALLATION	
2.1 GENERAL.....	11
2.2 STRUCTURAL INTEGRITY OF A TRAMPOLINE BED, SUSPENSION SYSTEM AND TRAMPOLINE FRAME.....	11
2.3 MINIMUM TRAMPOLINE BED HEIGHT	12
2.4 SURFACE FINISHES	12
2.5 ENTRAPMENT, CRUSHING AND PROTUSION HAZARDS.....	12
2.6 IMPACT AREA.....	12
2.7 IMPACT ATTENUATION SYSTEMS	13
2.8 FREE SPACE	14
2.9 TRAMPOLINE COURT.....	14
2.10 HIGH PERFORMANCE TRAMPOLINE	15
2.11 INSTALLATION	16
2.12 DOCUMENTATION.....	16
 SECTION 3 INSPECTION, TESTING, REPAIRS, MAINTENANCE, ALTERATION AND VERIFICATION	
3.1 GENERAL.....	17
3.2 INSPECTION, TESTING AND REPAIRS.....	17
3.3 MAINTENANCE AND ALTERATION	20
 SECTION 4 OPERATIONAL PROCEDURES	
4.1 GENERAL.....	21
4.2 RISK ASSESSMENT	21
4.3 POLICIES AND PROCEDURES	21
4.4 PATRON CAPACITY OF A TRAMPOLINE COURT	21
4.5 SUPERVISION	22
4.6 COMPETENCIES	22
4.7 RULES AND SIGNAGE.....	22
4.8 PATRON BRIEFING	23
4.9 FACILITY OPERATION	23
4.10 FIRST AID	24
4.11 DOCUMENTATION AND RECORD KEEPING	24
 APPENDICES	
A TESTING METHODS FOR ENTRAPMENT AND PROTUSIONS	25
B TEST METHODS FOR STRUCTURAL INTEGRITY OF A TRAMPOLINE BED, SUSPENSION SYSTEM AND TRAMPOLINE FRAME.....	36
C TEST METHOD FOR NET SYSTEMS USED WITHIN A TPF.....	39
D DETERMINATION OF CRITICAL FALL HEIGHT	41
E TEST METHOD FOR PADDING	43
F TEST METHOD FOR BED FOAM	45

	<i>Page</i>
G RISK ASSESSMENT	47
H COMPETENCIES	49
I EXAMPLES OF RISK OF INJURY POSTERS	52
J TEST METHOD FOR CAPACITY OF A TRAMPOLINE COURT	54

FOREWORD

A trampoline park is a venue with multiple trampolines and/or trampoline courts used separately or in conjunction with other apparatus or features such as climbing walls or climbing blocks. A trampoline park is used for amusement, entertainment or recreation by children and adults. The first parks in Australia were opened in 2012 and in 2018 there were more than 80 in Australia and, approximately 500 worldwide.

There are significant differences between domestic trampolines and trampolines used in trampoline parks. Trampolines in trampoline parks are designed, built and used in different ways compared with domestic trampolines. Park trampolines are not generally raised off the ground but built into a frame, meaning that it is not possible to ‘fall off’ the trampoline. Historically, this was the most common cause of injury in domestic trampolines.

An Australian study of paediatric injury data collected over a 6-month period in 2014/15 analysed the presentation of 40 patients (under the age of 17) to the Sydney Children’s Hospital (a Level 1 paediatric trauma centre with approximately 37 000 emergency department presentations per annum) who had sustained injuries as a result of activities at a trampoline park. Injuries most commonly occurred when the child was bouncing on a trampoline alone and landed awkwardly on the bed. Injuries relating to multiple concurrent users of a single trampoline were common where the smaller of the two (or more) users fell as a result of the increased energy transferred from the larger bouncer. Other injuries occurred while attempting somersaults or flips or coming into contact with foreign objects, such as balls, while on the trampoline. The study states that the rise in popularity of trampoline parks has seen a corresponding rise in the number of injuries. While most of the injuries presented were minor, they range in severity, with over 12% requiring operative intervention.

The study found the majority of patients presented with a soft tissue injury or sprain (55%) or fractured bone(s) (37.5%). The lower extremity was the most frequent site of injury (67.5%), followed by the upper extremity (15%).

Trampoline parks have also become very popular with adults who, anecdotally, are more likely to perform more risky manoeuvres.

In industry safety, there is a recognized hierarchy of hazard control measures, based on the principle that hazards should be removed by ‘engineering out’ and that personal protective equipment is the last line of defence. This Standard addresses the physical structure and the management of the trampoline component of the trampoline parks, including associated equipment such as impact areas and bouncing space, but does not address other equipment that may be present in the park, such as climbing walls.

The existence of a Standard alone will not necessarily prevent injuries. Like other physical activities, trampoline use involves the risk of injury, particularly if the equipment is used improperly.

In drafting this Standard, Committee SF-051 was cognisant of finding a balance between the known hazards found within trampoline parks and the benefits to be obtained from their use. The Committee also recognized that they had a duty of care to protect trampoline park patrons from hazards that may not be obvious to the patron. With these factors in mind, the Committee agreed that the Standard should aim to minimize the hazards known to cause injury.

STANDARDS AUSTRALIA

Australian Standard
Trampoline park facilities

Part 1: General safety requirements and test methods

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the minimum requirements for the design, operation, maintenance and inspection of trampoline park facilities (TPF).

This Standard is applicable for indoor, outdoor and mobile trampoline park facilities and related equipment associated with a TPF.

This Standard includes supervision levels, staff and patron training, competencies, information, maintenance and testing of TPF and associated equipment.

This Standard is not applicable to domestic trampolines, bungee trampolines, gymnastic trampolines, trampolines intended for use on water, and inflatable trampolines and/or devices.

1.2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS

1657	Fixed platforms, walkways, stairways and ladders—Design, construction and installation
2321	Short-link chain for lifting purposes
2741	Shackles
3569	Steel wire ropes—Product specification
4100	Steel structures
4989	Trampolines for domestic use—Safety aspects

AS/NZS

1170	Structural design actions
1170.0	Part 0: General principles
1170.1	Part 1: Permanent, imposed and other actions
1170.2	Part 2: Wind actions
1170.3	Part 3: Snow and ice actions
1554	Structural steel welding (series)
1891	Industrial fall-arrest systems and devices
8124	Safety of toys
8124.1	Part 1: Safety aspects related to mechanical and physical properties (ISO 8124.1:2014, MOD)
8124.3	Part 3: Migration of certain elements (ISO 8124-3:2010, MOD)

ISO

6487 Road vehicles—Measurement techniques in impact tests—Instrumentation

Australian Building Codes Board

NCC National Construction Code

1.3 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

1.3.1 Airbag

A device containing air for the purpose of impact attenuation.

1.3.2 Base bag

An impact-attenuating device containing air that adds a fail-safe system on the floor of a dismount pit and/or airbag.

1.3.3 Base foam

An impact-attenuating layer that adds a fail-safe system on the floor of a dismount pit and/or air bag.

1.3.4 Bed

A flexible surface that the patron contacts in the course of bouncing on a trampoline. Also known as a mat.

1.3.5 Competent person

A person who has acquired through training, qualifications or experience, or a combination of these, the knowledge and skills enabling that person to perform a specified task.

1.3.6 Critical fall height

The impact height where an impact attenuating system has a HIC less than 1000, a HIC duration greater than 5 ms, and a $g_{\max}$ less than 200g.

1.3.7 Cyclic loading

The application of repeated or fluctuating stresses, strains, or stress intensities to locations on structural components.

1.3.8 Dismount pit

A contained space comprising an impact attenuating system for safe landing from height.

1.3.9 Dismount pit net

An under slung flexible knitted/woven device to hold the foam cubes off the ground and provide fluffing. May be spring or tied solid. Method to keep foam cubes from compressing in base of dismount pit especially corners.

1.3.10 Foam cube

Polyhedron shaped foam objects used to fill a dismount pit to absorb impact.

1.3.11 Free space

Space in, on, beneath or around the trampoline.

1.3.12 $g_{\max}$

The maximum acceleration experienced during impact. Expressed as a multiple of acceleration into gravity at the earth's surface at sea level.

1.3.13 Harness

A suspended device intended to provide support and control for the patron and coach/instructor. Typically a fixed attachment used on a non-stationary piece of equipment/activity to assist a coach/instructor during the training of athletes in advanced manoeuvres.

1.3.14 Head injury criteria (HIC)

A measure of impact severity that considers the duration over which the most critical section of the acceleration pulse persists as well as the peak level of that acceleration.

1.3.15 HIC duration

The time interval over which the HIC is calculated, i.e. $(t_1 - t_2)$.

NOTE: Where t_1 and t_2 are intermediate values of t between t_{start} and t_{end} attaining the maximum HIC value.

1.3.16 High performance trampoline

A gymnastic grade trampoline with a bed constructed of string or similar material that enhances performance.

1.3.17 High performance wall

Assorted height structures located adjacent to high performance trampolines so that patrons may enhance their level of activity by utilizing the wall as a landing or rebound space integrated into their activity. Typical activities include jumping to or on the wall, around the corner of two walls and wall running, and may include bodily manoeuvres such as flips and twists.

1.3.18 Impact area

The surface that can be hit by a patron falling.

1.3.19 Impact attenuation system

Pad, floor mat, carpet and foam composite flooring system, foam filled bag, or another system that transforms the kinetic energy from falls into controlled acceleration/time behaviour during impact.

1.3.20 Impact attenuation test

A series of at least four (in situ) or ten (laboratory-base) impact measurements carried out from a specified impact height.

1.3.21 Impact attenuation test position

A position on the impact attenuating system to be tested, located perpendicularly below the centre of the headform.

1.3.22 Impact height

The distance between the impact attenuating system and the lowest boundary of the impacting headform.

1.3.23 Impact measurement

Determination of the HIC, HIC duration and g_{max} values from the recorded acceleration of the headform falling from one fall height onto one test position of the specimen.

1.3.24 Jumping platforms

Padded boxes scattered throughout a venue or a trampoline arena used for patrons to land on or breach over.

1.3.25 Landing (parkour) box

A vaulting box used for landing and dismounting, located beside a trampoline at an elevation above the trampoline bed.

1.3.26 Mattress

Domestic bedding that contains springs and/or foam.

1.3.27 Nominal load

The maximum load that can be generated in normal use.

1.3.28 Nominated fall height

The fall height that a patron could reasonably be expected to fall.

1.3.29 Patron

A person participating at a TPF who does not require previous experience or any training other than the safety briefing to be able to participate in a safe manner.

1.3.30 Patron containment system

Net or other device surrounding a trampoline court or activity area that prevents patrons falling from height and impacting an adjacent surface or object.

1.3.31 Patron levels

The number of participants in an area within a TPF.

1.3.32 Pinch hazards

Points or locations where there is a reasonable and foreseeable likelihood of a body part being caught between an element or object and a moving or stationary mechanism.

1.3.33 Redundant bed system

A device installed beneath a trampoline bed that prevents a patron from impacting the floor beneath in the event of trampoline bed failure.

1.3.34 Redundant net

A flexible knitted/woven device located beneath the trampoline bed for the purpose of arresting a ground impact in the event of a bed failure.

1.3.35 Redundant system

A method of protecting patrons and staff from a catastrophic event with a device. Examples include: a redundant net, attenuated material under a device suitable to break a fall of a pre-determined height, double thickness trampoline beds such that, if one tears, the second will prevent a fall and indicate that the bed requires immediate replacement, and an overhead harness that will limit the participant from any impact in the event of losing contact with a device.

1.3.36 Related equipment

Additional equipment used in conjunction with a TPF, such as slam ball court (basketball), bounce ball court (volleyball), high performance walls, jumping platforms, padded shapes (apparatus), harnesses, dismount pits, and airbags.

1.3.37 Slam ball (basketball)

Using a trampoline or other base in order to elevate the player so as to dunk a ball through a ring.

1.3.38 Suspension system

An arrangement of components that enables flexible movement between the bed and supporting structure.

1.3.39 Trampoline court

A defined area comprising commercial trampolines and containment devices, and may contain a dismount pit and/or airbag.

1.3.40 Trampoline park facility (TPF)

A facility used by patrons for exercise and enjoyment, which entails bouncing on single or multiple trampolines or similar, as well as interaction with associated devices.

SECTION 2 DESIGN AND INSTALLATION

2.1 GENERAL

2.1.1 Risk assessment

A risk assessment of the design shall be conducted taking into consideration the requirements of this Standard. Where risks are identified the design shall be modified and control measures implemented to minimize risks to a tolerable level.

2.1.2 Structural requirements

The trampoline frame shall be designed to accommodate the most adverse combination of loading that will be applied according to the Australian Standards for structural components, in particular the following:

- (a) For welding of steel structures, AS/NZS 1554 (series).
- (b) For chains, AS 2321.
- (c) For shackles, AS 2741.
- (d) For wire rope, AS 3569.
- (e) For structural steel, AS 4100.

NOTE: This Standard does not exclude components conforming to international or other national standards provided it can be demonstrated that they achieve performance that is equivalent to or better than the corresponding Australian Standard.

2.1.3 Toxic materials

Toxic materials shall not be used in TPF. All materials shall conform to the minimum requirements of AS/NZS 8124.3.

2.1.4 Access ways and platforms

Access shall be provided for places normally used by operating, inspection, maintenance and servicing personnel for device set-up, inspection and maintenance. Where access ways and platforms are required for these non-climbing activities, they shall conform to AS 1657.

2.2 STRUCTURAL INTEGRITY OF A TRAMPOLINE BED, SUSPENSION SYSTEM AND TRAMPOLINE FRAME

The maximum patron weight shall be 140 kg.

NOTE: For design purposes account should be taken of the combined dynamic loading of multiple users. Designers are encouraged to exceed the 1000 kg and 1500 kg design load (see Paragraph B3.2). As a general rule, TPF trampolines are single user only. Exceptions to allow multiple users include coach/instructor assistance and volley ball.

The structural integrity of a trampoline bed, suspension system and trampoline frame shall be verified by a competent person(s).

Structural integrity shall be determined by calculation or proof loading (see Appendix B), or a combination of both of these two methods.

2.3 NETS

2.3.1 Patron containment nets

Patron containment nets shall be positioned within a TPF such that they shall control:

- (a) Patron entry to and exit from trampoline courts.
- (b) Access under and around a trampoline.

- (c) Balls and other obstacles from travelling from a trampoline court to another area within the TPF.
- (d) Patrons from falling outside the boundaries of a trampoline courts.

Patron containment nets shall extend to a minimum height of 4100 mm vertically from a horizontal bed or 1500 mm from the uppermost edge of an angled bed.

2.3.2 Dismount pit nets

Dismount pit nets shall not contact the base foam or base bag.

2.3.3 Redundant bed system

Redundant nets or similar device shall be installed under all beds in a TPF that prevents a patron from impacting the floor beneath in the event of trampoline bed failure.

2.4 MINIMUM TRAMPOLINE BED HEIGHT

The minimum trampoline bed height shall be 900 mm.

NOTE: This requirement includes junior areas as adults may use these trampolines.

High performance trampoline bed height shall exceed 900 mm and be determined by a competent person.

2.5 SURFACE FINISHES

Any surface that a patron contacts on or around the TPF or that a patron can reach from a position on the TPF shall be free from any sharp edged parts, any hazardous projections or any potential for internal structures to become hazardous projections.

2.6 ENTRAPMENT, CRUSHING AND PROTUSION HAZARDS

TPF shall not present an entrapment hazard where a body, or part of a body, or clothing can become trapped.

TPF shall be tested for entrapment and protrusion conformance in accordance with Appendix A.

Devices shall be constructed so that forced movement does not create any of the following:

- (a) Foot or leg entrapment on surfaces intended for walking/running/jumping.
- (b) Head and neck entrapment hazards, either by head first or feet first passage.
- (c) Hand and arm entrapment.
- (d) Finger or toe entrapment.
- (e) Hair and clothing entrapment.

When choosing materials, consideration shall be made for entrapment hazards that can occur through distortion of materials during use. The risk and hazard assessment shall cover areas within the TPF and include non-patron areas, such as beneath and behind all devices.

There shall be no pinch or crushing hazards between components.

Flexible or movable parts and any rigid members shall be arranged so that entrapment, pinch or crushing hazards are not created.

2.7 IMPACT AREA

2.7.1 General

The impact area shall not contain items likely to create a hazard in the event of a fall.

2.7.2 Extent of impact area

The impact area shall extend a minimum of 1.5 m from the edge of the trampoline bed, measured in the horizontal and/or the vertical planes.

The impact area shall be extended beyond 1.5 m to provide protection against falling injuries when configuration of the TPF allows the patron to obtain a horizontal component of velocity.

2.8 IMPACT ATTENUATION SYSTEMS

2.8.1 General requirements

2.8.1.1 Critical fall height (h_c)

The critical fall height, h_c , of all impact attenuating systems shall be determined in accordance with Appendix D. The critical fall height of all impact attenuating systems shall exceed the nominated fall height by no less than 0.1 m. The performance of all TPF impact attenuating systems shall be monitored to ensure they are replaced in a timely manner.

2.8.1.2 Trip hazards

All surfaces shall be designed and installed to minimize trip hazards.

Impact attenuation systems may introduce unavoidable potential tripping situations. The use of contrasting colours is encouraged to increase awareness of potential tripping situations.

When installed correctly, impact attenuation padding is not considered a trip hazard.

2.8.1.3 Uniformity of surface

The TPF surfacing shall be uniform, with no opening that can present a risk of injury to the foot or ankle of a patron.

2.8.1.4 Pinch and crushing hazards

The TPF surfacing shall contain no pinch or crushing hazards.

2.8.1.5 Projection hazards

The TPF surfacing shall be free from any sharp edged parts, any hazardous projections or any potential for internal structures to become hazardous projections during normal and/or intended usage, and/or after an equipment failure. The covering material should not produce skin grazes, burns or abrasions during normal and/or intended usage.

2.8.1.6 Mattresses

Mattresses shall not be used as an impact attenuating system within a TPF.

NOTE: This requirement applies to the use of mattresses in dismount pits.

2.8.1.7 Performance information

The suppliers of TPF surfacing should provide information about the performance of the impact attenuating system in respect of the following:

- (a) Anticipated service life of the product when installed and maintained in accordance with the manufacturer's/supplier's instructions.
- (b) Flammability of the material when tested in accordance with a recognized test procedure.
- (c) Instructions about correct installation, maintenance and inspection procedures.
- (d) The critical fall height (see Clause 2.7.1.1).
- (e) UV and weather exposure (where applicable).

2.8.2 Specific requirements for impact attenuation

2.8.2.1 *Impact attenuating system surrounding a trampoline, device, horizontal surface within the impact area and landing (parkour) box*

The surface of the potential impact area shall be covered with an impact attenuating system that limits the $g_{\max}$ value to less than 200g and the HIC to less than 1000, and with an impact event duration of greater than 5 ms at a nominated fall height of 1.5 m.

NOTES:

- 1 This level of impact attenuation may not prevent serious injury.
- 2 Examples of impact attenuating systems known to provide these impact-attenuating properties are 50 mm thick ethylene-vinyl acetate (EVA) foam with a density of 45 kg/m³.

2.8.2.2 *Impact attenuating system for vertical surface*

Vertical surfaces within the impact area, with the exception of high performance walls and parkour box walls, shall be covered with an impact attenuating system that limits the $g_{\max}$ value to less than 200g and the HIC to less than 1000 and with an impact event duration of greater than 5 ms at a nominated fall height of 1.5 m.

2.8.2.3 *Impact attenuating system surrounding a high performance trampoline*

The surface of the potential impact area shall be covered with an impact attenuating system that limits the $g_{\max}$ value to less than 200g and the HIC to less than 1000 and with an impact event duration of greater than 5 ms at a nominated fall height of 4.0 m.

2.9 FREE SPACE

2.9.1 General

The free space shall not contain items likely to be a hazard in the case of an impact, e.g. walls not designed for trampolining activities, glass windows, sprinklers, lights, exit signs, stored items or other physical structures.

2.9.2 Extent of free space

The extent of free space shall be determined as part of the risk and hazard assessment by a competent person.

Hard surfaces of jumping (parkour) boxes, high performance walls and similar structures are exempt from free space requirements.

To prevent patrons contacting overhead hazards there shall be a minimum clearance of 4 m in general areas and 6 m in high performance trampoline areas when measured perpendicular from the trampoline bed. This free space shall have no suspended or protruding objects such as lights or sprinkler heads.

The space beneath the trampoline bed and frame shall be free space.

2.10 TRAMPOLINE COURT

2.10.1 General

All structural steel, suspension systems and associated support structures shall be protected from any access by patrons during normal operation.

The trampoline suspension system shall not present a hazard to the user under normal operation and/or in the event of equipment failure.

Trampoline beds shall be of a material that conforms to this Standard when tested in accordance with Appendix B.

Trampoline beds should not have excess stitching that may cause a perforation weakness through the bed other than stitching required for the containment of suspension support or skirt connection.

A trampoline bed shall have a skirt attachment to prevent patron contact with steel or suspension materials.

Performance trampolines do not require a skirt but shall have rubber sheeting or similar product suitable for reducing access to spring system during normal operation.

NOTE: Skirts are known to cause problems in performance trampolines due to greater elongation of springs.

Domestic trampolines (see AS 4989) shall not be used in a TPF.

2.10.2 Jump box and landing platform

Jump boxes and landing platforms shall be constructed such that they conform to the structural design requirements specified in the AS/NZS 1170 series.

Jump boxes shall not be located within or around a trampoline court such that they present an increased injury risk.

The top and sides of a jump box in a trampoline area shall be protected with impact attenuation material in accordance with this Standard.

Patrons resting or gathering on a jump box constitute part of the patron capacity in the trampoline area in accordance with Appendix J.

2.11 HIGH PERFORMANCE TRAMPOLINE

2.11.1 General

High performance trampolines (see Clause 1.3.16) shall be designed with either a 2-string woven bed or a webbing woven bed, and have a more advanced suspension system of greater spring capacity, such as, but not limited to, longer springs and/or a closer spring placement.

2.11.2 Harnesses

Harnessing equipment shall be a fixed attachment used on a non-stationary piece of equipment/activity.

Harnessing equipment may be operated from an overhead-perimeter position above performance trampolines. They may have active contact by a qualified coach/instructor or may be a bungee-controlled system that protects a patron from major impact and guides a patron towards the sweet spot of the trampoline bed.

All harnessing equipment and structural supporting equipment shall be installed in accordance with engineer's and/or manufacturer's/supplier's instructions. Maintenance requirements are specified in Section 3.

All components in a harness system shall be designed, supplied and installed in accordance with the manufacturer's specifications and AS/NZS 1891 (all parts).

Harnessing equipment may include, but is not limited to, waist harness; belt harness; swivel harness; karabiners; ropes; blocks; eyebolts; ascenders (jumar); bungee cord; and the engineered fixing points.

2.11.3 High performance wall

High performance walls shall be padded on all horizontal surfaces in accordance with impact attenuation criteria within this Standard.

Padding around a performance trampoline shall not present a trip, pinch, crush or entrapment potential between the wall and the padding.

The impact attenuation surface adjacent and beneath a high performance wall shall, as a minimum, be inspected daily for movement and damage, and monthly for deterioration.

Padding deemed to have deteriorated shall be replaced before allowing patrons into this area.

NOTE: The construction of high performance walls needs to comply with the requirements of the National Construction Code (NCC).

2.12 INSTALLATION

All installation shall be in accordance with the design and installation requirements of this Standard, and the relevant manufacturer's or supplier's specifications.

2.13 DOCUMENTATION

The TPF shall be covered by a risk management system that allows traceability of individual critical items including but not limited to—

- (a) beds;
- (b) airbags, base bag (if applicable); and
- (c) harnesses and associated equipment/fixings (if applicable).

The following information shall be maintained and retained for the life of the TPF:

- (i) Documentation verifying TPF conformance with this Standard, i.e. AS 5159.1.
- (ii) Manufacturer's/supplier's and/or installer's instructions.
- (iii) The maximum patron weight for each trampoline.
- (iv) For critical items such as beds, airbags and harnesses—the date(s) of manufacture, the date(s) of inspection, testing and copies of the test reports.
- (v) Maintenance requirements, including inspection frequency and inspection procedures.
- (vi) Any usage qualifications and/or restrictions of any TPF equipment.