



TB10 – Clarification for inspecting fall-off heights

Document Number	TB010-100		
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Title	Clarification on inspecting fall-off heights		

Version	Date	Notes
V1.00	03-01-25	First Release

Introduction

Earlier in 2024, PIPA received a query from a member regarding the measurement of fall-off heights. This is with respect to inspecting a fall off height using the 600mm loaded condition which is referenced under section 4.2.3. of BS EN 14960:2019 (Part 1).

Following discussion with the PIPA Leadership Group, it was decided that clarity should be sought from an official position at the BSI as how to inspect against this reference.

Outcome

Please find attached the query and response in from BSI below. Parts of the response have been redacted to remove copyright elements and personal information.

The determination came from a national level as there would be a substantial delay when sent to the international committee.

The position is that all open fall-off heights should be inspected in their unloaded condition, and they should not be greater than 630mm. The PLG agree with this view and have issued this technical bulletin to provide clarity and a clear position going forward.

BSI Documents [SW/65/-/6 " Inflatable Play Equipment](#)

Query received from PIPA with regards to BS EN 14960-1: 2019

Index.

1. Notice from National Secretary to SW65 Committee Members
2. Copy EN 14960 :2006 . The appropriate provision is in orange.
3. Copy EN 14960 : 2013. Ditto
4. Copy EN 14960 : 2019 Ditto
5. SW65 Draft/Suggested Guidance To Query.

1/10/2024

Convenor TC136/SC1 WG9



BSI Documents

[SW/65/-/6 "Inflatable Play Equipment"](#)

Dear committee members,

Apologies, I missed out the standard number. You can find it added below.

We have received a query from PIPA with regards to BS EN 14960-1:2019

Their question is as follows:

I am hoping to get some help and guidance regarding a query we had come in around fall off height

Is it possible to get more information on the method of measuring a loaded fall off height - Section 4 paragraph 7

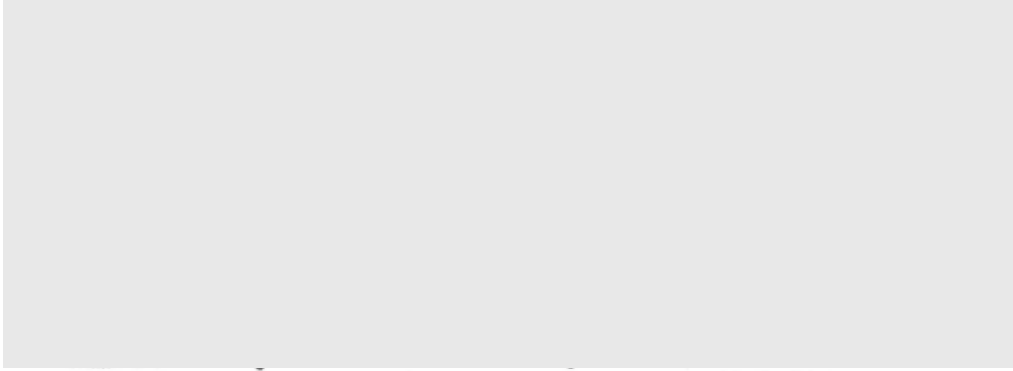
"On any open side, the height of free fall shall be no greater than 630mm from the ground in the unloaded condition (600mm in the loaded condition)"

We are exploring the test method of unloaded vs loaded. 99% of our inspectors use the unloaded condition as it provides the most reproducible results, but we are being asked about the loaded con and how it is tested.

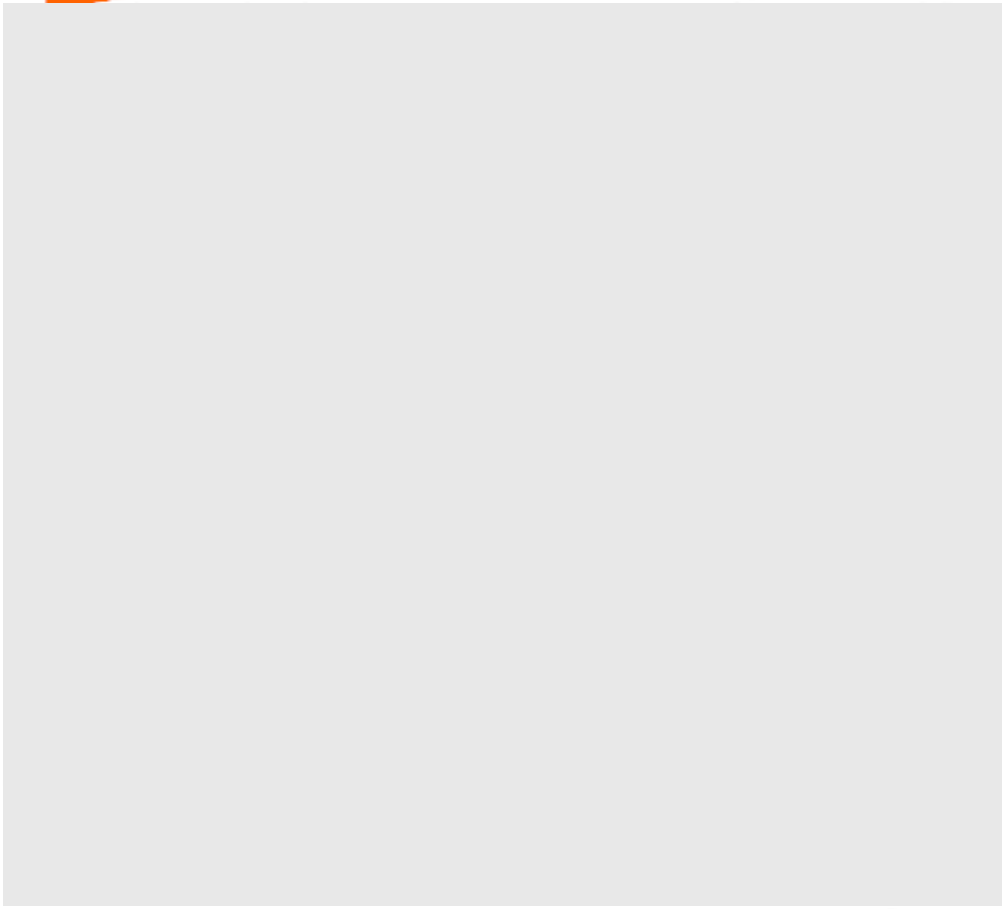
We need to provide her with an answer from the committee as they are looking for official guidance. we are not able to provide this, then we will have to send this to CEN/TC 136/SC 1/WG 9. But in the instance, if we can provide the clarification, then we need to do that. Please let me know your thoug as soon as possible.

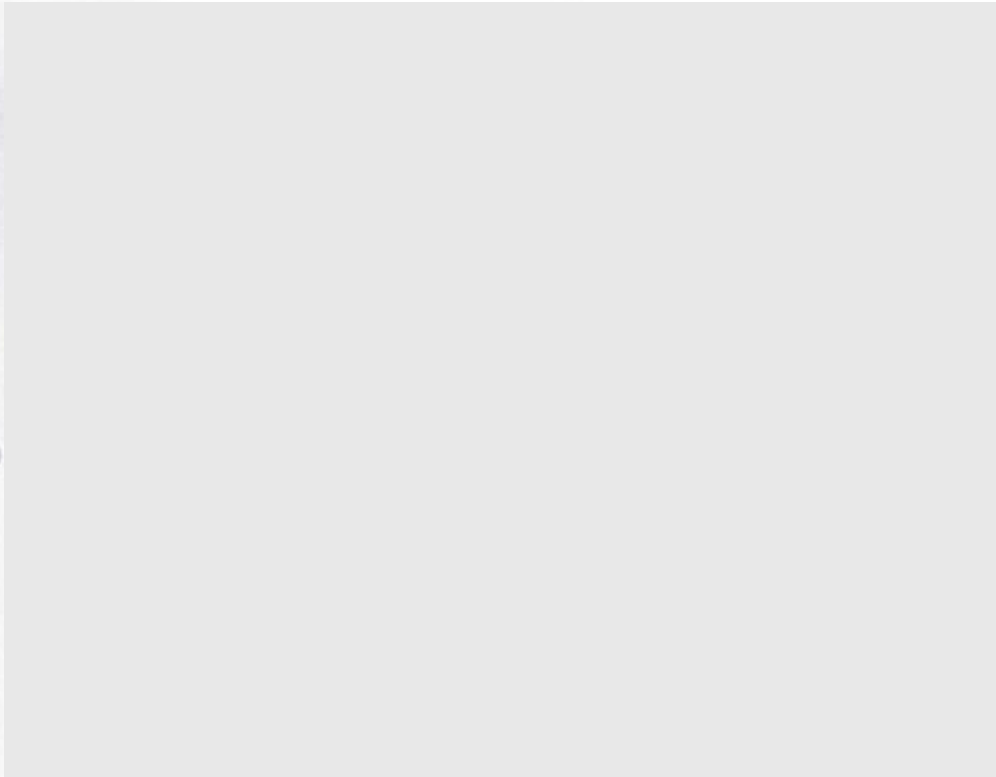
Best regards,

National secretary of SW/65/-/6

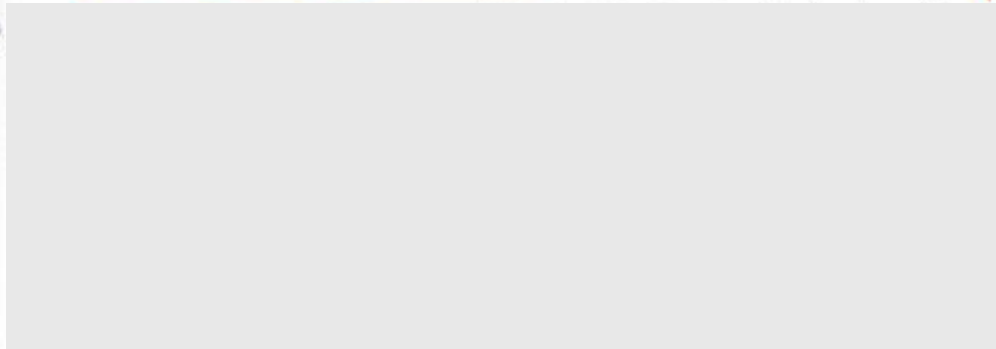


On any open side the free height of fall shall be no greater than 630 mm from the ground in the unloaded condition.

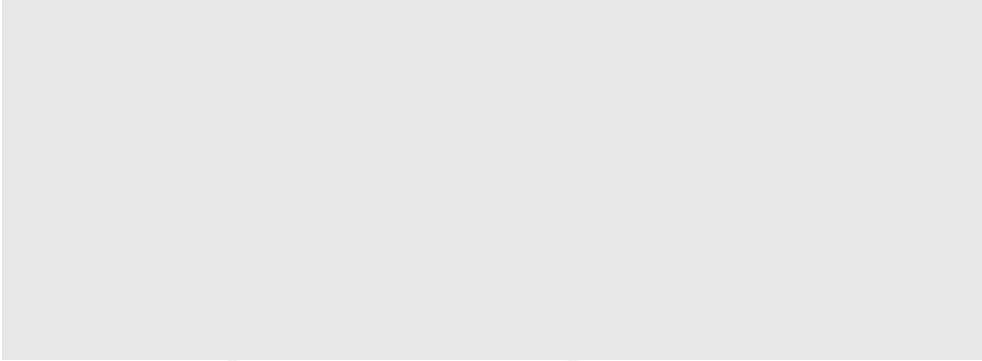




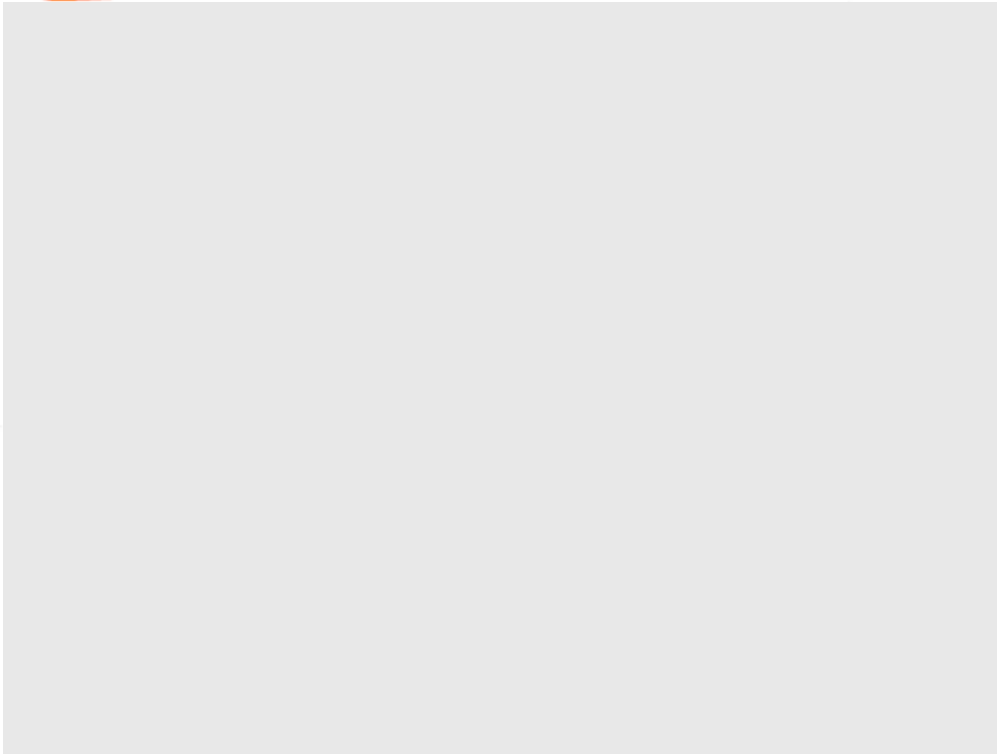
On any open side, the free height of fall shall be no greater than 630 mm from the ground in the unloaded condition, (600 mm in the loaded condition).



4.2.3 Access/egress



On any open side, the free height of fall shall be no greater than 630 mm from the ground in the unloaded condition, (600 mm in the loaded condition).



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5. DRAFT GUIDANCE BY BSI COMMITTEE SW65 REGARDING A PIPA QUERY RELATING TO BS EN 14960-1:2019

- a) The first Inflatable Standard BS EN 14960;2006 was issued in 2006. Reference to Page 13, and the wording highlighted in orange relates to the query raised. At that time, the sole reference was to the unloaded condition of 630mm.

The rationale at the time was based on:

- i) The premise incorporated into all appropriate play standards at the time that beneath all play equipment with a free height of fall of more than 600mm there shall be impact attenuating surfacing over the entire impact area.
 - ii) The above applied to a solid non-flexing surface from a standing position.
 - iii) It was recognised that inflatable surfaces deflect under load and logically this needed to be taken into account. Following extensive research and discussions it was agreed that the unloaded measurement be fixed at 630mm.
 - iv) The 2006 version of the EN 14960 contained reference only to the unloaded measurement, namely 630mm.
 - v) Accordingly, there was one option only that could and was applied throughout the industry. Clear to understand and practically easy to carry out during the inspection process.
- b) The first revision to BS EN 14960 was issued in 2013 when as can be seen that (600mm in the loaded condition) was added . The rationale being to signal clearly the link or alignment with other play standards.

The second revision of BS EN 14960 was issued in 2019. The provision here remained unchanged with the reference to (600mm in the loaded condition) continuing to be incorporated.

In practice inspectors universally continued to use the unloaded condition test when carrying out inspections.

However, by defining two datum points it could be argued that both options can be used whilst carrying out inspections or tests, although this was not the intention when the additional note relating to the loaded height was inserted.

Additionally, to carry out tests/inspections using the loaded method or approach is not logical.

Firstly, it would be very difficult in practical terms to use.

Secondly, there are several factors which can have a marginal impact resulting in small variations in the extent of the actual deflection. These include but are not exhaustive:

1. The weight of the user.
2. The weight to surface area of the user's feet producing varying loads per square cm.
3. The working pressure of the unit.
4. The size of the bed panels.
5. The shape of the bed panels.
6. Trough depths.

Thus, it is logical to consistently use the unloaded method for testing and inspection as the alternative, the loaded approach serves to introduce unnecessarily potential variations within the test regime as well as complicating the procedure.

c) Recommendations

- i) Undertake inspections solely using the unloaded applying the 630mm provision.
- ii) Consider requesting that on the next revision of EN 14960 Part 1 shortly be undertaken that the paragraph clarifies the position as regards to testing and inspection. Namely by adding:

“Tests shall be carried out to the 630mm unloaded measurement”.