Technical Bulletin 6

Guidance On Webbing Handrails Located Along Climbing Inclines On Inflatable Play Devices (slides)

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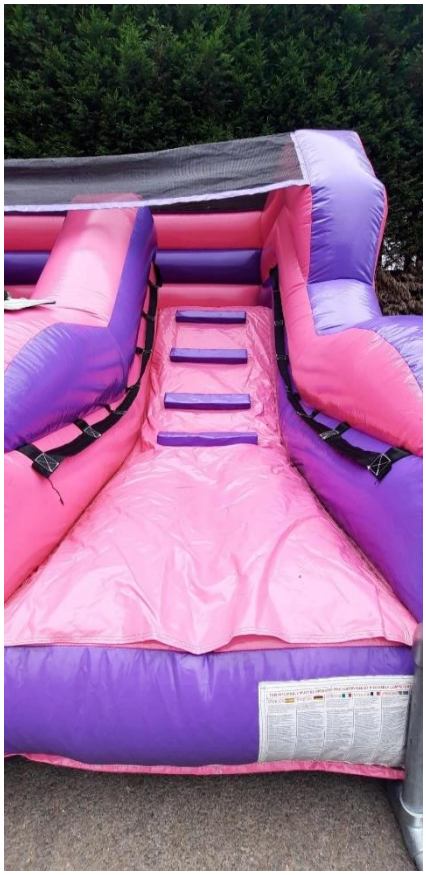
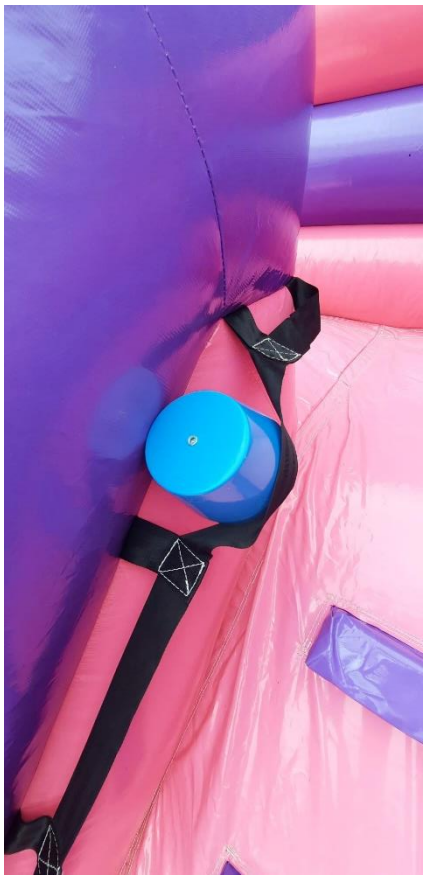
Title:	Guidance on webbing handrails located along climbing inclines on inflatable play devices (slides)
Date:	November 2023





Reason for this report

PIPA received a question from one of its inspectors regarding the addition of webbing rails/banisters that they found installed on several inflatable slides.

The inspectors found that the spacing between the stanchions allowed enough free play for the small head probe to pass between the webbing and the PVC panel to which it is attached. But would not allow the large head probe to pass through the same gap.

The GCG have studied the pictorial evidence, examined BS/EN 14960-1 and reports that were supplied by some of the manufacturers/importers of the slides that are considered within this report.

The GCG also considered any new hazards that may be presented by the webbing handrail that may not have been sufficiently considered or considered at all by BS/EN 14960-1.

BS/EN 14960-1 Relevant sections.

1. Section 4.2.5.2 states.
   "Inflatables shall be constructed so that any openings do not create head and neck entrapment hazards by either headfirst or feet first passage".

2. Section 4.2.5.2 includes completely bound openings, the webbing loops created by the handrail/bannister system forms such an opening.

3. Section 4.2.5.2 A states.
   "Accessible completely bound openings with a lower edge more than 600mm above a platform shall be tested in accordance with D.2.1."

4. *"Probes C or E shall not pass through any opening unless it also allows the passage of the large head probe D"*.

5. Section 3.13 identifies a platform as *"any surface that a user may stand on"*.

6. Section 4.2.10 states.

7. *“Slopes of less than 30 degrees shall be treated as a platform”.*

The GCG findings.

Findings based on BS/EN 14960-1.

1. As per section 4.2.5.2 there are multiple completely bound openings created by the webbing handrail/banister and these have the potential to create a head and/or neck entrapment.

2. When considering the photographic evidence presented to the GCG these openings do form a head/neck entrapment when applying the requirements of sections 4.2.5.2A and D2.1.

3. Section 4.2.5.2 suggests an allowance for completely bound openings located on platforms with a lower edge less than 600mm above the platform on which it is located.

   In this case the handrails are located on an incline with an angle greater than 30 degrees and so the area cannot be classed as a platform, BS/EN 14960-1 makes no differentiation between slides and areas intended for users to climb up to platforms, both are inclines and so not included in the allowance stated.

   Also, due to the nature of an incline, a user on such a section would (at all points of their travel along the incline) have a completely bound opening with a lower edge higher than 600mm within their reach.

4. Forced motion.
   Both slide and slide climbs, being classified as “inclines” within BS/EN 14960-1 must be considered areas of forced motion as users who may slip, slide, or fall along the incline to a point where they may come to rest on a platform (area with an angle below 30 degrees)

Summary of the decision of the GCG regarding Compliance.

The webbing handrails/bannisters do not comply with BS/EN 14960-1 and do form a potential head, neck, or limb entrapment when all relevant sections of the standard are considered.

The handrail could have been installed in a way that did not create the hazard, for example by increasing the number of stanchions.

Special considerations.

One manufacturer highlighted that these webbing handrails were installed to reduce the risk to users of losing their footing and potentially tumbling down the incline, this being of increasing concern and risk on higher and steeper angled inclines.

This is indeed a concern that BS/EN 14960-1 does not adequately consider and as inspectors do often not consider such.

However, in this case, while attempting to address the issue of users losing their footing and falling, a hazard has been created that contravenes the requirements of BS/EN 14960-1 and should not be declared a compliant.

Actions and going forward.

1. For future products, manufacturers could simply increase the number of stanchions tying the handrail back to the unit until the opening no longer allows the entry of the small head probe. The GCG would not recommend expanding the opening to allow the large head probe to pass through as the location of the opening on an incline would still present an increased risk to users.

2. The additional stanchions could be retro installed; however, this would be a complicated and costly solution.

3. The handrail could simply be removed. However, before doing this, manufacturers, inspectors, and repairers should carefully consider the risk to users should they slip or fall. is this hazard significant in comparison to the risk presented by the handrail?

4. The handrail could be segmented to produce “Tabs” to which users could hold onto while climbing the incline. Of course, this would increase the strain associated with each “Tab” and may lead to seams failing earlier than expected.