

Tube Slide Injury Incident

Recommendations

Recommendations – Tube Slide Injury Incident

This was a serious and impactful incident to all parties affected. Technical Safety BC is issuing three recommendations to support industry in making changes to inspection, and response procedures to prevent this type of incident from happening again.

Recommendation #1: To Owners of Fibreglass Waterslides

IT IS RECOMMENDED THAT DAILY INSPECTION PROCEDURES AND TRAINING SPECIFICALLY DETAIL THE NEED TO IDENTIFY BULGING, MOVEMENT OF THE FLUME, OR DEVIATION OF THE FLUME SHAPE WHEN IT IS LOCATED DIRECTLY IN THE PATH OF RIDERS. IF ANY OF THESE DEFICIENCIES ARE IDENTIFIED, IT IS RECOMMENDED THAT THEY BE IMMEDIATELY ASSESSED, AND SCHEDULED FOR REPAIRS.

The incident showed that bubbling, flume movement, and deviation of the flume from its original shape are evidence of significant structural issues with the flume that can result in sudden and severe failures of the fibreglass. Current industry standards, checklists and guidance around daily or pre-season checks do not specifically call out these issues, or the potential hazards associated with them. This incident showed that cracks in these locations can initiate, and progress rapidly, but bulging and movement of the flume is often detectable before the cracks initiate. Since many waterslides are unique, and subject to unique conditions, owners and manufacturers should ensure those performing inspections and assessments have sufficient knowledge about the unique properties of the slides to identify when areas of concern require repair.

Recommendation #2: To Owners of Fibreglass Waterslides with Hidden Flume Supports and/or Structural Cores

IT IS RECOMMENDED THAT PRIOR TO EACH OPERATING SEASON, OR AT LEAST ONCE ANNUALLY, OWNERS HAVE COMPLETED A DETAILED SLIDE CONDITION ASSESSMENT BY A MANUFACTURER'S REPRESENTATIVE OR OTHER THIRD-PARTY QUALIFIED INDIVIDUAL TO IDENTIFY ANY DETERIORATION OF THE CORE AND/OR FLUME SUPPORTS THAT SHOULD BE MONITORED OR REPAIRED.

In this case, the internal wood core, as well as the in-ground installation of the slide degraded in a way that was not easily identified through a visual inspection. Both of these aspects of the slide construction were fundamental to the structural integrity of the flume. Slowly progressing changes to the flume shape, orientation, and strength were never identified or flagged for the owner to repair until eventually, a large failure occurred. Detailed annual inspections by someone with knowledge of the original slide construction can help identify visual indicators or slow progressing changes to the flume that might not be identified during regular daily inspections.

Off-season inspections also ensure there is adequate time for repairs, and changes without the pressures associated with mid-season inspections and any off-season changes to the flume will be captured. Owners are reminded that repairs are not only surface level and should address underlying structural issues to ensure defects will not return.

Recommendation #3: To Owners of Fibreglass Waterslides

IT IS RECOMMENDED THAT OWNERS TRAIN ALL OPERATORS AND ATTENDANTS TO, ONCE NOTIFIED OF AN UNSAFE CONDITION IN A FLUME SURFACE, IMMEDIATELY CEASE ALLOWING PATRONS TO ENTER, OR CONTINUE DOWN A SLIDE, UNTIL SUCH TIME AS THE CONDITION HAS BEEN INVESTIGATED THROUGH A DIRECT, AND HANDS-ON ASSESSMENT BY A STAFF MEMBER QUALIFIED TO PERFORM SLIDE INSPECTIONS.

In this incident, following a report of an unsafe condition, a decision was made to close the slide; however, patrons were allowed to continue down a flume section with a known hazard, resulting in the most serious injury. Owners, attendants, and operators are reminded that under the Act, the use of a regulated product, in this case a waterslide, where an unsafe condition exists is prohibited. When a possible unsafe condition is reported, staff have a responsibility to prevent the use of the slide until they investigate and assess whether there is a risk to the public. This incident establishes that visual only assessments, while the slide remains in operation, is unlikely to provide sufficient information to make an accurate assessment of the risk. As typical daily inspections involve staff members entering the flume, with the water off, and using their hands to evaluate the flume surface; a similar approach is reasonable when possible unsafe conditions are reported during operation.