Ontario (https://www.ontario.ca/page/government-ontario)

Live Performance Advisory Committee Guidelines

Rakes

Introduction

This guideline focuses on performers, but it should be noted that hazards exist for anyone working on a rake — an acting area that is not level.

The risk of working on a surface that is not level increases as the slope of the rake increases. Other risks are at points of transition between one slope and another, or between a raked area and a level area.

Potential hazards include:

1. Tripping, slipping and missteps (a floor or other surface used by a worker must be kept free of obstructions, hazards and not have any finish or protective material used on it that is likely to make the surface slippery – Industrial Establishments Reg. 851 (https://www.ontario.ca/laws/regulation/900851) section 11).
2. Loose objects (e.g. props, ladders, scaffolding, tools or scenery) rolling, sliding or falling down a rake (machinery, equipment or material that may tip or fall and

endanger any worker shall be secured against tipping or falling – Industrial Establishments Reg. 851 section 46).

3. Musculo-skeletal disorders due to extended work periods on an inclined surface.

Definitions

Note: These definitions are provided for clarity and guidance only and, unless otherwise noted, are not definitions found under the Occupational Health and Safety Act (https://www.ontario.ca/laws/statute/90o01) (OHSA) or its regulations.

Counter-rake
An angled platform placed on a rake to create a level area on the rake.

Elevating work platforms (EWP)
Hydraulically, electrically or mechanically controlled devices used to elevate workers or materials. In the live performance industry these include: scissor lifts, articulated boom lifts, individual personnel lifts, self-propelled lifts, manual 'push-around' lifts, elevating rolling work platforms, self-propelled elevating work platforms, boom-type elevating work platforms, vehicle-mounted aerial devices, and aerial work platforms (definition based on information contained in Working at Heights Guideline (https://www.ontario.ca/english/hs/pubs/liveperformance/gl_live_heights.php) – Construction Projects Reg. 213/91 (https://www.ontario.ca/laws/regulation/910213) , subsection 143(1)).

Ladder
Straight or extension ladders requiring support, 'A' frame ladders that are self-supporting, and vertical ladders with platforms, known as 'cherry pickers.'

Level, level surface
Horizontal in all directions.

Rake
An acting area that is not level.

Raked stage
A stage where most or all of the performance area is raked.

Ramp

An inclined walkway for getting from one elevation to another.

Platform
A temporary structure used to support workers and materials.

Working on a rake

1. Each worker should be notified of the use of rakes prior to engagement (OHSA clause 25(2)(d)). When a rake is part of the design, the engager should consider the capabilities and physical fitness of the worker. Workers on medication or with existing medical conditions should speak to a physician before working on a rake.
2. There should be adequate rehearsal on the rake particularly for any choreographed movement, such as dance or fight sequences (OHSA clause 25(2)(a)). 'Adequate' rehearsal should be determined by consultation before and during rehearsals, with performers and others working on the rake.
3. Once work on the rake has started, wherever possible further rehearsal should include both work on the rake and less taxing rehearsal off the rake.
4. Performers should be encouraged to do warm-up and cool-down exercises specific to working on a rake.
5. Staging a performance on a rake should make reasonable accommodation for any pre-existing condition of a performer, such as an earlier injury or a predisposition to back or knee problems.
6. As a widely recognised industry standard, working on a rake with a slope greater than 1:12, requires extra care and more frequent rest periods off the rake.
7. The surface of the rake should be periodically inspected, cleaned and maintained to ensure sufficient grip for safe movement (Industrial Establishments Reg. 851 section 46).

Construction of a rake

1. Rakes must have the structural integrity to support all anticipated loads applied to them (OHSA clause 25(1)(e) and Constructions Projects Reg. 213/91 section 31).
2. The slope of the rake and the movement requirements of the performance should determine the surface treatment for a rake.
3. Transitions should be designed to enable safe movement between the rake and its various access points, including landings, steps, and ramps.
4. A raised lip or other protection at the lower edge of the rake may be needed to stop or catch anything that may slide or roll off the rake.

Use of elevating work platforms, scaffold and ladders on a rake

1. Elevating work platforms, scaffolds and ladders should be placed on a counter-rake. They should be securely supported in their position of normal, level operation, in accordance with the manufacturer's instructions, and immobilised to prevent unintentional movement (Industrial Establishments Reg. 851 section 46). The counter-rake should be designed to support the worker and any equipment required to perform the task (OHSA clause 25(1)(e)). The counter-rake should be secured to the rake to prevent unintentional movement (Industrial Establishments Reg. 851 section 46).

Scenery, props and costumes

1. Movable scenic elements should have a braking and locking mechanism to prevent the unit from tipping over or rolling off the rake (Industrial Establishments Reg. 851 section 46).
2. Adequate measures should be taken to prevent props and scenic elements from inadvertently rolling down the rake or tipping over. Measures may include tethers, stops, wedges and the shape of the object (Industrial Establishments Reg. 851 section 46).

3. When moving large scenic elements on a rake, a secondary safety device such as those listed above (item 2) should be added.
4. The length, weight and balance of a prop or costume should be considered when designing it for use on a rake, especially for large or heavy props to be pushed or carried.
5. Reference should be made, as appropriate, to the guideline for Hand Props, Costumes and Make-Up (https://www.ontario.ca/english/hs/pubs/liveperformance/gl_live_props.php) .

Footwear for performance

1. The footwear to be worn in performance should be made available to the performers as close to the beginning of the rehearsal period as possible, and for all rehearsals on the rake.
2. Consideration should be given to the choice and construction of footwear, and treatment of the sole, to suit the activity and the stage surface. The steeper the slope, the greater the hazard of high heels, for instance.
3. Footwear should be maintained to ensure proper fit and sufficient grip for safely carrying out the movement required.

More information

- Ministry of Labour, Performance Industry (https://www.ontario.ca/english/hs/topics/performance.php)
- Health and Safety Partners (https://www.ontario.ca/english/hs/websites.php)
- Workplace Safety & Insurance Board (http://www.wsib.on.ca)

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