

Naturalized Playspaces and Common Sense

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Fun

- *an inherent need to seek novelty*
- *an attitude*
- *exploration*
- *variety*
- *intrinsic*
- *playful*



Play

- initiated and controlled by children
- a process with no prescribed outcome involving:
 - exploration
 - investigation
 - manipulation
- driven solely by "intrinsic motivation"

International Association for the Child's Right to Play, 2003

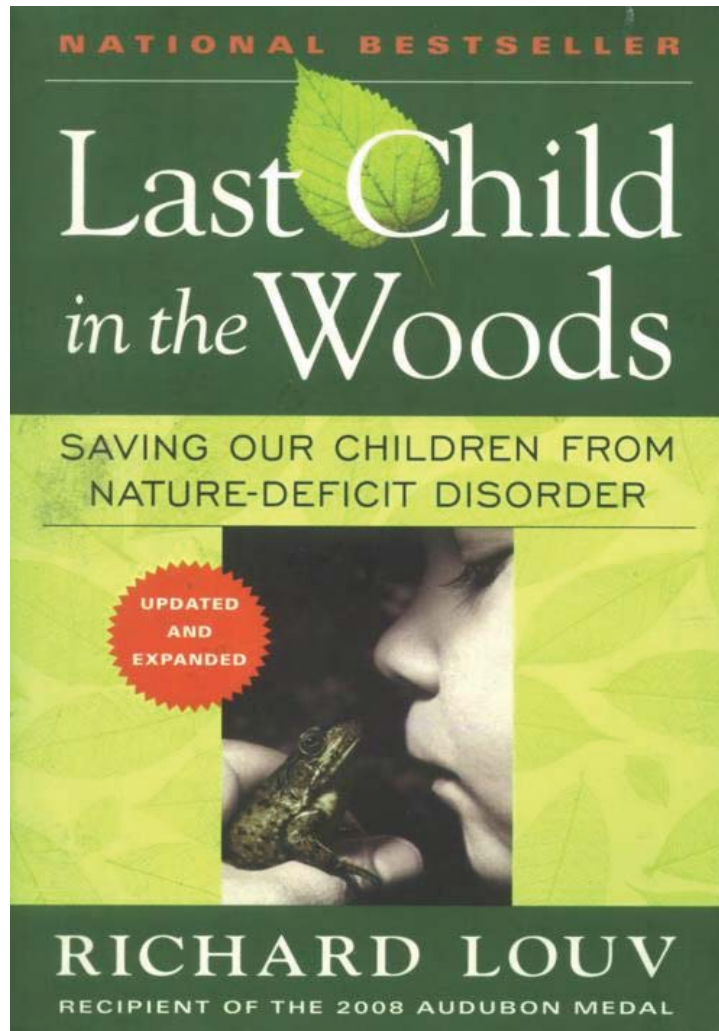
More Play

To live is to risk

***To live more is to risk
more....***

Lady Allen of Hurtwood
Planning for Play

Why Naturalized?



Why Naturalized?

“Since opening our new naturalized yard the children's behaviour has been exemplary....”

***Joanne Mantha, Directrice
École élémentaire publique Trille des Bois***

Why Naturalized?

Trille des Bois



The Good

- *Fun*
- *Challenging*
- *Novel*
- *Imaginative*
- *Playvalue*
- *Creative*



The Bad

- *Boring*
- *Repetitive*
- *Frustrating*
- *Single use*
- *Broken*
- *Static*



The Ugly

- *Debilitating Injury*
- *Brain Damage*
- *Paralysis*
- *Amputation*
- *Poisonous*
- *Death*



The Ugly



What to Do?

The Good



The Ugly

The Courts Say...

Duty of Care

- Originally established by the *Neighbour Principle* in common law
- Currently established by *Occupiers' Liability Act* which is a statute

The Courts Say...

Breach of Duty of Care

The conduct of the defendant is below the
Standard of Care

The Courts Say...

Standard of Care

- What is **reasonable** in the circumstances
- Usually measured against accepted norms such as:
 - **CSA Standard**
 - Industry/Government guidelines
 - General principles of construction, maintenance etc.
- Perfection is not expected but a **consistent, systematic approach** to identify and manage **foreseeable** risk is

Why CSA

- Consensus standard developed by a balanced matrix committee from four stakeholder groups
 - Producers
 - Consumers
 - Regulators
 - General interest



Z614-14



Why CSA

- Useful tool for hazard identification and injury reduction
- Accepted as a risk management tool by institutional and regulatory stakeholders
- Provides criteria for accessibility in public use playspaces



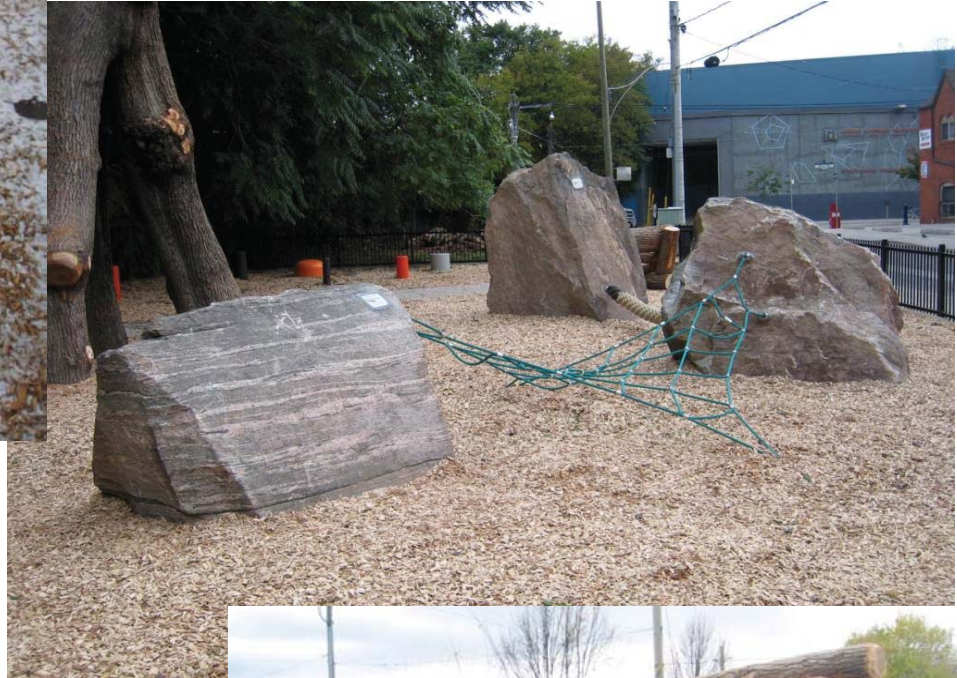
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Where to Begin?

- Is it strong enough...
- Is it poisonous...
- Will I fall...
- Are there pokey things...
- Will I get trapped...
- Can I get to it...

Is it Strong?



Is it Strong?

Clause 9 – Test it.....



Is it Strong?

9.8 Alternatives to testing for structural integrity

As an alternative to the tests described in Clause 9, it shall be acceptable for a licensed professional engineer to verify the integrity of the equipment to support the test loads specified in Clause 9.



Engineers are parents too....

Is it Strong?



Tacoma Engineers Inc.

October 7, 2013

Page 2 of 2

5. Larger Wigwam:

- a. Provide 2x4 x 12" long scab below ply that has been notched into the timber post. Fasten scab to timber post with ten – 3 1/2" spiral nails OR 3 – 3/8" dia. 8" long lag screws. As well, provide a minimum of three 3/8" dia. x 8" long lag screws into timber post through inner (longer) 2x8 ply.

Smaller Wigwam:

- a. Provide a minimum of three 3/8" dia. x 8" long lag screws into timber post through inner (longer) 2x8 ply.
6. Provide additional 3/8" dia. 10" long lag screws through side of rail into timber post.

Please contact Tacoma Engineers with any concerns.

Per:

E. Golem
Emily Golem, E.I.T.
Structural Designer
Tacoma Engineers Inc.



Encl.:

Deficiency List (2 pages)
Tower As-Built Drawings (2 pages)

Is it Strong?

Clause 9.8 – ask an engineer.....



Is it Poisonous?

Z614 Requires....

7.7 Hazardous substances

The manufacturer and owner/operator shall ensure that users of the playground equipment cannot ingest, inhale, or absorb through body surfaces potentially hazardous amounts of substances as a result of using the playspace.

Z614 Suggests....

G.8.2 Poisonous/hazardous plants

Poisonous or hazardous plants shall not be used.



As an extra precaution, a poison information centre should be consulted before the selection of plant materials is finalized.

Is it Poisonous?

Z614 Suggests....

G.8.5 Toxic fungi

All mushrooms and fungi that appear in a playspace should be treated with suspicion because their identification is highly specialized and outside the scope of this Standard. Caregivers should be familiar at least with the one mushroom that is responsible for the great majority of fungus poisonings in Canada, the *Amanita virosa* ("Destroying Angel"). All parts of this mushroom (i.e., cap, gills, and stem) are white in colour, and any such mushrooms found should be removed immediately. The familiar red mushroom with white spots, the *Amanita muscaria* ("Fly Agaric"), is also considered poisonous and should be removed.



Will I fall?

- Its not the fall that hurts, its the landing...
- Create landing conditions that reduce the severity of the impact
- Make sure that the landing area is large enough to accommodate the fall pattern
- Make sure landing area is free of objects/obstacles

Will I fall?

Z614 Requires....

14.1.1 Protective surfacing zone

There shall be a protective surfacing zone for each playstructure, which shall consist of obstacle-free surfacing that conforms to the requirements of Clause 10 for the defined fall height of the equipment. The dimensions and configuration of the protective surfacing zone shall be dependent upon the type of play equipment and playspace, as specified in Clauses 14.2 to 14.10.

10.1 Energy absorbency of a surfacing material

The surfacing material in the protective surfacing zone shall have a g_{\max} not exceeding 200 and an HIC not exceeding 1000 when tested for the defined fall height. The test methods specified in ASTM F1292 and CEN EN 1177 may be used for testing protective surfacing.

Will I fall?

Z614 Requires....



Will I fall?

- Its not the fall that hurts, its the landing...
- Try to create conditions where a high free fall is broken by intermediate elements
- Discourage climbing onto elements where not intended
- Encourage climbing onto elements where it is intended

Will I fall?

Z614 Requires....

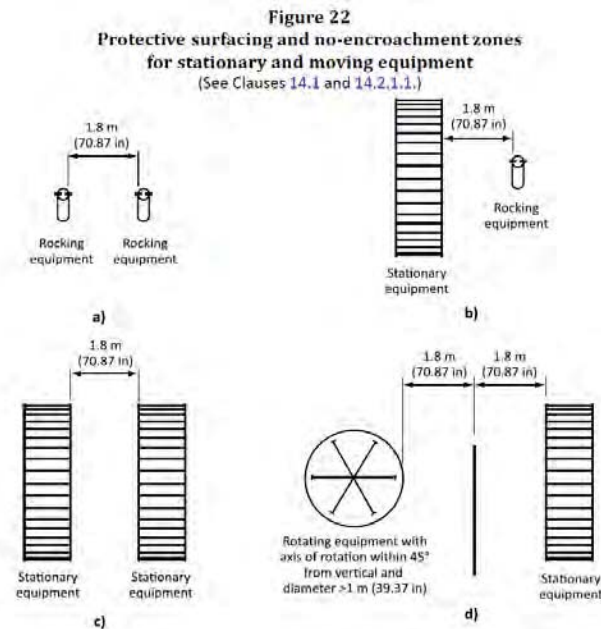


Will I fall?

Z614 Requires....

14.2.1.2

The protective surfacing zone for stationary play equipment shall extend not less than 1.8 m (70.87 in) on all sides of the playstructure. Equipment designed so that a user maintains constant contact with the ground during play has no individual protective surfacing zone requirement (e.g., sandboxes, diggers, free-standing activity walls, free-standing playhouses, play counters). However, the requirements for placement and circulation under Clause 14.10.1 shall apply.



Will I fall?

Rule of thumb....



Will I fall?

- Leaping can cause injury in certain conditions
- Cluster rocks so that a child can easily step from one to the other or....
- Separate rocks or clusters by 1.8 m to discourage leaping

Will I fall?

Its not the fall that hurts, its the landing...



Will I fall?

Round exposed edges to min
6 mm radius



Pokey things?



Pokey things?

Figure 7
Protrusion test gauges

(See Clauses 12.3.1.3, 12.3.3.1, 12.3.3.2, 12.4.2, 12.4.3, and 12.4.4.)

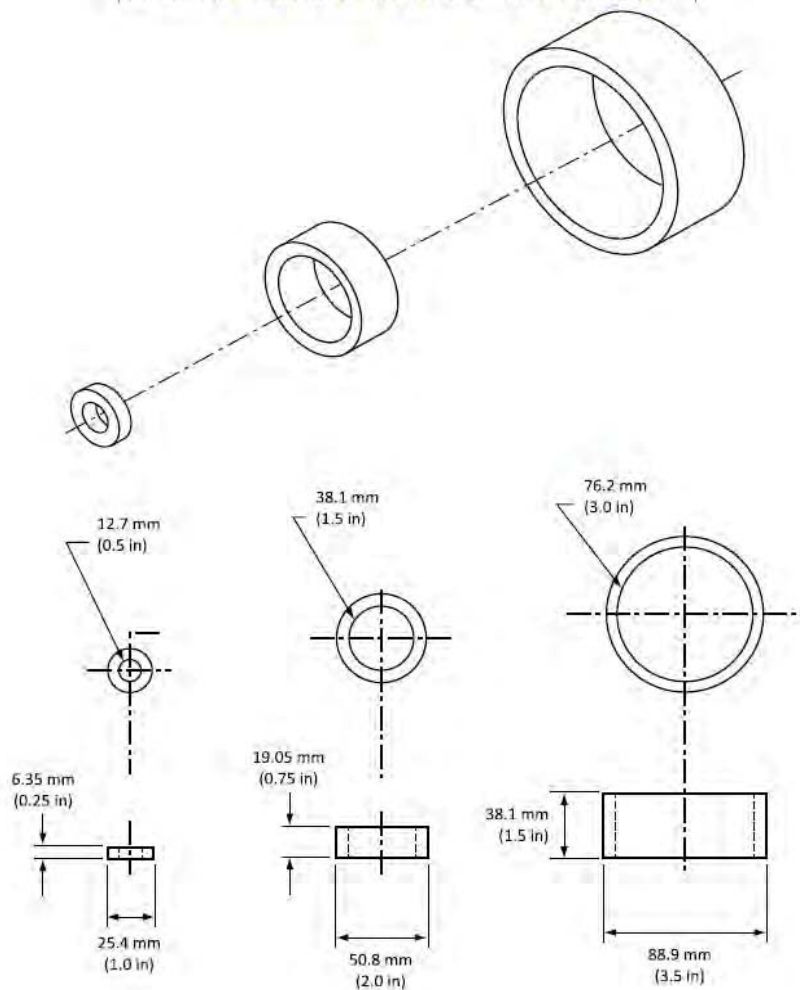
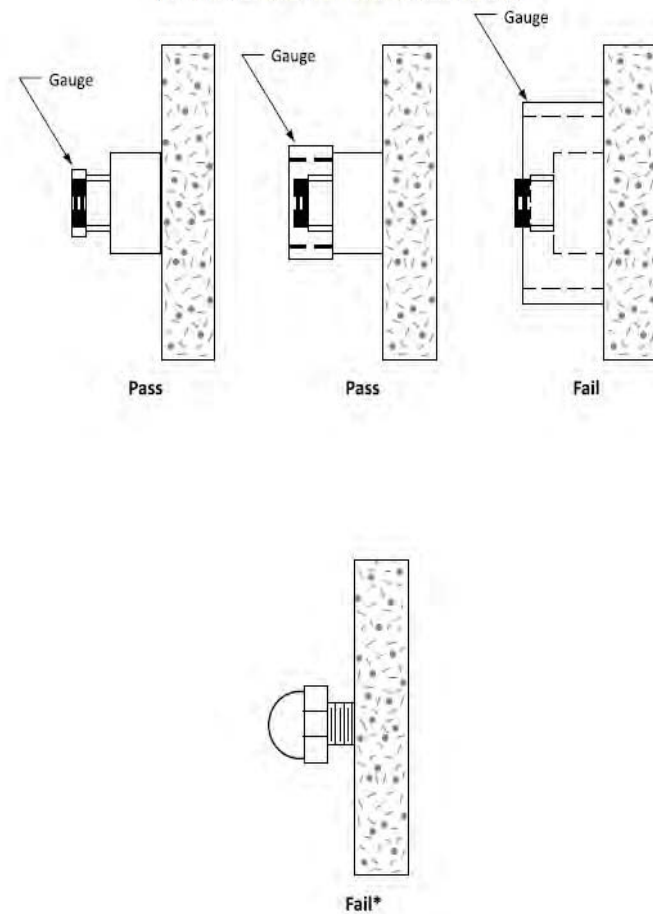


Figure 8
Compound protrusion test

(See Clauses 12.3.3.2, 12.3.3.3, and 12.4.4.)



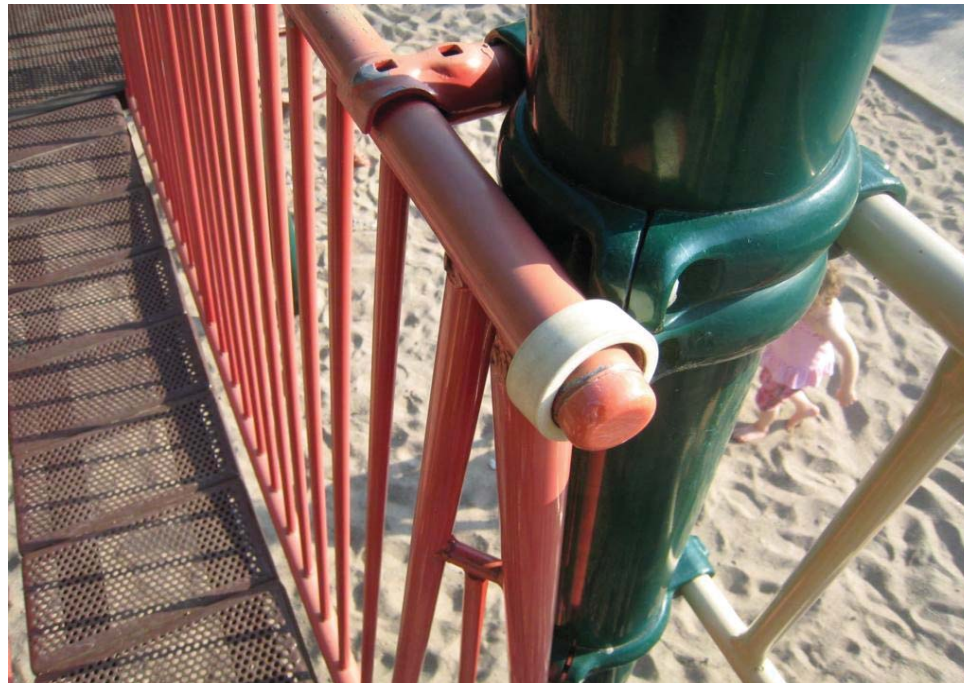
Pokey things?

12.3.1.1

There shall be no accessible sharp points or sharp edges.

12.3.3.1 General

There shall be no protrusion on any playstructure that extends beyond the face of any of the three test gauges having the dimensions shown in Figure 7 when tested in accordance with Clause 12.3.3.3.

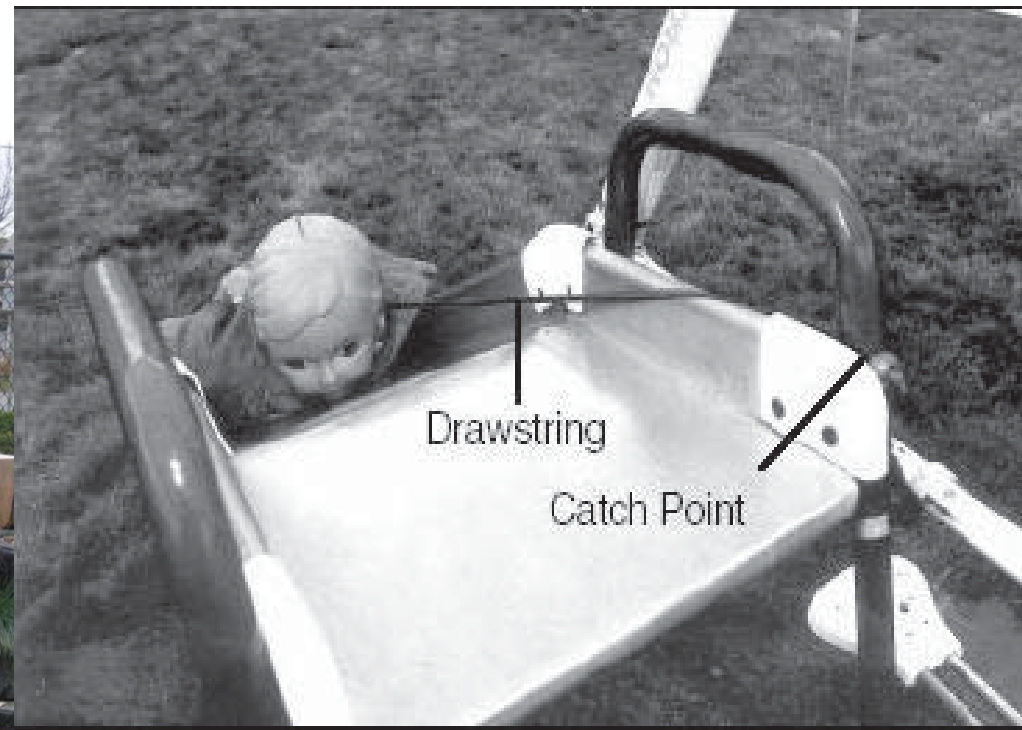


Pokey things?



Can I get caught?

Clothing entanglement



Can I get caught?

Clothing entanglement

Figure 16
Position of the test device on slides
(See Clause 12.4.6.2 and 12.4.6.3.)

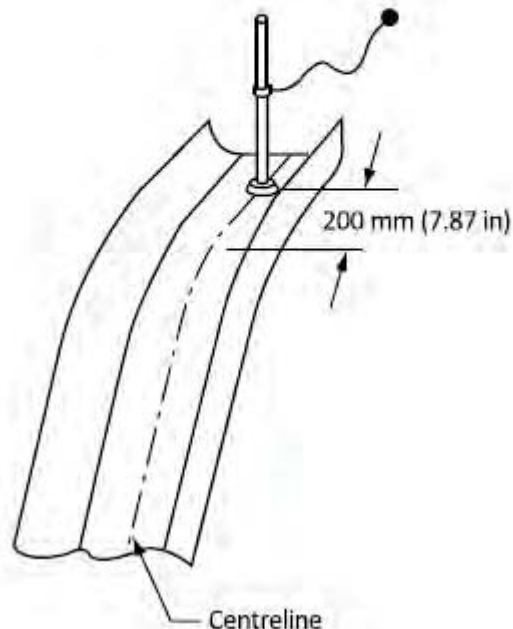
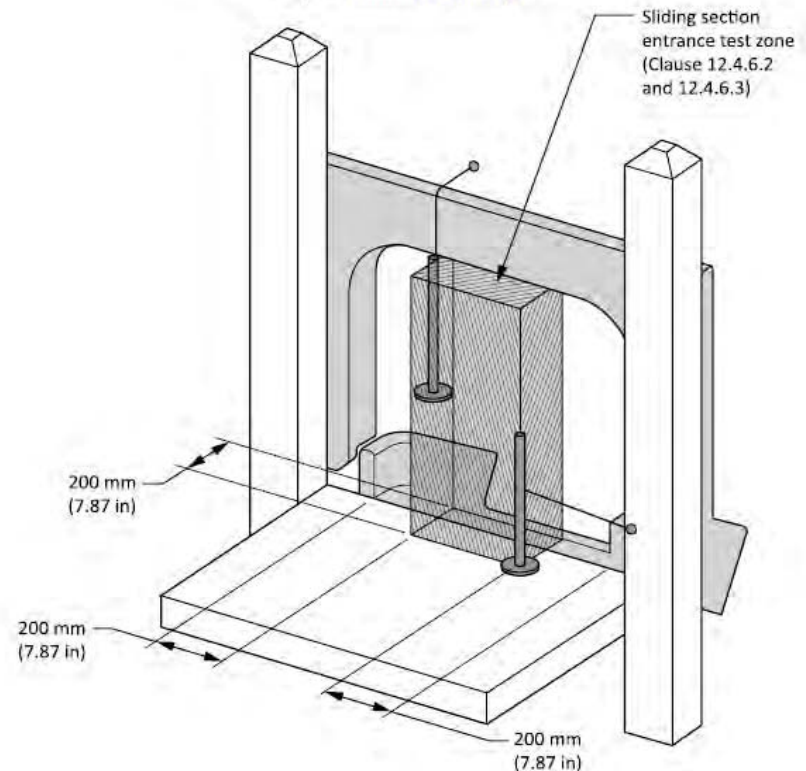


Figure 17
Test method — Slides and protrusions adjacent to slides
(See Clause 12.4.6.3.)



Can I get caught?

Clothing entanglement



Can I get caught?

Clothing entanglement



Can I get caught?

Clothing entanglement



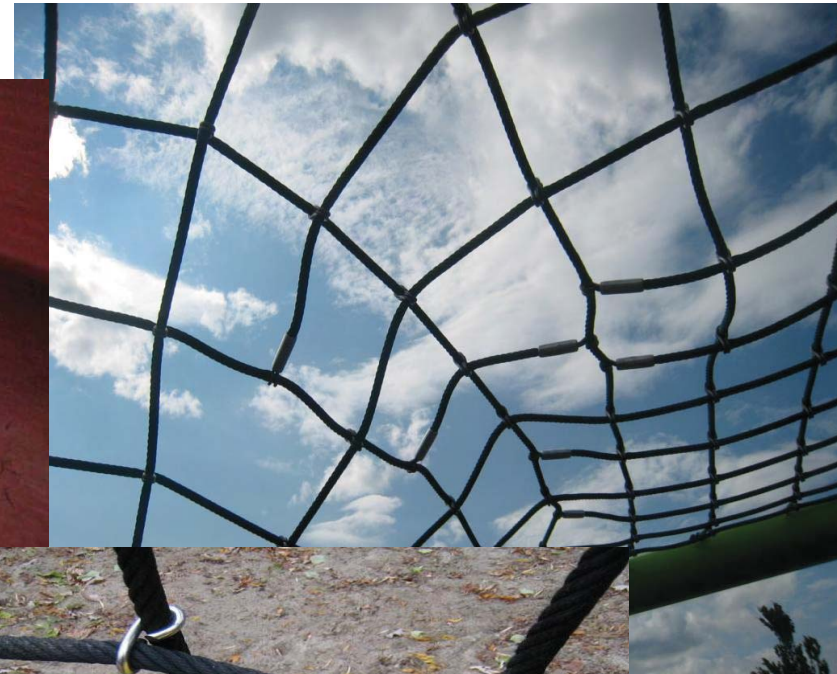
Can I get caught?

Entrapment



Can I get caught?

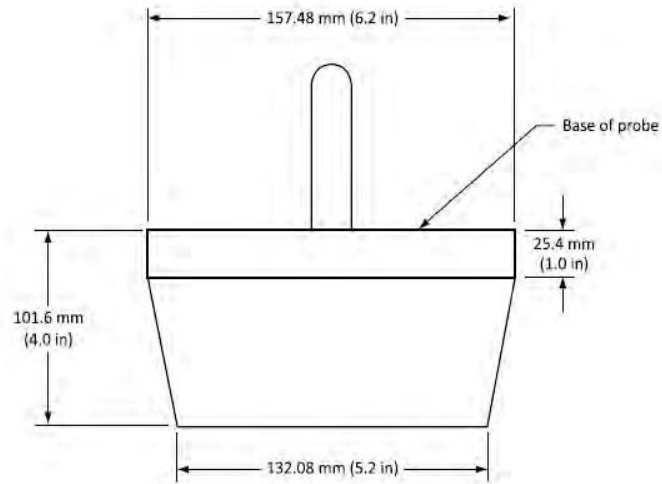
Head and Neck Entrapment



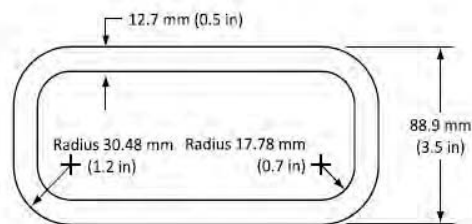
Can I get caught?

Head and Neck Entrapment

Figure 3
Torso probe
(See Clauses 12.2.2.1, 12.2.2.2, and 12.2.3.1.)



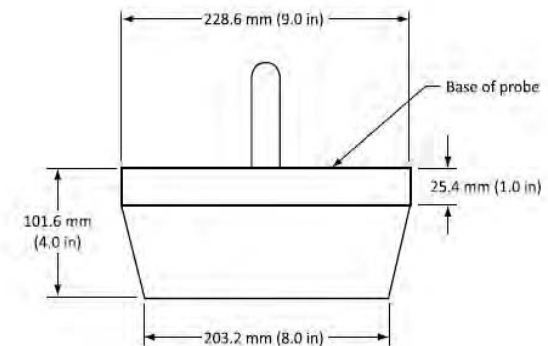
Side view



End view

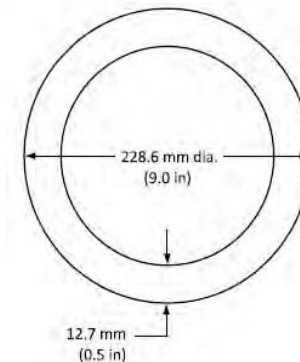
Note: The probe shall be made of any rigid material.

Figure 4
Head probe
(See Clauses 12.2.2.2, 12.2.3.1, 12.2.4.3, and 12.2.5.2.)



Side view

Note: The probe shall be made of any rigid material.

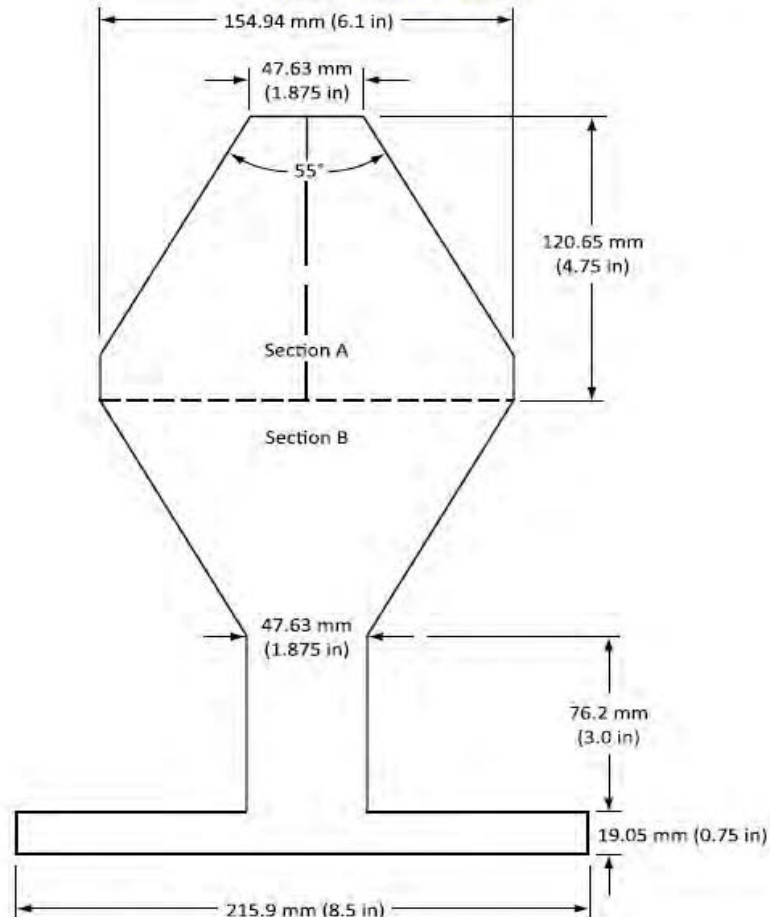


End view

Can I get caught?

Head and Neck Entrapment

Figure 5
Test template for partially bounded openings
(See Clause 12.2.4.3.)



Note: The probe shall be made of any rigid material 19.05 mm (0.75 in) thick.



Can I get caught?

Looping

12.6.2 Looping

Rope, cable, or chain shall be fixed at both ends and shall not be capable of being looped back on itself to create an inside loop perimeter greater than 125 mm (4.92 in).



Can I get caught?

Shear/Crush

12.5 Crush or shear points

12.5.1 General

There shall be no crush or shear points caused by the junctures of two components moving relative to one another or at an opening present at the junction of a stationary support and a rigid supporting member for a swinging element (e.g., junctions in pendulum see-saws or glide rides), while the swinging elements are within their normal swinging angles. A crush or shear point is any point that entraps a 15.75 mm (0.62 in) diameter rod in one or more positions.



Can I get to it?

Accessibility

Ontario Reg. 191/11

Schedule

80.5 Obligated organizations shall meet the requirements set out in this Part in accordance with the following schedule:

1. For the Government of Ontario and the Legislative Assembly, January 1, 2015.
2. For designated public sector organizations, January 1, 2016.
3. For large organizations, January 1, 2017.
4. For small organizations, January 1, 2018. O. Reg. 413/12, s. 6.

Can I get to it?

Accessibility

Access Ontario Guide suggests....

Organizations have the flexibility to design play spaces that are creative, fun and challenging for children of all ages and abilities. A number of resources are already available that can help organizations develop accessible play spaces for everyone. Annex H of the Canadian Standards Association's Standard for Play Spaces (CAN/CSA Z614), and the Ontario Parks Association's PlayAbility Toolkit are examples of useful resources that can help organizations determine the best way to incorporate accessibility features into their play spaces.

Can I get to it?

Annex H

- Provides criteria for accessibility in playspaces
- Is currently adopted as policy in a number of municipalities across Canada
- Provides detailed specifications for designers in clear and concise language
- Is a useful tool for compliance to the requirements of the AODA

Can I get to it?

Annex H... component ratios

Table H.1

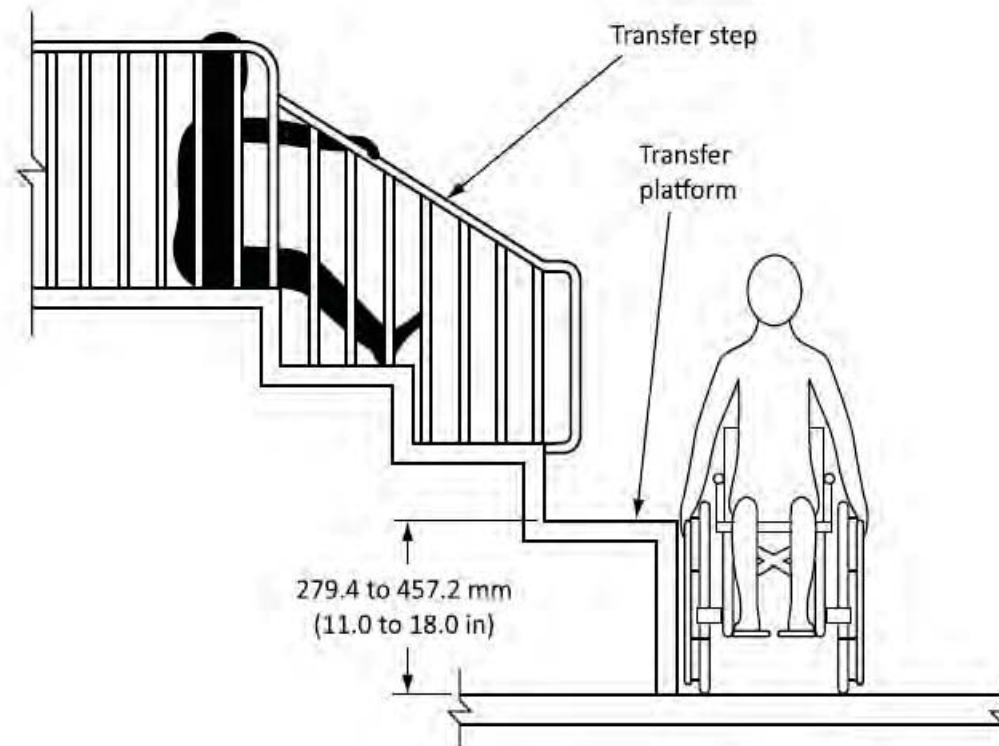
Recommended minimum number and types of ground-level play components on accessible routes
(See Clauses [H.4.2.2](#) and [H.4.2.3](#).)

Number of elevated play components provided	Minimum number of ground-level play components required to be on accessible route	Minimum number of different types of ground-level play components required to be on accessible route
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
More than 25	8 plus 1 for each additional 3 over 25, or fraction thereof	5

Can I get to it?

Annex H... access

Figure H.1
Transfer platform
(See Clause [H.4.5.2.1](#).)



Can I get to it?

Annex H... access



Can I get to it?

Annex H... access



Can I get to it?

Annex H... surfacing



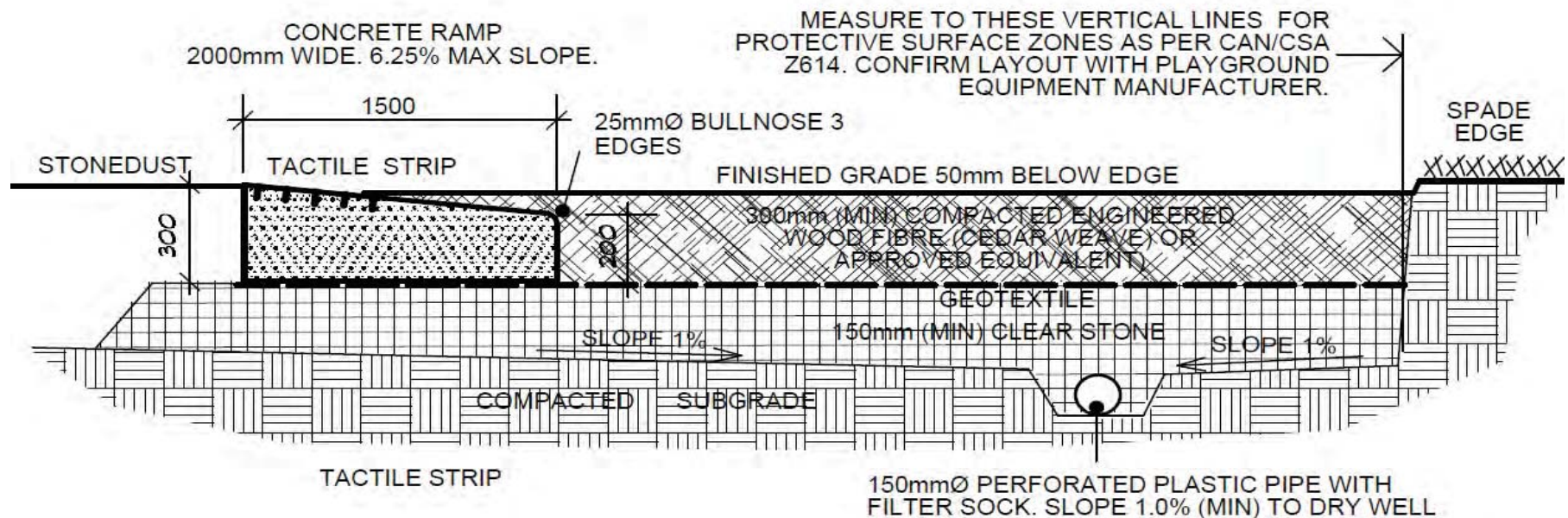
Can I get to it?

Annex H... surfacing



Can I get to it?

Annex H... surfacing



Engineered Wood Fibre Protected Play Surface / Concrete Ramp

CAST IRON TWSI FROM NEENAH FOUNDRY (AVAILABLE THROUGH CROZIERS).
INSTALL AS PER MANUFACTURER'S SPECIFICATIONS.

Will it last?

Every garden needs a gardener.....

- naturalized spaces are more fragile
- budget for maintenance up front
- make a plan and allocate resources
- establish a programme of routine and remedial maintenance
- be realistic

Will it last?

Wood ... use rot resistant species

Table 14–1. Grouping of some domestic and imported woods according to average heartwood decay resistance^a

Very resistant	Resistant	Moderately resistant	Slightly or nonresistant
Domestic			
Black locust	Baldcypress, old growth	Baldcypress, young growth	Alder, red
Mulberry, red	Catalpa	Cherry, black	Ashes
Osage-orange	Cedar	Douglas-fir	Aspens
Yew, Pacific	Atlantic white	Honey locust	Beech
	Eastern redcedar	Larch, western	Birches
	Incense	Pine, eastern white, old growth	Buckeye
	Northern white	Pine, longleaf, old growth	Butternut
	Port-Orford	Pine, slash, old growth	Cottonwood
	Western redcedar	Redwood, young growth	Elms
	Yellow	Tamarack	Basswood
	Chestnut		Firs, true
	Cypress, Arizona		Hackberry
	Junipers		Hemlocks
	Mesquite		Hickories
	Oaks, white ^b		Magnolia
	Redwood, old growth		Maples
	Sassafras		Pines (other than those listed) ^b
	Walnut, black		Spruces
			Sweetgum
			Sycamore
			Tanoak
			Willows
			Yellow-poplar

Will it last?

Rocks..use stable igneous if possible



Will it last?

Rocks..do not use calciferous



Will it last?

Cables..use steel core rope



Steps for Success

- budget for maintenance before all else
- use the services of:
 - landscape architect
 - engineers
 - industrial designers
 - skilled trades
- design for maintenance
- design to comply with CSA-Z614
- use Annex H as tool for Accessibility
- involve staff, community and children
- monitor...monitor...monitor