# Floor Wall Openings — Know The Laws of Your Province



Floor and wall openings present serious hazards in the workplace, particularly in construction, industrial, maintenance settings where workers may be exposed to unguarded edges, drop-offs, or holes. These openings can lead to falls, falling object injuries, and other incidents if not properly identified and secured. Occupational Health and Safety (OHS) regulations across Canada set clear requirements to ensure these hazards are controlled through proper guarding, covers, signage, and safe work procedures. While general safety principles apply throughout Canada, specific OHS regulations vary by province and territory to address unique worksite industry risks. Compliance with these conditions and regulations is essential to preventing serious injuries, supporting legal accountability, and maintaining a safe work environment for everyone on site.

# **FEDERAL**

In federally regulated workplaces, floor and wall openings are addressed under the <u>Canada Occupational Health and Safety</u> <u>Regulations</u> – Part III: Temporary Structures and Excavations, Sections 2.5, 2.12 and 2.13. These sections establish key safety requirements to prevent injuries from falls or contact with hazardous areas created by temporary or permanent openings in floors, roofs, or walls.

## Floor and Wall Openings

- (1) Where an employee has access to a wall opening from which there is a drop of more than 1.2 m or to a floor opening, highly visible guardrails **shall** be fitted around the wall opening or floor opening or it **shall** be covered with material capable of supporting all loads that may be brought to bear on it.
- (2) The material **shall** be securely fastened to and supported by structural members.
- (3) Subsection (1) does not apply to vehicle maintenance pits or to the loading and unloading areas of truck, railroad or marine docks the edges of which are marked in a highly visible manner.
- (4) Where a pit is used for the maintenance of vehicles, including railway rolling stock, the hazard it represents shall be clearly identified and its perimeter shall be delineated by highly visible markings. Section 2.5 (1) to (4).

#### **Guardrails**

- (1) Every guardrail shall be highly visible and consist of:
  - (a) a horizontal top rail not less than 900 mm but not more than 1 100 mm above the base of the guardrail;
  - (b) a horizontal intermediate rail spaced midway between the top rail and the base; and
  - (c) supporting posts spaced not more than 3 m apart at their centres.
- (2) Every guardrail **shall** be designed to withstand a static load of 890 N applied in any direction at any point on the top rail. **Section 2.12 (1)(2).**

#### Toe Boards

If there is a risk that tools or other objects could fall onto a person from a platform or other raised area, or through a floor opening or floor hole,

- (a) a toe board that extends from the floor of the platform or other raised area to a height of not less than 125 mm shall be installed; or
- (b) if the tools or other objects are piled to such a height that a toe board would not prevent the tools or other objects from falling, a solid or mesh panel **shall** be installed from the floor to a height of not less than 450 mm. Section 2.13 (a)(b).

Further details on the Canada Occupational Health and Safety Regulations can be found at <a href="Laws-lois.justice.gc.ca">Laws-lois.justice.gc.ca</a>.

## **ALBERTA**

In Alberta, **floor and wall openings** are regulated under the Occupational Health and Safety Code — Part 8: Entrances, Walkways, Stairways and Ladders, Sections 121, 122(2), 123(2), and 130(4). These provisions outline the responsibilities of employers to protect workers from fall hazards associated with unguarded or inadequately covered openings in walking and working surfaces.

# Walkways, Runways, and Ramps

- (1) An **employer must** ensure that a walkway, runway, or ramp:
  - (a) is strong enough to support the equipment and workers who may use it,
  - (b) is at least 600 millimetres wide,
  - (c) is wide enough to ensure the safe movement of equipment and workers, and
  - (d) has the appropriate toe boards and guardrails required

by Part 22.

(2) An **employer must** ensure that the surface of a walkway, runway or ramp has sufficient traction to allow workers to move on it safely. **Section 121 (1)(2).** 

## **Stairways**

- (2) An employer must ensure that:
  - (a) a stairway with 5 or more risers has the appropriate handrail **required** by this Code, and
  - (b) a stairway with open sides has a handrail and an intermediate rail or equivalent safeguard on each open side. **Section 122(2)**.

## Handrails on Stairways

- (2) An employer must ensure that a stairway is equipped with a handrail that:
  - (a) extends the entire length of the stairway,
  - (b) is secured and cannot be dislodged,
  - (c) is between 800 millimetres and 920 millimetres above the front edge of the treads, and
  - (d) is substantial and constructed of lumber that is not less than 38 millimetres by 89 millimetres or material with properties the same as or better than those of lumber. **Section 123(2).**
- (4) The employer must ensure that a self-closing double bar safety gate, or equally effective barrier, is provided at ladderway floor openings and platforms of fixed ladders installed on or after April 30, 2004. Section 130(4).

Further details on the Occupational Health and Safety Code can be found at Alberta.ca.

# **BRITISH COLUMBIA**

In British Columbia, floor and wall openings are regulated under the Occupational Health and Safety Regulation — Part 4: General Conditions, Sections 4.55 and 4.59 to 4.61. These sections outline essential requirements to prevent worker injuries caused by falls through unprotected openings in walking surfaces or walls.

#### **Guardrail Locations**

An area accessible to workers **must** have guards or guardrails installed in any of the following circumstances:

- (a) if a raised floor, open-sided floor, mezzanine, gallery, balcony, work platform, ramp, walkway, or runway is 122 cm (4 ft) or more above the adjacent floor or grade level;
- (b) on both sides of any walkway over or adjacent to any substance which is a hazard if a worker fell in, or on it, or which is over machinery or work areas;
- (c) around the perimeter of any open container or containment area such as an open vat, bin, tank or pit which is 122 cm (4 ft) or more in depth and which has sides that do not extend at least as high as **required** for a quardrail above the adjacent grade or work surface;
- (d) if a stairway ends in direct proximity to dangerous traffic or other hazard to prevent inadvertent entry into the dangerous area. **Section** 4.55.

# Floor and Roof Openings

(1) A pit or other opening in a floor, walkway, roof or other area accessible to workers, which is a danger to workers, must be securely covered with a cover of adequate size and strength or guarded by fixed or movable quardrails, which must be identified as such and kept in

place except when necessarily removed to work in the opening or pit.

- (2) If compliance with subsection (1) is not practicable for a vehicle service pit, the area around the perimeter of the pit **must** be marked in a high visibility colour extending back at least 1 m (3.3 ft) from the edge of the pit, and the marking coating or material **must** provide a skid resistant surface.
- (3) Subsection (1) does not apply to a trap door in a performance stage or scenic unit that will be visible to the audience during a rehearsal or performance, provided that effective measures are taken to protect performers and other workers from injury.
- (4) If a worker **must** enter an area not normally accessible and that has openings that are a danger, such openings **must** be guarded or personal fall protection **must** be used while the worker is in the area. **Section** 4.59 (1) to (4).

#### Toeboards

- (1) Floor openings, elevated walkways and platforms **must** have toeboards if there is a danger from tools, materials, equipment, and debris falling off the edge of the work surface, or there is a danger of slipping off the work surface due to the environment or work practices being used.
- (2) The top of a toeboard **must** be at least 10 cm (4 in) above the floor or platform, and the space between the bottom of the toeboard and the floor or platform **must** not exceed 13 mm (1/2 in).
- (3) If material is stacked or stored on a platform or walkway, or near a floor opening, toeboards **must** be increased in height or solid or mesh panels of appropriate height **must** be installed to prevent the material from

falling.

(4) Subsections (1) and (2) do not apply to a walkway or a platform that is on a performance stage or scenic unit and will be visible to the audience during a rehearsal or performance, provided that effective measures are taken to protect performers and other workers from injury. **Section** 4.60 (1) to (4).

## Walkways

Elevated walkways **must** be at least 50 cm (20 in) wide, and safe access to walkways **must** be provided by means of stairs, ramps or fixed ladders. **Section** 4.61.

Further details on the Occupational Health and Safety Regulation can be found at <a href="https://www.worksafeBC.com">WorksafeBC.com</a>.

# **MANITOBA**

In Manitoba, floor and wall openings are addressed under the Workplace Safety and Health Act and Regulation — Part 30: Temporary Structures, Sections 30.4 and 30.5. These sections establish safety requirements for protecting workers from fall hazards related to temporary floor openings and wall penetrations during construction or maintenance work.

# **Employer to Provide Floor**

- (1) If a skeleton frame building of more than one storey in height is being erected and persons, other than those engaged in erecting the structure, are **required** to work or pass beneath the work area, an **employer must** provide:
  - (a) a permanent floor; or
  - (b) a temporary floor that:
    - (i) extends over an entire working area, except for necessary openings which **must** be protected by a

guardrail in accordance with Part 14 (Fall Protection),

- (ii) is designed to safely support any load that will be or is likely to be imposed on it, including loads from material, machinery or equipment such as cranes and hoists, and
- (iii) is securely fastened to structural members that are capable of safely supporting any imposed load.
- (2) When a plank floor is used as a temporary floor, an **employer must** ensure that the planks used are:
  - (a) structurally sound and at least 50 mm thick; and
  - (b) securely fastened to the frame of the building and laid close together to form a solid floor.
- (3) When material is stored on a temporary floor, an **employer must** ensure that the material does not fall off the edge of the floor. **Section 30.4 (1) to (3).**

# **Openings in Temporary Floors**

When an opening in a temporary floor cannot be adequately protected by a guardrail, an **employer must** ensure that:

- (a) the opening is completely covered with securely fastened planks or other materials capable of supporting any load that will be or is likely to be imposed on them; and
- (b) the covering is clearly, visibly and legibly marked to identify the hazard. **Section 30.5**.

Further details on the Workplace Safety and Health Act and Regulation can be found at <a href="Gov.MB.ca">Gov.MB.ca</a>.

## **NEW BRUNSWICK**

In New Brunswick, floor and wall openings are regulated under the <u>General Regulation – Occupational Health and Safety Act</u>, specifically <u>Sections 99</u>, 103, 104, 111, and 116. These sections outline the minimum safety requirements to prevent falls and other hazards associated with unguarded or improperly secured openings in floors, roofs, and walls.

# Opening for Guardrail

An owner of a place of employment, an **employer** and a contractor **shall** each ensure that an opening for passage through a guardrail is equipped with a barrier or gate that may be removed temporarily to permit passage. **Section** 99.

## Floor Area During Construction

An **employer** and a contractor **shall** each ensure during the construction of a building or structure that a floor area in the building or structure is adequately closed in, except for necessary openings, before the floor above is started. **Section 103**.

# **Temporary Working Floor**

- (1) An employer and a contractor shall each ensure that a temporary working floor:
  - (a) will support a minimum live load of 2.4 kPa,
  - (b) has planks that are securely fastened and supported on each end 300 mm beyond the opening that is being covered, and
  - (c) has no unsupported projection of a length that would be unstable if an employee were to stand on the projection or that exceeds 450 mm, whichever is the lesser.
- (2) If it is not practical to install a temporary working

floor, an **employer** and a contractor **shall** each ensure that a safety net that meets the requirements of subsection 49.8(2) is installed under the area where an employee is working or a that a travel restraint system or fall-arresting system is used by the employee. **Section 104 (1)(2).** 

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- (2) If it is not practical to install a temporary working floor, an **employer** and a contractor **shall** each ensure that a safety net that meets the requirements of subsection 49.8(2) is installed under the area where an employee is working or a that a travel restraint system or fall-arresting system is used by the employee. **Section 104 (1)(2).**

# **Stairways**

Where a stairway has treads or landings made of perforated material, an **employer shall** ensure that the perforated material does not have openings larger than 11 mm. **Section** 116.

Further details on the General Regulation — Occupational Health and Safety Act can be found at <a href="mailto:Gnb.ca">Gnb.ca</a>.

## **NEWFOUNDLAND & LABRADOR**

In Newfoundland and Labrador, floor and wall openings are addressed under the <u>Occupational Health and Safety Regulations</u>, Sections 28 and 30. These sections set out employer responsibilities to prevent falls and injuries related to unprotected openings in walking or working surfaces.

#### **Guardrails**

- (1) Guardrails **shall** be installed where an open-sided floor, working platform, runway, walkway, or balcony is over 1.22 metres above the existing floor or ground level.
- (2) Detour guardrails **shall** be installed where a stairway ends in direct proximity to dangerous traffic or other hazards.
- (3) An **employer shall** ensure that a guardrail is secured so that it cannot move in any direction if it is struck or if a point on it comes in contact with a worker, materials, or equipment.
- (4) Guardrails **shall** be installed on walkways over open tanks containing harmful substances or over open tanks 1.22 metres or more in depth.
- (5) Walkways and platforms installed over machinery and work areas **shall** be equipped with toe boards at least 10 centimetres high along all sides of the walkway or platform.
- (6) A guard rail **shall** have a top rail located at least .9 metres but not more than 1.1 metres above the working surface and an intermediate rail located midway between the top rail and the working surface. **Section 28 (1) to (6).**

# Openings, Pits, and Tanks

- (1) Where a worker is employed around an open tank containing liquid or a harmful substance, the sides of the tanks **shall** be constructed to extend at least 91.44 centimetres above a working platform or standard guardrails **shall** be provided to prevent the worker from falling into the tank.
- (2) A hole or pit in a floor, roof, walkway or work area accessible to a worker **shall** be securely covered and identified.
- (3) Where a vehicle service pit is used so frequently that compliance with this section is impractical, the perimeter of the pit **shall** be delineated by high visibility, luminescent, skid-resistant paint instead of guardrails.
- (4) A vehicle service pit **shall** have a fixed ladder at each end. **Section 30 (1) to (4).**

Further details on the Occupational Health and Safety Regulations can be found at <a href="https://www.nk.ca">Assembly.NL.ca</a>.

# **NOVA SCOTIA**

In Nova Scotia, **floor and wall openings** are regulated under the <u>Workplace Health and Safety Regulations</u> — Part 21: Fall Protection, Sections 21.5 and 25.6. These sections outline specific safety requirements aimed at protecting workers from fall hazards associated with unguarded openings in floors, roofs, and walls.

#### **Guardrails**

- (1) An employer must ensure that a guardrail that is used as a means of fall protection is installed at all of the following places in a work area:
  - (a) around any uncovered opening in any surface;

- (b) at the perimeter or other open side of a work area.
- (2) A guardrail **must** be designed and installed in compliance with the CSA standard CSA Z797:18 (R2023), "Code of practice for access scaffold".
- (3) If there is a risk of falling at a doorway or the opening of a building floor, roof, walls or shaft, an **employer must** ensure that a guardrail is:
  - (a) installed in accordance with this Section; and
  - (b) marked with a warning sign that indicates the presence of a doorway or other opening. **Section 21.5 (1) to (3).**

## **Temporary Flooring**

An **employer must** ensure that temporary flooring that is used as a means of fall protection is able to withstand 4 times the maximum load likely to be on it and is installed so that it meets all of the following:

- (a) it extends over the entire work area with the exception of any openings necessary for the carrying out of work;
- (b) it is securely fastened to prevent lateral and upward movement. **Section 21.6.**

Further details on the Workplace Health and Safety Regulations can be found at <a href="Novascotia.ca">Novascotia.ca</a>.

# **NORTHWEST TERRITORIES & NUNAVUT**

In the Northwest Territories, floor and wall openings are addressed under the <u>Occupational Health and Safety Regulations</u>, Sections 128, 129, and 130. These sections establish clear safety requirements to prevent falls and other injuries resulting from exposure to unguarded or inadequately protected openings in walking and working surfaces.

#### **Guardrails**

- (1) Subject to subsections (2) to (4), if the installation of a guardrail is **required** by these regulations, an **employer shall** ensure that the guardrail:
  - (a) has a horizontal top member between 920 mm and 1070 mm above the working surface;
  - (b) has a horizontal intermediate member that is spaced midway between the horizontal top member and the working surface;
  - (c) is supported for the entire length of the guardrail by vertical members that are, if reasonably possible, not less than 2.4 m apart;
  - (d) is capable of supporting a worker who could fall against the guardrail; and
  - (e) is constructed of construction grade lumber not less than 38 mm by 89 mm, or material of equivalent strength.
- (2) A horizontal intermediate member is not **required** in the case of a temporary guardrail that is manufactured with a substantial barrier that completely fills the area enclosed by the horizontal top member, and horizontal bottom member and vertical members.
- (3) A wire rope guardrail may be used at the external perimeter of a building under construction.
- (4) If a wire rope guardrail is used under subsection (3), an **employer shall** ensure that:
  - (a) the guardrail consists of a horizontal top member and a horizontal intermediate member made of wire rope not less than 9.5 mm in diameter, with vertical separators not less than 50 mm wide that are spaced at intervals that are not less than 2.4 m apart;

- (b) the horizontal top member and horizontal intermediate member are positioned above the working surface in accordance with paragraphs (1)(a) and (b);
- (c) the guardrail is kept taut by means of a turnbuckle or other appropriate device; and
- (d) the guardrail is arranged so that a worker coming into contact with the ropes cannot fall through the ropes.
- (4.1) In cases where the Building Code Act applies to a guardrail, the guardrail **must** be constructed in accordance with the requirements of the Code, as defined in that Act, rather than in accordance with any different requirements under subsection (1) to (4).
- (5) An **employer shall** ensure that a worker does not hang equipment on a guardrail. **Section 128 (1) to (5).**

#### **Toeboards**

- (1) In this section, "toeboard" means a low vertical guard that is:
- (a) located at the outer edge of a platform, scaffold, floor, stair, walkway, pit or other height; and
- (b) designed to prevent materials or equipment from falling over the edge. (plinthe)
- (2) An employer shall provide toeboards at the edge of:
  - (a) a permanent floor, platform, mezzanine, walkway, ramp, runway or other surface from which it is possible for materials to fall more than 1.2 m;
  - (b) a temporary scaffold or work platform from which it is possible for materials to fall more than 3 m; and
  - (c) a pit for a flywheel or pulley.

- (3) Subsection (2) does not apply to a loading or unloading area if the **employer** has taken other precautions to ensure that materials will not fall from the floor or other horizontal surface.
- (4) If a toeboard is **required** by these regulations, an **employer shall** ensure that the toeboard extends from the floor or other horizontal surface to a height of not less than:
  - (a) 125 mm from the floor or surface; or
  - (b) 100 mm from the floor or surface, in the case of a toeboard that was installed before the day these regulations come into force. **Section 129 (1) to (4).**

## **Openings**

- (1) An **employer shall** ensure that an opening or hole in a floor, roof or other work surface into which a worker could step or fall is:
  - (a) covered with a securely installed covering that is capable of supporting a distributed load of 360 kg/m<sup>2</sup> and is provided with a warning sign or permanent marking clearly indicating the nature of the hazard; or
  - (b) provided with a guardrail and a toeboard as defined in subsection 129(1).
- (2) If the covering or guardrail and toeboard referred to in subsection (1) or a part of the guardrail or toeboard is removed, an **employer shall** immediately provide an effective alternative means of protection. **Section 130 (1)(2)**.

Further details on the Occupational Health and Safety Regulations can be found at <a href="Canlii.org">Canlii.org</a>.

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Occupational Health and Safety Regulations, Sections 128, 129, and 130. These sections establish clear safety requirements to prevent falls and other injuries resulting from exposure to unguarded or inadequately protected openings in walking and working surfaces.

#### **Guardrails**

- (1) Subject to subsections (2) to (4), if the installation of a guardrail is **required** by these regulations, an **employer shall** ensure that the guardrail:
  - (a) has a horizontal top member between 920 mm and 1070 mm above the working surface;
  - (b) has a horizontal intermediate member that is spaced midway between the horizontal top member and the working surface;
  - (c) is supported for the entire length of the guardrail by vertical members that are, if reasonably possible, not less than 2.4 m apart;
  - (d) is capable of supporting a worker who could fall against the guardrail; and
  - (e) is constructed of construction grade lumber not less than 38 mm by 89 mm, or material of equivalent strength.
- (2) A horizontal intermediate member is not **required** in the case of a temporary guardrail that is manufactured with a substantial barrier that completely fills the area enclosed by the horizontal top member, and horizontal bottom member and vertical members.
- (3) A wire rope guardrail may be used at the external perimeter of a building under construction.
- (4) If a wire rope guardrail is used under subsection (3), an **employer shall** ensure that:

- (a) the guardrail consists of a horizontal top member and a horizontal intermediate member made of wire rope not less than 9.5 mm in diameter, with vertical separators not less than 50 mm wide that are spaced at intervals that are not less than 2.4 m apart;
- (b) the horizontal top member and horizontal intermediate member are positioned above the working surface in accordance with paragraphs (1)(a) and (b);
- (c) the guardrail is kept taut by means of a turnbuckle or other appropriate device; and
- (d) the guardrail is arranged so that a worker coming into contact with the ropes cannot fall through the ropes.
- (4.1) In cases where the Building Code Act applies to a guardrail, the guardrail **must** be constructed in accordance with the requirements of the Code, as defined in that Act, rather than in accordance with any different requirements under subsection (1) to (4).
- (5) An **employer shall** ensure that a worker does not hang equipment on a guardrail. **Section 128 (1) to (5).**

#### **Toeboards**

- (1) In this section, "toeboard" means a low vertical guard that is:
  - (a) located at the outer edge of a platform, scaffold, floor, stair, walkway, pit or other height; and
  - (b) designed to prevent materials or equipment from falling over the edge.
- (2) An employer shall provide toeboards at the edge of:
  - (a) a permanent floor, platform, mezzanine, walkway, ramp, runway or other surface from which it is possible for

materials to fall more than 1.2 m;

- (b) a temporary scaffold or work platform from which it is possible for materials to fall more than 3 m; and
- (c) a pit for a flywheel or pulley.
- (3) Subsection (2) does not apply to a loading or unloading area if the **employer** has taken other precautions to ensure that materials will not fall from the floor or other horizontal surface.
- (4) If a toeboard is **required** by these regulations, an **employer shall** ensure that the toeboard extends from the floor or other horizontal surface to a height of not less than:
  - (a) 125 mm from the floor or surface; or
  - (b) 100 mm from the floor or surface, in the case of a toeboard that was installed before the day these regulations come into force. **Section 129 (1) to (4).**

# **Openings**

- (1) An **employer shall** ensure that an opening or hole in a floor, roof or other work surface into which a worker could step or fall is:
  - (a) covered with a securely installed covering that is capable of supporting a distributed load of 360 kg/m<sup>2</sup> and is provided with a warning sign or permanent marking clearly indicating the nature of the hazard; or
  - (b) provided with a guardrail and a toeboard as defined in subsection 129(1).
- (2) If the covering or guardrail and toeboard referred to in subsection (1) or a part of the guardrail or toeboard is removed, an **employer shall** immediately provide an effective alternative means of protection. **Section 130 (1)(2)**.

Further details on the Occupational Health and Safety Regulations can be found at <a href="Canlii.org">Canlii.org</a>.

# **ONTARIO**

In Ontario, **floor and wall openings** on construction sites are regulated under <u>O. Reg. 213/91: Construction Projects</u> — **Part II: General Construction, Sections 26 and 26.3**. These sections are part of the province's broader fall protection framework, designed to prevent injuries resulting from unguarded openings and elevated work surfaces.

Sections 26.1 to 26.9 apply where a worker may be exposed to any of the following hazards:

- 1. Falling more than 3 metres.
- 2. Falling more than 1.2 metres, if the work area is used as a path for a wheelbarrow or similar equipment.
- 3. Falling into operating machinery.
- 4. Falling into water or another liquid.
- 5. Falling into or onto a hazardous substance or object.
- Falling throughan opening on a work surface. Section
   26.
- (1) Despite paragraph 1 of section 26, a guardrail system that meets the requirements of this section **shall** be used if a worker has access to the perimeter or an open side of any of the following work surfaces and may be exposed to a fall of 2.4 metres or more:
  - 1. A floor, including the floor of a mezzanine or balcony.
  - 2. The surface of a bridge.
  - 3. A roof while formwork is in place.
  - 4. A scaffold platform or other work platform, runway or ramp.
- (2) One of the following precautions **shall** be used to prevent a worker from falling through an opening on a work surface:

- 1. A guardrail system that meets the requirements of this section.
- 2. A protective covering that,
- 3. completely covers the opening,
- 4. is securely fastened,
- iii. is adequately identified as covering an opening,
  - 1. is made from material adequate to support all loads to which the covering may be subjected, and
  - 2. is capable of supporting a live load of at least 2.4 kilonewtons per square metre without exceeding the allowable unit stresses for the material used.
- (3) The guardrail system or protective covering **required** under subsection (1) or (2) may be removed temporarily to perform work in or around the opening if a worker is adequately protected and signs are posted in accordance with subsections 44 (1) and (2).
- (4) The following are the specifications for a guardrail system:
  - 1. It **shall** have a top rail, an intermediate rail and a toe board.
  - 2. The intermediate rail may be replaced by material that can withstand a point load of 450 newtons applied in a lateral or vertical downward direction.
  - 3. Subject to subsection 116 (8), the top of the guardrail system **shall** be located at least 0.9 metres but not more than 1.1 metres above the surface on which the system is installed.
  - 4. The intermediate rail **shall** be located midway between the top rail and the toe board.
- 4.1 The toe board **shall** extend from the surface to which the guardrail system is attached to a height of at least 89 millimetres.

- 5. If the guardrail system is located at the perimeter of a work surface, the distance between the edge of the surface and the guardrail system **shall** not be greater than 300 millimetres.
- (5) A guardrail system **shall** be capable of resisting anywhere along the length of the system the following loads when applied separately, without exceeding the allowable unit stress for each material used:
  - 1. A point load of 675 newtons applied in a lateral direction to the top rail.
  - 2. A point load of 450 newtons applied in a vertical downward direction to the top rail.
  - 3. A point load of 450 newtons applied in a lateral or vertical downward direction to the intermediate rail, or midway between the top rail and the toe board.
  - 4. A point load of 225 newtons applied in a lateral direction to the toe board.
- (6) The distance between any two adjacent posts of the guardrail system may be greater than 2.4 metres only if the system is capable of resisting the loads specified in subsection (5) increased in proportion to the greater distance between the posts.
- (7) The following additional requirements apply to a guardrail system that is made of wood:
  - 1. The wood **shall** be spruce, pine or fir (S-P-F) timber of construction grade quality or better and **shall** not have any visible defect affecting its load-carrying capacity.
  - 2. The wood **shall** be free of sharp objects such as splinters and protruding nails.
  - 3. The system **shall** have posts that are at least 38 millimetres by 89 millimetres, are securely fastened to the surface and are spaced at intervals of not more than 2.4 metres.

- 4. The top rail and the intermediate rail **shall** each be at least 38 millimetres by 89 millimetres.
- (7.1) If a guardrail system that is made of wood is constructed and installed so that it is capable of resisting all loads that it may be subjected to by a worker, the following do not apply:
  - 1. The requirement in paragraph 2 of subsection (4) that the replacement material can withstand a point load of 450 newtons.
  - 2. Subsections (5) and (6).
- (8) The following additional requirements apply to a guardrail system that is made of wire rope:
  - The top rail and intermediate rail shall be made of wire rope that is at least 10 millimetres in diameter, and the rope shall be kept taut by a turnbuckle or other device.
  - 2. The outward deflection of the top rail and intermediate rail resulting from the loads specified in subsection (5) **shall** not extend beyond the edge of a work surface.
  - 3. The system **shall** have vertical separators at intervals of not more than 2.4 metres and horizontal supports at intervals of not more than 9 metres. **Section 26.3 (1) to (8).**

Further details on the O. Reg. 213/91: Construction Projects can be found at <a href="Ontario.ca">Ontario.ca</a>.

# PRINCE EDWARD ISLAND

In Prince Edward Island, floor and wall openings are addressed under the Occupational Health and Safety Act Fall Protection Regulations, Sections 4(1) and 9. These sections are part of the province's broader effort to prevent fall-related injuries in workplaces where workers may be exposed to unguarded openings or elevated surfaces.

#### PART 4 - GUARDRAILS

## **Construction and Installation Requirements**

- (1) A guardrail that is constructed or installed at a work area, in accordance with subsection 2(1), **shall:** 
  - (a) extend around
  - (i) any uncovered opening in a floor or other surface, and
  - (ii) the perimeter or other open side of a floor, mezzanine, balcony or other surface, at the work area from which a worker may be exposed to the hazards of a fall described in clauses 2(1)(a) to (c);
  - (b) have posts that
    - (i) are spaced at intervals of not more than 2.4 m; and
    - (ii) are secured against movement by the attachment of the posts to the structure under construction or that is otherwise being worked on, or by another means that provides an equivalent level of safety;
  - (c) have a top railing that is between 0.91 and 1.06 m above the surface of the protected working area and that is securely fastened to posts secured in compliance with subclause (b)(ii);
  - (d) have a toeboard, securely attached to the posts and the structure to which the posts are secured, extending from the base of the posts to a height of 102 mm; and
  - (e) have an intermediate railing on the inner side of the posts midway between the top railing and the toeboard. Section 4 (1).

# PART 7 - TEMPORARY FLOORINGRequirements

Where temporary flooring is constructed or installed at a work

area, in accordance with subsection 2(1), it shall:

- (a) be constructed or installed at each floor level of the work area where work is in progress;
- (b) extend over the whole work area except for any openings necessary for the carrying out of work;
- (c) be able to withstand four times the maximum load likely to be imposed on it; and
- (d) be securely fastened to and supported on members that are able to withstand four times the maximum load likely to be imposed on them. **Section 9.**

Further details on the Occupational Health and Safety Act Fall Protection Regulations can be found at <a href="https://example.com/PrinceEdwardIsland.ca">PrinceEdwardIsland.ca</a>.

# **QUÉBEC**

In Québec, additional requirements related to **floor and wall openings** and general fall prevention are outlined in the **Regulation Respecting Occupational Health and Safety**, specifically in **Sections 6, 10, 12, 14, and 15**. These sections provide foundational safety principles that apply to workplace openings, elevated surfaces, and access points where there is a risk of falling or injury.

Access routes and passageways: Access routes providing access to buildings and reserved pedestrian passages shall be:

- (1) kept in good condition and free from any obstructions;
- (2) maintained to keep the surface from becoming slippery;
- (3) protected from falling objects or materials;
- (4) properly lit **Section** <u>6.</u>

Vertical openings: Any opening made through a wall that

presents a falling hazard for an object that may cause injuries **shall** be protected with a net or a protective screen. **Section 10**.

**Guardrails**: Any guardrail incorporated in a building, with the exception of a guardrail that is part of any equipment, **shall** comply with the National Building Code as applied at the time of its installation.

Temporary guardrails **shall** be so designed, constructed, and installed as to withstand the following minimum loads:

- (1) a 900 N horizontal single point load applied at any location on the top rail;
- (2) a 450 N load applied vertically at the top rail.

In addition, such guardrails shall be provided with:

- (1) a top rail located between 1 m and 1,2 m from the floor;
- (2) at least an intermediate rail fixed at midway between the top rail and the floor. The intermediate rail may be replaced by balusters or panels;
- (3) a toeboard at floor level at least 90 mm high.

At locations where there is a concentration of workers and at other locations where the intermediary guardrails may be subject to extraordinary pressures, they **shall** be reinforced accordingly. **Section** 12. (1) to (3).

Floor: Any floors shall be:

- (1) kept in good order, clean and free from any obstruction;
- (2) provided with walkways that comply with section 15;
- (3) provided with drains, if **required** for maintenance and the draining off of liquids;

(4) free from any opening capable of causing an accident, unless they are protected with a guardrail or a cover capable of bearing a load of at least  $2.4 \text{ kN/m}^2$ .

Where a motorized vehicle is likely to travel on a cover, the cover **must** have a resistance at least equivalent to 3 times the maximum load that may be imposed by the vehicle. **Section** 14. (1) to (4).

Walkways: Walkways inside a building shall:

- (1) be kept in good order and free from any obstruction;
- (2) be maintained to keep the surface from becoming slippery, even through wear or humidity;
- (3) be wide enough to allow the safe handling of materials and be at least 600 mm wide;
- (4) be at least 1,100 mm wide if they serve as direct access to an exit;
- (5) be clearly marked out by lines traced on the floor or be bordered by facilities, equipment, walls or material or merchandise depots, to permit the safe passage of persons;
- (6) have a free space of at least 2 m above the floor unless the danger is made known by means of a visible sign;
- (7) be free from any opening capable of causing an accident, unless they are protected with a guardrail or a cover capable of withstanding a load of at least  $2.4 \text{ kN/m}^2$ .

Where a motorized vehicle is likely to travel on a cover, the cover **must** have a resistance at least equivalent to 3 times the maximum load that may be imposed by the vehicle. **Section** 15. (1) to (7).

Further details on the Regulation Respecting Occupational Health and Safety can be found at <a href="Legisquebec.gouv.QC.ca">Legisquebec.gouv.QC.ca</a>.

## **SASKATCHEWAN**

In Saskatchewan, floor and wall openings are regulated under the Occupational Health and Safety Regulations — Part 9: Safeguards, Storage, Warning Signs and Signals, Sections 9-11 to 9-13. These provisions outline clear responsibilities for employers to safeguard workers from fall hazards related to unprotected or inadequately marked openings in floors, walls, or platforms.

#### **Guardrails**

- (1) Subject to subsections (2) to (4), if the installation of a guardrail is **required** by these regulations, an **employer**, contractor or owner **shall** ensure that the guardrail:
  - (a) has a horizontal top member that is not less than 920 millimetres and not more than 1070 millimetres above the working surface;
  - (b) has a horizontal intermediate member that is spaced midway between the horizontal top member and the working surface;
  - (c) is supported for the entire length of the guardrail by vertical members that are:
    - (i) not more than 3 metres apart, in the case of a guardrail installed before the coming into force of this section; and
    - (ii) if reasonably practicable, not more than 2.4 metres apart, in the case of a guardrail installed on or after the coming into force of this section;
  - (d) is capable of supporting a worker who may fall against the guardrail; and
  - (e) is constructed of 38 by 89 millimetre construction grade lumber or other materials that are of equal or

greater strength.

- (2) Clause (1) (a) does not apply to a guardrail that:
  - (a) was installed on or before October 30, 1988; and
  - (b) is not less than 900 millimetres nor more than 1 metre above the working surface.
- (3) A horizontal intermediate member is not **required** in the case of a temporary guardrail that is manufactured with a substantial barrier completely filling the area enclosed by the horizontal top member, a horizontal bottom member and the vertical members.
- (4) A wire rope guardrail may be used at the external perimeter of a building under construction.
- (5) If a wire rope guardrail is used pursuant to subsection
  (4), an employer, contractor or owner shall ensure that:
  - (a) the guardrail consists of a horizontal top member and a horizontal intermediate member made of wire rope that is not less than 9.5 millimetres in diameter, with vertical separators not less than 50 millimetres wide that are spaced at intervals not exceeding 2.4 metres;
  - (b) the horizontal top member and horizontal intermediate member are positioned above the working surface in accordance with clauses (1) (a) and (b);
  - (c) the guardrail is kept taut by means of a turnbuckle or other appropriate device; and
  - (d) the guardrail is arranged so that a worker coming into contact with the ropes cannot fall through the ropes.
- (6) An **employer**, contractor or owner **shall** ensure that no worker hangs equipment on a guardrail. **Section 911 (1) to (6).**

#### **Toeboards**

- (1) An **employer**, contractor or owner **shall** provide toeboards at the edge of:
  - (a) a permanent floor, platform, mezzanine, walkway, ramp, runway or other surface from which it is possible for materials to fall more than 1.2 metres;
  - (b) a temporary scaffold or work platform from which it is possible for materials to fall more than 3 metres; and
  - (c) a pit for a flywheel or pulley.
- (2) Subsection (1) does not apply to a loading or unloading area if the **employer**, contractor or owner has taken other precautions to ensure that materials will not fall from the floor or other horizontal surface.
- (3) If a toeboard is **required** by these regulations, an **employer**, contractor or owner **shall** ensure that the toeboard extends from the floor or other horizontal surface to a height of not less than:
  - (a) 125 millimetres from the floor or surface; or
  - (b) 100 millimetres from the floor or surface, in the case of a toeboard that was installed before March 13, 1986. **Section 912 (1) to (3).**

#### For more information:

• Openings in floors, roofs, etc. Sections 9.13.

Further details on the Occupational Health and Safety Regulations can be found at <u>Saskatchewan.ca</u>.

# **YUKON**

In Yukon, the safety of floor and wall openings is addressed

under the <u>Occupational Health and Safety Regulations</u> — Part 1: General, Sections 1.60 to 1.64, 1.66, and 1.67. These sections establish minimum standards for guarding and protecting workers from fall hazards associated with unprotected edges, holes, and openings in walking and working surfaces.

#### **GUARDRAILS**

## Where Required

Subject to subsection (f), areas accessible to a worker **shall** have guards or guardrails installed:

- (a) if a raised floor, open-sided floor, mezzanine, gallery, balcony, work platform, surface of a bridge, a concrete roof or scaffold has a height exceeding 2.4 m (8 ft.),
- (b) if a walkway, runway, ramp or platform other than a scaffold is used as a path and is more than 1.2 m (4 ft.) in height,
- (c) on any walkway over or adjacent to any hazardous substance, or adjacent to or over machinery or a work area,
- (d) around the perimeter of any open container or containment area such as an open vat, bin, tank or pit that is 1.2 m (4 ft.) or more in depth, and with sides that do not extend at least as high as **required** for a guardrail above the adjacent grade or work surface,
- (e) if a stairway ends in direct proximity to dangerous traffic or other hazard, and

# Loading Docks, Stages

(f) except where other effective measures are taken to ensure that workers are protected from falls from the front edge of a loading dock or the edge of a performance stage. **Section 1.60.** 

# **Inspections**

(1) A competent person **shall** inspect guardrails on a regular basis and if they do not meet the specification requirements, the guardrails **shall** be repaired immediately to meet those requirements or they **shall** be replaced.

#### Gates

(2) An opening for passage through a guardrail **shall** be equipped with a barrier or gate that may be removed temporarily to permit passage and then replaced immediately.

#### Removal

- (3) Where a guardrail is removed in order for work to be done,
  - (a) adequate precautions **shall** be taken to ensure the safety of the workers, and
  - (b) the area **shall** not be left unguarded.
- (4) A worker who removes a guardrail, in order to do a particular task, **shall** replace the guardrail before leaving the area. **Section 1.61 (1) to (4).**

#### **Elevated workers**

Where a worker working on stilts or a work platform is elevated above the floor, resulting in the reduction of the effective height of guardrails, walls or barricades to less than the **required** height in 1.63(2), additional guardrails or a personal fall protection system **shall** be provided and used. **Section 1.62.** 

# **Specifications for Guards and Guardrails**

- (1) Guardrails **shall** be designed and installed to withstand:
  - (a) a load of  $900\ N$  ( $200\ lbs.$ ) applied horizontally at any point along the rail, and

(b) a vertical load, downward of 1.5 kN per m (100 lbs. per ft.) along the top rail, but the horizontal and vertical loads need not be considered to act simultaneously.

## Height and Material Type

- (2) A guardrail shall be:
  - (a) not made of fibre rope,
  - (b) not less than 0.91 m (36 in.) in height or more than 1.07 m (42 in.) above the surface on which it is installed,
  - (c) made of wood not less than 0.038~m by 0.089~m (1-1/2 in. by 3-1/2 in.), securely supported on posts of the same size, and spaced at intervals not more than 2.4~m (8 ft.), or
  - (d) made of metal pipe with a top rail and vertical supporting posts that are at least 0.04~m (1-1/2 in.) in diameter and intermediate rails that are 0.025~m (1 in.) in diameter, or
  - (e) made of angle iron with a top rail and vertical supporting posts that are at least 0.04 m  $\times$  0.04 m  $\times$  0.005 m (1-1/2 in.  $\times$  1-1/2 in.  $\times$  3/16 in.), and intermediate rails that are at least 0.032 m  $\times$  0.032 m  $\times$  0.003 m (1-1/4 in.  $\times$  1-1/4 in.  $\times$  1/8 in.), or
  - (f) made of wire rope not less than 0.01 m (3/8 in.) in diameter, on vertical separators not less than 0.05 m (2 in.) wide, spaced at intervals of less than 2.4 m (8 ft.), and attached to a welded fastening on the vertical supporting posts with metal clips to prevent unnecessary sagging and easily distinguishable from the background, or
  - (g) made from other materials, of at least equivalent strength and protection,
  - (h) free of sharp edges, plinters and protruding nails, and

(i) kept taut by means of turnbuckles where wire rope is used. **Section 1.63 (1)(2).** 

## For more information:

- Sections 1.64 (1) to (4).
- Sections 1.66, 1.67.

Further details on the Occupational Health and Safety Regulations can be found at <a href="https://www.wcb.yk.ca">wcb.yk.ca</a>.