

**A GUIDE TO:
DECKS
BROUGHT TO YOU BY:
CITY OF PORT COLBORNE
BUILDING DIVISION**

Disclaimer

This information package is provided by the City of Port Colborne Building Division for information purposes only. It provides various requirements from the applicable by-laws and Ontario Building Code. In any case where there exists a discrepancy between the information in this document and the City of Port Colborne By-law or the Ontario Building Code, the requirements established by the By-law, or the Code shall prevail. This information package is intended to assist residents in making educated decisions when planning construction. The individual property owner/applicant is solely responsible to ensure that all required By-laws, codes, and regulations are met, and all projects are maintained to the requirements of the Municipality through its By-laws.

1.0 Permits

1.1 When a Building Permit is required

A building permit to construct a deck is required for every deck that has:

- A height which exceeds 600 mm (23 5/8 in.) above finished ground level adjacent to the deck, or
- A building area that exceeds 10 square metres (108 square feet), or
- A covered deck attached to a building.

When a building permit to construct a deck is required, the permit must be issued and in the possession of the property owner prior to the start of any construction activity. If a building permit is not required, the property owner is still responsible to ensure that no other By-laws or applicable laws are contravened before commencing any work. Contact the Building Division should you have questions about the applicable laws and regulations.

1.2 Obtaining a Building Permit to construct a deck

A permit application is available from the Building Division office at City Hall or on the City of Port Colborne website. The review of your submitted package will not begin until all the required information is submitted and the application is considered complete. A Building Official will then review the submitted application package for compliance with all applicable building codes, By-laws, and other regulations. This process may take up to two weeks from the submission of the permit application. Once the permit is approved and recommended for issuance, the applicant is required to pay the outstanding building permit fee and pickup the building permit before commencing any work.

A complete application shall include:

- A complete application form; and
- All required drawings and plans.
- Minimum application fee

1.3 Required Drawings and Plans

An application for a building permit to construct a deck shall be accompanied by specific drawings. A complete set of drawings will consist of the following:

- A site plan drawing must show the entire property, the location of all buildings and the proposed location of the deck. Dimensions shall be given from the proposed deck to all property lines and buildings on the site.
- The structural floor plan drawing(s) must include all sizes, spans and spacing of structural members and components. These components may consist of, but are not limited to, all columns, posts, beams, joists, deck boards, guards, pickets and required fasteners.
- The section/detail drawing(s) must illustrate the proposed construction of the deck, stairs as well as the required guards or handrails. Sizing and spacing of all proposed members and the required fasteners are to be provided on the section/detailed drawing(s). Additional drawings may be requested by the Building Official if the information submitted is insufficient to provide the details requested above.

2.0 Owner Responsibility

The owner of the property has several responsibilities in any building project. These responsibilities begin before the commencement of construction and continue after the construction of the deck is complete.

2.1 Prior to Construction

It is the responsibility of the property owner to:

- Obtain a building permit;
- Ensure that the proposed deck is not located on any easement, drainage swale, septic system or right-of-way;
- Obtain all applicable permits for any electrical works from the appropriate authority; and
- Call Ontario One Call for locates of any services on the property

Once building permit is issued, the property owner is also responsible to:

- Ensure the deck is constructed as per the approved drawings. Any revisions to the approved drawings shall be submitted to the Building Division for approval prior to proceeding with the revisions. Additional fees may be required for revisions to the building permit.

- Ensure that sufficient provisions have been taken to secure any door leading to the exterior where stairs may have been removed for the construction of the deck as an unsafe condition may be present;
- Ensure that no person shall occupy the deck for purposes other than construction activity until final inspection of the deck has been conducted and approved by the Chief Building Official;
- Schedule all required inspections upon completion of each stage of the construction process as outlined in the building permit package
- Ensure all electrical installations are installed in accordance with all applicable electrical codes and standards, and that necessary electrical inspections are conducted.

2.3 After Construction

It is the responsibility of the property owner to:

- Maintain all deck components, stairs as well as guards and/or handrails in accordance with all applicable By-laws to the minimum standards which have been approved at the time of the final inspection.

3.0 Required Inspections

3.1 Footing and Excavating

The footing and excavation inspection is required prior to the pouring of any concrete and upon the completion of the foundation excavation. The Ontario Building Code requires that the foundation be at a minimum depth of 1.2 metres (3.94 feet) from grade level. It should be noted that a full foundation is not always necessary.

3.2 Framing Inspection

The framing inspection is required prior to the installation of the deck boards (walking surface). The Building Official must be able to inspect all structural elements such as connections to the dwelling (where applicable), connections to the foundation elements, framing members, posts, columns, and beams. Where these items can be inspected from below, the deck boards are permitted to be installed prior to inspection.

3.3 Final/Occupancy

The final inspection is required upon completion of the deck construction and prior to occupancy of the deck. The project is considered complete when all framing, walking surfaces, stairs, handrails, and guards are installed as indicated on the approved drawings and plans in accordance with all applicable codes and by-laws. The Building Official will issue a passing inspection report upon the completion of a successful final inspection.

4.0 Enforcement

4.1 Inspection for Compliance

The Building Official may inspect at any time during construction to determine compliance with any applicable codes and regulations. Where non-compliance exists, removal of deficient items may be ordered, or occupancy denied until the items are rectified to the satisfaction of the Building Official.

4.2 Penalty

Every person who contravenes the provisions of the Ontario Building Code is guilty of an offence and upon conviction is liable to fines as provided for in the Provincial Offences Act, R.S.O. 1992, C.23 S.36(1)

5.0 Deck Construction

5.1 Applicable Codes

In addition to the other regulations discussed in this package, the construction of decks and exterior stairs must satisfy the requirements of the Ontario Building Code. The following sections of this package have been included to:

- Offer information from the Ontario Building Code (OBC)
- Provide illustrations of how to construct a deck and/or exterior stair in conformance with the requirements of the OBC.

This information is offered for reference as it is understood that many homeowners do not have access to the codes in question. The information is intended to assist with providing correct information in applications and are not the only way to satisfy the requirements of the OBC. For more complicated designs and construction, the

assistance of a professional designer can be sought to ensure compliance with the required regulations.

5.2 Building Materials

Lumber grades shall meet the following:

- The minimum grade of softwood dimensional lumber for posts, rails and joists shall be Northern Species, No. 2;
- The minimum grade of softwood dimensional lumber for pickets shall be Northern Species, No. 2 Picket Grade; and
- Wood pickets shall be free of loose knots.

Lumber for guard and floor systems must be resistant to decay; it shall be:

- A species resistant to decay;
- Preservative treated to prevent decay; or
- Pressure treated.

All cut ends of preservative or pressure treated lumber shall be treated to prevent decay.

Connectors used in deck construction shall be:

- Nails, screws, lag bolts and machine bolts shall not cause splitting of wood elements;
- Fasteners shall be resistant to corrosion; and
- All nails shall be common spiral

Minimum Size of Load Bearing Elements:

Guard Element	Post	Top Rail	Bottom Rail	Picket/ Baluster
Minimum size, mm (in.)	89 mm x 89mm (4" x 4" nominal)	38 mm x 89 mm (2" x 4" nominal)	38 mm x 89 mm (2" x 4" nominal)	32 mm x 32 mm (1 9/32" x 1 9/32")

Minimum Size of Floor Elements:

Floor Element	Minimum Size
Dimensional lumber decking	25 mm x 140 mm (5/4" x 6" nominal) When each plank is fastened with 2 – 63 mm (2 1/2") nails
	38 mm x 89 mm (2" x 4" nominal) When each plank is fastened with 2 – 76 mm (3") nails
Dimensional lumber joists	38 mm x 184 mm (2" x 8" nominal)

5.3 Guard Construction

A guard as defined by the OBC is a protective barrier at the open sides of a deck, stair, landing, balcony, or other such structures to prevent accidental falls from one level to another.

The OBC requires that a guard be installed on walking surfaces on each side that is not protected by a wall where:

- There is a difference in elevation of more than 600 mm (23 5/8") between the walking surface and the adjacent surface; or
- The adjacent surface within 1.2 m (3' – 11") from the walking surface has a slope of more than 1 in 2.

The OBC requires that an exterior guard shall be:

- Not less than 900mm (2' 11") high where the walking surface served by the guard is not more than 1.8 m (5' 11") above finished ground level;
- Not less than 900 mm (2' – 11") high for guards installed on flights of steps, where the height of a guard on a flight of steps is measured vertically from a line drawn through the leading edge of the treads served by the guard; and
- Not less than 1070 mm (3' – 6") in all other situations.

The OBC also requires that guards be constructed so that:

- Openings through any required guard shall be of a size that will prevent the passage of a spherical object having a diameter of more than 100 mm (4"); and
- No member, attachment or opening will facilitate climbing.

5.4 Handrail Construction

A handrail simply defined is a component of a stair and is used to assist the user should they require something to hold on to for additional stability while using the stair. It can also be a component of a ramp to provide a graspable member for support while using the ramp.

The OBC requires that a handrail be installed on:

- Every exterior stair having more than 3 risers; and
- Every ramp rising more than 400 mm (15 3/4")

The OBC requires that every handrail shall be mounted at a height:

- Not less than 800 mm (2' – 7"); and
- Not more than 965 mm (3' – 2").

5.5 Structural Requirements and Element Sizing

Any deck must support the weight of its users, furniture and other items used for the enjoyment of the deck as well as the snow load in the winter months. As such the deck must comply with the same structural requirements as a floor system within your home. Members must be sized appropriately to ensure the structural stability of the deck. Information has been provided below to assist in the process of properly sizing joists, beams, columns, and piers. The size of each member is critical in determining compliance with the OBC. For this reason, it is to be included with any drawings accompanying your Building Permit Application for your deck.

Concrete Pier Sizing

Joist Spacing (on center)	Joist Span			
	1.8 m (5' – 11")	2.4 m (7' – 10")	3.0 m (9' – 10")	3.6 m (1' – 10")
300 mm (12")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 184 (2" x 8")
400 mm (16")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 235 (2"x10")
600 mm (24")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 184 (2" x 8")	38 x 235 (2"x10")

Beam Sizing

Joist Spacing	Pier Spacing			
	1.2 m (3' – 11")	1.8 m (5' – 11")	2.4 m (7' – 10")	3.0 m (9' – 10")
300 mm (12")	2 - 38 x 184 (2 – 2" x 8")	2 - 38 x 184 (2 – 2" x 8")	2 - 38 x 235 (2 – 2" x 10")	2 - 38 x 286 (2 – 2" x 12")
400 mm (16")	2 - 38 x 184 (2 – 2" x 8")	2 - 38 x 184 (2 – 2" x 8")	2 - 38 x 235 (2 – 2" x 10")	2 - 38 x 286 (2 – 2" x 12")

5.6 Covered Deck Element Sizing

When the structural elements are intended to support the structural loading from a roof, the sizing requirements differ from those for an uncovered deck. The information below is to be used for sizing structural deck elements which support a roof.

The OBC requires that wood columns shall:

- Not be less than 184 mm (7 1/4") diameter for round columns and 140 mm x 140 mm (5 1/2" x 5 1/2") for rectangular columns.

The OBC requires that solid concrete columns shall:

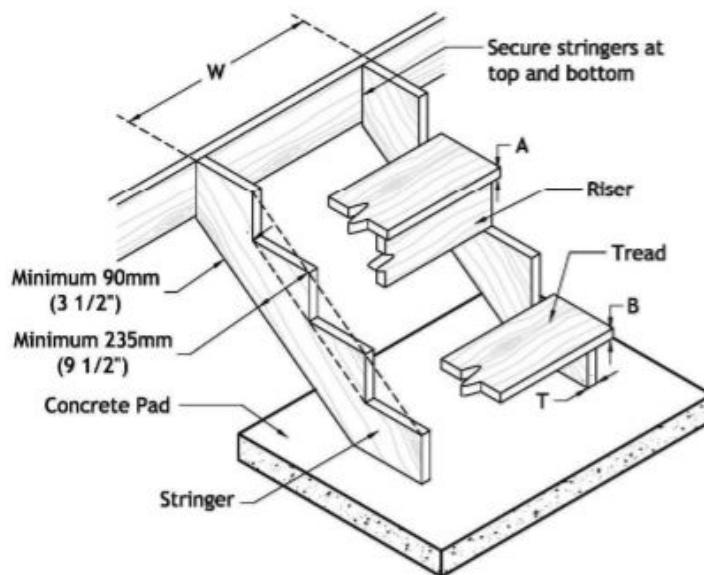
- Not be less than 230 mm (9") diameter for round columns and 200 mm x 200 mm (7 7/8" x 7 7/8") for rectangular columns.

When the columns and foundation support structural loading from a roof, the concrete columns require a footing beneath to distribute the loads properly. This means that a sonotube is insufficient on its own. A footing is required with a minimum area of 0.4 square metres (4.3 square feet) as per the OBC. The thickness of the footing is dependent on the size of the footing and the size of the column it supports. The table below can assist in sizing the required footing.

Footing Size	Pier Diameter			
	8" diameter	10" diameter	12" diameter	14" diameter
Minimum dimensions	635 mm x 635 mm (2' – 1" x 2' – 1")	635 mm x 635 mm (2' – 1" x 2' – 1")	635 mm x 635 mm (2' – 1" x 2' – 1")	635 mm x 635 mm (2' – 1" x 2' – 1")
Min. footing thickness	216 mm (8 1/2")	191mm (7 1/2")	165mm (6 1/2")	140 mm (5 1/2")

Reference Material

Wood Stair Construction



Tread Thickness

A = minimum 25mm [1"] when risers support front of tread

B = minimum 38mm [1 1/2"] when tread unsupported at front and distance between stringers is no greater than 750mm [30"] as per the Ontario Building Code Division B 9.8.9.5

Stringer Thickness

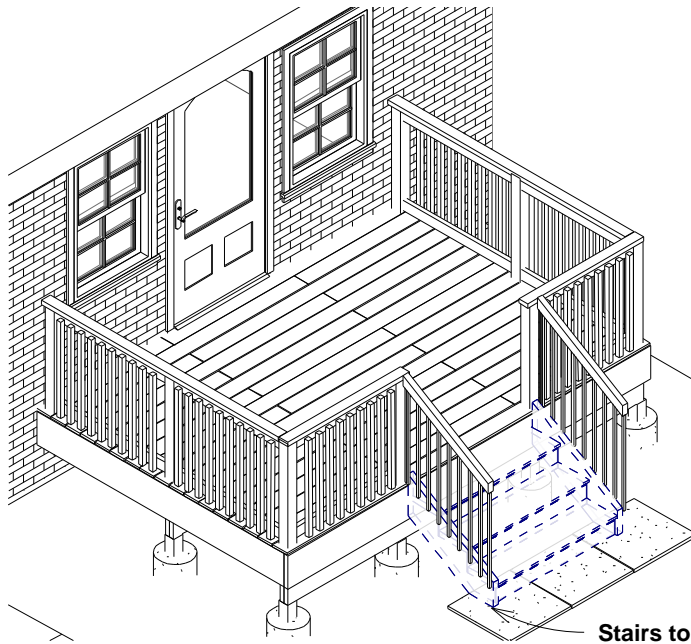
T = 25mm [1"] if supported along the length (i.e. secured to a wall) T = 38mm [1 1/2"] if unsupported along the length

Stair Width

W = maximum 900mm [2'-11"] in dwelling units

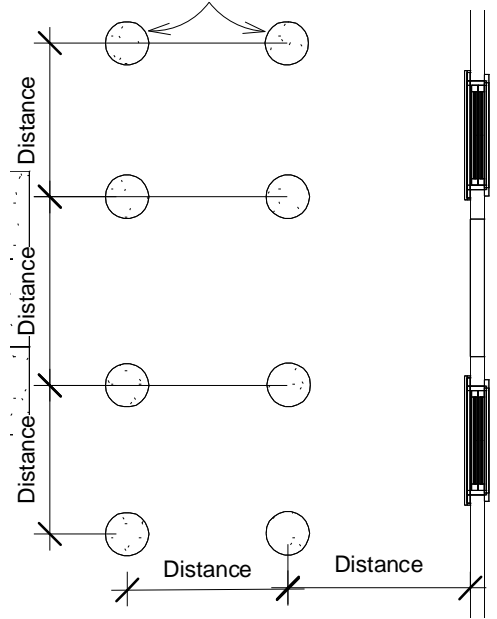
W = maximum 1.2m [3'-11"] in dwelling units when risers support the front of the treads unless stringers and treads are designed for wider spacing

W = maximum 600mm [2'-0"] in other than dwelling units Stair treads of plywood or O-2 grade OSB must have their face grain or direction of face orientation at right angles to the stringers as per the Ontario Building Code Division B 9.8.9.5 Exterior wood steps shall not be in direct contact with the ground unless treated to prevent decay (i.e. preservatives) as per the Ontario Building Code.

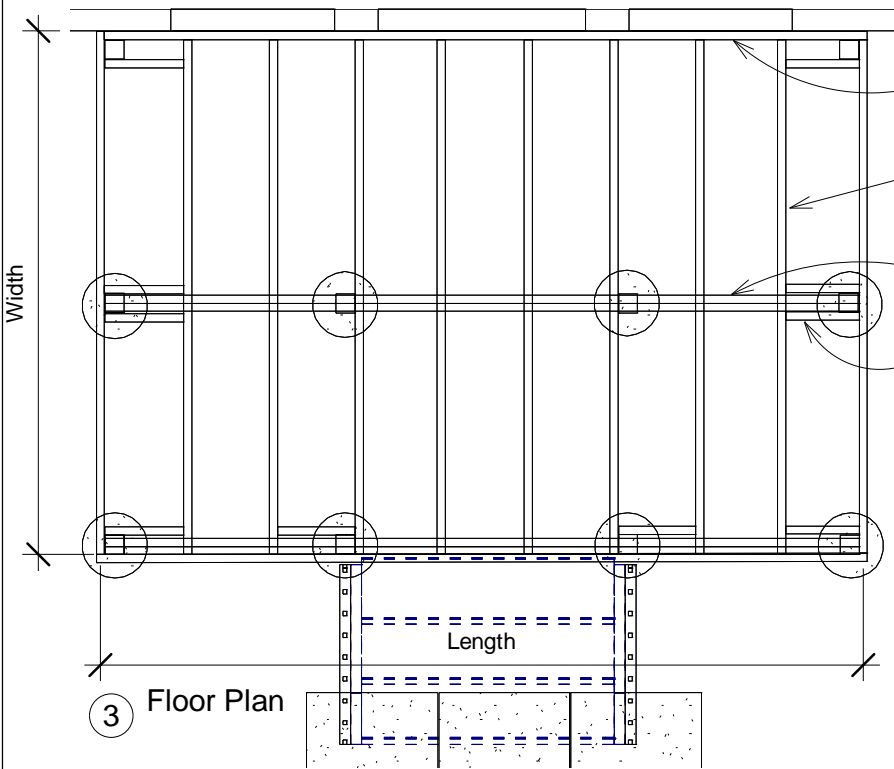


Stairs to rest on impermeable surface (i.e. patio stones or concrete)

Sono Tube: _____ " dia
 Footing: _____ " x _____ "



② Foundation Plan



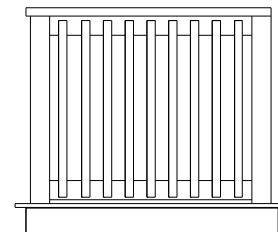
③ Floor Plan

Bolts: _____ " dia @ _____ " o/c
 Ledge board: 2 x _____

Joist Size and Spacing:
 _____ X _____ @ _____ " o/c

Beam: _____ ply, 2 x _____

Blocking for guards



NOTES FOR GUARDS

- Min 36" in height
- Max 4" gap between pickets
- Non- Climbable
- All guards to conform with OBC 9.8.8 and SB-7 or P.Eng Design
- Glass in guards shall conform to OBC 9.8.8.7

NOTES

- All structural members to be attached using nails or structural screws
- Label distance of deck from grade

Information Only



PORT COLBORNE

Deck Example

City of Port Colborne

Deck

www.portcolborne.ca