

# Deck Construction

## Project Guide



# DECK DEVELOPMENT

*Applies to construction of uncovered or covered decks on a one unit, two unit and multi-family dwellings.*

## The following items must be included in your application package:

### Site Plan

- Property lines
- Streets and alleys
- Outline of home and deck
- Dimensions of proposed deck
- Distance from proposed deck to all property lines
- Location and size of windows under deck, if required

Deck Detail Submission Form (Refer to page 2)

Deck Drawings (Required only for covered decks and non-simple decks)

*\*Required for all covered decks and decks outside tables below.*

- Plan view
- Elevation View

## Other requirements that may need to be included in your application package:

Engineered drawings (stamped drawings)

- All screw piles required to be designed by engineer

Structural commitment letter for field review

- Required for a structural design completed by an engineer

## Additional Resources

National Building Code references are provided throughout the document. Download a free electronic copy of the 2015 National Building Code of Canada [here](#).

Canadian Wood Council has developed a guide to help support designing exterior wood decks. Download a free electronic copy [here](#).

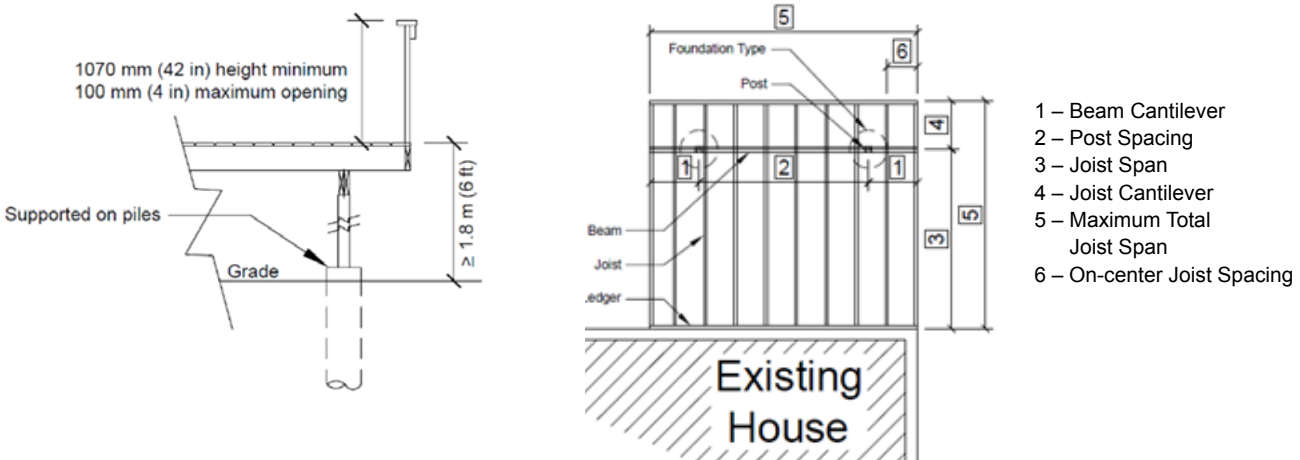


# SUBMISSION DETAILS FORM

Complete the form below and submit with your application.

Deck Information		Foundation	
Type of Deck:	Deck Dimensions:	Concrete block and pad	Screw piles
Uncovered	Length (m)	Concrete Piles:	Other
Covered	Width (m)	Depth (m)	
	Height (m)	Diameter (mm)	

1) For multi-level, multiple beam and/or irregular shape decks, or decks of unconventional material, provide construction drawings for review.  
 2) Decks > 1.8m (6ft) require a foundation to be designed by Engineer. 3) Screw piles must be designed by an Engineer.



## JOIST AND BEAM SPAN CHARTS

Joist span:	m (ft)	Cantilever:	m (ft)	Maximum Total joist span:	m(ft)
<i>(add your joist span + cantilever)</i>					

**INSTRUCTIONS:** Using the following charts, select size of lumber and spacing that will meet your desired span. Please use charts from one type of lumber (i.e. Joists and Beam charts for non-incised or Joists and Beam charts for incised lumber). Incised & Non-incised lumber definitions are found on page 7.

**What type of lumber are you using?**    **Non-incised**    **Incised**

### Non-Incised Pressure Treated Lumber, SPF grade 2

JOISTS Select joist size and joist spacing based on maximum total joist span of your project				
Joist Size	Maximum Total Joist Span, m (ft in)			Maximum Joist Cantilever
	On-centre Joist Spacing			
	300mm (12in)	400mm (16in)	600mm (24in)	
2" x 6"	3.0m (9ft-10in)	2.7m (9ft-1in)	2.4m (8in)	400mm (16in)
2" x 8"	4.0m (13ft-2in)	3.6m (12ft)	3.1m (10ft-2in)	
2" x 10"	4.9m (16ft)	4.6m (15ft-2in)	3.7m (12ft-5in)	600mm (24in)
2" x 12"	4.9m (16ft)	4.9m (16ft)	4.3m (14ft-4in)	

1) Optional cantilever selection must be on the same row as joist size selection  
 2) Where guards are required, joists and rim board shall be a minimum of 2" x 8"

**Submission Details Form continued on next page.**

# SUBMISSION DETAILS FORM

**BEAM** Select beam size and post spacing based on maximum total joist span

Beam Size	Maximum Total Joist Span, m (ft in) <i>(joist span + length of joist cantilever)</i>				Maximum Beam Cantilever
	Post spacing				
	up to 1.8m (6ft)	up to 2.4m (8ft)	up to 3.1m (10ft-2in)	up to 3.6m (11ft-10in)	
2-ply, 2" x 6"	4.3m (14ft)	2.1m (7ft)	Not permitted	Not permitted	300mm (12in)
2-ply, 2" x 8"	4.9m (16ft)	3.3m (11ft)	Not permitted	Not permitted	400mm (16in)
2-ply, 2" x 10"	4.9m (16ft)	4.9m (16ft)	Not permitted	Not permitted	
2-ply, 2" x 12"	4.9m (16ft)	4.9m (16ft)	Not permitted	Not permitted	600mm (24in)
3-ply, 2" x 10"	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	
3-ply, 2" x 12"	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	

1) Cantilever not permitted to be greater than 25% of the total span length (distance between posts)

## Incised Pressure Treated, SPF grade 2

**JOISTS** Select joist size and joist spacing based on maximum total joist span of your project

Joist size	Maximum Total Joist Span, m (ft in) <i>(joist span + length of joist cantilever)</i>			Maximum Joist Cantilever
	Joist Spacing			
	300mm (12in)	400mm (16in)	600mm (24in)	
2" x 6"	3.0m (9ft-10in)	2.7m (9ft-1in)	2.3m (7ft-8in)	400mm (16in)
2" x 8"	3.9m (13ft-0in)	3.4m (11ft-5in)	2.8m (9ft-4in)	
2" x 10"	4.9m (16ft)	4.2m (14ft)	3.4m (11ft-5in)	600mm (24in)
2" x 12"	4.9m (16ft)	4.9m (16ft)	4.0m (13ft-3in)	

1) Optional cantilever selection must be on the same row as joist size selection  
2) Where guards are required, joists and rim board shall be a minimum of 2" x 8"

**BEAM** Select beam size and post spacing based on maximum total joist span

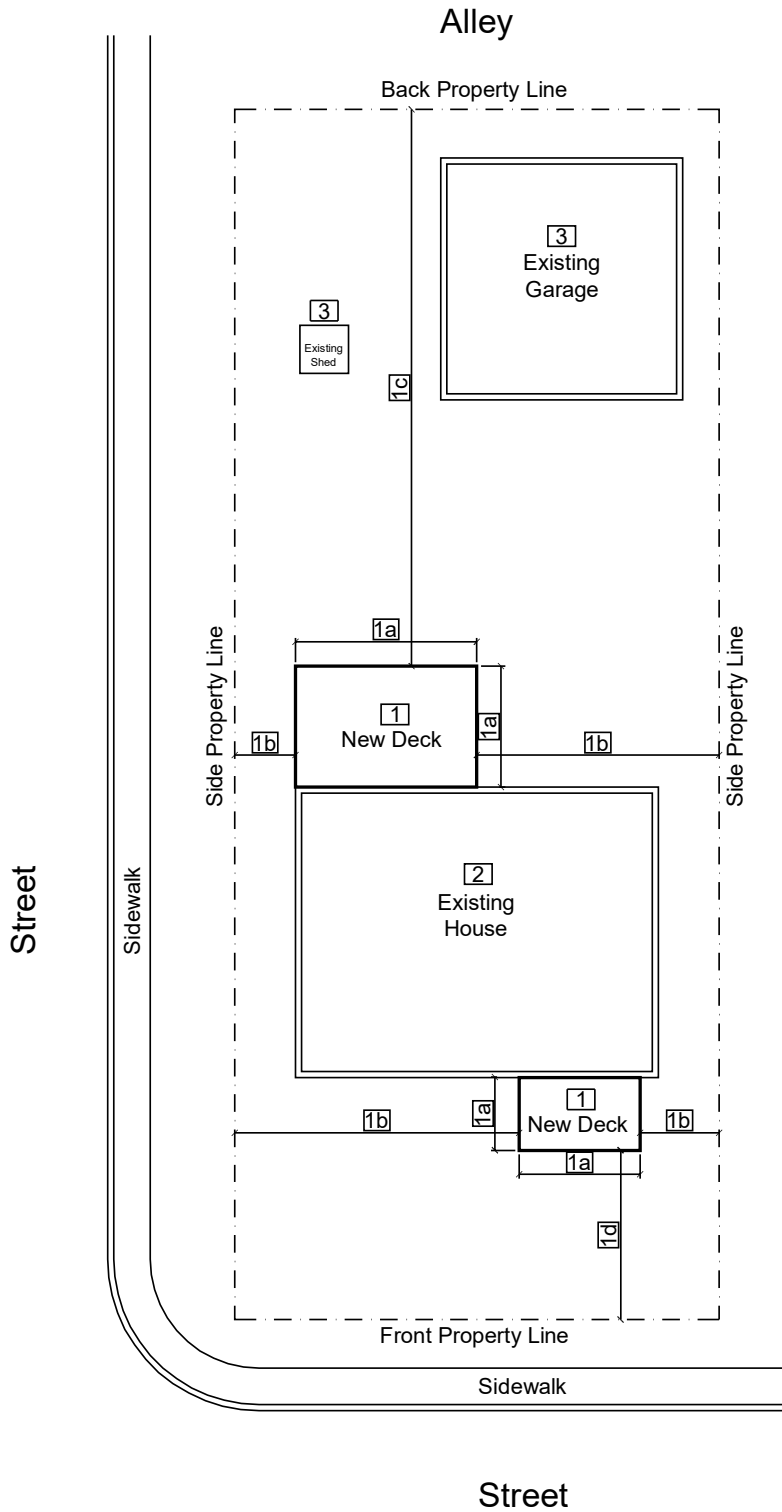
Beam Size	Maximum Total Joist Span, m (ft in) <i>(joist span + length of joist cantilever)</i>				Maximum Beam Cantilever
	Post spacing				
	up to 1.8m (6ft)	up to 2.4m (8ft)	up to 3.1m (10ft-2in)	up to 3.6m (11ft-10in)	
2-ply, 2" x 6"	4.3m (14ft)	2.1m (7ft)	Not permitted	Not permitted	300mm (12in)
2-ply, 2" x 8"	4.9m (16ft)	3.3m (11ft)	Not permitted	Not permitted	400mm (16in)
2-ply, 2" x 10"	4.9m (16ft)	4.9m (16ft)	Not permitted	Not permitted	
2-ply, 2" x 12"	4.9m (16ft)	4.9m (16ft)	Not permitted	Not permitted	600mm (24in)
3-ply, 2" x 10"	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	
3-ply, 2" x 12"	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	4.9m (16ft)	

1) Cantilever not permitted to be greater than 25% of the total span length (distance between posts)

Posts		Decking	
4" x 4"	Minimum size for 2-ply beams and decks up to and including 1.8m (6ft)	Composite	ensure you read and follow the manufacturer's specifications to ensure the adequate support.
6" x 6"	Minimum size for 3-ply beams and decks over 1.8m (6ft)	Lumber	5/4" wood decking on joists up to 16" o.c. 1 1/2" wood decking on joists up to 24" o.c.

# INFORMATION PACKAGE

## Sample Site plan



### Details to be shown on plan:

- 1 Location of proposed decks
  - 1a Deck dimensions
  - 1b Distance to side property lines
  - 1c Distance to rear property line
  - 1d Distance to front property line
- 2 Location of existing house
- 3 Location of existing building / structures

# ZONING REQUIREMENTS

We have provided a table detailing the required distances from property lines. The below tables are not an exhaustive list and reference should be made to the Zoning Bylaw to verify.

Access the City of Saskatoon [CityMap](#) to determine your property's zoning, site area and additional details.

## Uncovered decks

Zoning districts: R1, R1A, R1B, R2, R2A (One unit, two unit, and semi-detached dwellings)			
Distance from front property line	Decks less than 400 mm (18 in) above grade	All sites	Unrestricted
	Decks greater than 400 mm (18 in) above grade	All sites	4.2 m (13 ft 9 in)*
Distance from rear property line	Decks less than 600 mm (2 ft) above grade	Interior sites	3.0 m (10 ft)
		Corner Sites (Flanking Street)	1.5 m (5 ft)
	Decks Greater than 600 mm (2 ft) above grade	Interior Sites	4.5 m (15 ft)
		Corner Sites (Flanking Street)	3.0 m (10 ft)
Distance from side property line	Uncovered Decks less than 600 mm (2 ft) above grade	All sites	Unrestricted
	Uncovered Decks Greater than 600 mm (2 ft) above grade	Interior sites	0.6 m (2 ft) <i>*R1 zoned sites require 1.2 m (4 ft)</i>
		Corner Sites (flanking street or lane)	unrestricted
Zoning districts: RMTN, RMTN1, RM1, RM, RM2 (group dwelling sites, street townhouses)			
Distance from front property line	Decks less than 400 mm (18 in) above grade	All sites	Unrestricted
	Decks greater than 400 mm (18 in) above grade	All sites	4.2 m (13 ft 9 in)*
Distance from rear property line	All decks	All sites	3.0 m (10 ft)
Distance from side property line	All decks	All sites	3.0 m (10 ft)

# ZONING REQUIREMENTS

## Covered decks

Covered decks contribute to site coverage. Site coverage means that a percentage of the site covered by buildings above grade level exclusive of marquees, canopies, balconies and eaves. You can check the permitted site coverage for your property by finding your zoning, and checking [Zoning Bylaw No. 8770](#).

Covered decks are considered to meet the definition of a building within the zoning bylaw.

Setbacks are measured to the front of the supporting post of the covered deck.

Zoning districts: R1, R1A, R1B, R2, R2A (One unit, two unit, and semi-detached dwellings)		
Distance from front property line	All sites	6 m (19 ft 8 in)* <i>*R1 zoned sites require 9 m (29 ft 6 in)</i>
Distance from rear property line	Interior sites	7.5 m (24 ft 7 in)
	Corner Sites (Flanking Street)	4.5 m (14 ft 9 in)
Distance from side property line	All sites	0.75 m (2 ft 5 in) <i>*R1 zoned sites require 1.5 m (4 ft 11 in)</i>

*\* Site coverage may be increased to a maximum of 50% for a covered deck. This increase does not include front covered entryways or front verandas.*

Zoning districts: RMTN, RMTN1, RM1, RM, RM2, RM3 (group dwelling sites, street townhouses)		
Distance from front property line	Refer to zoning bylaw for information on the required distance from the front property line for decks built on the front of the building.	
Distance from rear property line	All sites	3.0 m
Distance from side property line	All sites	3.0 m

*RMTN sites – site coverage may be increased to 40% for attached covered decks*

*RMTN1 sites - site coverage may be increased to 45% for attached covered decks*

*RM1, RM2, & RM3 sites - site coverage may be increased to 50% for attached covered decks*

# BUILDING CODE REQUIREMENTS

## Bedroom Window Obstruction

If a deck covers a basement bedroom window, a minimum of 760 mm (2 ft 6 in) of clearance is needed along the path of travel for a means of escape (Article 9.9.10.1)

## Foundation Requirements

Uncovered decks over 1.8 m (6 ft) require a sealed foundation design by an engineer or architect who is licensed in the province of Saskatchewan.

Covered decks foundation may be designed either:

- 1) In conformance with the Residential piles and Grade Beams Handout; or
- 2) Sealed foundation design by an engineer or architect who is licensed in the province of Saskatchewan.

## Framing

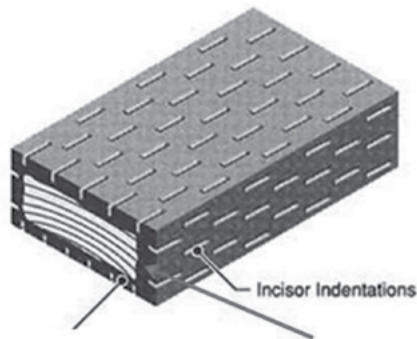
### Wood type

There are two type of pressure treated wood:



Non-incised lumber

*Non-Incised Pressure Treated Lumber* – wood product treated with a preservative using a pressure process.



Incised lumber

*Incised Pressure Treated Lumber* - Incising is the process of cutting many small slits into the surface of a piece of wood in order to increase the amount of preservative absorbed into the wood during treatment. This process does affect the structural integrity of the lumber.

**PRO-TIP**  
*Incised lumber has small regular piercings.*

### Decking (Sentence 9.23.15.5)

- Lumber:
  - 2" x 4", 2" x 6", may be supported on joists spaced up to 600 mm (24 in) o.c.
  - 5/4" x 6" may be supported on joists spaced up to 400 mm (16 in) o.c.
- Composite decking
  - refer to manufacturer's specifications for joist spacing to ensure adequate support.



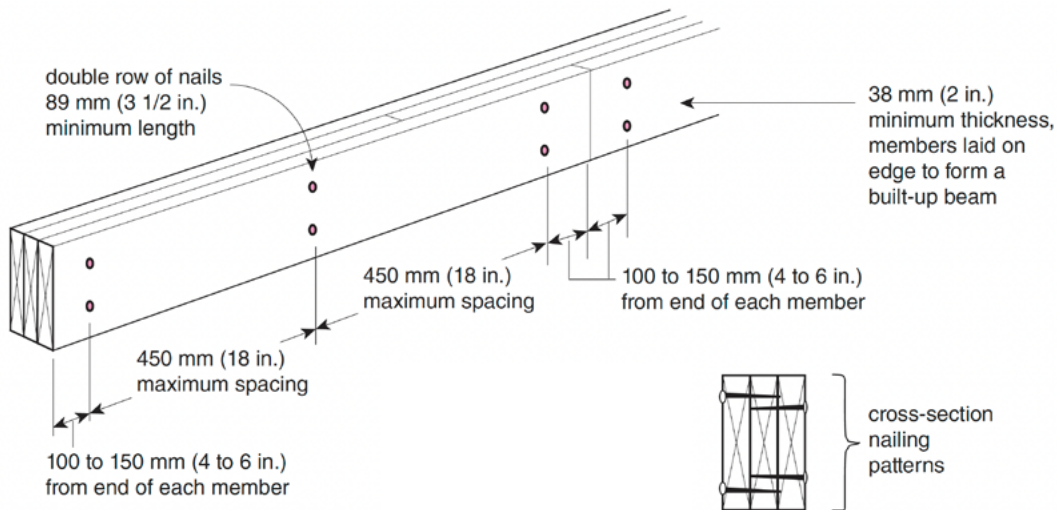
# BUILDING CODE REQUIREMENTS

## Columns/Posts (Section 9.17)

- Wood columns/posts must be at least as wide as the member being supported.

## Beams (Sentence 9.23.8.1)

- Beams shall have even and level bearing and the bearing at end supports shall be not less than 89 mm (3 ½ in) long, except as stated in the notes to Span Tables 9.23.4.2.-H to 9.23.4.2.-K.
- Built-Up Beam (Article 9.23.8.3) nailing patterns and where splicing of members can occur are detailed below:



Alternatively, members can be bolted together with 12.7 mm (1/2 in.) minimum diameter bolts (with washers), spaced at 1.2 m (4 ft.) o.c. maximum, with end bolts 600 mm (2 ft.) maximum from ends of members.

## Clearance off ground (Sentence 9.3.2.9.(3))

- Wood elements less than 150 mm (6 in) to the ground must be pressure-treated
- If wood members are not pressure treated and are supported by concrete that is in contact with the ground, they must have a 2 mil (0.05 mm) polyethylene film or Type S roll roofing in between the wood and the concrete support (Article 9.23.2.3).

## Stairs, Railings and Guards

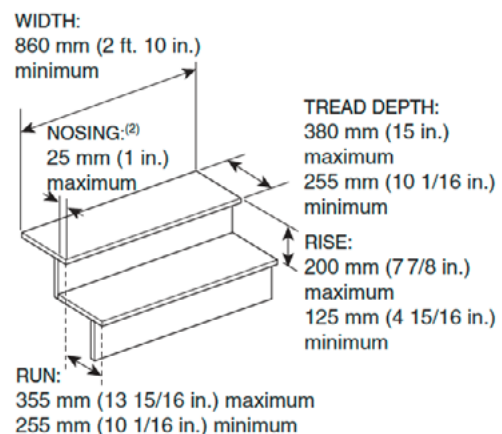
### Width (Article 9.8.2.1)

- Stairs shall be at least 860 mm (2 ft 10 in) wide.

### Rise and run (Articles 9.8.4.1 - 9.8.4.8)

Treads and risers must have uniform rise and run in any flight, including top and bottom risers.

- Risers must be 125 mm (4 15/16 in) minimum to 200 mm (7 7/8 in) maximum.
- Runs must be 255 mm (10 1/16 in) minimum to 355 mm (15 in) maximum.



Private stairs

# BUILDING CODE REQUIREMENTS

## Landings (Subsection 9.8.6)

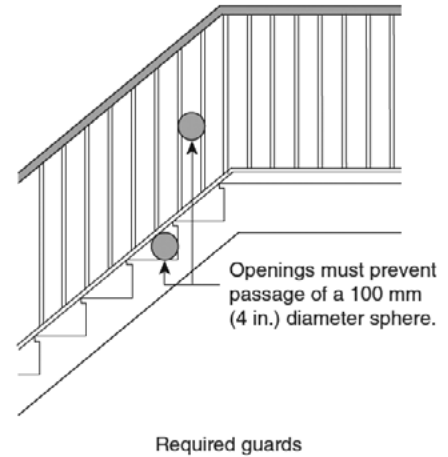
- Landings are required at the top and bottom of each flight of stairs. In general, landings must be at least as wide and as long as the width of the stairs.

## Handrails (Subsection 9.8.7)

- Handrails are required on stairs with more than three risers.

## Guards (Subsection 9.8.8)

- Guardrail height:
  - Decks > 600 mm (2 ft) above grade require 900 mm (36 in) guards
  - Decks > 1.8m (6 ft) above grade require 1040 mm (42 in) guards
- Openings in guards shall not exceed 100 mm (4 in).



## Roofing for Covered Decks

### Pre-manufactured Trusses

- Pre-manufactured trusses require shop drawings to be submitted to the on-site inspector

### Rafters (Article 9.23.4.2. and Subsection 9.23.14)

- All rafters made on site will have to be drawn for the permit application and show how they meet the snow loads and spans from Part 9 of the NBC.

### Roof sheathing (Table 9.23.16.7.-A)

- The roof sheathing type, grade, thickness and edge support (H-clips) to conform to the requirements of this table.

### Roof slope and roofing type/provisions (Section 9.26)

- Roofing to be provided to protect the building from precipitation. The type of roofing and installation shall conform to Section 9.26. A summary of slopes and applicable roofing types is shown in Table 9.26.3.1 (e.g. where the slope of a roof with asphalt shingles is less than 1 in 3, the low slope requirements of Subsection 9.26.8 would apply).



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**[saskatoon.ca/projectguides](https://saskatoon.ca/projectguides)**

*This project guide has no legal status and cannot be used as an official interpretation of the various codes and regulations currently in effect. Users are advised to contact Building Standards for assistance, as the City of Saskatoon accepts no responsibility for persons relying solely on this information.*

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