

BEFORE YOU BUILD...

**HOW TO
BUILD A
DECK**



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NOTE:

The City of Saskatoon adopts the National Building Code of Canada (NBC). Throughout this document the NBC will be referenced as the building code. All information in this document is provided from the NBC 2015 and Zoning Bylaw #8770.

Decks vary in size and area and it is beyond the scope of this publication to deal with each possible situation. The requirements and construction guidelines that follow are provided to assist you in designing and constructing a deck.

1.0 General Information

Do I require a building permit for a deck?

Yes, a building permit is required for any deck which is higher than 200 mm (8 in) above ground level or is more than 2.32 sq m (25 sq ft) and more than 600 mm (24 in) above grade. In all cases a permit is required if the deck has more than three risers.

What if the deck is not attached to my house, do I still need a building permit?

Regardless of whether or not the deck is attached to the house or any other structure on the property, a building permit is required, as noted above.

Where can I obtain a building permit?

Permits are obtained by submitting the required information to Building Standards on the third floor of City Hall.

What information do I have to bring with me in order to make an application for a building permit?

1. You must present a well-drawn site plan or a copy of a Surveyor's Certificate showing all property dimensions, location of all buildings, and location and size of the proposed deck. See *Figure 1* for details.

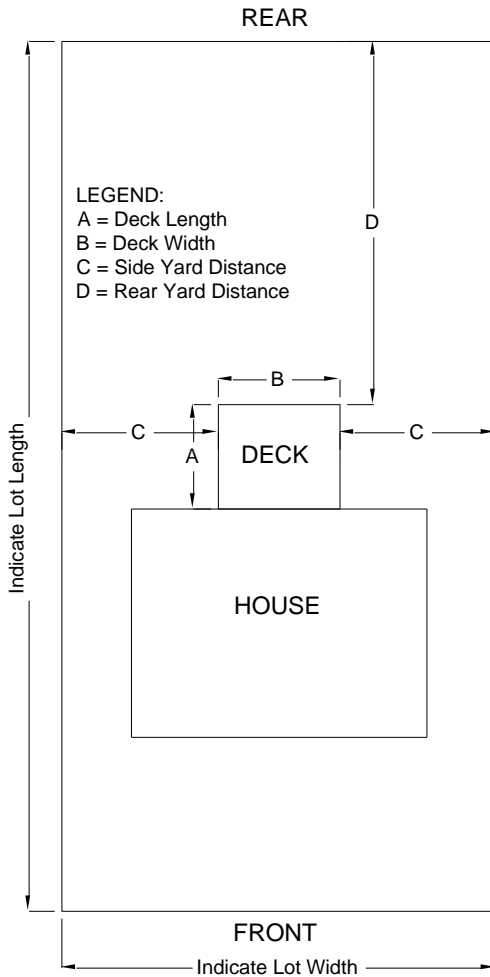


Figure 1 – Typical Site Plan

2. One copy of the deck plan is required. This plan details how the deck will be constructed.
 See *Figure 2*.

What does the deck plan have to indicate?

The deck plan must show the overall size of the deck, the size and spacing of the beams, posts, and deck joists and the beam and joist overhangs.

See *Figure 2*.

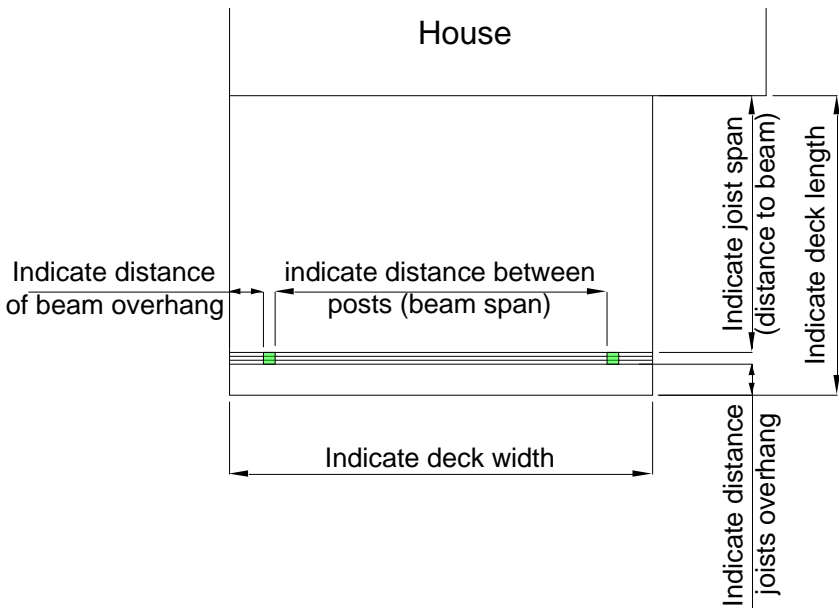


Figure 2 – Deck Plan

What if there is a window where I want to place the deck?

Bedroom windows are required to have a clear area at least 760mm (30 in) front of the window. A pathway of at least 760 mm (30 in) clear height is required from the window to public street or area.

2.0 Zoning Bylaw Information

Can I have a pergola or trellis type structure added to my deck?

Pergola and trellis structures are considered to be architectural features and cannot be reviewed against the building code. These structures are not to be sheathed, as they become covered decks once sheathing is attached.

Where can I build my deck?

Decks that are more than 600 mm (24 in) above grade must be a minimum of 4.5m (15 ft) from the rear property line for interior sites or 3m (10 ft) from the rear property line if a corner site. The minimum distance between the side property line and the deck is 570mm (22.5 in) in most “R” zoning districts, but 1.124m (44 in) in the R1 zoning district– See *Figure 3*.

Decks that are not more than 600 mm (24 in) above grade must be located at least 3 m (10 ft) from the rear property line or 1.5 m (5 ft) from the rear property line if a corner site – See *Figure 4*.

Decks in the front yard that are more than 400 mm (16 in) above grade may only project 1.8 m (6 ft) into the required front yard - See *Figure 5*.

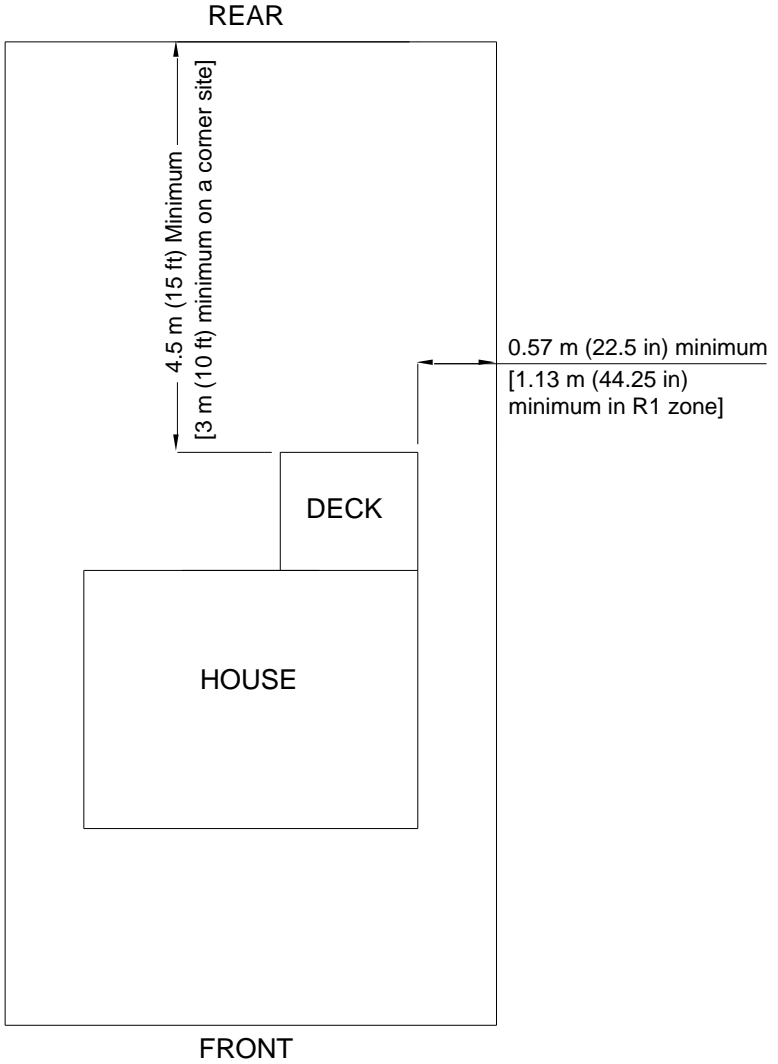


Figure 3 – More than 600 mm (24 in) above grade

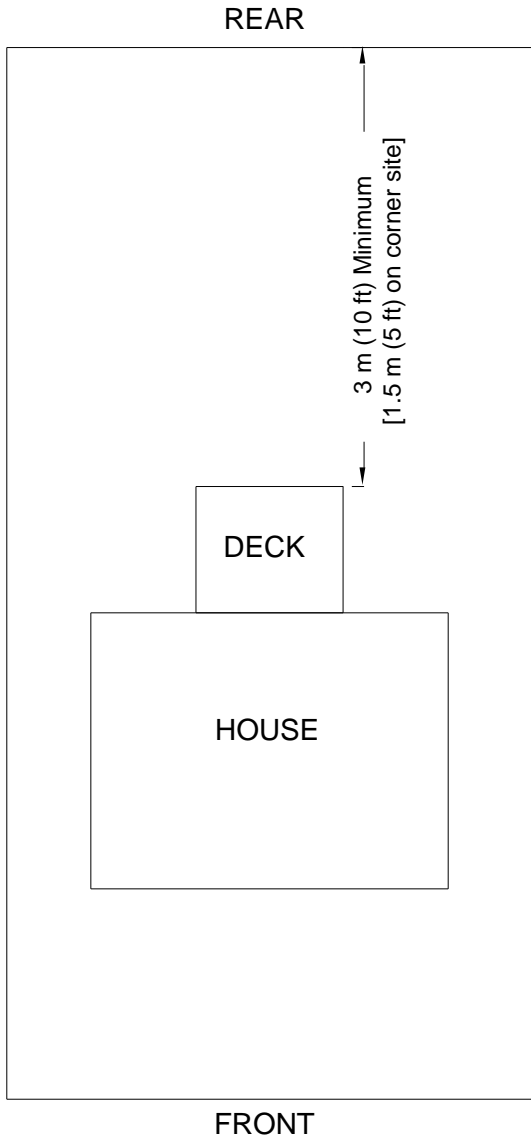


Figure 4 - Not more than 600 mm (24 in) above grade

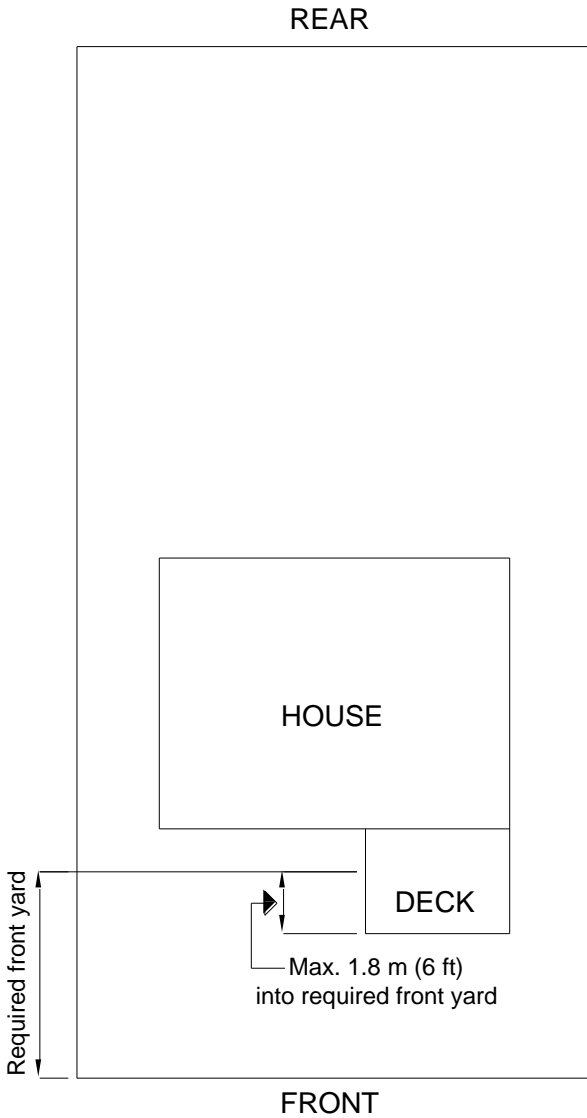


Figure 5 – Decks in the front yard

3.0 Foundations

When does my deck require piles?

Decks, when the walking surface is equal to or greater than 1.80 m (6 ft) above grade, require piles. Decks with roofs must be supported on piles.

Deck blocks can be used to support decks less than 1.80 m (6 ft) in height. Concrete pads are recommended to be placed under deck blocks.

What types of piles am I allowed to use?

Concrete piles

Minimum of 200 mm (8 in) in diameter by 2.4 m (8 ft) deep reinforced with 1-15M full depth. See the *Residential Piles and Grade Beams* handout or *A Guide to Residential Decks and Patios* brochure for more information.

Screw Piles

Screw piles are required to be engineered. Contact Building Standards for more information.

4.0 Structural

What size of posts should I use and how should they be anchored?

Posts shall be at least the width of the beam, centred on the pad or pile, and securely fastened to the beam. Decks 1.5m (5') high or more shall be supported on minimum 6 x 6 posts.

It is recommended that decks 1.80 m (6 ft) or greater in height have a column to beam connection for lateral support to prevent movement. All decks that have a superstructure are required to have a column to beam connection that provides lateral support to prevent movement, when the height from ground to underside of deck exceeds 0.60m (2 ft)

What size of beams do I need?

See *Table 1 and Figure 2* for clarification.

2 Ply Beams (must be spliced over columns)

Joist Length	2 x 6	2 x 8	2 x 10
8'-0"	6'-7"	8'-5"	10'-3"
10'-0"	6'-1"	7'-6"	9'-2"
12'-0"	5'-8"	6'-10"	8'-4"

Values from Table 9.1a The Span Book 2009 Edition

3 Ply Beams (see Built-Up Wood Beams for allowable splices not over a column)

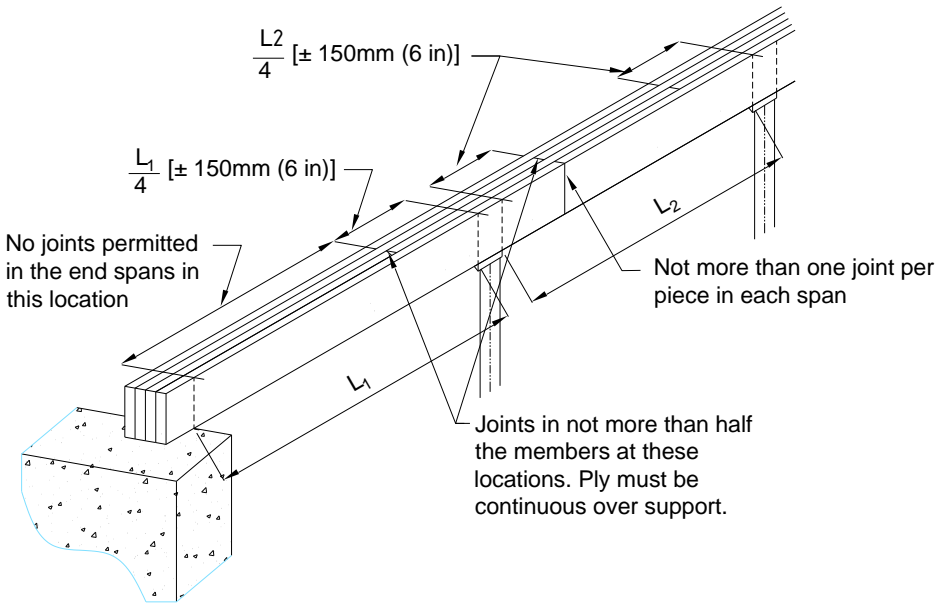
Joist Length	2 x 8	2 x 10
8'-0"	9'-10"	12'-7"
10'-0"	9'-2"	11'-3"
12'-0"	8'-5"	10'-3"

Values from Table 7.3 The Span Book 2009 Edition

Table 1 – Beam Spans

Can I have joints in the beam?

Yes, in two ply beams, joints shall be located over supports. See *Figure 6* for allowable joint locations in beams with three or more plies.



Reproduced from NBC A9.23.8.3

Figure 6 – Joint locations multi-ply in beams

How can I build my beam?

You can build your beam as a built-up beam and nail it together as shown in *Figure 7*. You may also bolt the beam together with bolts 12.7 mm in diameter with washers, spaced 1.20 m (4 ft) on centre with bolts located less than 600 mm (24 in) from the end.

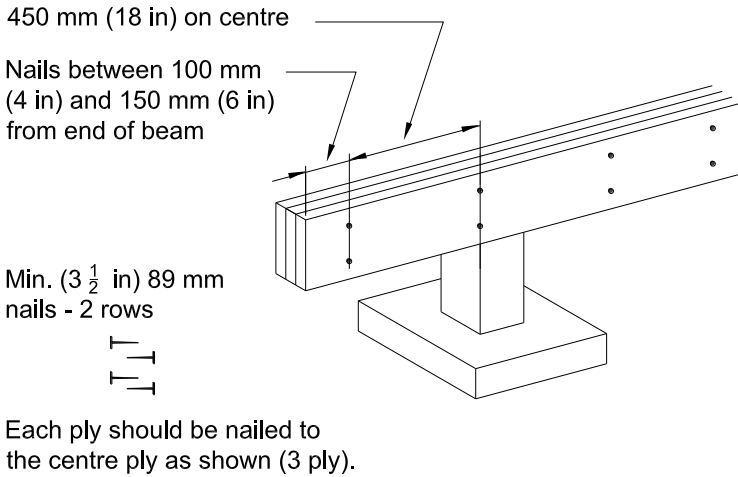


Figure 7 – Nailing of a beam

A ladder beam (split beam) is also acceptable, see *Figure 8*.

1. Blocking is required every 400 mm (16 in) on centre.
2. Vertical blocking is required to be attached to the side of posts to support each ply of the beam.

Note: Joists may only bear on the beam and cannot be hung off the ladder beam.

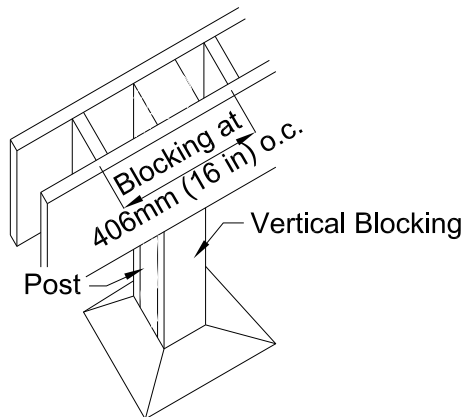


Figure 8 – Ladder beam (split beam)

How far can the beam overhang the face of the post(s)?

See *Table 2*.

Beam Overhang

Beam Size	Maximum Overhang
2" x 6"	1'-0"
2" x 8"	1'-6"
2" x 10"	2'-0"

Table 2 – Maximum beam overhang

How far can the joists overhang beyond the beam face?

See *Table 3*.

Joist Overhang

Joist Size	Maximum Overhang
2" x 6"	1'-0"
2" x 8"	1'-4"
2" x 10"	2'-0"

Table 3 – Maximum joist overhang

What size of deck joists will I need?

The joist size depends on the distance between supports, such as between the ledger board on the house and the supporting beam, or the distance between beams. See *Table 4* and *Figure 2* for clarification.

Note: Blocking or strapping is required mid-span with the joist span is greater than 2.1m (7 ft). Strapping is required at a maximum of 2.1m (7 ft) o.c.

Joist Length (spans determined using SPF No.1&2 lumber)

Joist Size	16" o.c.	24" o.c.
2" x 6"	8'-11"	8'-2"
2" x 8"	11'-0"	10'-6"
2" x 10"	13'-0"	12'-4"

Values from Table 9.23.4.2.-A. NBC 2015

Table 4 – Maximum joist length

Do the deck members have to be pressure treated?

When the vertical clearances between the wood elements and the finished ground level is less than 150 mm (6 in) or when the wood elements are not protected from exposure to precipitation they must be treated with a preservative or otherwise protected to resist decay.

5.0 Handrails, Guards, Stairs

What are the differences between guards and handrails?

Guards are intended to prevent persons from falling off the edge of stairs or a raised floor area such as a deck. The guard must be able to withstand the pressure of a human body applied horizontally to it. Guards must be continuous around the deck surface.

Handrails are required to assist persons in ascending or descending stairs. They offer a continuous and graspable handhold to guide and support persons.

Will my deck require guards or handrails?

Guards are only required on decks that are more than 600 mm (2 ft) above ground level. Only one handrail is required for deck stairs with more than three risers.

Can I attach lattice to my guard?

A spherical object having a diameter of 100 mm (4 in) may not pass through the openings in a guard.

How high do my guards have to be?

Guards are to be 900 mm (36 in) in height where the walking surface of the deck is not more than 1.80 m (6 ft) above the finished ground level, and 1070 mm (42 in) when the walking surface of the deck to the finished grade level exceeds 1.80 m (6 ft). See *Figure 9 and 10*.

Do stairs require a guard?

Guards are required on stairs where there is a difference in elevation of more than 600 mm (24 in) to finished ground level.

Do stairs have any requirements?

Treads and risers must have a uniform rise and run in any one flight including the top and bottom risers. Risers must be 125 mm (5 in) minimum to 200 mm (8 in) maximum. Treads must be 255 mm (10 in) minimum to 355 mm (14 in) maximum.

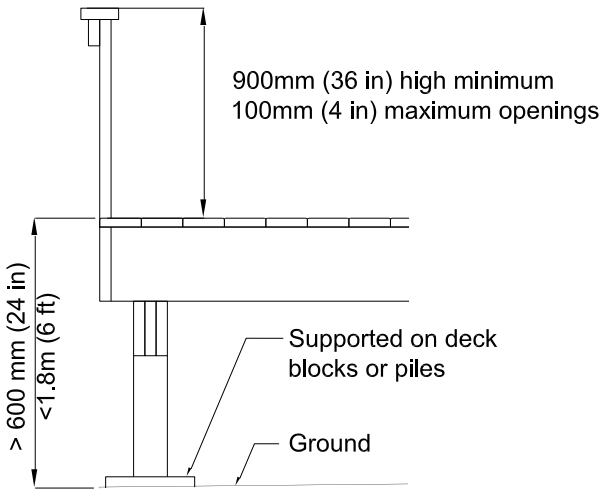


Figure 9 – 900 mm (36 in) high guards

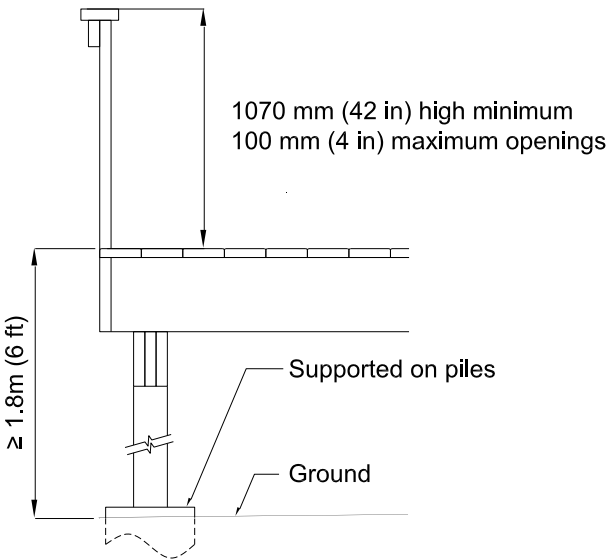


Figure 10 – 1070 mm (42 in) high guards

Can I have a built-in bench at the edge of my deck?

Decks may have built-in benches, as long as the height from the bench to the ground is less than 4.2m (13.75 ft). Benches will be allowed at or above this height if the back is designed as a guardrail. The required height of the guardrail is measured from the bench and the guardrail will be required to extend down to the deck surface. See *Figure 11*.

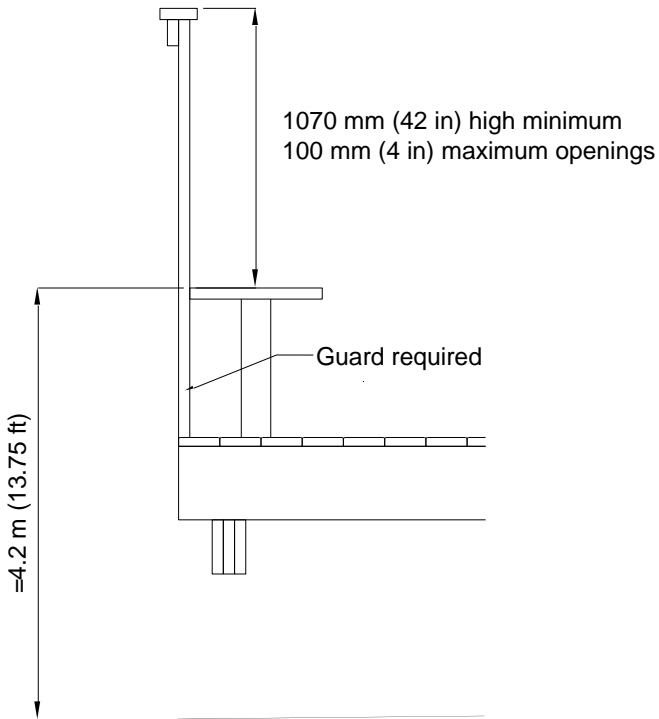


Figure 11 – High Deck

Can I have a privacy wall?

Yes, a privacy wall is allowed on your deck.

6.0 Decking

What materials can I use to for a walking surface?

Lumber, plywood and composite decking are all common decking materials. Please note that 2x's are 38mm thick (1.5 in) and 5/4x's are 22 mm (7/8 in) thick.

Lumber decking not less than 38 mm (1½ in) thick may be placed perpendicular to joists that are not more than 600 mm (24 in) on centre, or may be placed diagonally to joists not more than 400 mm (16 in) on centre.

Lumber decking that is less than 38 mm (1½ in) thick and composite decking should be installed as per manufacturer's instructions. City of Saskatoon Building Standards suggests 5/4" lumber and composite decking be place perpendicular to joists that are not more than 400 mm (16 in) on centre, or diagonally to joists not more than 300 mm (12 in) on centre.

Solid surface decks (plywood) must be sloped away from the building and all guards/walls which do not allow for drainage.

7.0 Checklist

The following checklist may be used with your permit application:

Address: _____

Height of the deck above grade: _____

Height of guardrails: 36" (decks > 2'-0")

42" (decks > 6'-0")

**Spindles must be spaced < 4" and Horizontal Members must be a minimum of 30" apart.*

Beam size:

2 ply

3 ply

2" x 6"

2" x 8"

2" x 10"

Post Size:

4" x 4"

6" x 6"

Other _____

**Columns for decks over 2'-0" from grade to the underside of the joists and which support a superstructure must be laterally supported to resist racking and/or differential movement*

Joist size:

2" x 6"

2" x 8"

2" x 10"

Joist Spacing:

16"

24"

Decking:

2" x 4" lumber

2" x 6" lumber

5/4" x 6" lumber

Composite Material

Solid surface decking

Installed perpendicular to joists

Installed diagonally

Foundation:

Deck blocks

Conc pad Size _____

**Concrete pads are recommended under deck blocks.*

Conc piles Dia. _____ Length _____

Screw piles Installer _____

**Decks with roofs or decks that measure $\geq 6'-0"$ above grade require piles.*

**All piles must extend at least 8' below finished grade. Concrete piles require 1-15 m rebar minimum extending the full depth of the pile.*



For more information contact:

Community Services Department
Building Standards Division
222 3rd Avenue North
Saskatoon SK S7K 0J5

Phone: (306) 975-3236

Fax: (306) 975-7712

Website: www.saskatoon.ca

Email: building.standards@saskatoon.ca

Office Hours

Monday – Friday: 8:00 a.m. to 5:00 p.m.

This pamphlet 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 to persons relying solely on this information.

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