

Typical Residential Deck Construction Details

The information provided is to be considered general guidelines. Each project is different; please consult the Technical Services Department with any questions related to your project. All data listed is based on single-storey residential decks without roof structures, hot tubs, kid's pools or any other unusual loads, and includes pool decks.

Frequently Asked Questions

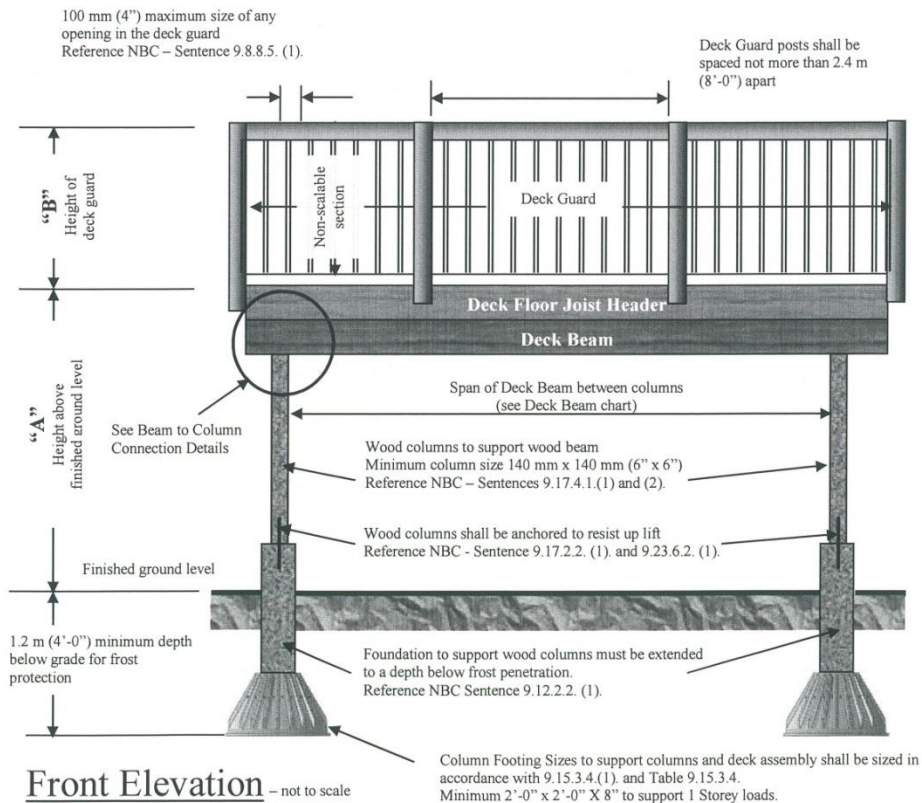
How high does the railing (guard) around my deck have to be?		Can my deck railing (guard) have any horizontal parts incorporated in the design?	Is a Foundation required?	Can deck blocks be used to support the deck?	What is the required depth for the foundation? (See Note 2)
"A" Height above finished ground level	"B" Height of deck railing/guard				
Greater than or equal to 1.8 m (6'-0")	1070mm (3'-6")	Not Permitted between 140 mm (5 1/2") and 900 mm (3'-0") above deck surface	Yes	No	1.2 m (4'-0") minimum from finished grade
Less than 1.8 m (6'-0")	900mm (3'-0")				
Greater than 600mm (24") and Less than or equal to 830mm (30")		Not Required	Not Required	No (See Note #1)	Yes (See Note #1)
Less than or equal to 600 mm (2'-0")					

Note #1: A deck that is attached to a building will require a foundation that extends below frost level.

A surface foundation (Deck Blocks) can only be used where:

- The deck is freestanding and not attached to another structure (house),
- The deck is less than 55m² (600ft²),
- The deck does not support a roof or hot tub,
- The deck is not more than one storey, and
- The distance from the finished ground to the top of deck is not more than 830mm (30") at any point.

Note #2: Deck piers closer than 5' to a foundation wall are required to extend to the footing elevation of the foundation.



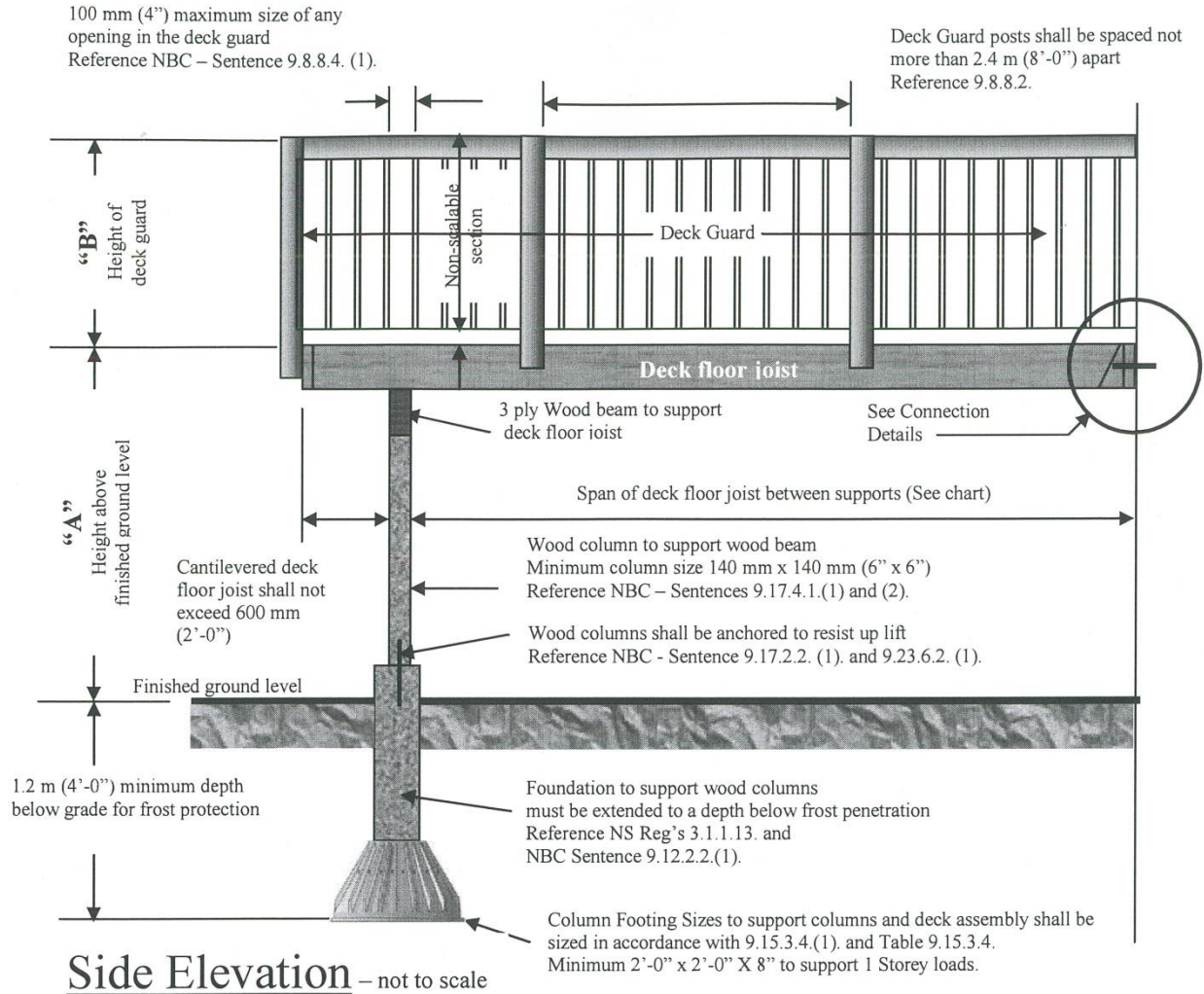
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Revised 3/12/18

City Of Summerside-Technical Services

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What Size “Deck Floor Joist” do I need to have?

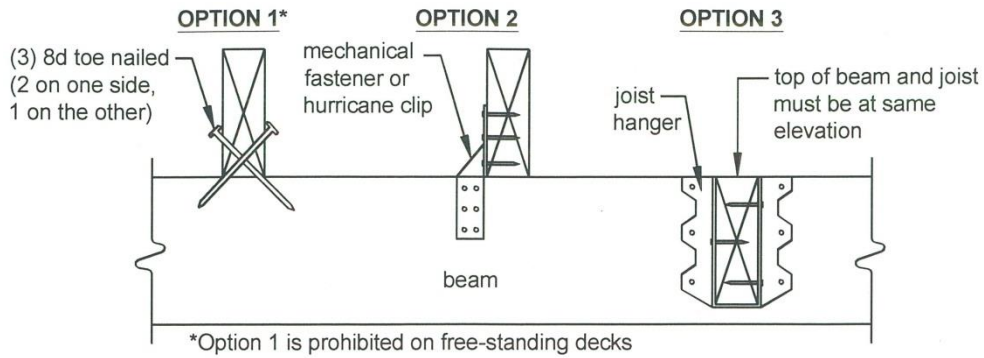
	Spacing of Joists (on Centre)	Maximum Span between supports	Spacing of Joists (on Centre)	Maximum Span between supports	Spacing of Joists (on Centre)	Maximum Span between supports
2" x 6" (38 x 140 mm)	12" (300 mm)	9'-4" (2.86 m)	16" (400 mm)	8'-6" (2.60 m)	24" (600 mm)	7'-5" (2.27 m)
2" x 8" (38 mm x 184 mm)	12" (300 mm)	12'-4" (3.76 m)	16" (400 mm)	11'-2" (3.42 m)	24" (600 mm)	9'-9" (2.99 m)
2" x 10" (38 mm x 235 mm)	12" (300 mm)	15'-9" (4.81 m)	16" (400 mm)	14'-4" (4.37 m)	24" (600 mm)	12'-6" (3.82 m)
2" x 12" (38 mm x 286 mm)	12" (300 mm)	19'-2" (5.85 m)	16" (400 mm)	17'-5" (5.31 m)	24" (600 mm)	15'-2" (4.64 m)

The information in this table is derived from the National Building Code 2010, Maximum Spans for Roof Joists - Table A-5, Lumber Type: S-P-F (Spruce-Pine-Fir), Lumber Grade : No. 1 & No. 2 with a Specified Snow Load of 2.5 kPa.

The joist span shown in the tables are based on wood decking nailed to the top side of the joists, with a row of wood blocking at the mid-point of the span of the wood joists and the lumber is pressure treated wood with a lumber grade stamp equivalent to No.1 or No. 2. Refer to Sentence 9.4.2.3. – “Balconies, decks and other accessible exterior platforms intended for occupancy and subject to snow loads shall be designed to carry the specified roof snow load or 1.9kPa, whichever is greater, where the platform, or each segregated area of the platform, serves a single family dwelling unit.” (Summerside 2.3kPa-uses 2.5 kPa data)

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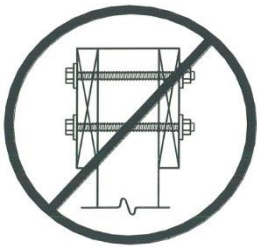
Joist-to-Beam Detail (9.23.9.2/9.23.9.3)



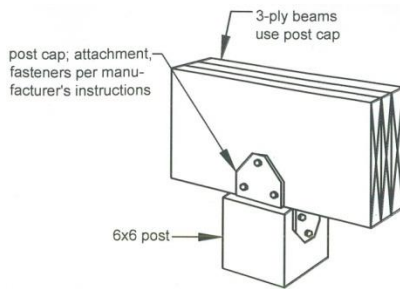
What Size “Deck Beam” do I need to have?

Wood Beam Size	Supported Joist length of Wood Deck Joists “Supported Joist” length means ½ the sum of the joist spans on both side of the beam”				
	8'-0" (2.4 m)	10'-0" (3.0 m)	12'-0" (3.6 m)	14'-0" (4.2 m)	16'-0" (4.8 m)
Maximum Span of Wood Beam between Columns					
3 - 2" x 8" (3 - 38 mm x 184 mm)	10' (3.07 m)	9'-4" (2.85 m)	8'-7" (2.63 m)	8' (2.44 m)	7'-6" (2.28 m)
4 - 2" x 8" (4 - 38 mm x 184 mm)	10'-2" (3.38 m)	10' (3.14 m)	9'-8" (2.95 m)	9'-2" (2.8 m)	8'-7" (2.63 m)
3 - 2" x 10" (3 - 38 mm x 235 mm)	12'-10" (3.92 m)	11'-6" (3.52 m)	10'-6" (3.22 m)	9'-9" (2.98 m)	9'-2" (2.79 m)
4 - 2" x 10" (4 - 38 mm x 235 mm)	14'-2" (4.32 m)	13'-2" (4.01 m)	12'-2" (3.71 m)	11'-4" (3.44 m)	10'-7" (3.22 m)
3 - 2" x 12" (3-38 mm x 286 mm)	15' (4.57 m)	13'-4" (4.09 m)	12'-4" (3.73 m)	11'-4" (3.46 m)	10'-6" (3.23 m)
4 - 2" x 12" (4-38 mm x 286 mm)	17'-4" (5.25 m)	15'-6" (4.72 m)	14'-2" (4.31 m)	13' (3.99 m)	12'-3" (3.73 m)

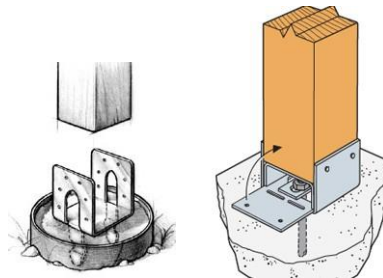
The information in this table is derived from the National Building Code 2010, “Maximum Spans for Built Up Wood Beams Supporting not more than One Floor – Table A-8” and Lumber Type: S-P-F (Spruce-Pine-Fir), Lumber Grade : No.1 & No.2



Prohibited Post-to-Beam Connection



Example of Post-to-Beam Connection



Examples of Post Base Anchoring

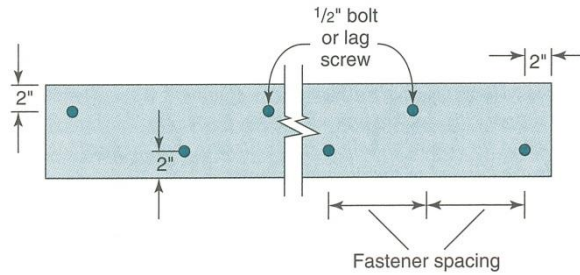
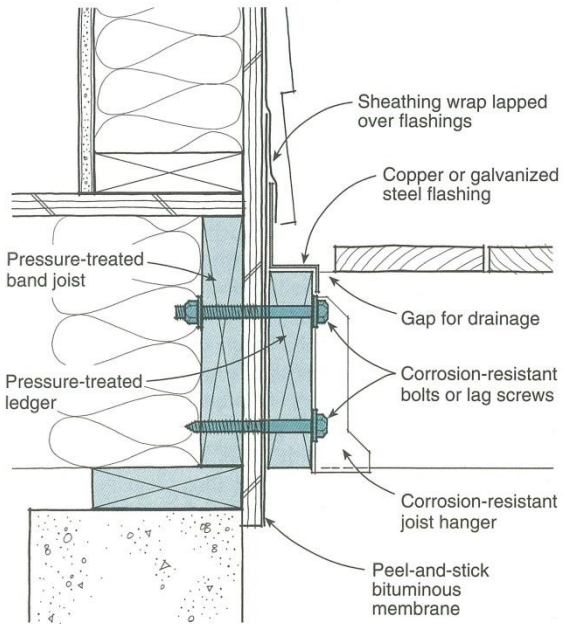
Bearing for Beams: Beams shall have even and level bearing (9.23.8.1)

Anchorage of Columns and Posts: Exterior columns and posts shall be anchored to resist uplift and lateral movement-all deck above 600mm (24") (9.23.6.2)

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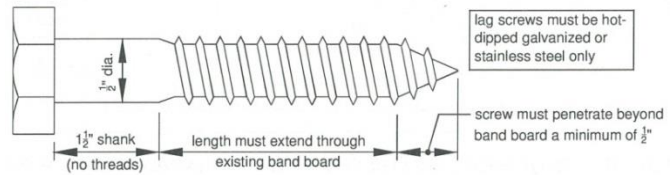
Ledger Boards

Ledger board is to be equal to or one size larger than the joists. If aluminum flashings are used, a barrier between the flashing and pressure treated wood is required-the materials are not compatible. Bolts or lag screws are to be galvanized or stainless steel and washers must be used, do not countersink the fastener.

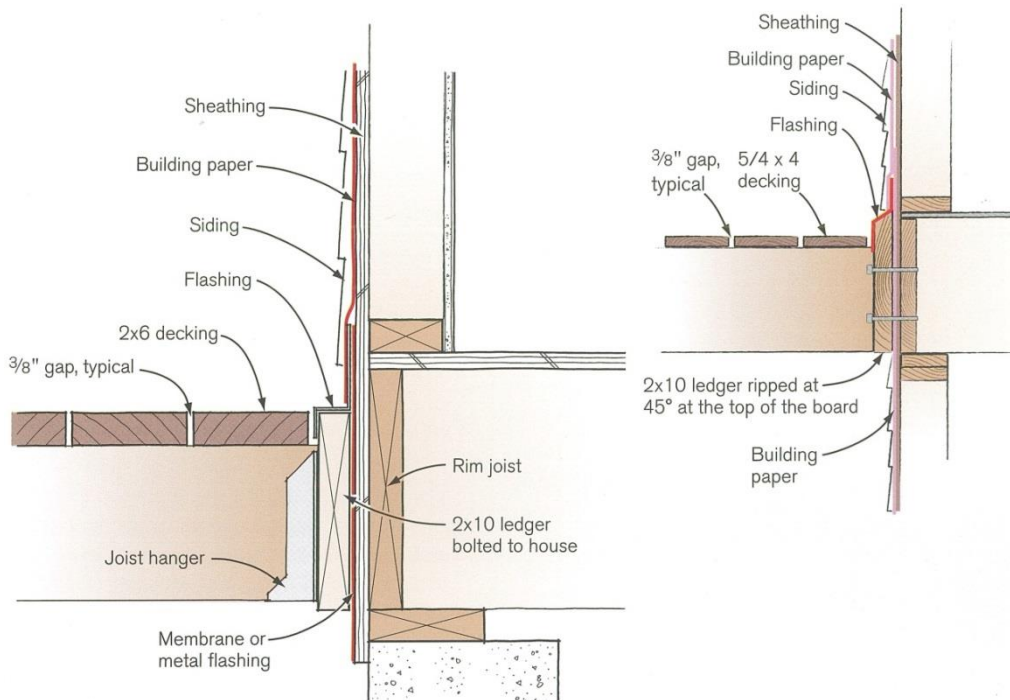


To prevent splitting, fasteners in the deck ledger should be held back 2 inches from edges and staggered, as shown.

Though deck failures are rare, ledger connections are typically at fault when they occur. Through-bolts make the strongest connection, but adequately sized lag screws can also work. With either, it is critical to flash the ledger area and to only use metal components that are compatible with pressure-treated wood.

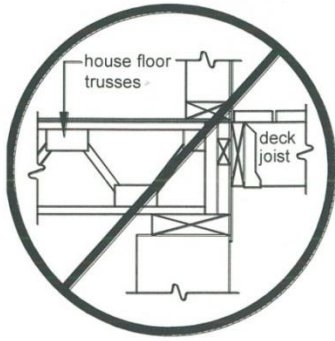


Debris-Free Ledgers

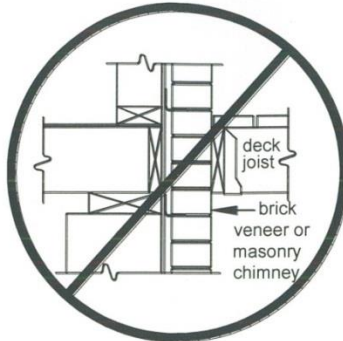


Typical Residential Deck Construction Details

Prohibited Ledger Attachments



Floor Trusses

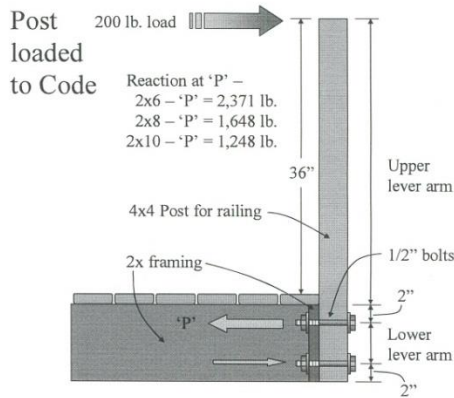


Brick Veneer



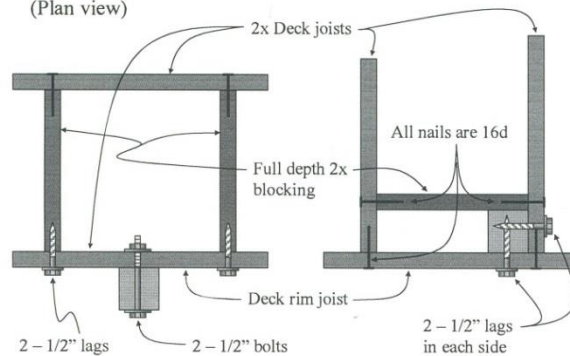
House Overhang

Handrail/Guards



Loads on guards (9.8.8.2)

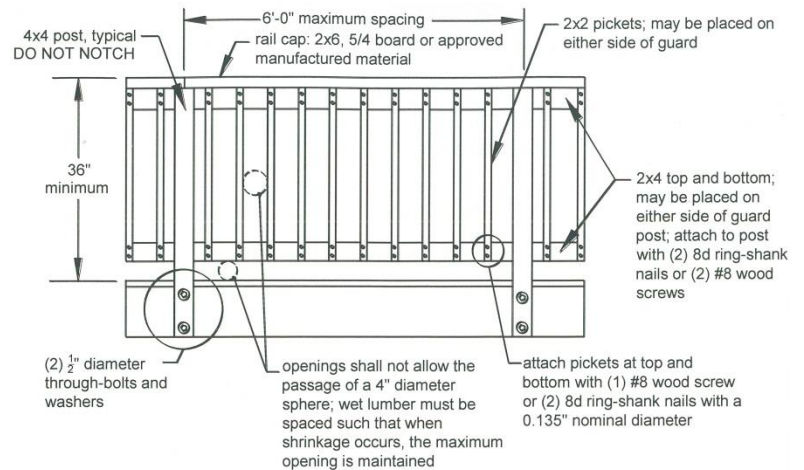
Reinforced Post Connections (Plan view)



Bolts or lag screws are to be galvanized or stainless steel and washers must be used, do not countersink the fastener.



Post Notching Prohibited



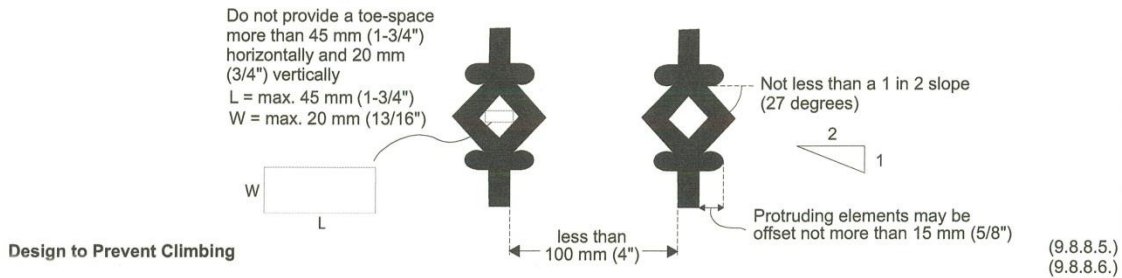
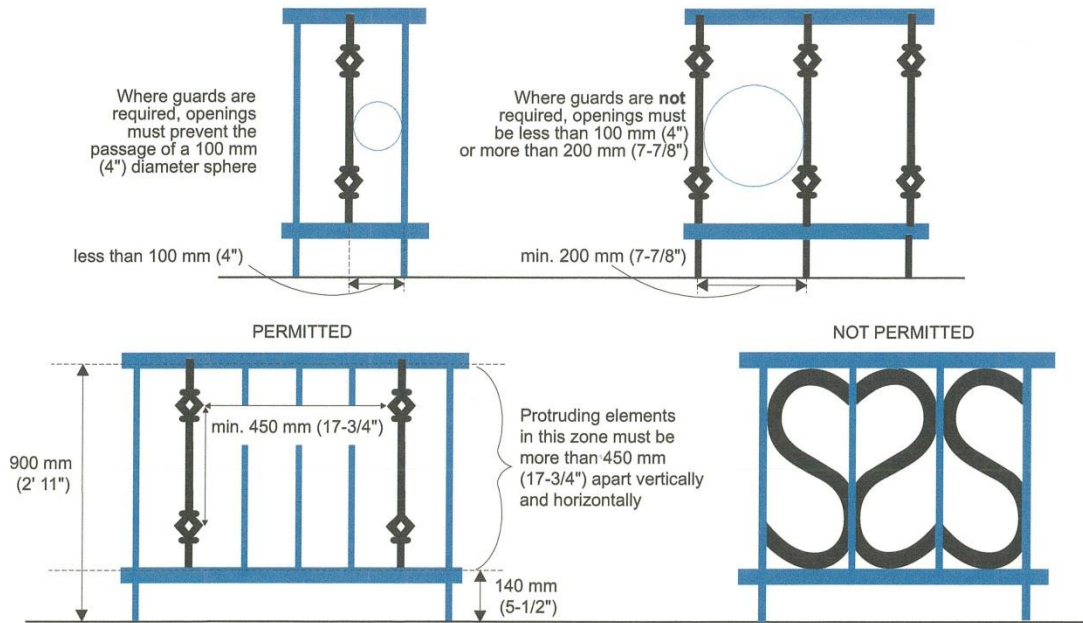
Typical Railing System (Refer to Table on page 1)

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Lattice panels are not allowed to be used as a guard panel

Manufactured guard-railing systems are permitted as long as they meet the requirements of Section 9.8.8.



Stairs

WOOD STAIRS

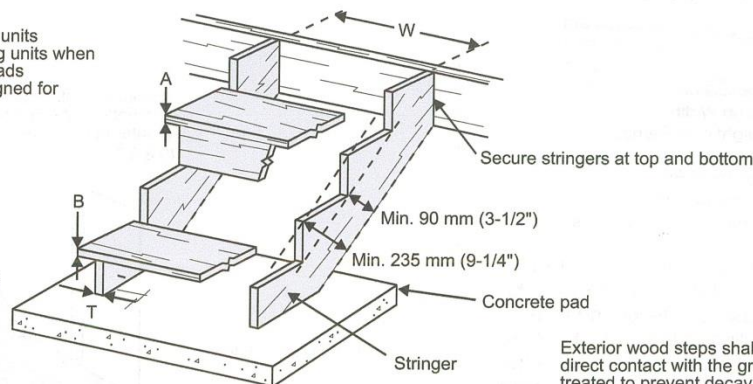
W = max. 900 mm (2' 11") in dwelling units
W = max. 1200 mm (3' 11") in dwelling units when risers support the front of the treads unless stringers and treads designed for wider spacing

Tread thickness:

A = min. 25 mm (1") when risers support front of tread
B = min. 38 mm (1-1/2") when tread unsupported at front and distance between stringers is greater than 750 mm (2' 6")

Stringer thickness:

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

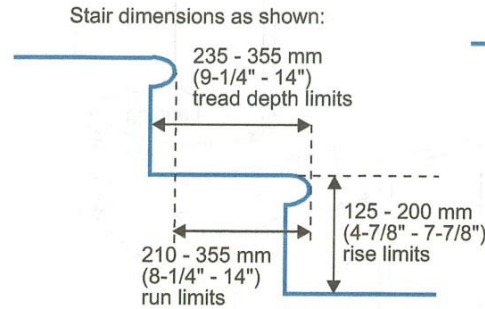


Exterior wood steps shall not be in direct contact with the ground unless treated to prevent decay (9.8.9.3.)

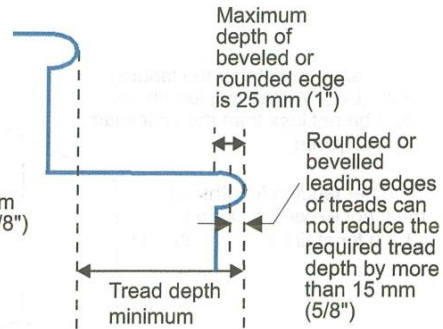
(9.8.9.4.)
(9.8.9.5.)

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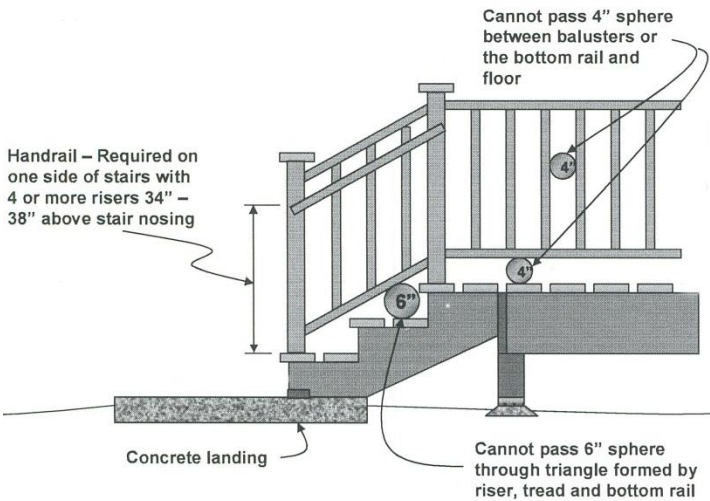
INTERIOR AND EXTERIOR STAIRS



(9.8.4.2.)



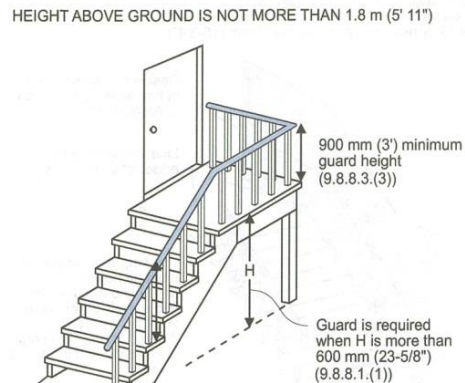
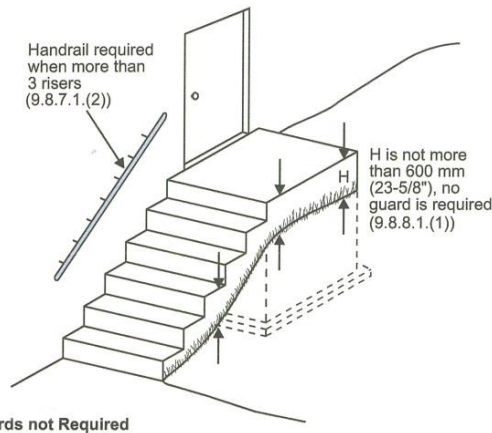
(9.8.4.6.)



All handrails shall be constructed so as to be continually graspable along their entire length with no obstructions on or above them to break a handhold, except where a handrail is interrupted by newels at changes of direction. (9.8.7.5)

Handrail and any building element that could be used as a handrail shall be designed and attached in such a manner to resist a concentrated load at any point of not less than 0.9kN (200lbs) *See post connection details*

Typical Stair Handrail/Guard Details



Every exterior flight of steps and ramps, landing, porch, balcony, mezzanine, gallery, and raised walkway to which access is provided for other than maintenance purposes shall be protected by guards on all open sides where there is a difference in elevation of more than 600mm (24") between the walking surface and the adjacent surface. (9.8.8.1)