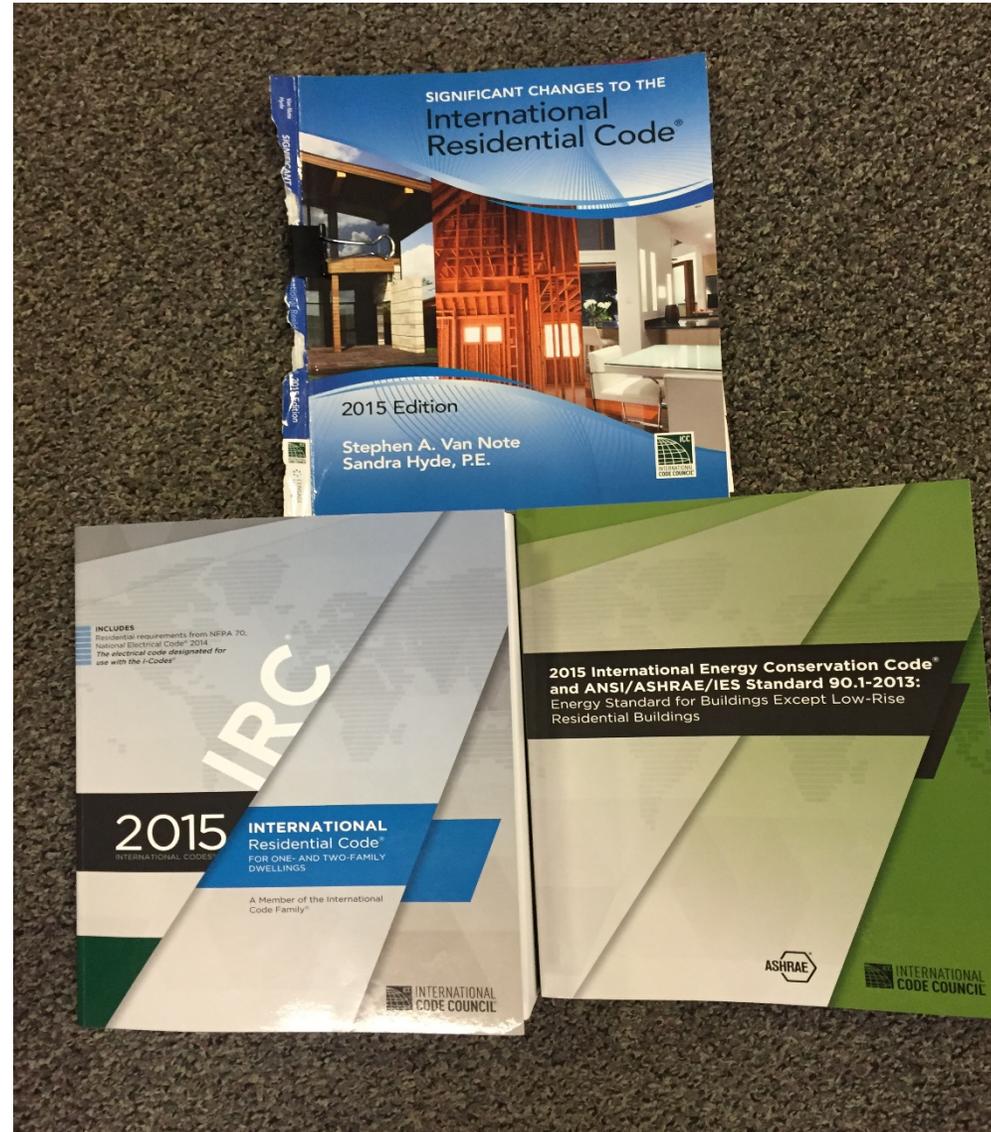
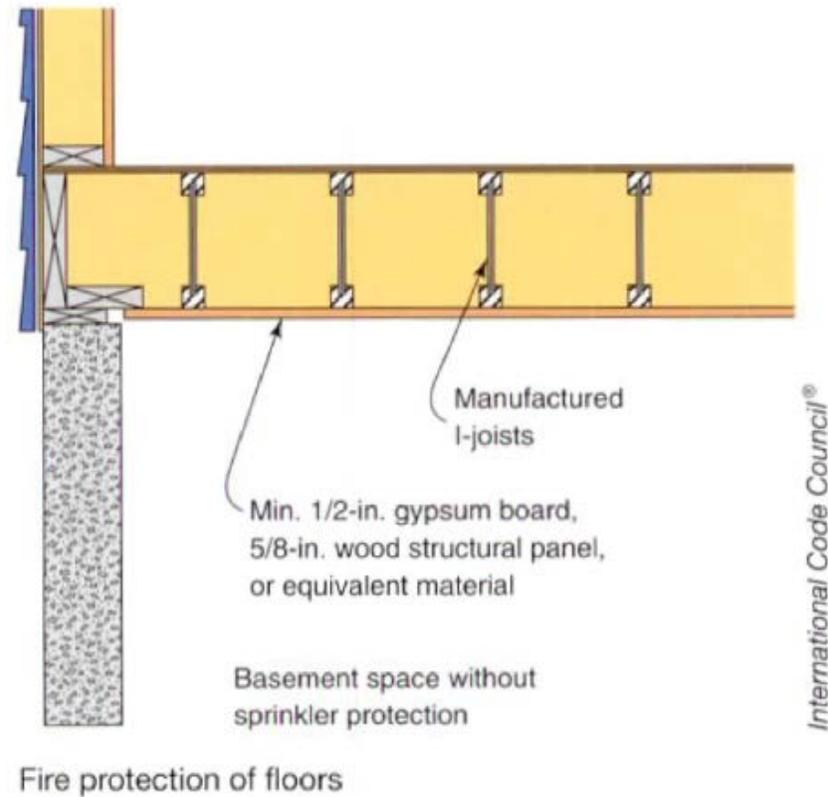


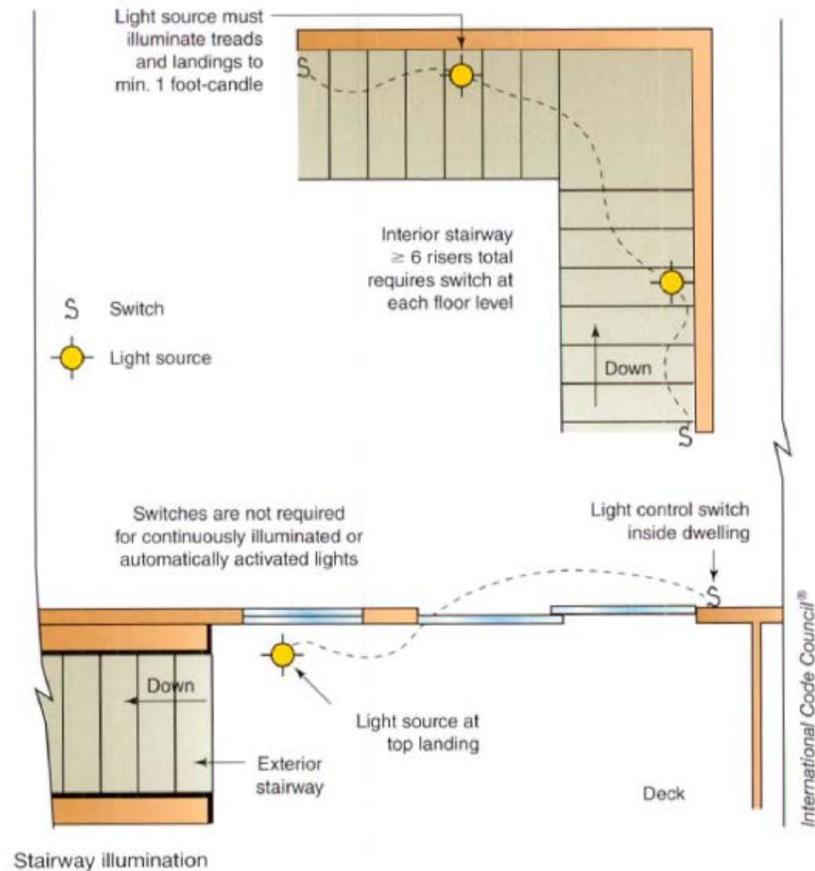
Significant Changes to the International Residential Code 2015



Fire protection of floors R302.13

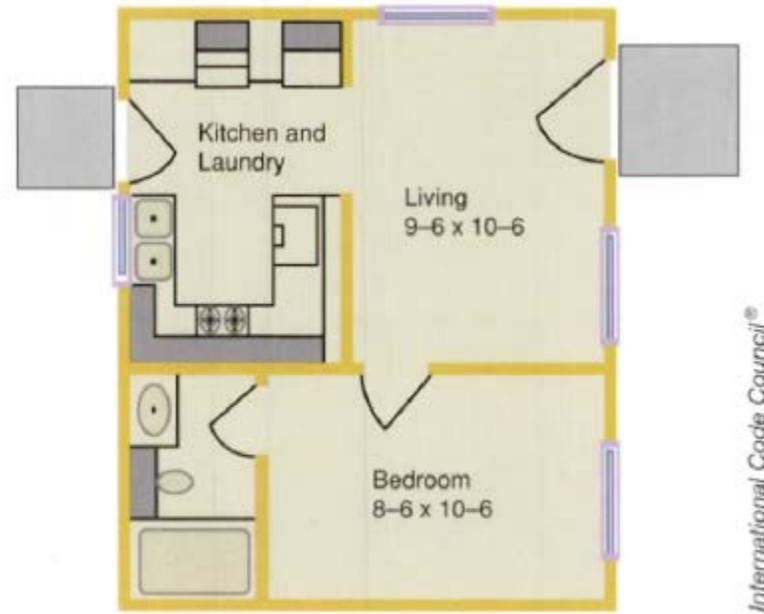


Stairway Illumination 303.7 (interior) & 303.8 (exterior)



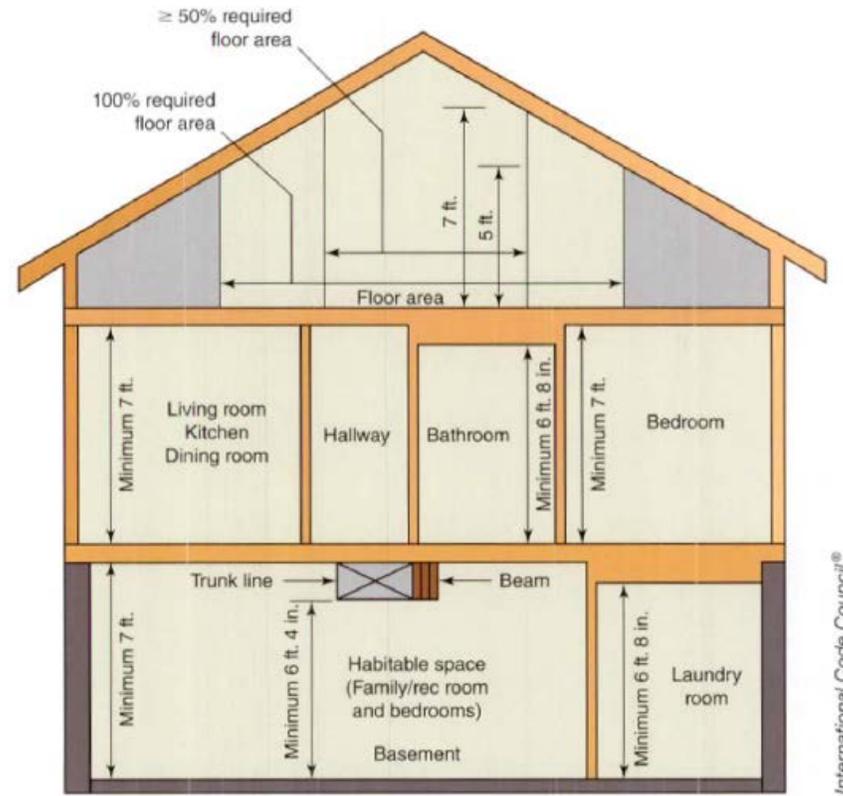


Minimum Habitable Room Area R304.1



Small dwelling complying with minimum area requirements

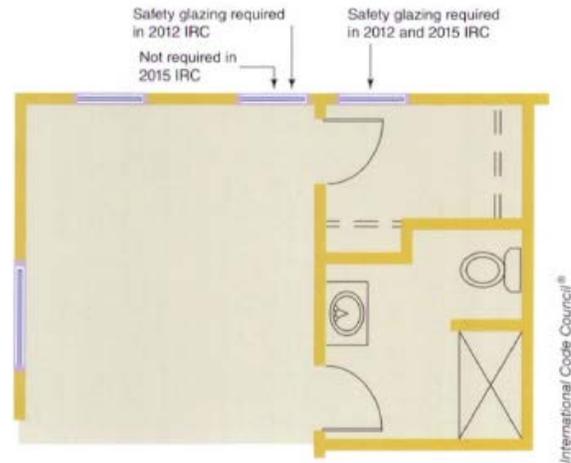
Ceiling Height R305



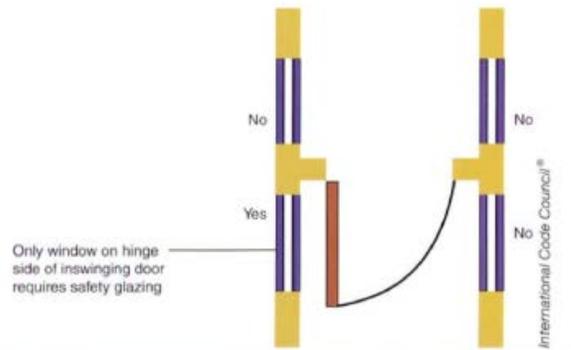
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Ceiling height

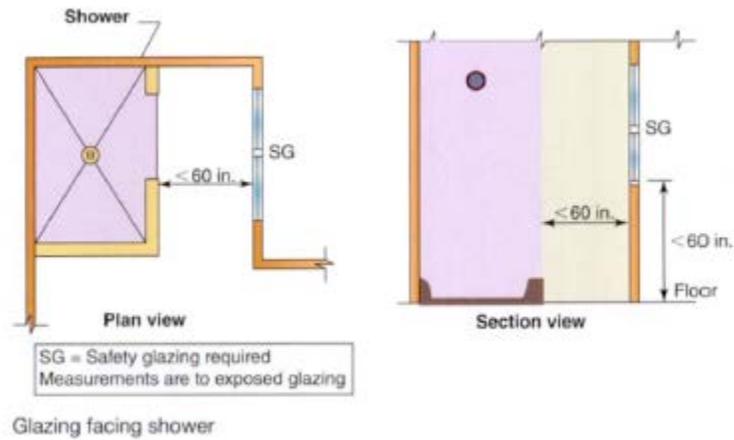
Glazing Adjacent To Doors R308.4.2



Glazing in windows adjacent and perpendicular to door



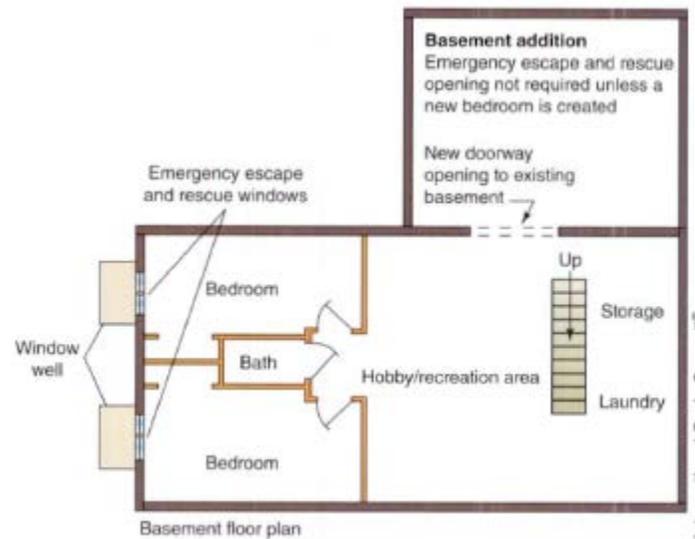
Safety Glazing and Wet Surfaces R308.4.5



Safety Glazing Adjacent to Bottom of Stair Landing R308.4.7



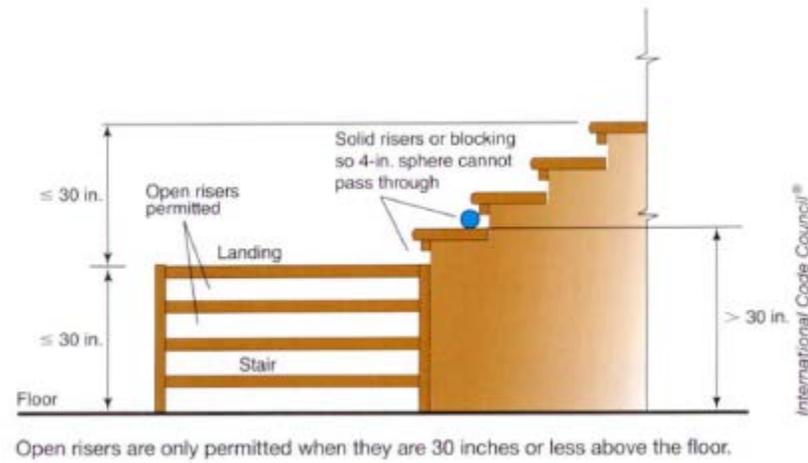
Emergency Egress for Additions, Alterations and Repairs. R310.6



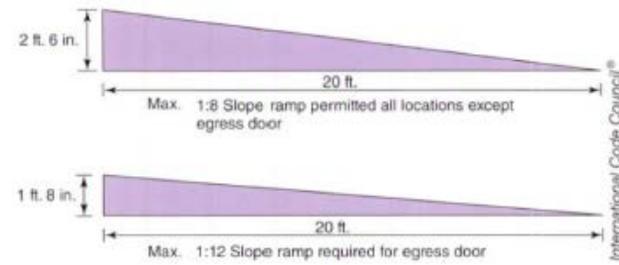
A basement addition does not require an emergency escape and rescue opening if access is provided to the existing basement.



Stair Risers R311.7.5.1



Ramps R311.8

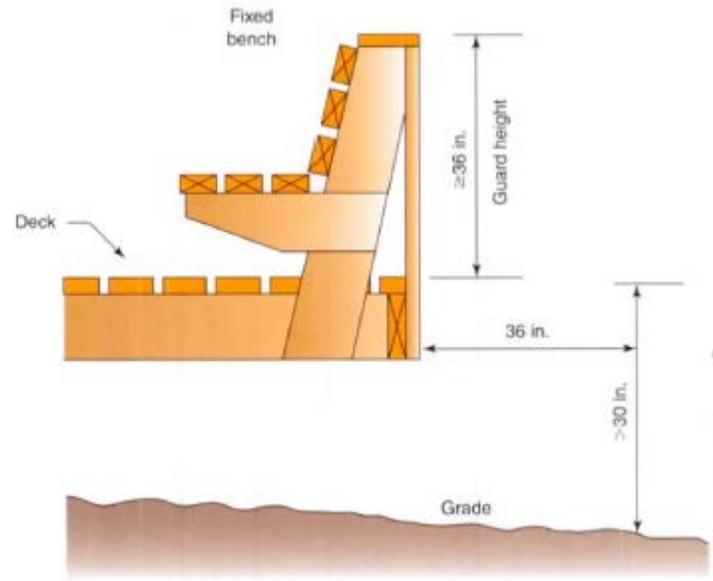


Maximum ramp slopes



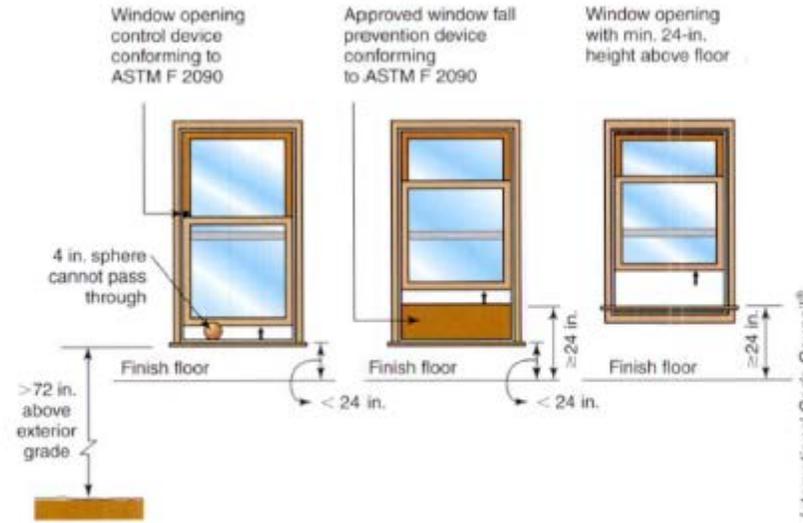
Ramp serving the required egress door

Guard Height R312.1.2



Measuring guard height at fixed seating

Window Fall Protection R312.2.1



Three methods for complying with the window fall prevention provisions

Smoke Alarms R314 Amendment

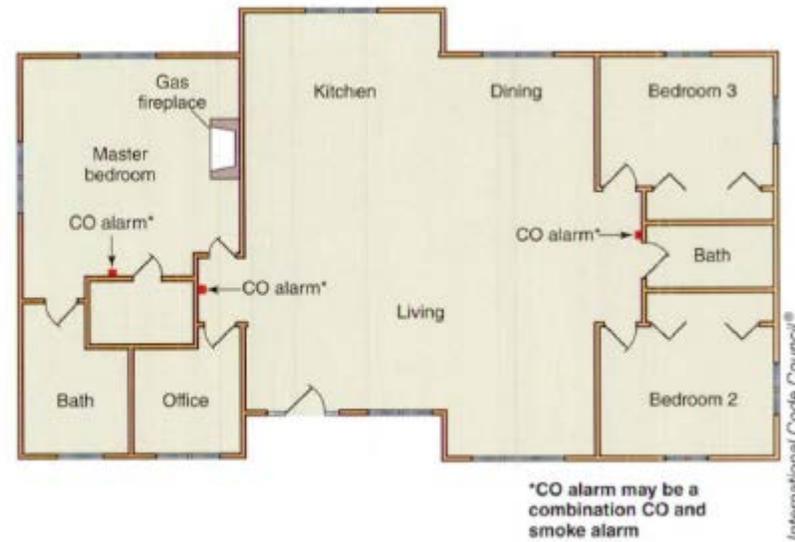
Section R314.6. Delete Exception 2 and replace with the following: interior finishes are not removed, battery operated smoke alarms installed in the same locations as required by section R 314.3 are permitted. Battery powered smoke alarms shall be sealed with long life batteries, tamper resistant, and incorporate a silence/hush button.”In existing areas where interior finishes are not removed, battery operated smoke alarms installed in the same locations as required by section R 314.3 are permitted. Battery powered smoke alarms shall be sealed with long life batteries, tamper resistant, and incorporate a silence/hush button.”



Smoke alarm



Carbon Monoxide Alarms R315.3



Carbon monoxide alarms required outside each separate sleeping area and in bedrooms containing fuel-fired appliances

Minimum Footing Size and Depth R403.1.1

TABLE R403.1(1) Minimum Width and Thickness for Concrete Footings
for Light Frame Construction (inches)^{a,b}

Snow Load or Roof Live Load	Story and Type of Structure with Light Frame	Load-Bearing Value of Soil (psf)					
		1500	2000	2500	3000	3500	4000
20 psf	1 story - slab on grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - with crawl space	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - plus basement	18 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - slab on grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - with crawl space	16 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - plus basement	22 × 6	16 × 6	13 × 6	12 × 6	12 × 6	12 × 6
	3 story - slab on grade	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - with crawl space	19 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - plus basement	25 × 8	19 × 6	15 × 6	13 × 6	12 × 6	12 × 6
30 psf	1 story - slab on grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - with crawl space	13 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - plus basement	19 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - slab on grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - with crawl space	17 × 6	13 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - plus basement	23 × 6	17 × 6	14 × 6	12 × 6	12 × 6	12 × 6
	3 story - slab on grade	15 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - with crawl space	20 × 6	15 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - plus basement	26 × 8	20 × 6	16 × 6	13 × 6	12 × 6	12 × 6

(continues)

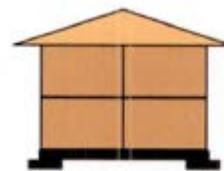


Examples—Minimum Required Footing

Two-story house with slab on grade foundation:

Light-frame construction
 Soil-bearing strength = 1500 psf
 Roof Live Load = 20 psf
 32 ft wide building with interior load-bearing wall

Minimum Footing Width		
2012	2015	Smaller footing width allowed
15×6	12×6	



Slab on grade

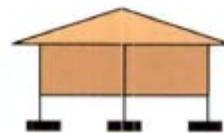
One-story house with stem wall foundation (crawl space):

Light-frame construction
 Soil-bearing strength = 1500 psf
 Snow Load = 30 psf
 28 ft. wide building with interior load-bearing wall (see footnote b)
 Footnote b allows buildings with roof widths smaller than 32 ft. to subtract 2 in. from the footing width for every 2 ft. of width less than 32 ft.

Minimum Footing Width		
2012	2015	Same size footing required
12×6	13" - 2×2" < 12" 12×6	

4-inch brick veneer over light-frame construction
 Soil-bearing strength = 1500 psf
 Snow Load = 30 psf
 32 ft. wide building with interior load-bearing wall

Minimum Footing Width		
2012	2015	Larger footing width required
12×6	16×6	



Crawl space

Foundation Anchorage R403.1.6



Photo Courtesy of Peter Kulczyk

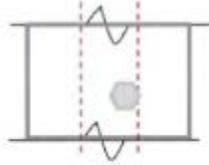


Anchor bolt placement - centered in sill plate

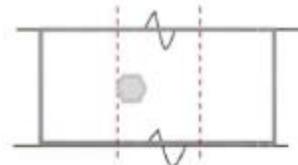
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2x4 plates



2x6 plates



2x4 plates are 3.5 in. wide. If a bolt needs to be in the middle third of the plate, then:

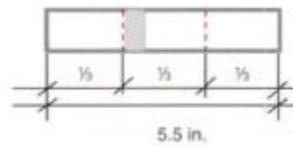
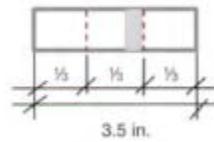
$$3 \frac{1}{2}'' / 3 = 1 \frac{1}{6}''$$

The edge of the bolt, not the bolt head, should begin at least $1 \frac{1}{6}$ in. in from the edge of the plate.

2x6 plates are 5.5 in. wide. If a bolt needs to be in the middle third of the plate, then:

$$5 \frac{1}{2}'' / 3 = 1 \frac{5}{6}''$$

The edge of the bolt, not the bolt head, should begin at least $1 \frac{5}{6}$ in. in from the edge of the plate.



Minimum edge distance



Retaining Walls R404.4



Photo Courtesy of Peter Kulczyk

Retaining wall

Floor Joist Spans R502.3.1 (1) & (2)

TABLE R502.3.1(1) Floor Joist Spans for Common Lumber Species (Residential sleeping areas, live load = 30 psf, L/Δ = 360)^a

Joist Spacing (inches)	Species and Grade	Dead Load = 10 psf				Dead Load = 20 psf			
		2 × 6	2 × 8	2 × 10	2 × 12	2 × 6	2 × 8	2 × 10	2 × 12
		Maximum floor joist spans							
		(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)
12	Douglas fir-larch SS	12-6	16-6	21-0	25-7	12-6	16-6	21-0	25-7
	Douglas fir-larch #1	12-0	15-10	20-3	24-8	12-0	15-7	19-0	22-0
	Douglas fir-larch #2	11-10	15-7	19-10	23-4	11-8	14-9	18-0	20-11
	Douglas fir-larch #3	9-11	12-7	15-5	17-10	8-11	11-3	13-9	16-0
	Hem-fir SS	11-10	15-7	19-10	24-2	11-10	15-7	19-10	24-2
	Hem-fir #1	11-7	15-3	19-5	23-7	11-7	15-3	18-9	21-9
	Hem-fir #2	11-0	14-6	18-6	22-6	11-0	14-4	17-6	20-4
	Hem-fir #3	9-8	12-4	15-0	17-5	8-8	11-0	13-5	15-7
	Southern pine SS	12-3	16-2	20-8	25-1	12-3	16-2	20-8	25-1
	Southern pine #1	11-10	15-7	19-10	24-2	11-10	15-7	18-7	22-0
	Southern pine #2	11-3	14-11	18-1	21-4	10-9	13-8	16-2	19-1
	Southern pine #3	9-2	11-6	14-0	16-6	8-2	10-3	12-6	14-9
	Spruce-pine-fir SS	11-7	15-3	19-5	23-7	11-7	15-3	19-5	23-7
	Spruce-pine-fir #1	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7
	Spruce-pine-fir #2	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7
	Spruce-pine-fir #3	9-8	12-4	15-0	17-5	8-8	11-0	13-5	15-7

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

Note: Check sources for availability of lumber in lengths greater than 20 feet.

a. Dead load limits for townhouses in Seismic Design Category C and all structures in Seismic Design Categories D₀, D₁, and D₂ shall be determined in accordance with Section R301.2.2.2.1.



Example—Floor Spans

#1 Bedroom

Dead load = 10 psf
2×10 joists
16" o.c. spacing
Southern Pine (SP) #2

Maximum Span Allowed	2012	2015
	18'-0"	15'-8"

The SP #2 span length is significantly reduced from the 2012 IRC span length.

Note: An SP #1 joist will span about the same length in the 2015 IRC Table R502.3.1(1) or R502.3.1(2) as the SP #2 did in the tables in the 2012 IRC.

#2 Bathroom

Dead load = 20 psf
2×8 joists
16" o.c. spacing
Douglas Fir-Larch (DFL) #2

Maximum Span Allowed	2012	2015
	11'-6"	11'-8"

The span has increased about 2 inches which is the typical increase in the table. Some cells for Douglas Fir and Hemlock have not changed. Others increased by 1-2 inches.

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Floor joist span examples

Decking R507.4

TABLE R507.4 Maximum joist spacing

Material type and nominal size	Maximum on-center joist spacing	
	Perpendicular to joist	Diagonal to joist ^a
1 1/4-inch thick wood	16 inches	12 inches
2-inch thick wood	24 inches	16 inches
Plastic composite	In accordance with Section R507.3	In accordance with Section R507.3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.

a. Maximum angle of 45 degrees from perpendicular for wood deck boards

R507.1, R507.4 continues



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Decking



R507.2.1 Ledger Details. Deck ledgers installed in accordance with Section R507.2 shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, pressure-preservative-treated Southern Pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers installed in accordance with Section R507.2 shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.

R507.2 continues

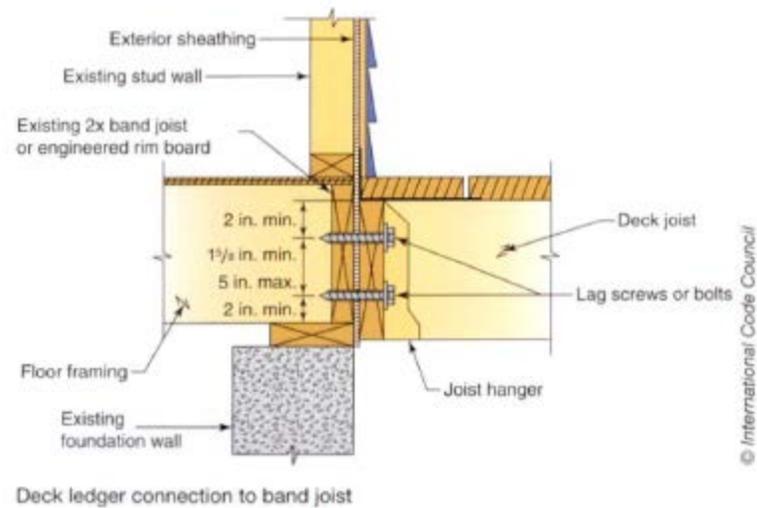


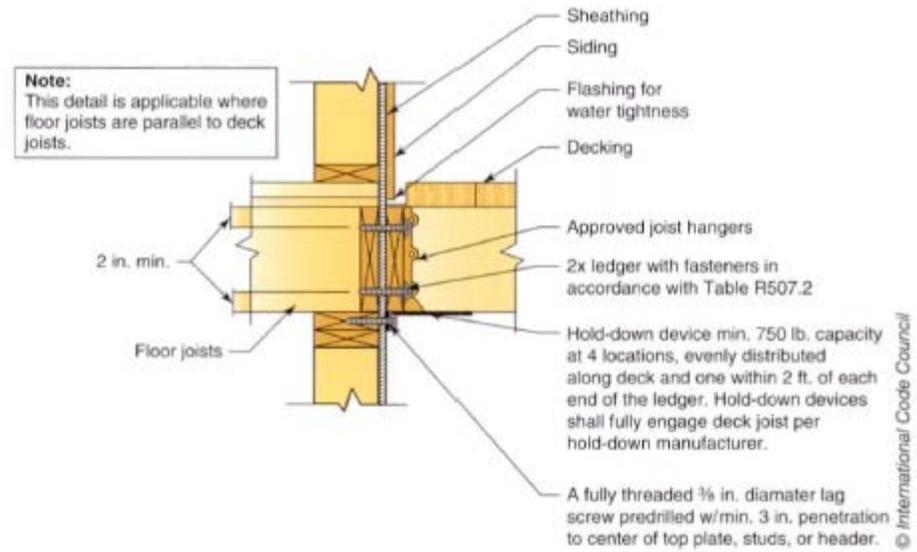


TABLE R507.2 Fastener Spacing for a Southern Pine or Hem-fir Deck Ledger and A 2-Inch-Nominal Solid-Sawn Spruce-pine-fir Band Joist^{c,t} Deck Ledger Connection to Band Joist^{a,b} (Deck live load = 40 psf, deck dead load = 10 psf, snow load ≤ 40 psf)

Connection Details	Joist Span						
	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
	On-center spacing of fasteners ^{d,m}						
½ inch diameter lag screw with ^{tt} ½- to ¾-inch maximum sheathing ^{t,d}	30	23	18	15	13	11	10
½ inch diameter bolt with ^{tt} ½- to ¾-inch maximum sheathing ^d	36	36	34	29	24	21	19
½ inch diameter bolt with ^{tt} ½- to 1 inch maximum sheathing and ½-inch washers ^{tt,h}	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

- a. Ledgers shall be flashed in accordance with Section R703.8 to prevent water from contacting the house band joist.
- b. Snow load shall not be assumed to act concurrently with live load.
- c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- d. Sheathing shall be wood structural panel or solid sawn lumber.
- e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber, or foam sheathing. Up to ½-inch thickness of stacked washers shall be permitted to substitute for up to ½ inch of allowable sheathing thickness when combined with wood structural panel or lumber sheathing. The maximum gap between the face of the ledger board and face of the wall sheathing shall be ¼ inch.



Alternative deck attachment for lateral loads

**TABLE R507.5 Deck Joist Spans for Common Lumber Species^f (ft.-in.)**

Species ^a	Size	Spacing of Deck Joists With No Cantilever ^b (inches)			Spacing of Deck Joists With Cantilevers ^c (inches)		
		12	16	24	12	16	24
Southern pine	2 × 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 × 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 × 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 × 12	18-0	16-6	13-6	18-0	16-6	13-6
Douglas fir-larch ^d , hem-fir ^d spruce-pine-fir ^d	2 × 6	9-6	8-8	7-2	6-3	6-3	6-3
	2 × 8	12-6	11-1	9-1	9-5	9-5	9-1
	2 × 10	15-8	13-7	11-1	13-7	13-7	11-1
	2 × 12	18-0	15-9	12-10	18-0	15-9	12-10
Redwood, western cedars, ponderosa pine ^e , red pine ^e	2 × 6	8-10	8-0	7-0	5-7	5-7	5-7
	2 × 8	11-8	10-7	8-8	8-6	8-6	8-6
	2 × 10	14-11	13-0	10-7	12-3	12-3	10-7
	2 × 12	17-5	15-1	12-4	16-5	15-1	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. No. 2 grade with wet service factor.

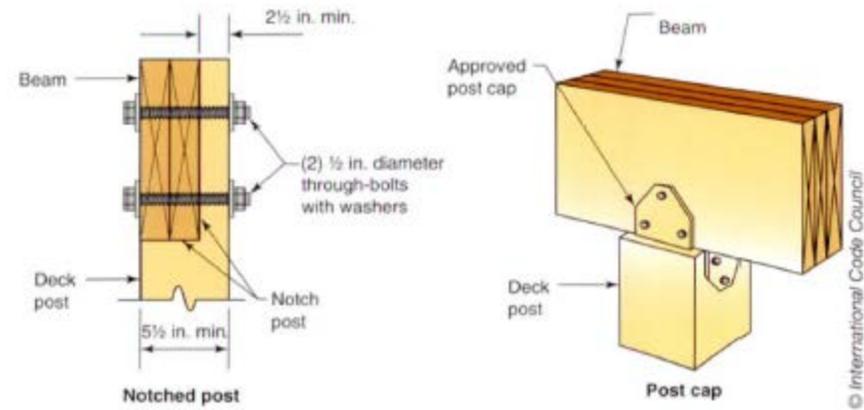
b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360.

c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360 at main span, L/A = 180 at cantilever with a 220-pound point load applied to end.

d. Includes incising factor.

e. Northern species with no incising factor.

f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.



Connection of deck posts to deck beam



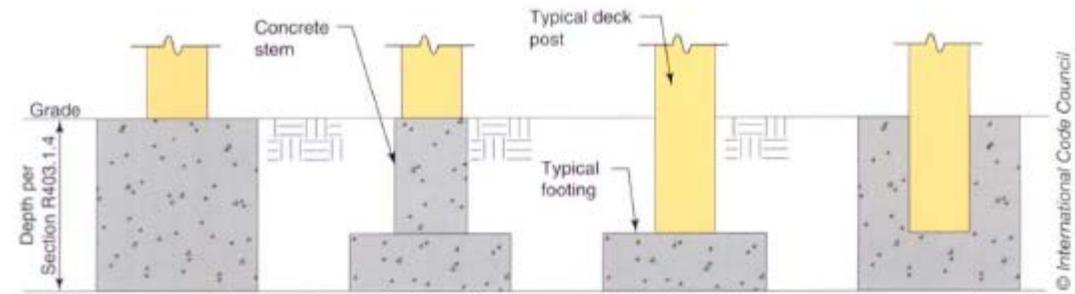
2015 CODE: R507.8 Deck Posts. For single-level, wood-framed decks with beams sized in accordance with Table R507.6, deck post size shall be in accordance with Table R507.8.

TABLE R507.8 Deck Post Height^a

Deck Post Size	Maximum Height
4 × 4	8'
4 × 6	8'
6 × 6	14'

For SI: 1 foot = 304.8 mm.

a. Measured to the underside of the beam.



Typical deck posts to deck footings

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Fastening Schedule R602.3 (1)

TABLE R602.3(1) Fastening Schedule for Structural Members

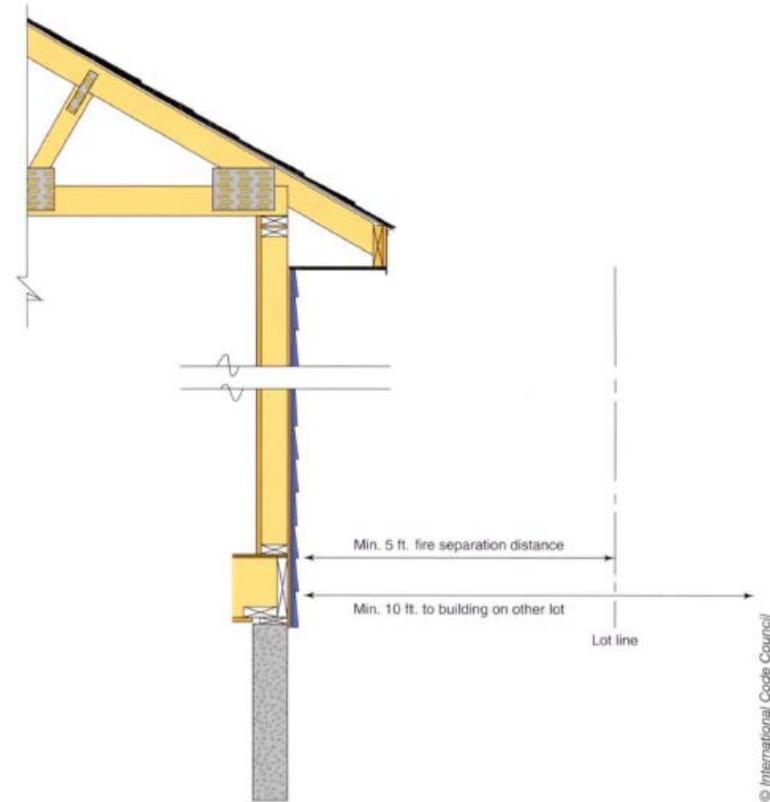
Description of Building Elements		Number and Type of Fastener ^{a, b, c}	Spacing and Location of Fasteners
Item	Roof		
1	Blocking between ceiling joists or rafters to top plate, toe nail	3-8d 4-8d box (2½" × 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Toe nail
2	Ceiling joists to top plate, toe nail	3-8d 4-8d box (2½" × 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Per joist, toe nail
3	Ceiling joist not attached to parallel rafter, laps over partitions, face nail [See Sections R802.3.1, R602.3.2, Table R802.5.1(9)]	3-10d 4-10d box (3" × 0.128"); or 3-16d common (3½" × 0.162"); or 4-3" × 0.131" nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) [See Sections R802.3.1, R802.3.2, Table R802.5.1(9)]	Per Table R802.5.1(9)	Face nail
5	Collar tie to rafter, face nail or 1¼" × 20 gage ridge strap to rafter	3-10d 4-10d box (3" × 0.128"); or 3-10d common (3" × 0.148"); or 4-3" × 0.131" nails	Face nail each rafter
6	Rafter or roof truss to plate, toe nail	3-16d box nails (3½" × 0.135"); or 3-10d common nails (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss ^d
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam, toe nail face nail	4-16d box (3½" × 0.135"); or 3-10d common (3½" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	Toe nail
		3-16d box (3½" × 0.135") 2-16d common (3½" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	End nail

^aFastener not shown for fastener end condition.



Insulated Vinyl Siding R703.13

R703.13, R703.14 continued

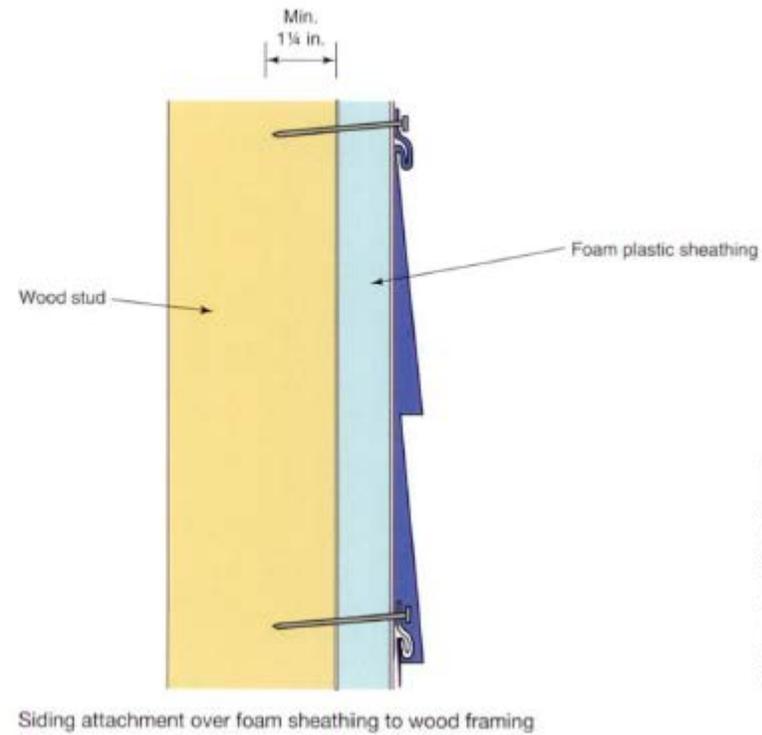


Minimum fire separation distance for polypropylene siding

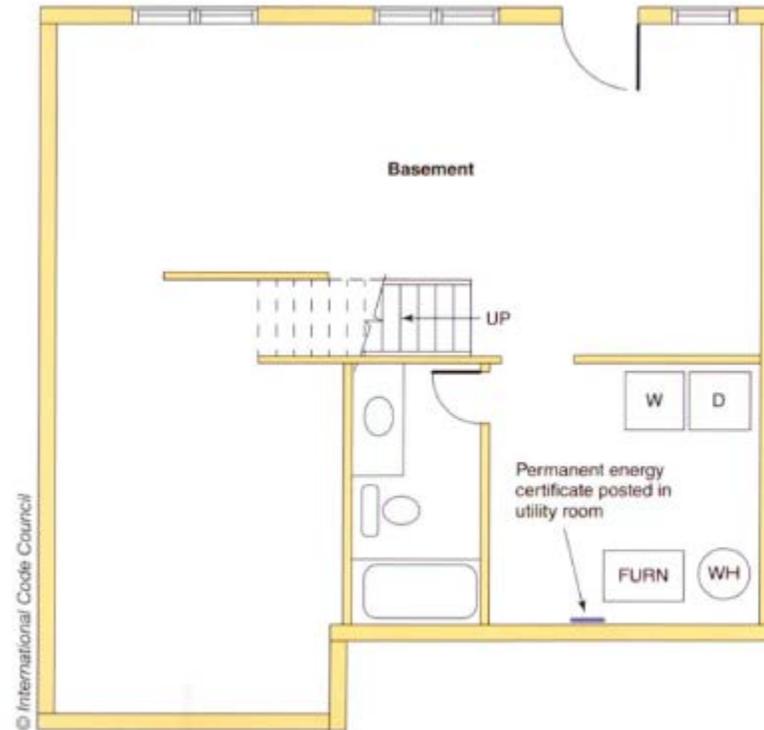
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Cladding Attachment over Foam Sheathing R703.15



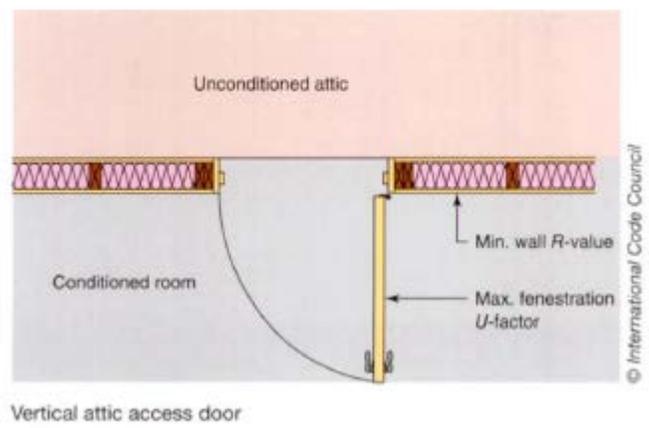
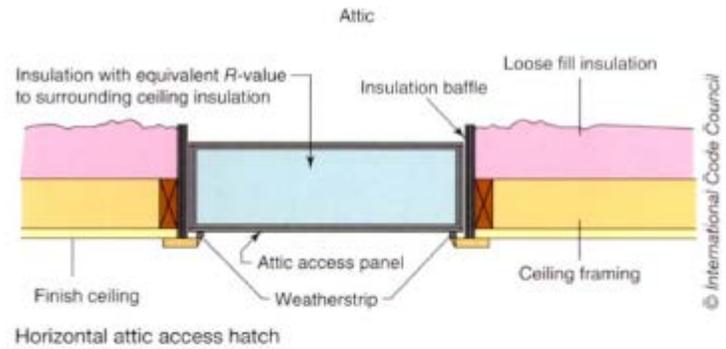
IECC Permanent Energy Certificate R401.3



A permanent energy certificate must be posted inside the building.

IECC R102 Alternative Methods of Construction.

IECC Access Hatches and Doors R402.2.4



IECC Fireplaces R402.4.2

2015 CODE: N1102.4.2 (R402.4.2) Fireplaces. New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

Wood-Burning Fireplace Doors

N1102.4.2, Table N1102.4.1.1 continues

TABLE N1102.4.1.1 (R402.4.1.1) Air Barrier and Insulation Installation

Component	Air Barrier Criteria	Insulation Installation Criteria
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors.	

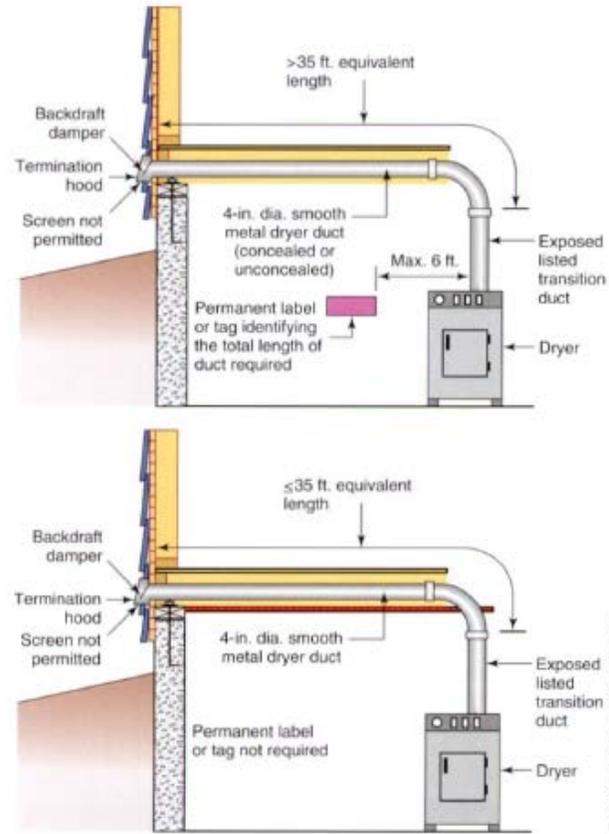
(Portions of table not shown for brevity and clarity.)



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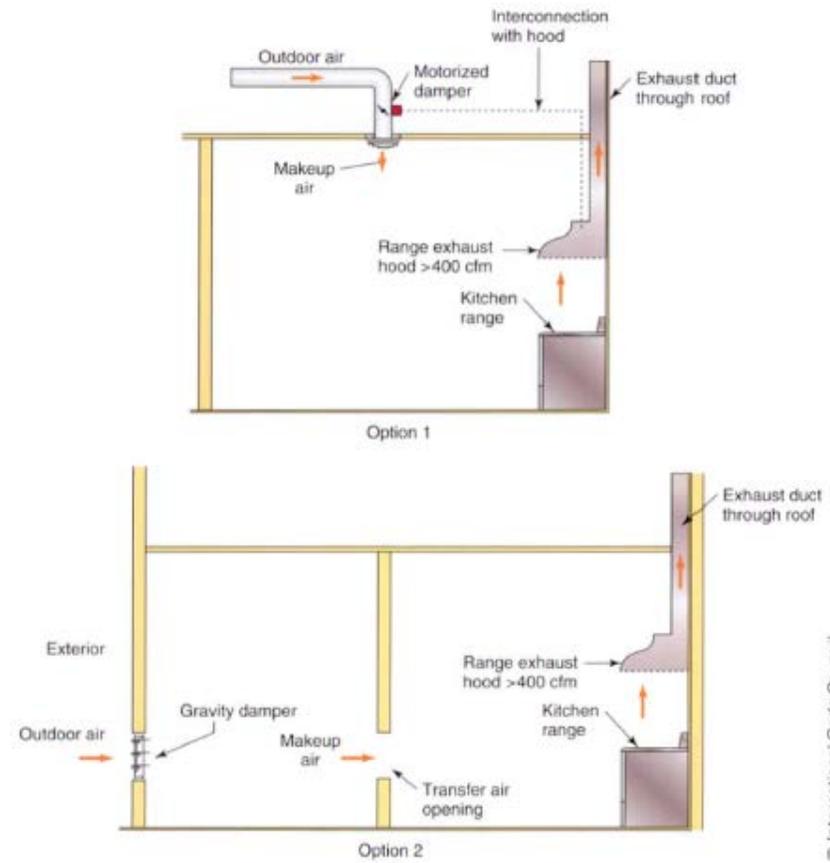
Fireplace doors must be listed for the application.

Dryer Duct Length Identification M1502.4.6



A permanent label or tag is only required when the equivalent length of the dryer exhaust duct exceeds 35 feet.

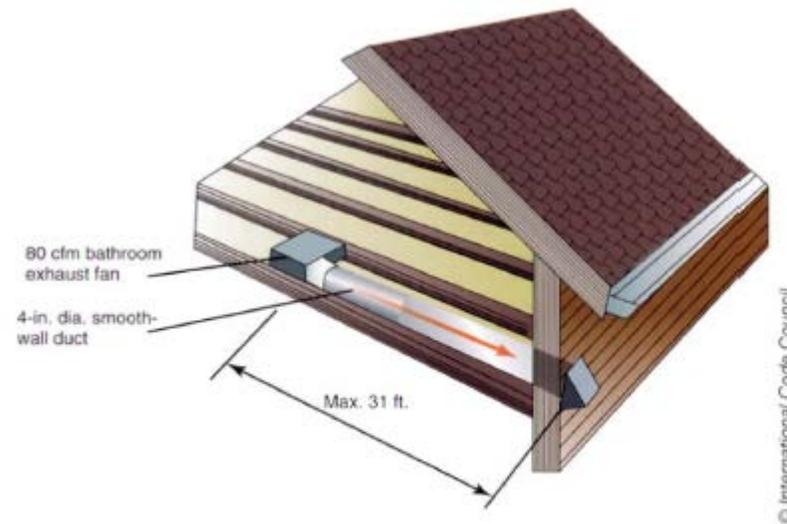
Make up Air for Range Hoods M1503.4



Required makeup air for kitchen exhaust hoods exceeding 400 cfm



Exhaust Duct Length M1506.2



Maximum length of exhaust duct is based on fan rating and type and diameter of duct.

M1506.2 continued

TABLE M1506.2 Duct Length

Duct Type	Flex Duct									Smooth-Wall Duct						
Fan airflow rating (CFM @ 0.25 inch wc ^a)	50	80	100	125	150	200	250	300	50	80	100	125	150	200	250	300
Diameter ^b (inches)	Maximum length ^{c, d, e} (feet)															
3	X	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X
4	56	4	X	X	X	X	X	X	114	31	10	X	X	X	X	X
5	NL	81	42	16	2	X	X	X	NL	152	91	51	28	4	X	X
6	NL	NL	158	91	55	18	1	X	NL	NL	NL	168	112	53	25	9
7	NL	NL	NL	NL	161	78	40	19	NL	NL	NL	NL	NL	148	88	54
8 and above	NL	NL	NL	NL	NL	189	111	69	NL	NL	NL	NL	NL	NL	198	133

a. Fan airflow rating shall be in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

b. For non-circular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.

c. This table assumes that elbows are not used. Fifteen feet (5 m) of allowable duct length shall be deducted for each elbow installed in the duct run.

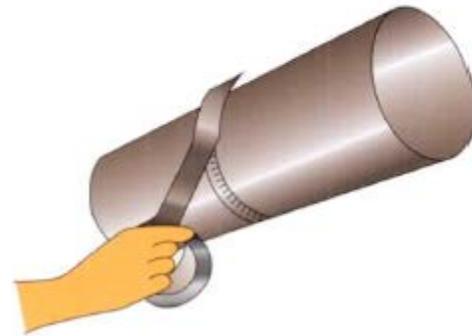
d. NL = no limit on duct length of this size.

e. X = not allowed. Any length of duct of this size with assumed turns and fittings will exceed the rated pressure drop.



Duct Installation M1601.4

equally spaced around the joint.

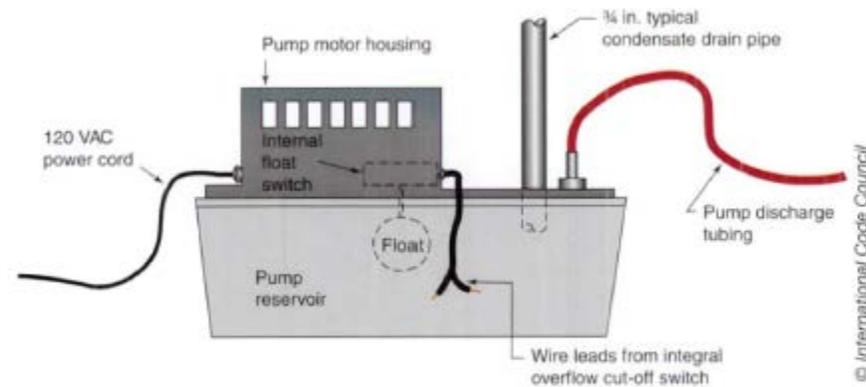


Mastic Tape
181 B-FX

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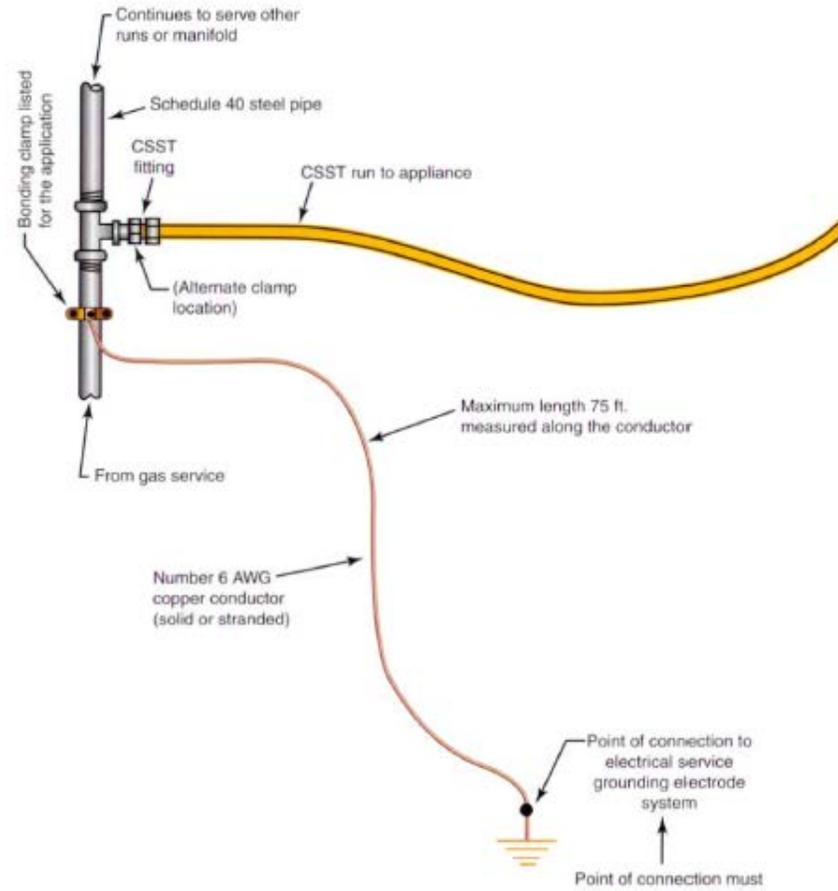
Tapes and mastics used to seal sheet metal ducts must be listed to UL 181 B.

Condensate Pumps G2404.11



Condensate pumps located in attics and crawl spaces must be connected to the appliance such that when the pump fails the appliance shuts off.

Bonding of CSST G2411.1.1





Door Clearance to Vent Terminals G2426.7.1



Vent terminals must be located so doors cannot swing within 12 inches to protect against physical damage.