

DECK GUIDELINES

All information in this handout pertains to 1 and 2 family residential decks. The Town of Simsbury is offering this informational handout as representative of typical issues/questions that may arise on a typical job. It does not represent the full code text. The Town assumes no responsibility for any errors, omissions, and the installer is required to follow all applicable state and local codes. For additional information please refer to the 2015 IRC and Connecticut State Building code.

Permit Application

1. Building plans for deck including:
 - Proposed deck size
 - Height of structure from grade
 - Size and spacing of floor joists
 - Size, type, location and spacing of posts
 - Size and type of beams
 - Size and depth of footings (minimum 42 inches deep for frost protection and minimum of 8 inches around)
 - Ledger attachment details and flashing information
 - Size and type of decking material
2. Plot plan showing deck scaled with stairs
3. Building Permit Application signed by owner or licensed contractor and fee paid (\$14.26 per \$1,000 of project cost)
4. Zoning Compliance Form completed (\$25 application fee)
5. Approval from Farmington Valley Health District (septic) or WPCA (sewer)

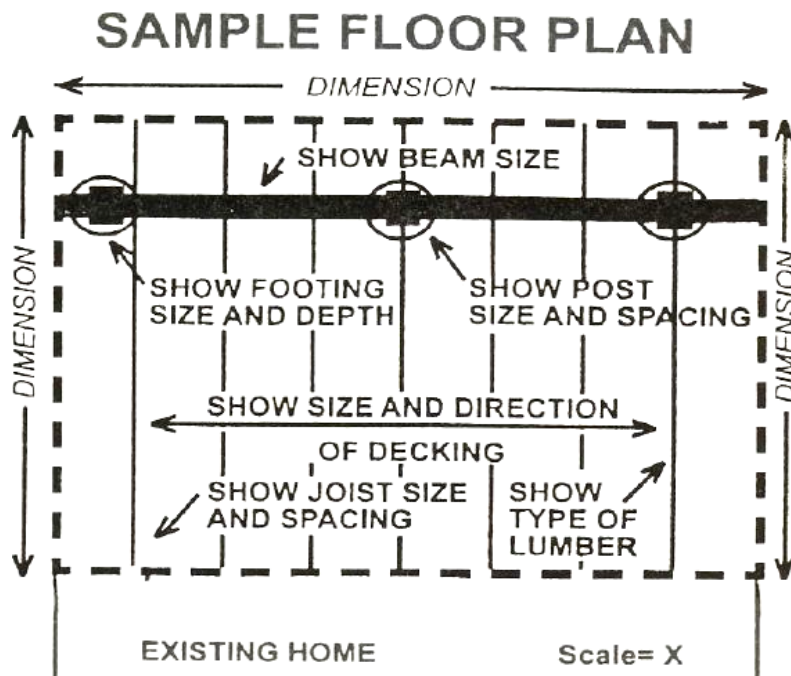


TABLE R507.6 DECK BEAM SPAN LENGTHS^{a, b} (ft. - in.)

SPECIES ^c	SIZE ^d	DECK JOIST SPAN LESS THAN OR EQUAL TO:						
		(feet)						
		6	8	10	12	14	16	18
Southern pine	2 – 2 × 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2 – 2 × 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2 – 2 × 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2 – 2 × 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3 – 2 × 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3 – 2 × 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3 – 2 × 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10
Douglas fir-larch ^e , hem-fir ^e , spruce-pine-fir ^e , redwood, western cedars, ponderosa pine ^f , red pine ^f	3 × 6 or 2 – 2 × 6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3 × 8 or 2 – 2 × 8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3 × 10 or 2 – 2 × 10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3 × 12 or 2 – 2 × 12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4 × 6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4 × 8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4 × 10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4 × 12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3 – 2 × 6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3 – 2 × 8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3 – 2 × 10	12-0	10-5	9-4	8-6	7-10	7-4	6-11
	3 – 2 × 12	13-11	12-1	10-9	9-10	9-1	8-6	8-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

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

b. Beams supporting deck joists from one side only.

c. No. 2 grade, wet service factor.

d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.

e. Includes incising factor.

f. Northern species. Incising factor not included.

TABLE R507.5 DECK JOIST SPANS FOR COMMON LUMBER SPECIES^f (ft. - in.)

SPECIES ^a	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER ^b			SPACING OF DECK JOISTS WITH CANTILEVERS ^c		
		(inches)			(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	12-4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. No. 2 grade with wet service factor.

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

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

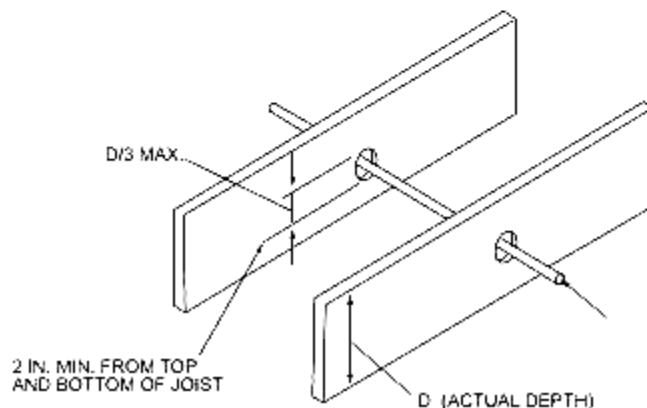
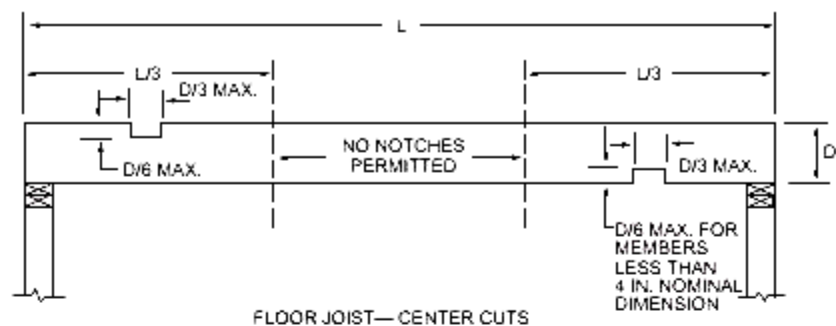
d. Includes incising factor.

e. Northern species with no incising factor

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

Above tables from IRC2015

Drilling and Notching



IRC2015 R502.8

Hardware

Fasteners and weight bearing connecting devices used for pressure preservative and fire-retardant treated wood shall be made of stainless steel, silicon bronze, copper, G185 galvanized steel, or shall be hot-dipped after fabrication. It is important to meet these standards to avoid excessive corrosion.

Aluminum flashing cannot come in contact with preservative treated wood unless it is painted or coated with material to prevent contact with lumber.

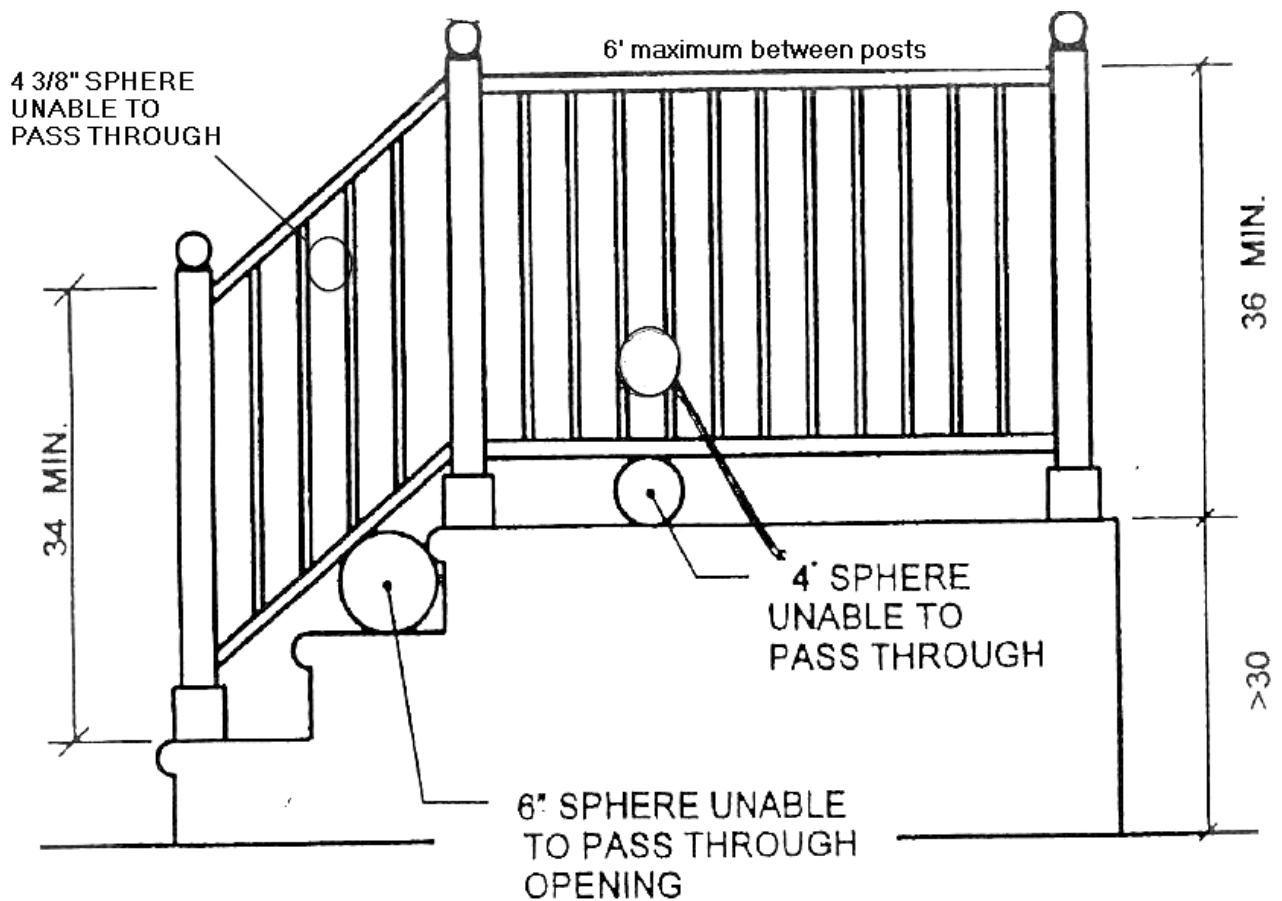
Do not use old hardware on new preservative treated lumber.

"Z" designation on hardware shows G185 standard is met and "HDG" designation shows hot dipped galvanized standard is met.

Guards

Porches, balconies, or raised floor surfaces located more than 30 inches above the floor or grade below require guards not less than 36 inches in height. Open sides of stairs with a total rise of more than 30 inches above grade require guards not less than 34 inches from nose of tread.

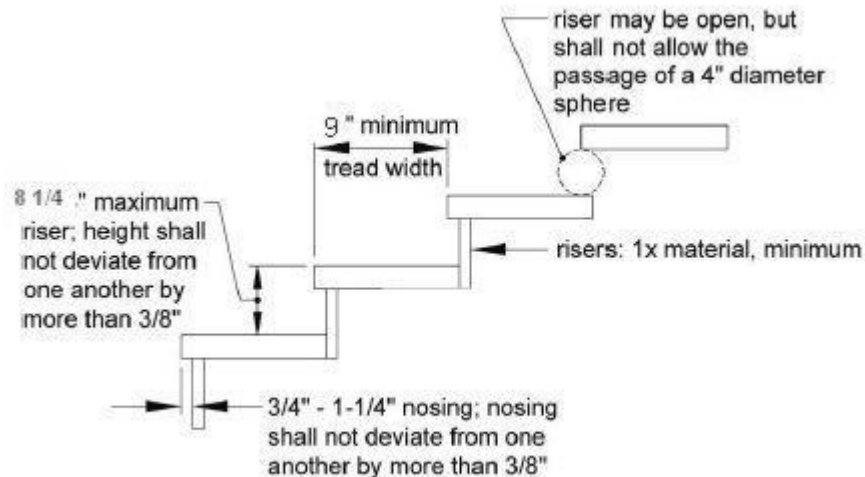
- Guard openings on sides of porches and deck cannot allow passage of a sphere 4 inches or more in diameter.
- Openings for guards on the sides of stair treads cannot allow passage of a sphere 4 3/8 inches or more in diameter.
- Triangular openings formed by riser, tread and bottom rail of a guard at the open side of a stairway cannot allow passage of a sphere 6 inches or more in diameter.



Stairways and Handrails

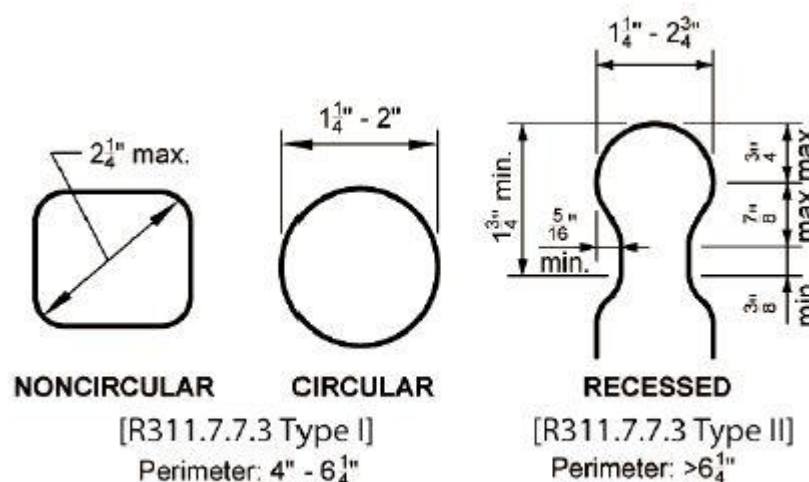
Riser Height: Maximum riser height is 8 1/4 inches as measured vertically between leading edges of adjacent treads and not deviate by more than 3/8 inch.

Tread Depth: Minimum tread depth is 9 inches from nose to nose



Stairway Width: The minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31 1/2 inches for 1 handrail and 27 inches for handrail on both sides. And not less than 36 inches at all points above the handrail height.

Handrails: All stairs with 4 or more risers shall have a continuous handrail on at least one side with a space of at least 1 1/2 inches from wall but not more than 4 1/2 inches and at a height of 34 – 38 inches.



For additional information please refer to the 2015 IRC and Connecticut State Building code.