



COUNTY of FREDERICK

Inspections Department

Mark A. Fleet, Building Code Official

540/665-5650

Fax 540/678-0682

DECK

BUILDING PERMIT APPLICATION REQUIREMENTS

1. A completed application that includes:
 - ☐ The name of the current owner of the property or lot and the tax map identification number (this may be found on your real estate bill)
 - ☐ Directions to the location of the property or lot
 - ☐ Setbacks: Actual distance (measured in feet) from the proposed deck to the property line
 - ☐ A daytime phone number so that you may be contacted with questions
2. A recorded plat or drawing of the property.
 - ☐ Please mark where the deck will be located on the plat. Place the actual distance of the proposed deck on the plat and indicate, in feet, the distance to all property lines
3. One Complete set of structural plans that contain the following information
 - Post size and spacing
 - Footing size and location
 - Floor framing size, spacing, and direction
 - Height, measured from grade to the walking surface of the deck
 - Completed Frederick County Typical Deck Detail

The use of the Frederick County Deck Detail is encouraged as a supplement to your plans but may not be sufficient to explain your project entirely. If your deck is not a rectangle/square, please provide and framing layout showing the joist direction, beam location, and foundation/pier locations

Additional information may be required depending on the specifics of your project

Your permit application and plans will be reviewed by:

- a) the Zoning Department to ensure compliance with setback requirements and
- b) the Inspections Department to ensure compliance with Virginia Residential Code

You will be contacted when your permit has been approved and is ready to be issued or, if there is any additional information required to complete the review process.

Should you have any questions regarding your plans after the permit has been issued, please call 540-665-5650.

DATE: _____

PERMIT # _____

APPLICATION FOR DECK PERMIT

Owner's Name: _____

Address: _____

Phone Number: _____

- Owner's are allowed to act as their own contractor provided DPOR Title 54 Owner Contractor Definition is met.

*Contractor's Name: _____

Address: _____

Phone Number: _____ VA State Contractors License Number: _____

***NOTE:** If you have never obtained permits in Frederick County please attach a copy of your state contractor's license. Any jobs over \$25,000 will also need a Frederick County Business License unless you are building in the Town of Middletown or the Town of Stephens City. You would then need that town's business license. All businesses in Frederick County are required to have a Frederick County Business Licenses regardless of the job value.

LOCATION OF PROPERTY

Subdivision: _____ Lot Number _____

Address: _____

Tax Map Identification Number of the Property: _____

Directions to the job site: _____

SETBACKS (Please indicate the actual distance measured from the structure to the property lines)

Front _____ Rear _____ Right _____ Left _____

TYPE OF PERMIT APPLYING FOR:

☐ Building ☐ Electrical Number of Switches _____ Lights _____ Receptacles _____

DECK DIMENSIONS: _____ x _____ TOTAL SF: _____ LOCATION: Front/Rear/Side (circle one)

Covered/Uncovered (circle one) JOB VALUE: _____

I hereby agree to comply with all provisions of the Virginia Uniform Statewide Building Code and the Zoning Ordinance as adopted by the County of Frederick.

Applicant (*signature*): _____

(*print*): _____

Applicant is: _____ Contractor _____ Owner _____ Agent* _____ Engineer/Architect

Permit Representative to be contacted for permit/plan questions or permit status:

Name _____

Phone Number _____ EMAIL ADDRESS: _____

FREDERICK COUNTY USBC/IRC 2021



My Deck Is:

☐ FREE STANDING WITH TWO GIRDERS

☐ SUPPORTED AT THE HOUSE WALL WITH A LEDGER - LATERAL BRACING IS REQUIRED

EXTERIOR GROUND FAULT RECEPTICAL LOCATED ON THE DECK?

☐ YES

☐ NO

This requirement is for new house construction. See VEEBC, Part II of the USBC, Section 102.2.2 for code requirements to an existing house & deck alteration

IS A HOT TUB TO BE INSTALLED ON DECK?

☐ YES - STOP!

☐ NO

Typical deck details shall not be used for Decks higher than Fourteen (14) foot in height from grade, nor Decks Supporting Hot Tubs. Please submit design with beam locations and supports, as well as, Manufacture information on hot tub. All residential decks surrounding a POOL must comply with the 2021 International Swimming Pool & Spa code for barriers and decks.

For Ledger Board Attachment, please identify the existing floor system inside the home

☐ Dimensional Lumber (typical 2 x wood)

☐ TJI Engineered Floor

☐ Laminated Veneered Lumber Product (LVL)

☐ Open Web Trusses

☐ OTHER - _____

Please specify type

Fasteners for pressure preservative and fire-retardant treated wood shall be hot dipped galvanized steel, stainless steel, silicon bronze or copper.

If design of deck is not square or rectangular, submit an overhead view showing beam location, beam length, post location, joist size, and joist direction.

Structure to which deck is attached

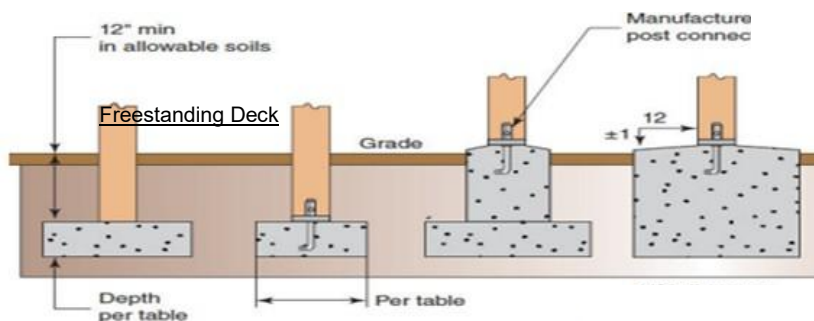
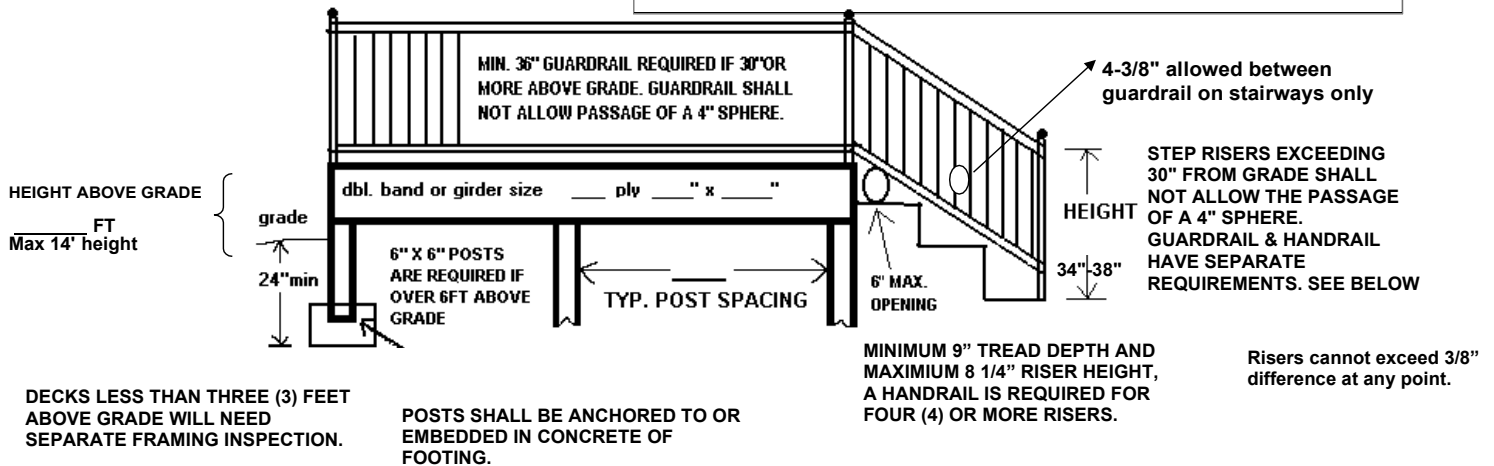
Depth

2" x _____ @ _____ O.C.

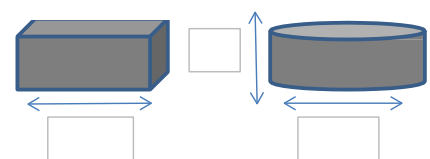
FLOOR JOISTS

Width

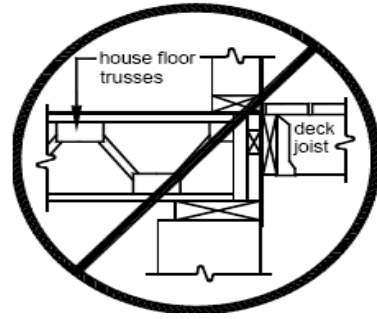
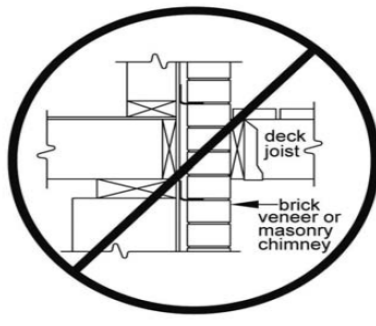
FOR OFFICE USE ONLY



NOTE: POSTS MUST BE CENTERD ON FOOTING OR IN FOOTING.



Indicate Size of Footings Being installed



Double-shear nailing should use full length common nails



Shorter nails may not be used as double shear nails

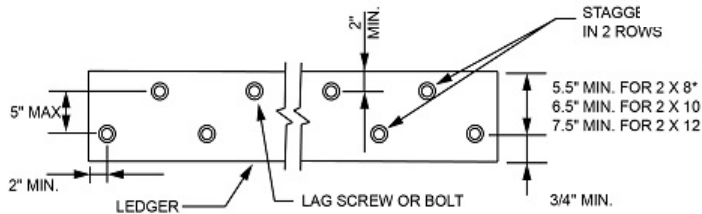
Figure R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS

LOAD ^c (psf)	JOIST SPAN ^a (feet)	ON-CENTER SPACING OF FASTENERS ^b (inches)		
		<u>1/2-inch diameter lag screw with 1/2-inch maximum sheathing^{d, e}</u>	<u>1/2-inch diameter bolt with 1/2-inch maximum sheathing^e</u>	<u>1/2-inch diameter bolt with 1-inch maximum sheathing^f</u>
40 live load	6	30	36	36
	8	23	36	36
	10	18	34	29
	12	15	29	24
	14	13	24	21
	16	11	21	18
	18	10	19	16

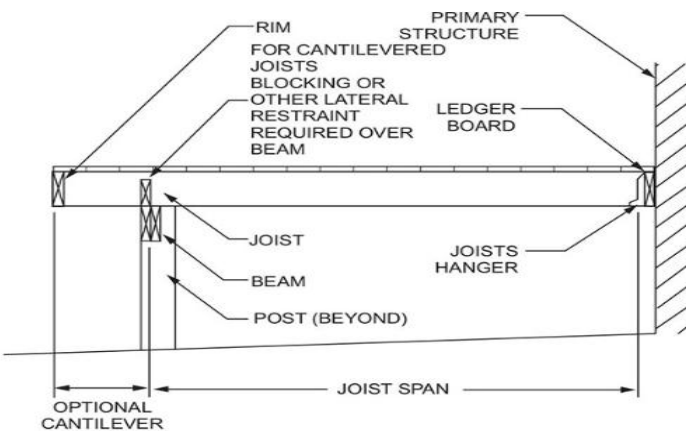
FOR SI: 1 INCH=25.4 MM, 1 FOOT=304.8 MM, 1 POUND PER SQUARE FOOT=0.0479 KPA

- INTERPOLATION PERMITTED. EXTRAPOLATION IS NOT PERMITTED.
- LEDGERS SHALL BE FLASHED IN ACCORDANCE WITH SECTION R703.4 TO PREVENT WATER FROM CONTACTING THE HOUSE BAND JOIST.
- DEAD LOAD=10 PSF. SNOW LOAD SHALL NOT BE ASSUMED TO ACT CONCURRENTLY WITH LIVE LOAD.
- THE TIPOF THE LAG SCREW SHALL FULLY EXTEND BEYOND THE INSIDE FACE OF THE BAND JOIST.
- SHEATHING SHALL BE WOOD STRUCTURAL PANEL OR SOLID SAWN LUMBER.
- SHEATHING SHALL BE PERMITTED TO BE WOOD STRUCTURAL PANEL, GYPSUM BOARD, FIBERBOARD, LUMBER OR FOAM SHEATHING. UPTO 1/2 INCH THICKNESS OF STACKED WASHERS SHALL BE PERMITTED TO SUBSTITUTE FOR UPTO 1/2 INCH OF ALLOWABLE SHEATHING THICKNESS WHERE COMBINED WITH WOOD STRUCTAL PANEL OR LUMBER SHEATHING.

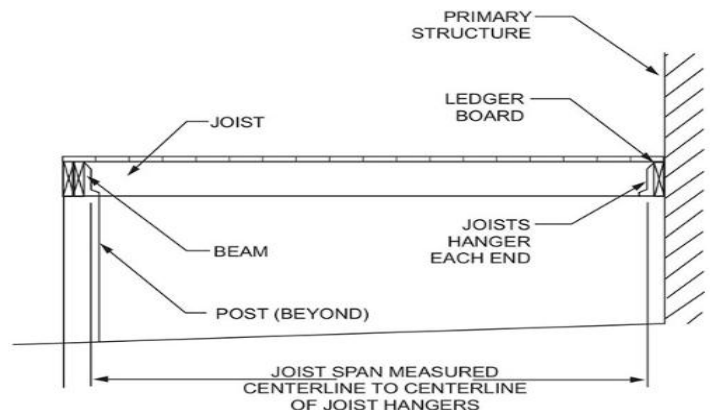
MINIMUM 2X8 TREATED LEDGER BOARD



*DISTANCE SHALL BE PERMITTED TO BE REDUCED TO 4.5" IF LAG SCREWS ARE USED OR BOLT SPACING IS REDUCED TO THAT OF LAG SCREWS TO ATTACH 2 X 8 LEDGERS TO 2 X 8 BAND JOISTS.

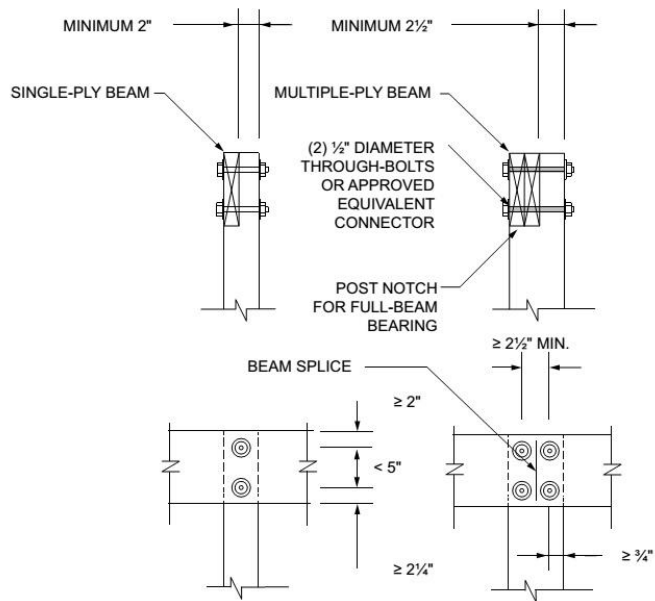


CANTILEVERED JOISTS WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM

BEAM TO POST CONNECTIONS



APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED IN A MANOR TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING

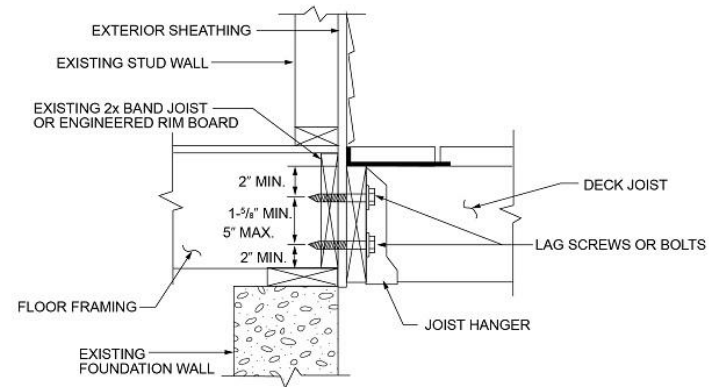


TABLE R507.5(1) MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD^c

BEAM SPECIES ^d	BEAM SIZE ^e	EFFECTIVE DECK JOIST SPAN LENGTH ^{a, i, j} (feet)						
		6	8	10	12	14	16	18
		MAXIMUM DECK BEAM SPAN LENGTH (feet-inches) ^{a, b, f}						
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	7-5	7-0
	3 – 2 × 6	8-6	7-5	6-8	6-1	5-8	5-3	4-11
	3 – 2 × 8	10-11	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-0	11-2	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

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.

- Interpolation permitted. Extrapolation not permitted.
- Beams supporting a single span of joists with or without cantilever.
- Dead load = 10 psf, $L/\Delta = 360$ at main span, $L/\Delta = 180$ at cantilever. Snow load is not assumed to be concurrent with live load.
- No. 2 grade, wet service factor included.
- Beam depth shall be equal to or greater than the depth of intersecting joist for a flush beam connection.
- Beam cantilevers are limited to the adjacent beam's span divided by 4.
- Includes incising factor.
- Incising factor not included.
- Deck joist span as shown in Figure R507.5.
- For calculation of effective deck joist span, the actual joist span length shall be multiplied by the joist span factor in accordance with Table R507.5(5).

TABLE R507.6 MAXIMUM DECK JOIST SPANS

LOAD ^a (psf)	JOIST SPECIES ^b	JOIST SIZE	ALLOWABLE JOIST SPAN ^{b, c} (feet-inches)			MAXIMUM CANTILEVER ^{d, f} (feet-inches)							
			Joist spacing (inches)			Joist back span ^g (feet)							
			12	16	24	4	6	8	10	12	14	16	18
40 live load	Southern pine	2 × 6	9-11	9-0	7-7	1-0	1-6	1-5	NP	NP	NP	NP	NP
		2 × 8	13-1	11-10	9-8	1-0	1-6	2-0	2-6	2-3	NP	NP	NP
		2 × 10	16-2	14-0	11-5	1-0	1-6	2-0	2-6	3-0	3-4	3-4	NP
		2 × 12	18-0	16-6	13-6	1-0	1-6	2-0	2-6	3-0	3-6	4-0	4-1
	Douglas fir-larch ^e Hem-fir ^e Spruce-pine-fir ^e	2 × 6	9-6	8-4	6-10	1-0	1-6	1-4	NP	NP	NP	NP	NP
		2 × 8	12-6	11-1	9-1	1-0	1-6	2-0	2-3	2-0	NP	NP	NP
		2 × 10	15-8	13-7	11-1	1-0	1-6	2-0	2-6	3-0	3-3	NP	NP
		2 × 12	18-0	15-9	12-10	1-0	1-6	2-0	2-6	3-0	3-6	3-11	3-11
	Redwood ^f Western cedars ^f Ponderosa pine ^f Red pine ^f	2 × 6	8-10>	8-0	6-10	1-0	1-4	1-1	NP	NP	NP	NP	NP
		2 × 8	11-8	10-7	8-8	1-0	1-6	2-0	1-11	NP	NP	NP	NP
		2 × 10	14-11	13-0	10-7	1-0	1-6	2-0	2-6	3-0	2-9	NP	NP
		2 × 12	17-5	15-1	12-4	1-0	1-6	2-0	2-6	3-0	3-6	3-8	NP

TABLE R507.7 MAXIMUM JOIST SPACING FOR WOOD DECKING

DECKING MATERIAL TYPE AND NOMINAL SIZE	DECKING PERPENDICULAR TO JOIST		DECKING DIAGONAL TO JOIST ^a	
	Single span ^c	Multiple span ^c	Single span ^c	Multiple span ^c
	Maximum on-center joist spacing (inches)			
1 1/4-inch-thick wood ^b	12	16	8	12
2-inch-thick wood	24	24	18	24

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.
b. Other maximum span provided by an accredited lumber grading or inspection agency also allowed.
c. Individual wood deck boards supported by two joists shall be considered single span and three or more joists shall be considered multiple span.

LATERAL BRACING APPLIES TO ALL DECKS THAT ARE NOT DESIGNED AS FREESTANDING/SELF SUPPORTED

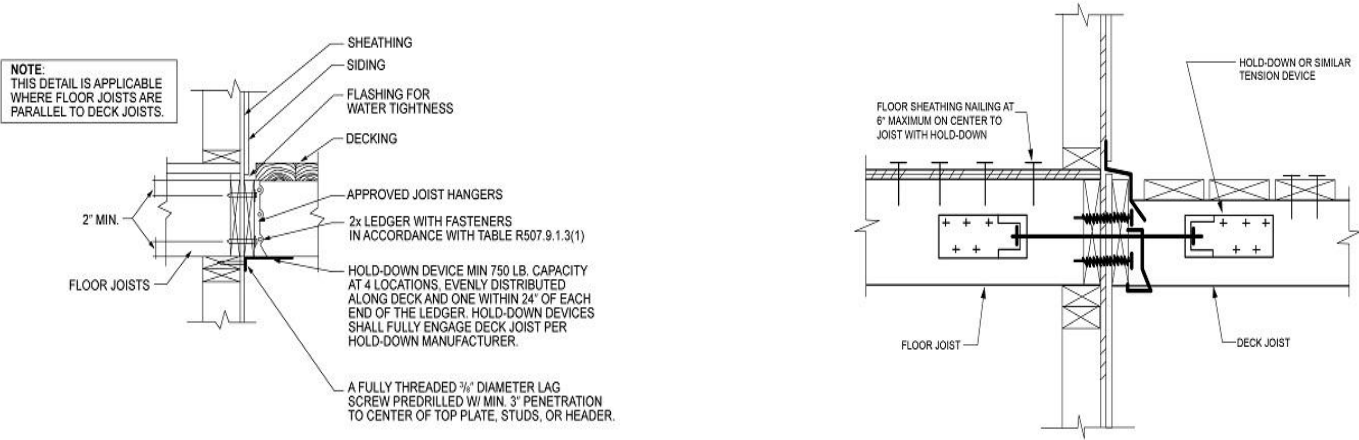
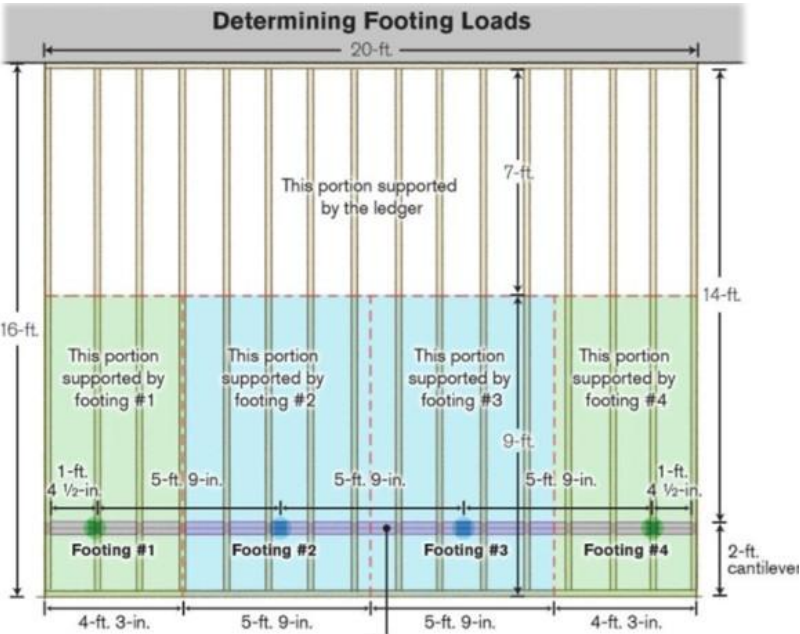
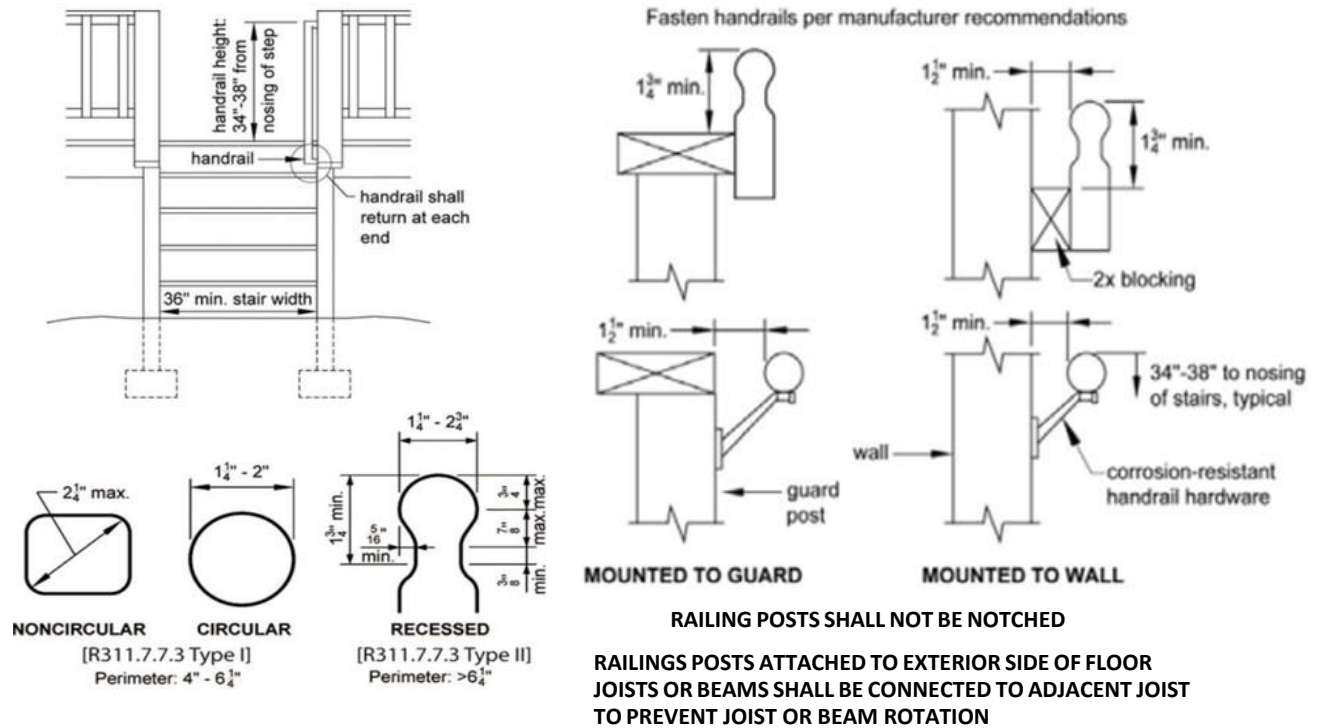


TABLE R507.3.1 MINIMUM FOOTING SIZE FOR DECKS

TRIBUTARY AREA (ft ²)	2,000 ^c		
	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches) ^f
5	7	8	6
20	9	9	6
40	12	14	6
60	15	17	6
80	17	19	6
100	19	21	6
120	21	23	7
140	22	25	8
160	24	27	9



HANDRAIL AND GUARDRAIL SEPARATE REQUIREMENTS



CONSUMER INFORMATION SHEET FOR ACQ PRESERVED WOOD

ACQ PRESERVED WOOD ALSO KNOWN AS ALKALINE COPPER QUATERNARY COMPOUNDS IS A PRODUCT BEING OFFERED AS AN ALTERNATIVE TO TRADITIONAL PRESSURE TREATED WOOD. THE PRESERVATIVE TECHNOLOGY IN ACQ PRODUCTS HAVE BEEN USED COMMERCIALY SINCE 1991 THROUGHT EUROPE, ASIA, AND THE UNITED STATES.

FOR MANY BACKYARD AND COMMERCIAL PROJECTS, ACQ PRODUCTS ARE AN IDEAL ALTERNATIVE TO TRADITIONAL PRESSURE TREATED WOOD.

THE MAIN ACTIVE INGREDIENT IN ACQ IS COPPER. COPPER HAS LONG BEEN KNOWN AS AN EFFECTIVE WOOD PRESERVITIVE. IN ACQ IT IS COUPLED WITH A QUATERNARY COMPOUND OR "QUAT" FOR ENHANCED PERFORMANCE AGAINST COPPER TOLERANT FUNGI AND TERMITES. QUATS ARE COMMONLY USED IN HOUSEHOLD DISINFECTANTS AND CLEANERS.

HANDLING, CONSTRUCTION TECHNIQUES AND THEN GENERAL CHARACTERISTICS OF ACQ WOOD PRODUCTS ARE SIMILAR TO THOSE OF TRADITIONAL TREATED WOOD. MOST IMPORTANT, ACQ PRODUCTS HAVE PROVEN AROUND THE WORLD TO REDUCE DEMANDS ON FOREST RESOURCES BY GREATLY EXTENDING THE LIFE OF WOOD.

IMPORTANT APPLICATION INFORMATION

USE AN END CUT PRESERVATIVE – WHEN BUILDING YOUR OUTDOOR PROJECT WITH ACQ PRESERVED WOOD, IT IS IMPORTANT TO PROTECT THE CUT ENDS OF BOARDS FROM FUNCAL DECAY. ALL CUTS AND HOLES THAT EXPOSED UNTREATED WOOD SHOULD BE LIBERALLY BRUSH-COATED WITH AN END-CUT PRESERVATIVE (COPPER NAPH THENATE IN GROUND CONTACT OR ZINC NAPHTHENATE ABOVE GROUND) BEFORE THE WOOD IS INSTALLED. ALSO APPLY ON AREAS WHERE MOISTURE CAN COLLECT. ALWAYS FOLLOW THE MANUFACTURE’S RECOMMENDATIONS.

USE CORROSION-RESISTANT FASTENERS – ACQ PRESEVED WOOD PRODUCTS ARE DESIGNED FOR LONG-TERM PERFORMANCE IN OUTDOOR APPLICATIONS AND THEREFORE, REQUIRE HIGH QUALITY, CORROSION-RESISTANT NAILS, SCREWS AND OTHER FASTENERS. FOR BEST RESULTS, FASTENERS SHOULD BE STAINLESS STEEL, HOT-DIP GALVANIZED OR OTHER FASTENERS THAT HAVE PERMFORMED WELL IN APPROPRIATE TESTING WITH COPPER-BASED PRESERVATIVE TREATED WOOD

DIRECT CONTACT OF ACQ PRESERVED WOOD WITH ALUMINIUM IS NOT RECOMMENDED AND SHOULD BE AVOIDED –WHEN USING ACQ PRESERVED WOOD IN CLOSE PROXIMITY TO ALUMINUM PRODUCTS, SUCH AS ALUMINUM SIDING, FLASHING AND DOOR AND WINDOW FRAMES, A 1/4" MINUMUM SPACE MUST BE ALLOWED FOR BETWEEN THE ACQ AND THE ALUMINUM PRODUCTS. POLYETHYLENE OR NYLON SPACERS CAN BE USED TO MAINTAIN THE 1/4" SPACING. ANOTHER OPTION IS TO USE A POLYETHYLENE BARRIER, WITH A MINUMUM THICKNESS OF 10 MILS, BETWEEN THE ACQ PRESERVED WOOD AND THE ALUMINUM PRODUCT TO PREVENT DIRECT CONTACT OF THE WOOD AND THE ALUMINUM.

ACQ PRESERVED WOOD IS TREATED UNDER PRESSURE FOR AN ASSIGNED PERIOD OF TIME THUS PROVIDING A PERCENTAGE OF ABSORPTION. THIS PERCENTAGE IS NOTED ON THE MANUFACTURES LABEL. PRESSURE TREATED WOOD LABELED IN THE 0-.33 RANGE IS FOR ABOVE GROUND CONTACT. PRESSURE TREATED WOOD LABELED ABOVE .33 IS FOR USE IN GROUND CONTACT APPLICATIONS.