



Building Permits for Decks

These guidelines apply to the construction of residential decks. This bulletin is for information only and may not apply to every deck permit application on every property in St. Mary's County. Building permits are required for all decks. If hot tubs, spas, etc. are included in the project, an electrical permit and a plumbing permit are usually required.

Step 1: See Customer Assistance Guide (CAG) #3

Use the "On Demand" Process for obtaining a Building Permit for Minor Residential Construction. Bring a drawing to a scale showing the existing house with the proposed deck and dimensions including its relative position to your property lines. If the house is not served by public water and/or sewer, include the well and/or septic system in your drawing.

Step 2: Permit Issued

Upon issuance of your deck permit you will be provided a Building Permit Placard for you to post on your property to identify the location of the deck construction. You will also be provided with CAG #22 and an inspection application form. Please follow the CAG #22 instructions as they pertain to "staking and flagging the lot," filling out the inspection application form and paying the applicable inspection fee. The fee and completed form must be on file with the inspection agency 24 hours prior to requesting your footing inspection.

Step 3: Building Inspections - Footings/Framing/Final

Construction must conform to the County building code, currently the International Residential Code (IRC2009). The three inspections described below are required. However, the Framing and Final inspections may be combined if all portions of the deck framing and mechanical attachments are visible upon completion of the deck. (Generally, this means the deck is high enough off the ground so that the entire underside is easily visible.) Call for inspections 24 hours in advance, as per CAG #22.

Footings – To pass inspection your postholes must be a minimum of 20" deep. The bottom of each hole must be nearly level and the soil at the bottom must be solid and undisturbed. The posthole must be a minimum of 3 times the diameter of the post.

Framing – To pass inspection the joists, beams and post spacing must comply with the span tables in our deck guide (attached). The framing inspection may be combined with the final inspection if all of the construction will be visible and accessible at the time of the final inspection.

Final – To pass inspection the steps, handrails and guardrails must comply with the dimensional criteria on the next page.

Step 4: Electrical Inspections – Final

To pass inspection an electrical receptacle shall be installed per the NEC 2008 as listed below.

2008 NEC Section 210-52 (E) (3) Balconies, Decks, and Porches. Balconies, decks and porches that are accessible from inside the dwelling unit shall have at least one receptacle installed within

the perimeter of the balcony, deck or porch. The receptacle shall not be located more than 6 ½ feet above the balcony, deck or porch surface.

Exception to (3): Balconies, decks, and porches with a useable area of less than 20 square feet are not required to have a receptacle installed.

Phone 301-475-4200, Ext. 1500

GENERAL REQUIREMENTS

Stairways and Guardrails

Stairways must be at least 3 ft. wide, with a minimum of 6'8" of headroom; handrails may not project into the required width of the stairs more than 3 ½" on each side.

Handrails are required on at least one side of any stairway of 4 or more risers. Handrails are required on both sides of open stairways more than 30" above finished grade. Stair treads must be at least 9" deep and risers can be a maximum of 8 ¼" high. The greatest tread depth shall not exceed the smallest by more than 3/8" and the highest riser shall not be more than 3/8" higher than the smallest.

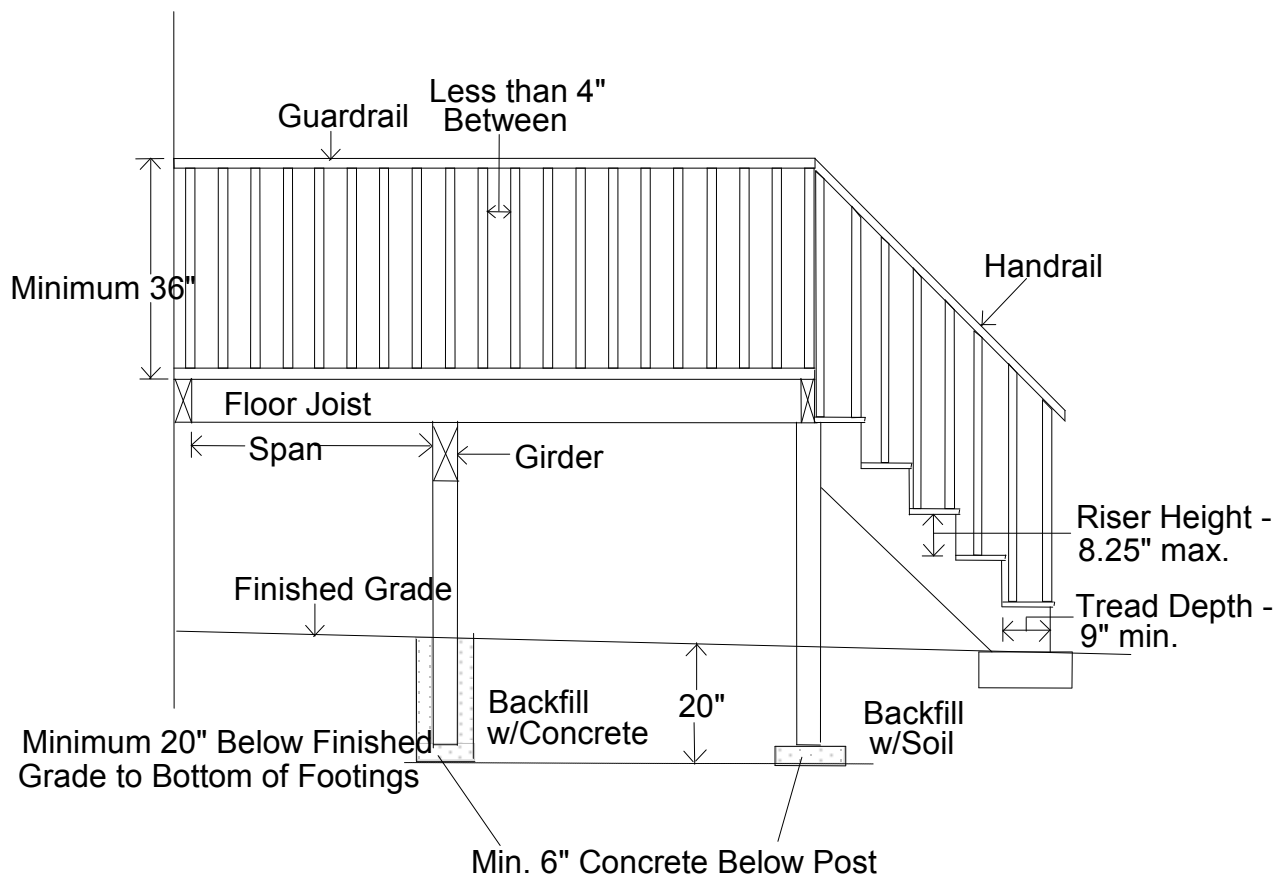
Guardrails at least 36" tall are required on decks 30" or more above finished grade.

Allowable Span for floor joists

| <u>Size</u> | <u>Spacing of Joists</u> | |
|-------------|--------------------------|------------|
| | <u>16"</u> | <u>24"</u> |
| 2"x6" | 9'9" | 8'6" |
| 2"x8" | 12'10" | 11'3" |
| 2"x10" | 16'1" | 13'1" |
| 2"x12" | 18'10" | 15'5" |

Table based on 40 lbs./sq. ft. Live Load and #2 Grade Southern Pine

NOTE: MANY LUMBER SUPPLIERS WILL PROVIDE DECK DESIGN PLANS AT NO CHARGE WITH THE PURCHASE OF MATERIALS.



Is My Deck Over-Built?*

*Adapted from an article in the Washington Post.

Local building departments hear the full range of complaints about decks: Codes are too stringent, officials too picky, inspections too frequent, the process too complicated. And why split hairs about lag-bolt spacing on a structure as basic as a deck?

But the reasons behind strict codes for decks become clear when a large crowd of people or mountains of snow weigh down the structure and the boards don't budge. Under unusually heavy loads, all those rules about footings and framing pay off in homeowner peace of mind.

Extra strength built in

The Washington region's extraordinary February 2003 snowfalls are a case in point. As the flakes piled up and news reports covered collapsing flat roofs on commercial buildings, we heard from homeowners worried about the snow loads on their decks.

But reasonably maintained (non-rotting decks built to code) were more than up to the stress. "It would take a lot more snow than even what we had in the February 2003 storm, to warrant homeowners having to shovel off their decks," says Adam Knight, Deputy Code Official at the Department of Land Use and Growth Management

The weight of snow varies with the weather, which can alter its density. But allowing for the weight specified in building codes, according to Knight, "a good rule of thumb would be to remove snow when it reaches the height of the guardrail," which is 36 inches. Even at that height, "the deck can still easily hold people with shovels," he says.

Codes call for deck construction to support a load of 40 pounds per square foot (psf). If you had a 10' by 12' deck (120 square feet) and could somehow shoehorn 120 people onto it at the same time, it just might fall down.

But even if you weigh 250 pounds and stand with your feet together you won't bust through because loads are spread across an interlocking network of boards, joists and girders down to the foundation piers.

That's one way in which codes have more strength than their numbers imply. Another is the built-in safety margin. A deck plan calling for 40 psf won't fail if its built to only 39 psf. That's because the code is designed to make the deck feel solid underfoot even loaded with furniture and people.

There is no occupancy limit for decks the way there is for elevators, and codes don't suggest a theoretical point at which a properly built deck would fail. No code official or inspector would allow anyone to alter the safety margin by cutting construction corners and building a deck designed up to the edge of failure.

However, a correctly designed deck built to code "can be expected to support over double its design load," according to Jay Jones, an engineer at the Washington-based National Association of Home Builders Research Center, quoted in the Washington Post.

As a practical matter, most decks that do fail never use the safety margin. In fact, they give way at a weak link even before reaching the load allowed by code. "Connections are typically the cause of deck collapses," says Jones. It's almost always the same bad connection that drops a deck.

Checking for the weakest link

In most designs, loads are split between footings built into the yard on one side and the house itself on the other. Piers sometimes settle, but decks almost crumble over the yard supports. Trouble generally occurs on the house side, even though the house rests on a large, continuous foundation and should be the ultimate anchor.

The weak link is the connection between the house and the deck. It's made by a ledger board, a long piece of lumber generally the same size as the deck joists. To carry its share of the load, the ledger has to be bolted to the house structure.

Nails alone won't do it, no matter how many or how large, because the nails will eventually wiggle free due to the weight they are supporting. Even with bolts, you can't hang a ledger on clapboards or other types of siding. If the bolts don't tie into solid framing behind siding and sheathing, the ledger can shear off the house and take the deck with it.

If you are building a new deck you need proper inspections to insure the deck won't fail.

If you're concerned about the safety of an existing deck, here are several indicators of ledger strength you should find. If there was a building permit for the project, the deck was almost certainly built to code. But you might want to check in any case because deck construction is often done by people who aren't professional builders who don't obtain permits and, therefore, don't call for inspections.

- Is the ledger at least as large as the joists?
- Are the joist-ledger connections supported with hardware?
- Are there bolt heads (not just nail heads) on the ledger surface?
- Does the bolt spacing conform to code, which typically calls for pairs at each end of the ledger and a staggered pattern elsewhere up to 14 inches apart?
- Is there metal flashing between the house and the ledger?
- Is the ledger free of rot, splitting or sagging that indicates structural movement?