



DEPARTMENT OF BUILDING INSPECTION

Decks, Porches, Stairs, and Ramps Design Requirements

Directions

This document has been prepared for contractors as well as homeowners as a guide for the design and installation of decks, porches, stairs, and ramps. The document provides fill-in-the-blank type design information that anyone can complete by following this guide and the Virginia Residential Code (VRC). Please read carefully this document and the exterior deck section of the VRC for assistance in completing the design specifications portion of this document.

Construction documents (i.e. plans) are required to be submitted along with a building permit. At a minimum, construction documents shall include the following:

1. Plan view of the deck, porch, stair, or ramp, including the location of structure in relationship to the dwelling
2. The location of all footings, including the width, length and thickness
3. The depth of all footings below finished grade
4. Section view of the deck, porch, stair, or ramp including details of the end away from the dwelling and the end closest to the dwelling
5. A complete description of the type of construction to be used including all lumber dimensions, fasteners, hangers, through bolts, and any other design details related to code compliance
6. Complete details of all handrails and guardrails, including heights, connections and support, extensions, dimensions of opening, and clearances to other objects
7. Dimensions to glazed openings in the exterior wall of the dwelling
8. Dimensions of landings at the top and bottom of ramps and stairs
9. Dimensions and depth and heights of all stair risers and treads
10. A plat indicating the exact location of the deck, porch, stair, or ramp and the dimensions from such structure to the property line, or setback

Submit

The following legible information shall be submitted to the portal for staff processing and review:

1. Plat plan
2. Construction plan of the deck, porch, stairs, or ramp
3. Specification sheets for all lumber, hangers, fasteners, and any other materials used in the construction
4. Stair and handrail/guardrail design details

Inspections

The following inspections, at a minimum, will be required to be conducted by a county inspector:

1. Footing
2. Set-back
3. Final



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Note: the footing inspection and final inspection can be combined into a single inspection visit if a solid concrete block footing is used and the hole left open such that the footing is exposed for inspection.

Using this Guide

1. Decide on the approximate dimensions and location of the deck, porch, stairs, or ramp
2. Decide on the preferred framing style: cantilevered, free-standing, flush, etc.
3. Decide on the type of materials to be used. A lumber sizing guide can be found on Sheet 3
 - a. Decide on size of deck joists
 - b. Decide on the number of footings
 - c. Size the components:
 - i. Beams
 - ii. Joists
 - iii. Posts
 - iv. Footings
 - v. Deck boards
 - vi. Rafters (if applicable)
4. Based on the type and size of materials determined in Step 3, specify the length and width dimensions of the deck, porch, stairs, or ramp.
5. Complete a list of materials needed. See specifications on Sheet 1
6. For convenience, the guide provides typical cross-section sketches of various connections. See Sheet 4.
7. Draw a plan of the property (plat). Sketch the house and indicate where the deck, porch, stairs, or ramp will be located and provide distances to property lines
8. Use attached details for other aspects of construction

Helpful Hints

The following is a list of useful information that may help in the construction of a deck, porch, stairs, or ramp.

1. All decking materials shall be preservative treated specifically designed for outside use or for use in contact with ground
2. All cut materials shall have the ends treated with an approved preservative treatment
3. Do not attach the ledger board to or through brick veneer
4. Do not construct footings over utility lines
5. Do not construct decks, porches, stairs, or ramps over septic tanks and/or drain fields
6. Do not attach a deck, porch, stairs, or ramp directly to manufactured homes
7. On grade deck blocks are not permitted to be used as footings