2012 Virginia Residential Code
Significant Code Changes

Presented by Arlington County Inspection Services Division
Produced with Virginia Department of Housing and Community Development
Jack A. Proctor Virginia Building Code Academy and
Virginia Building Code Officials Association
Welcome!

I WANT YOU TO TURN OFF YOUR PHONE
Significant Technical Changes from 2009 to 2012 Code Editions

- Includes International Residential Code (IRC) and Virginia Residential Code (VRC)
- Includes Chapter 2 Definitions through Chapter 10 Chimneys and Fireplaces
- **Highlights** Virginia State Amendments
Chapter 2

Definitions
R202 Definitions

Attic, Habitable – finished or unfinished area not considered Story and occupiable area compliant with certain criteria

- Floor area per Section R304
  - 70 square feet minimum
- Ceiling height per Section R305
  - 50% required floor area of 7 feet minimum
  - 0% required floor area below 5 feet
- Enclosure with:
  - Roof assembly above
  - Floor-ceiling assembly below
  - Knee walls to sides as applicable
R202 Definitions

Attic, Habitable definition limited habitable attics in dwellings or townhouses with 3 stories minimum above grade plane to:
• 2/3 area maximum of story below or
• 400 square feet maximum
Example 1
Given:
• 3 stories above grade plane
• 12/12 pitch hip roof
• 3rd floor area = 30’x36’ = 1080 sq ft
Analysis:
• 520 sq ft < 2/3x1080 sq ft < 720 sq ft but
• 520 sq ft > 400 sq ft

Habitable attic not allowed

12”

Habitat Below Grade

3 Stories / 5 Floors

Attic = 20 FT x 26 FT = 520 SQ FT
Example 2
Given:
• 2 stories above grade plane
• 8/12 pitch gable roof
• 2nd floor area = 26’x32’ = 832 sq ft
Analysis:
• 352 sq ft < 2/3x832 sq ft < 554 sq ft and
• 352 sq ft < 400 sq ft

Habitable attic allowed
R202 Definitions

**Basement** – any story not defined as **Story Above Grade Plane**
**R202 Definitions**

**Story Above Grade Plane** – any story with finished floor entirely above Grade Plane or with finished floor directly above:

- 6 feet minimum above Grade Plane or
- 12 feet minimum above finished ground level at any point
Understand **Grade Plane** to determine basements or stories relative to grade plane.

**Grade Plane** – reference plane representing average of finished ground levels adjoining building at all exterior walls.
Grade Plane where finished ground level slopes away from exterior walls, established reference plane to be at lowest ground point between building and:

- Lot line or
- 6 feet from building where lot line located beyond 6 feet minimum from building
R202 Definitions

Exterior Wall Covering – material or assembly of materials applied to exterior face of exterior wall for purposes of:
- Weather resistance
- Insulative protection
- Aesthetic characteristics

Pan Flashing – corrosion-resistant flashing located at opening base and integrated into exterior wall to direct water to exterior
R202 Definitions

Guestroom – any room or rooms used or intended for use by 1 minimum guest for living or sleeping purposes

Lodging House – single family dwelling with 1 minimum primarily permanent occupant who exchanges rent payments for guestroom
R202 Definitions

Local Exhaust – exhaust system with 1 minimum fan to exhaust air from specific room or rooms in dwellings

Whole-House Mechanical Ventilation System – exhaust or supply system designed to mechanically exchange indoor and outdoor air to satisfy ventilation rate and operated continuously or intermittently
R202 Definitions

**Nosing** – leading edge of tread on stair and of landing at top of stairway flight and formerly referred to as tread profile

**Riser** – vertical component of step or stair
R202 Definitions

Photovoltaic Modules / Shingles – roof covering composed of flat-plate photovoltaic modules fabricated into shingles
R202 Definitions

Vapor Permeable – property of having moisture vapor permeance rating of 5 perms minimum

Wind-Borne Debris Region – area within designated hurricane-prone region
R202 Definitions

Nonpotable Fixtures and Outlets – fixtures and outlets not dependent upon potable water to safely perform intended use

Nonpotable Water Systems – water systems for collection, treatment, storage, distribution, and use or reuse of potable water
R202 Definitions

Gray Water – waste water discharged from:
• Lavatories
• Bathtubs
• Showers
• Clothes washers
• Laundry trays
R202 Definitions

Rainwater – natural precipitation from roof surfaces only
Stormwater – precipitation discharged across land surface or through conveyances to 1 minimum waterway
Structural Composite Lumber – structural members manufactured with wood elements bonded with exterior adhesives

Included definitions of:

• Laminated Veneer Lumber (LVL)
• Parallel Strand Lumber (PSL)
• Laminated Strand Lumber (LSL)
• Oriented Strand Lumber (OSL)
Chapter 3

Building Planning
R301.2.1 Wind Design Criteria

Wind speeds correlated with 2010 ASCE 7
R302.2.2(2) Parapets

Exception:
Parapets for townhouses not required where:
• Class C minimum roof covering
• Non-combustible roof decking or sheathing for 4 feet minimum on both sides of common wall
• No roof openings or penetrations within 4 feet minimum of common fire-resistant wall
Whole-house mechanical ventilation system required in dwellings where:
- Air infiltration rate is less than 5 air changes per hour
- Tested with blower door at 0.2 inch pressure
- Installed per Section M1507.3
R308.4 Hazardous Locations

Glazing at hazardous locations:
- Section reorganized for ease of reading
- Multiple SubSections with titles added
- Multiple lists with various criteria and exceptions reduced

Stair landings at top of stairs not considered hazardous locations
R308.4.6 Glazing Adjacent to Stairs and Ramps

Glazing considered hazardous location where adjacent to:
- Stairways
- Landings between flights of stairs
- Ramps

and located where:
- Bottom of exposed edge 36 inches maximum vertically above plane of adjacent walking surface plane

Exception:
- Glazing located 36 inches minimum horizontally from walking surface
R308.4.6 Glazing Adjacent to Stairs and Ramps

- **Section view**
  - SG = Safety glazing required
  - NR = Not required to be safety glazing
  - Measurements are to exposed glazing

- **Plan view**
  - Landing between flights
  - Down
  - SG
  - NR
R308.4.7 Glazing Adjacent to Bottom Stair Landings

Glazing considered hazardous location where adjacent to:

- Landings at bottom of stairways and located where:
  - 36 inches maximum vertically above stair landings
    - Measured from bottom stair landings not tread nosings
  - 60 inches maximum horizontally of bottom stair treads
    - Measured from bottom stair treads not in any direction

Exception:

- Glazing protected with guards per Section R312 Guards and Window Fall Protection
- Located 18 inches minimum from guards
R308.4.7 Glazing Adjacent to Bottom Stair Landings

SG = Safety glazing required
NR = Not required to be safety glazing

Glazing adjacent to the bottom landing of a stairway.
R308.6.1 Tubular Daylighting Device

Non-operable fenestration unit primarily designed to transmit daylight from roof surface to interior ceiling via tubular conduit
R310.2.2 Drainage

Window wells to be designed for proper drainage:

- By connection to building foundation drainage systems per Section R405.1 Concrete or Masonry Foundations
- By approved alternative methods

Exception:

- Where foundations located on Group I well-drained or sand-gravel soils per Table R405.1 Properties of Classified Soils
Interior passage routes in dwelling units with both living / entertainment area and kitchen on same level as required egress door to provide access to:

- Living / Entertainment area
- Kitchen

and where provided on same level as living / entertainment area and kitchen:

- 1 bedroom minimum
- 1 bathroom minimum with water closet, lavatory, and bathtub or shower
R311.2.1 Interior Passage

Interior passage routes to provide access to those required areas with:

- Doors of 34 inch minimum nominal width
- Cased openings of 34 inch minimum clear width

Exceptions:

- Doors or cased openings located at end and facing length of interior passage routes / access hallways not of adequate accommodating width
- Doors or cased openings serving closets
- Doors or cased openings serving pantries
- Doors serving bathrooms accessed directly from bedrooms not required to comply
Example 1

R311.2.1 Interior passage.

Where a dwelling unit has both
1. a kitchen and
2. a living or entertainment area
on the same level as the egress door required by
Section R311.2,

Then:
1. An interior passage route shall be provided
from such egress door to
   the kitchen and
   the living or entertainment area and
   to at least one bedroom and
   at least one bathroom containing a water
   closet, lavatory and bathtub or shower, where
   such rooms are provided on that same level.
2. Any doors or cased openings along such
   interior passage route providing access to the
   areas identified above shall comply with the
   following:
      1. Cased openings shall provide a minimum
         34-inch clear width.
      2. Doors shall be, at a minimum, nominal
         34-inch doors.

Exceptions:
1. Where a door or cased opening, and its
   associated molding or trim, is at the end and
   facing the length of a hallway and the width of
   the hallway is not wide enough to
   accommodate such doors or cased openings.
2. Closet doors or cased openings.
3. Pantry door or cased openings.
4. Bathrooms accessed directly from a
   bedroom that is not required to comply with
   this section.
Example 2

R311.2.1 Interior passage.

Where a dwelling unit has both
1. a kitchen and
2. a living or entertainment area
on the same level as the egress door required by
Section R311.2,

Then:
1. An interior passage route shall be provided
   from such egress door to
   1. the kitchen and
   2. the living or entertainment area and
   3. to at least one bedroom and
   4. at least one bathroom containing a water
      closet, lavatory and bathtub or shower, where
      such rooms are provided on that same level.
2. Any doors or cased openings along such
   interior passage route providing access to the
   areas identified above shall comply with the
   following:
   1. Cased openings shall provide a minimum
      34-inch clear width.
   2. Doors shall be, at a minimum, nominal
      34-inch doors.

Exceptions:
1. Where a door or cased opening, and its
   associated molding or trim, is at the end and
   facing the length of a hallway and the width of
   the hallway is not wide enough to
   accommodate such doors or cased openings.
2. Closet doors or cased openings.
3. Pantry door or cased openings.
4. Bathrooms accessed directly from a
   bedroom that is not required to comply with
   this section.
Example 3

Example 3

DOOR WOULD NOT BE REQUIRED TO BE 34" BY EXCEPTION #4
DOOR WOULD NOT BE REQUIRED TO BE 34" BY EXCEPTION #1
R311.3.1 Floor Elevation at Required Egress Doors

Landings or finished floors at required egress doors to be 1½ inch maximum below top of door thresholds

Exception:

- Landings or finished floors at 8¼ inch maximum below top of door thresholds where:
  - On exterior side
  - Not having door swings over landings or floors (door swings to interior side)
R311.7.6 Landing for Stairways

Landings or floors to be located at top and bottom of each stairway
• Depth parallel to travel to be 36 inches minimum
• Width perpendicular to travel to be equal to stair width served minimum

Exception:
• Landings at top of interior stairways without door swing over stairs not required
R311.7.6 Landing for Stairways

Curve, angle, geometry, or shape other than square or rectangle allowed where:

- Depth at walkline equal to minimum of depth at walkline for required rectangular landing
- Area at landing equal to minimum of quarter circle with radius equal to required landing width
R311.7.6 Landing for Stairways

Figure R311.7.6(2) Example of Landings Of Other Shapes

Space required to safely turn a stairway at connecting flights is regulated by depth at the walkline and area.

Example of landing of shapes other than square or rectangular.
R311.7.6 Landing for Stairways

Required landing walkline and area to safely turn and navigate stairways.
Understand Walkline to determine curved, angular, or geometrically shaped stair landings other than squared or rectangular.

- Measured 12 inches minimum along stair nosing from extreme clear stair width.
R314.1 Smoke Detection and Notification

Physical interconnection of smoke alarms not required where wireless interconnection provided
R315.2 Carbon Monoxide Detection Systems

Household carbon monoxide (CO) detection system allowed where equipment:

- Owned by homeowner
- Affixed permanently within occupancy
- Monitored by approved supervising station
- Installed per NFPA 720
- Listed and labeled per UL 2075
R316.4 Thermal Barrier

Foam plastics to be separated from interior spaces with approved thermal barriers:

• ½ inch minimum gypsum wallboard
• Other materials tested and accepted per NFPA 275
R316.5.3 Attics

Thermal barriers per Section R316.4
Thermal Barriers not required in attics where complying with certain criteria

Foam plastic insulation to be protected against ignition with 1 of 7 listed ignition barrier materials:
• Included 1½ inch thick cellulose insulation
R317.3 Fasteners and Connectors in Contact with Preservative-Treated and Fire-Retardant-Treated Wood

Fasteners, connectors, and nuts and washers to be approved for contact with preservative-treated wood, fire retardant treated wood, and wood foundations

Referred to Sections R317.3.1 through R317.3.4
R317.3.1 Fasteners for Preservative-Treated Wood

Accepted fasteners:
• Hot-dipped, zinc-coated galvanized steel
• Stainless steel
• Silicon bronze
• Copper

Exceptions:
• Steel bolts of ½ inch diameter minimum
• Other fasteniers, not nails or timber rivets, of mechanically-deposited zinc-coated steel
• Plain carbon steel fasteners in dry interior environment for SBX / DOT and zinc borate preservative-treated wood
R317.3.3 – R317.3.4 Fasteners for Fire-Retardant-Treated Wood

Section R317.3.3 Accepted fasteners in exterior or wet / damp locations:

• Hot-dipped, zinc-coated galvanized steel
• Stainless steel
• Silicon bronze
• Copper
• Other fasteners, not nails or timber rivets, of mechanically-deposited zinc-coated steel

R317.3.4 Accepted fasteners in interior locations:

• Per manufacturer recommendations
• Per Section R317.3.3 above in absence of manufacturer recommendations
R317.4.1 Labeling

Wood / Plastic composite materials for exterior:
- Deck boards
- Stair treads
- Handrails
- Guardrails

to be labeled with:
- Maximum allowable load
- Maximum allowable span
- Required performance level
- Compliant with ASTM D 7032
R325 Swimming Pools

International Swimming Pool and Spa Code (ISPSC) for swimming pool requirements referenced

References to VRC Appendix G Swimming Pools, Spas, and Hot Tubs deleted
Chapter 4

Foundations
R405.1 Concrete or Masonry Foundation Drains

Perforated drains to be surrounded with:
- Approved filter membranes
- Filter membranes covering washed gravel or crushed rock that cover drains

Exception:
- Where foundations located on Group I well-drained or sand-gravel soils per Table R405.1 Properties of Soils Classified
R408.3.1 Termite Inspection

Unvented crawl spaces to provide clear and unobstructed view of vertical face of sill plate

Inspection gap to be provided:
• Below sill plate at top of interior foundation wall covering
• Throughout all enclosed foundations
• 1 inch minimum in width
• 2 inches maximum in width

Exceptions:
• Areas not subject to termite damage per Table R301.2(1) Climatic and Geographic Design Criteria
• Areas provided with other approved inspection means
R408.3.1 Termite Inspection

Pier and curtain foundations to provide clear and unobstructed view of interior face of rim joist and sill plate

Exception:
- Fiberglass or similar insulation where easily removable
Chapter 5

Floors
R501.3 Fire Protection of Floors

Section R501.3 Fire Protection of Floors deleted in entirety

Fire protection of non-fire-resistance rated floor assemblies with membranes applied to underside of 2”x8” or less nominal floor framing members not required

Referred to Virginia DHCD errata
R502.1.3, R602.1.1, and R802.1.2

End Jointed Lumber

End-jointed lumber in required fire-resistance rated assemblies to be designated with Heat Resistant Adhesive or HRA within grade mark.

Also required in:

• Section R602.1.1 Wall Construction / Wood Framing
• Section R802.1.2 Roof-Ceiling Construction / Wood Framing
R502.3 Allowable Joist Spans

Tables R502.3.1(1) and R502.3.1(2) Floor Joist Spans for Common Lumber Species revised to reflect reduced allowable floor joist spans for Southern Pine lumber.
R502.5 Allowable Girder and Header Spans

Tables R502.5(1) Girder and Header Spans for Exterior Bearing Walls and R502.5(2) Girder and Header Spans for Interior Bearing Walls revised to require Southern Pine Number 1 Grade minimum lumber.

Table R502.5(3) Girder and Header Spans for Porches added

- Based on Southern Pine
- Based on Number 2 Grade minimum lumber
R502.6 Bearing

Ends of joists, beams, and girders to bear on:

- Masonry or concrete directly
- Sill plate
  - 2 inch minimum nominal thickness
  - 48 square inches minimum nominal bearing area
Wood Structural Panel Sheathing

Identification and Grade

Wood structural panels to comply with DOC PS 1 or DOC PS 2 and to be identified by grade mark or certificate of inspection by approved agency with:

- Grade
- Bond classification
- Performance category

Also required in:

- Section R602.3 Wall Construction / Wood Framing
- Section R803.2.1 Roof-Ceiling Construction / Wood Framing
R506.2.3 Vapor Retarder

Exception 1: Vapor retarder allowed to be omitted from:
- Attached and detached garages
- Utility buildings
- Other unheated accessory structures
R507 Decks

Section R507 Decks relocated and revised from Section R502.2.2 Decks

Allowable spans for deck joists and deck beams reduced to reflect wet service conditions
R507 Decks

Multiple Sections, Tables, and Figures added and revised

- Section R507.4 Decking
- Table R507.4 Maximum Joist Spacing
- Section R507.5 Deck Joists
- Table R507.5 Deck Joist Spans and Cantilevers for Common Lumber Species
- Section R507.6 Deck Beams
- Table R507.6 Typical Deck Beam Spans
- Section R507.7 Deck Joist and Deck Beam Bearing
- Section R507.7.1 Deck Beam to Deck Post
- Section R507.8 Deck Posts
- Section R507.8.1 Deck Post to Deck Footing
- Table R507.8 Deck Post Heights
Chapter 6

Wall Construction
R602.3 Design and Construction

Section R602.3 Design and Construction revised to include:

• Components of exterior walls to be fastened per Tables R602.3(1) through R602.3(4)
• Wall sheathing to be fastened directly to framing members and capable of resisting applicable adjusted wind pressures per Tables R301.2(2) and R301.2(3) where on exterior side of exterior wall
• Wood structural panel sheathing on exterior wall to comply with DOC PS 1 or DOC PS 2
• Wall sheathing for exterior wall covering purposes only to comply with Section R703 Exterior Covering
# R602.3 Design and Construction

Table R602.3(1) Fastener Schedule For Structural Members revised

<table>
<thead>
<tr>
<th>Item</th>
<th>Description of Building Elements</th>
<th>Number and Type of Fastener&lt;sup&gt;a,b,c&lt;/sup&gt;</th>
<th>Spacing of Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Rafter or roof truss to plate, toe nail</td>
<td>2 3-16d box nails (3½” × 0.135”) or 3-10d common nails (3”× 0.148”)</td>
<td>2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Built-up corner studs – face nail</td>
<td>10d (3” × 0.123”)</td>
<td>24” o.c.</td>
</tr>
<tr>
<td>8</td>
<td>Abutting studs at intersecting wall corners, face nail</td>
<td>16d (3½” × 0.135”)</td>
<td>12” o.c.</td>
</tr>
</tbody>
</table>
R602.3.1 Stud Size, Height, and Spacing

Exception 2 for studs 10 feet minimum in height revised

- 2”x6” studs at 16” oc allowed to be 18 feet in height
- 2”x6” studs at 12” oc allowed to be 20 feet in height
- To be Number 2 Grade minimum lumber
- To support 1 maximum roof load
- To support tributary roof load of 6 feet maximum

and where:

- Snow load of 25 psf maximum
- Ultimate wind design speed of 130 mph maximum

Table R602.3.1 Maximum Allowable Length of Wood Wall Studs deleted
R602.7 Single Member Headers

Table R602.7.1 Spans for Minimum Number
2 Grade Single Header added

Exterior Bearing Wall
Alternative Framing Without Cripple Wall
R602.7.4 Supports for Headers

Headers to be supported on each end with 1 jack stud and 1 king stud minimum

King studs to be fastened to each end of headers with 4 -12d nails minimum
R602.10 Wall Bracing

Wall bracing required per 1 of 3 Sections:
• R602.10 Wall Bracing
• R602.12 Practical Wall Bracing or
• R301.1 Design Criteria, including
  • Engineered designs
  • Construction systems
  • Alternative provisions and approved Referenced Standards
    • AFPA WFCM Wood Frame Construction Manual
    • AISI S230 Standard for Cold-Formed Steel Framing – Prescriptive Method
    • ICC 400 Standard on Design and Construction of Log Structures

Building Official permitted to waive analysis of upper floors in certain conditions
R602.12 Practical Wall Bracing

Allowed where compliant with certain wall braced panel criteria:

- Braced wall panel requirements
- Sheathing materials
- Circumscribed rectangles
- Side bracing lengths
- Contributing cumulative bracing lengths
- Common bracing with skewed rectangles
- Cripple walls
- Walk-out basement walls
- Distribution
- Connections
- Supports
R602.12 Practical Wall Bracing

Specific braced wall panel requirements:

• Heights
• Lengths
• Joints
• Methods per Sections R602.10.4 and R602.10.6

Construction Methods for Braced Wall Panels

• ABW – Alternate braced wall panels
• PFH – Portal frame with holddowns
• PFG – Portal frame at garage door openings
• CS-PF – Continuously sheathed portal frame

• Interior finish materials
  • ½ inch minimum gypsum board fastened per Table R702.3.5 Minimum Thickness and Application of Gypsum Board
R602.12.3 Circumscribed Rectangles

Required length of wall bracing to be calculated by circumscribing 1 minimum rectangle around building and/or portions thereof

• Areas included:
  • Enclosed offsets
  • Enclosed projections

• Areas excluded:
  • Chimneys
  • Partial height offsets and projections
  • Open areas and structures

Each rectangle to be:
• 80 feet maximum lengths of sides
• 3:1 ratio maximum between long and short sides
• Skewed to include angled offsets and projections
R602.12 Practical Wall Bracing

Upper floor wall braced panel analysis not required where:
• Approved per Building Official
• Upper floor ceiling height ≤ lower floor ceiling height
• Upper floor window area ≤ lower floor window area
Chapter 7

Wall Covering
R703.7.3.2 Maximum Spans

Section R703.7.3.2
Maximum Spans
Condition 4 and Table

R703.7.3.2 Masonry Veneer Height Above Openings added to provide minimum and maximum masonry veneer heights above lintel openings
R703.7.4 Masonry Veneer Anchorage

Table R703.7.4
Tie Attachment and Air Space Requirements added for masonry veneer

<table>
<thead>
<tr>
<th>Backing and Tie</th>
<th>Minimum Tie</th>
<th>Minimum Tie Fastener</th>
<th>Air Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Stud</td>
<td>22 U.S. gage (0.0299 in.) × 7/8 in. wide</td>
<td>8d common nail (2 1/2 in. × 0.131 in.)</td>
<td>Nominal 1 in. between sheathing and veneer</td>
</tr>
<tr>
<td>Backing with Corrugated Sheet Metal</td>
<td>W1.7 (No. 9 U.S. gage: 0.148 in.) with hook embedded in mortar joint</td>
<td>8d common nail (2 1/2 in. × 0.131 in.)</td>
<td>Minimum nominal 1 in. between backing and veneer</td>
</tr>
<tr>
<td>Wood Stud</td>
<td>W1.7 (No. 9 U.S. gage: 0.148 in.) with hook embedded in mortar joint</td>
<td>No. 10 screw extending through the steel framing a minimum of three exposed threads</td>
<td>Minimum nominal 1 in. between sheathing and veneer</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.
a. In Seismic Design Category D1 or D2, the minimum tie fastener shall be an 8d ring-shank nail (2 1/2 in. × 0.131 in.) or a No. 10 screw extending through the steel framing a minimum of three exposed threads.
b. All fasteners shall have rust inhibitive coating suitable for the installation in which they are being used, or be manufactured from material not susceptible to rusting.
Chapter 8

Roof-Ceiling Construction
R802.4 Allowable Ceiling Joist Spans

Tables R802.4(1) and R802.4(2) Ceiling Joist Spans For Common Lumber Species revised to reflect reduced allowable spans of Southern Pine lumber.
R802.5 Allowable Rafter Spans

Tables R802.5(1) through R802.5(9) Rafter Spans For Common Lumber Species revised to reflect reduced allowable spans of Southern Pine lumber
Section R802.7.1.1 Cantilevered Portions of Rafters relocated Exception from Section R502.8.1 and limited notches:

- To cantilever length of 24 inches maximum
  - Measured at exterior face of supporting member
- To retain 3½ inches minimum depth of rafter member at rafter ends / tails
  - Measured parallel to rafter depth
Section R802.7.1.1 Ceiling Joist Taper Cut added and limited taper cuts:

- To 1/4 depth maximum of ceiling joist member
- Measured at interior face of supporting member
R802.11.1 Uplift Resistance

Roof assemblies, rafters, and trusses to attach to supporting wall assemblies and provide uplift resistance per Table 802.11 Rafter or Truss Uplift Connection Forces from Wind

Uplift forces to be determined by:

• Table R802.11 Rafter or Truss Uplift Connection Forces from Wind
• Accepted engineering practice
• Truss design drawings
R802.11.1 Uplift Resistance

Alternative allowed to comply with Table R602.3(1) Fastener Schedule for Structural Members where:

- Uplift force of 200 pound maximum
- Rafter or truss spacing of 24 inches oc maximum

or where:

- Basic wind speed of 90 mph maximum
- Wind exposure category of B
- Roof pitch 5/12 minimum
- Roof span of 32 feel maximum
- Rafter or truss spacing of 24 inches oc maximum
R806.5 Unvented Attic and Unvented Enclosed Rafter Assemblies

Allows unvented enclosed rafter assemblies where ceiling is applied directly to rafters

- To be contained within building envelope
- Air-impermeable and air-permeable insulation directly under structural roof sheathing to be installed per 1 of 3 conditions
- \( \frac{1}{4} \) inch vented air space to separate wood shingles or shakes and roof underlayment above structural sheathing
- Class I vapor retarders not to be installed on ceiling side of assembly
Condition 5.4 added to allow preformed insulation board as air-impermeable insulation layer

- Sealed at perimeter edges on ceiling side of each board to form continuous layer
Chapter 9

Roof Assemblies
R903.2.1 Locations

Flashing to divert water from intersections of sloped roof eaves and vertical sidewalls
R905.2.8.3 Sidewall Flashing

Base flashing against vertical sidewall to direct water to roof or gutter and to be:

- Continuous or step method
- 4 inches in width
- 4 inches in height

and installed per:

- Section R703.6.3 Water-Resistive Barriers under exterior plaster or adhered masonry veneer
- Section R703.7.2.2 Support by Roof Construction under anchored masonry veneer
- Continuous method under siding

Section R905.2.8.5 Drip Edge deleted
Interior surfaces of masonry fireplace smoke chambers formed with corbelled masonry to be parged smooth
R1003.9 Termination

Section R1003.9.1 Chimney Caps on masonry chimneys to be provided of sloped concrete, metal, or stone with drip edges and caulked bond breaks around flue liners per ASTM C 1283
• Mandatory and required

Section R1003.9.3 Rain Caps of masonry or metal installed on masonry chimneys to allow net free area under caps of 4x net free area of chimney flue outlets served
• Not mandatory or required
Questions or Comments?

Thank you
Thanks and Credits to:

Jack A. Proctor Virginia Building Code Academy
Virginia Building Code Officials Association
Roger Robertson, JAPVBCA Instructor
Paula Eubank, Arlington County
Chuck Vernon, Arlington County
Chuck Bajnai, Chesterfield County
Richard Moore, Henrico County
Art Berkley, Isle of Wight
Caleb Sulzen, Louisa County