WEST VIRGINIA
SECRETARY OF STATE
JOE MANCHIN, III
ADMINISTRATIVE LAW DIVISION

Form #7 ☐

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2002 JAN 28 A 11:40

OFFICE WEST VIRGINIA
SECRETARY OF STATE

Effective Date

NOTICE OF AN EMERGENCY RULE

AGENCY: STATE FIRE COMMISSION TITLE NUMBER: 87

CITE AUTHORITY: 29-3-5b

EMERGENCY AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 4

TITLE OF RULE BEING AMENDED: STATE BUILDING CODE

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

THE ABOVE RULE IS BEING FILED AS AN EMERGENCY RULE TO BECOME EFFECTIVE AFTER APPROVAL BY SECRETARY OF STATE OR 42ND DAY AFTER FILING, WHICHEVER OCCURS FIRST.

THE FACTS AND CIRCUMSTANCES CONSTITUTING THE EMERGENCY ARE AS FOLLOWS:
This emergency rule is necessary to prevent substantial harm to contractors and WV construction and renovation industry consumers by compliance requirements to outdated building code elements. Municipalities and counties enforcing the building code are penalized and harmed as the ISO Building Code Grading Effectiveness Schedule and ICC (International Code Council) Certification tests are both based on the most recent, or 2000 edition of the building code.

Use additonal sheets if necessary

Authorized Signature

$6.60

EMERGENCY RULE QUESTIONNAIRE

DATE: JANUARY 28, 2002

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (*Agency Name, Address & Phone No.*) STATE FIRE COMMISSION
1207 Quarrier Street, Suite 202, Charleston, WV 25301 (304) 558-2191

Questions should be directed to State Fire Commissioner Francis Guffey, 165 Lake Shore Drive, Cross Lanes, WV 25313, (304) 776-4915

EMERGENCY RULE TITLE: STATE BUILDING CODE

1. Date of filing JANUARY 28, 2002

2. Statutory authority for promulgating emergency rule:

   29-3-5b

3. Date of filing of proposed legislative rule: within the next ninety (90) days

4. Does the emergency rule adopt new language or does it amend or appeal a current legislative rule? adopts new language as well as replaces the current referenced BOCA and CABO codes with the ICC 2000 Codes.

5. Has the same or similar emergency rule previously been filed and expired?

   NO

6. State, with particularity, those facts and circumstances which make the emergency rule necessary for the **immediate** preservation of public peace, health, safety or welfare.

7. If the emergency rule was promulgated in order to comply with a time limit established by the Code or federal statute or regulation, cite the Code provision, federal statute or regulation and time limit established therein.

8. State, with particularity, those facts and circumstances which make the emergency rule necessary to prevent substantial harm to the public interest.

The current edition of the State Building Code is five (5) to eight (8) years old. Contractors and consumers are penalized by outdated provisions of the 1993 thru 1996 code elements. Municipal and county inspectors, plans examiners and building official certification tests are based on the 1999-2000 editions of these codes.

WEST VIRGINIA STATE FIRE COMMISSION

NOTICE OF PUBLIC HEARING PROPOSED RULE

STATE BUILDING CODE

SUMMARY OF PROPOSAL

This is an up-date of an existing rule by replacing the existing references to the BOCA and CABO codes with the ICC 2000 Code documents as well as amending various sections of the ICC 2000 Residential Code document.

EMERGENCY CIRCUMSTANCES

This emergency rule is necessary to prevent substantial harm to contractors and WV construction and renovation industry consumers by compliance requirements to outdated building code elements. Municipalities and counties enforcing the building code are penalized and harmed as the ISO Building Code Grading Effectiveness Schedule and ICC (International Code Council) Certification tests are both based on the most recent, or 2000 edition of the building code.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: STATE BUILDING CODE

Type of Rule: XXXX Legislative _____ Interpretive _____ Procedural

Agency: STATE FIRE COMMISSION

Address: 1207 Quarrier Street, Suite 202, Charleston, WV 25301

1. Effect of Proposed rule:

	ANNUAL		FISCAL YEAR		
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
ESTIMATED TOTAL COST	0	0	10,000	10,000	10,000
PERSONAL SERVICES	0	0	5,000	5,000	5,000
CURRENT EXPENSE	0	0	5,000	5,000	5,000
REPAIRS & ALTERATIONS	0	0	0	0	0
EQUIPMENT	0	0	0	0	0
OTHER	0	0	0	0	0

2. Explanation of Above Estimates:
Personnel ttime and benefits for response to building code matters, maintain records, assist local jurisdications with questions and proper manner to adopt code at local level, as well as for cost to conduct hearings on building code matter that require court reporter.

3. Objectives of These Rules:
To upgrade the existing State Building Code references of the BOCA codes to the ICC 2000 codes.

Rule Title: _____

4. Explanation of Overall Economic Impact of Proposed Rule:

   A. Economic Impact on State Government:
   We expect no increase in costs to this agency to administer the state code than is estimated in Itme 1 on the previous page. We have no method or data that would provide an estimate of the impact of these rules on other elements of state government.

   B. Economic Impact on Political Subdivisions; Specific Industries; Specific Groups of Citizens:
   A uniform state wide building code provides a level playing field for those in the design and construction of buildings throughout the state.

   C. Economic Impact on Citizens/Public at Large.
   Where local jurisdictions have adopted the State Building Code, provides the consumer/citizen with some assurance that building construction is done to the latest state-of-the art technology for safety and efficiency.

Date: 5 Oct 2001

Signature of Agency Head or Authorized Representative:

TITLE 87

LEGISLATIVE RULE

STATE FIRE COMMISSION

SERIES 4

STATE BUILDING CODE

87-4-1 GENERAL

1.1 Scope: This rule establishes the standards considered necessary by the State Fire Commission for the safeguarding of life and property and to ensure the quality of construction of all structures erected or renovated throughout this state.

1.2 Authority: West Virginia Code 29-3-5b

1.3 Filing Date: ~~April 6, 1998~~

1.4 Effective Date: ~~May 1, 1998~~

1.5 Incorporation of other Documents: This rule does not include a reprinting of all the requirements imposed by statute or by the incorporation of various nationally recognized standards and codes cited in Section 4.1 of this rule. For ascertaining these additional standards and requirements, it is necessary to make reference to the other documents.

87-4-2 DEFINITIONS

2.1 "Building code" - includes all aspects of safe building construction and mechanical operations and all safety aspects related to building construction and mechanical operations.

2.2 "Fire marshal" - means the West Virginia State Fire Marshal and/or his or her designated representatives.

2.3 "Fire Commission" - means the thirteen (13) appointed members of the West Virginia State Fire Commission.

2.4 "Local jurisdiction" - means municipal or county level government.

2.5 "State Building Code" - means the entire contents of this rule and the referenced national codes.

2.6 "BOCA" - refers to the "Building Officials & Code Administrators International", 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795.

2.7 "CABO" - refers to the "Council of American Building Officials", 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041.

2.8 "ICC" or "International" means "International Code Council", 5203 Leesburg Pike, Suite 708, Falls Church, Virginia 22041-3401.

2.9 "NFPA" means "National Fire Protection Association", 1 Batterymarch Park, P. O. Box 9101, Quincy, MA 02269-9101.

2.10 "ANSI" means "American National Standards Institute, 11 West 42nd St., New York, NY 10036.

87-4-3 CONFLICTS

3.1 Whenever there is a conflict between the "state fire code" and the "state building code", the state fire code takes precedence.

3.2 Whenever there is a conflict between the ~~BOCA~~ International Plumbing Code section of the "state building code" and the rules of the West Virginia State Department of Health and Human Resources, the rules of the Department of Health and Human Resources takes precedence.

3.3 Whenever there is a conflict between the "state building code" and statutory laws of the State of West Virginia, the West Virginia Code takes precedence.

87-4-4 NATIONAL STANDARDS AND CODES

4.1 The standards and requirements as set out and as published by the ~~Building Officials & Code Administrators International and the Council of American Building Officials~~ International Code Council, and American Standards Institute, as listed below, have the same force and effect as if set out verbatim in this rule: EXCEPTIONS: Change any and all references to *ICC Electrical Code* to NFPA 70, National Electric Code/1999.

The ~~BOCA~~ International Building Code, ~~Thirteenth~~ First Edition, ~~1996~~ 2000
Provided; that the section entitled "Fire Prevention" and identified as Section 101.4.6 is deleted and not considered to be a part of this rule.

The ~~BOCA~~ International Plumbing Code, First Edition, ~~1995~~ 2000

The ~~BOCA~~ International Mechanical Code, First Edition, ~~1996~~ 2000

International Fuel Gas Code, First Edition, 2000

The ~~BOCA~~ International Property Maintenance Code, ~~Fifth~~ First Edition, ~~1996~~ 2000. This Code may be rejected at the option of the local jurisdiction.

The ~~BOCA~~ International Energy Conservation Code, ~~Seventh~~ First Edition, ~~1993~~ 2000.

International Residential Code, First Edition, 2000.
EXCEPTIONS:

Section R303.4.1 Light Activation – CHANGE TO: The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stairway without traversing any steps. The illumination of exterior stairways shall be controlled from inside the dwelling unit. Exceptions: 1. Lights that are continuously illuminated or automatically controlled. 2. Interior stairways consisting of less than six steps.

Section R310.1 Basement Window Egress – CHANGE TO: Every sleeping room shall have at least one openable emergency escape and rescue window or exterior door opening for emergency escape and rescue.

Section R312.1.1 Landings at doors – CHANGE FIRST EXCEPTION TO: Where a stairway of two or fewer risers is located on the exterior side of a door, other that the required exit door, a landing is not required for the exterior side of the door.

Section R314.2 Stair Geometry – MAINTAIN: CABO One & Two Family Dwelling Code/1995 dimensions; maximum riser height of eight and one quarter (8 ¼) inches, minimum tread depth on nine (9) inches.

Section R315.1 Handrails – CHANGE TO: Handrails shall be provided on at least one side of stairways consisting of three or more risers. Handrails shall have a minimum height of 34 inches (864 mm) and a maximum height of 38 inches (96 mm) measured vertically from the nosing of the treads. All required handrails shall be continuous the full length of the stairs from a point directly above the top riser to a point directly above the lowest riser of the stairway. The ends of the handrail shall be returned into a wall or shall terminate in newel posts or safety terminals. A minimum clear space of 1 ½ inches (38 mm) shall be provided between the wall and the handrail.

Section R403.3 Frost Protected Shallow Foundations – ADD TO: Frost protected shallow foundations shall not be used for unheated spaces such as porches, utility rooms, garages and carports, and shall not be attached to basements or crawl spaces that are not maintained at a minimum monthly mean temperature of 64 degrees F (18C). (Strike out two exceptions)

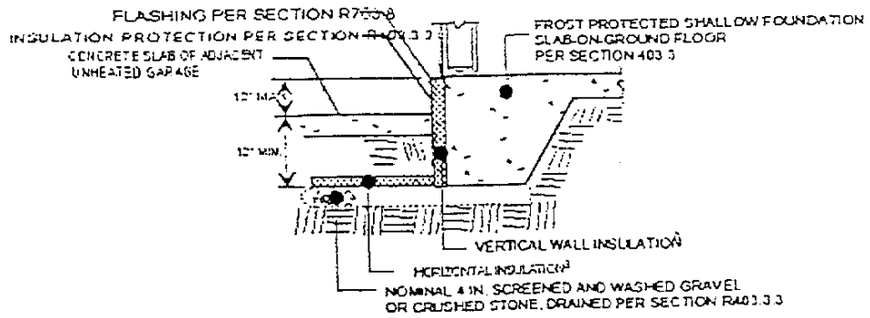
ADD NEW SECTIONS: R403.3.1.1 Foundations adjoining frost protected shallow foundations. Foundations that adjoin frost protected shallow foundations shall be protected from frost in accordance with Section R403.1.4.

R403.3.1.2 Attachment to unheated garage. Vertical wall insulation and horizontal insulation of frost protected shallow foundations that adjoin a Garage that does not have a monthly mean temperature maintained at a minimum of 64 degrees F (18 C), shall be in accordance with Figure R403.3(3) and Table R403.3. Vertical wall insulation shall extend between the frost protected shallow foundation and the adjoining slab foundation. Required horizontal insulation shall be continuous under the adjoining slab foundation and through any foundation walls adjoining the frost protected shallow foundation.

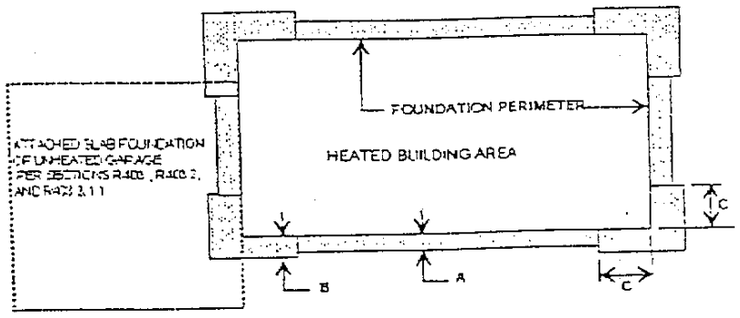
R403.3.1.3 Attachment to heated structure. Where a frost protected shallow foundation abuts a structure that has a monthly mean temperature maintained at a minimum of 64 degrees F (18 C), horizontal insulation and vertical wall insulation shall not be required between the frost protected shallow foundation abuts the heated structure, the horizontal insulation and vertical wall insulation shall extend along the adjoining foundation in accordance with Figure R 403.3(4) a distance of not less than Dimension A in Table R403.3.,

Exception: Where the frost protected shallow foundation abuts the heated structure to form an inside corner, insulation extending along the adjoining foundation is not required.

INSULATION DETAIL



HORIZONTAL INSULATION PLAN



For SI: 1 inch = 25.4 mm

a. See Table R403.3 for required dimensions and R-values for vertical and horizontal insulation.

FIGURE R403.3(3)
INSULATION PLACEMENT FOR FROST-PROTECTED FOOTINGS ADJACENT TO UNHEATED GARAGE

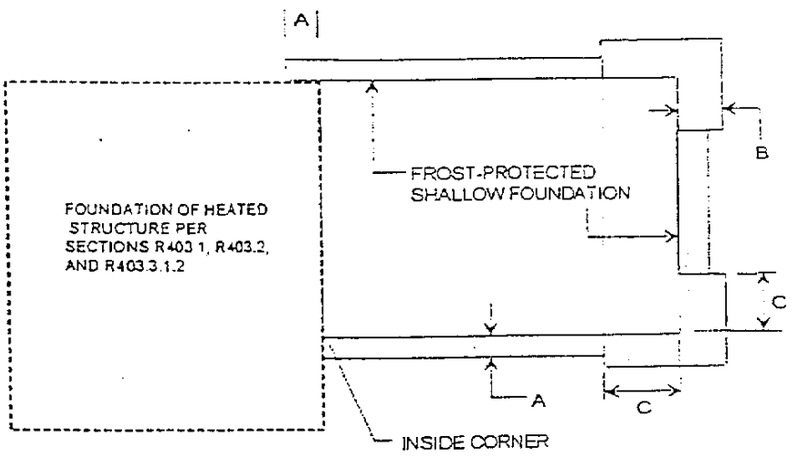


FIGURE R403.3(4)
INSULATION PLACEMENT FOR FROST-PROTECTED FOOTINGS ADJACENT TO HEATED STRUCTURE

R5502.3.3 Floor cantilevers. ADD NEW SECTION: Floor cantilever spans shall not exceed the nominal depth of the wood floor joist. Floor cantilevers constructed in accordance with Table R502.3.3 shall be permitted when supporting a light-frame bearing wall and roof only. The ratio of backspan to cantilever span shall be at least 3 to 1.

Table R502.3.3 ADD NEW TABLE (attached)

TABLE R502.3.3
CANTILEVER SPANS FOR FLOOR JOISTS
SUPPORTING LIGHT-FRAME EXTERIOR BEARING WALL AND ROOF ONLY [a, b, c, f, g, h]
(Floor Live Load ≤ 40 psf, Roof Live Load ≤ 20 psf)

Member & Spacing	Maximum Cantilever Span (Uplift Force at Backspan Support in Lbs.) [d, e]											
	Ground Snow Load											
	≤ 20 psf			30 psf			50 psf			70 psf		
	Roof Width			Roof Width			Roof Width			Roof Width		
	24 ft.	32 ft.	40 ft.	24 ft.	32 ft.	40 ft.	24 ft.	32 ft.	40 ft.	24 ft.	32 ft.	40 ft.
2 x 8 @ 12"	20" (177)	15" (227)		18" (209)								
2 x 10 @ 16"	29" (228)	21" (297)	16" (364)	26" (271)	18" (354)		20" (375)					
2 x 10 @ 12"	36" (166)	26" (219)	20" (270)	34" (198)	22" (263)	16" (324)	26" (277)			19" (356)		
2 x 12 @ 16"		32" (287)	25" (356)	36" (263)	29" (345)	21" (428)	29" (367)	20" (484)		23" (471)		
2 x 12 @ 12"		42" (209)	31" (263)		37" (253)	27" (317)	36" (271)	27" (358)	17" (447)	31" (348)	19" (462)	
2 x 12 @ 8"		48" (136)	45" (169)		48" (164)	38" (206)		40" (233)	26" (294)	36" (230)	29" (304)	18" (379)

For SI: 1 in. = 25.4 mm, 1 psf = 0.0479 kN/m^2

Notes:

a. ***Tabulated values are for clear-span roof supported solely by exterior bearing walls.***
b. ***Spans are based on No. 2 Grade lumber of douglas fir-larch, hem-fir, southern pine, and spruce-pine-fir for repetitive (3 or more) members.***
c. Ratio of backspan to cantilever span shall be at least 3:1.
d. Connections capable of resisting the indicated uplift force shall be provided at the backspan support.
e. Uplift force is for a backspan to cantilever span ratio of 3:1. Tabulated uplift values are permitted to be reduced by multiplying by a factor equal to 3 divided by the actual backspan ratio provided (3/backspan ratio).
f. See Section R301.2.2.7.1 for additional limitations on cantilevered floor joists for detached one- and two-family dwellings in Seismic Design Categories D1 and D2 and townhouses in Seismic Design Categories C, D1, and D2.
g. A full-depth rim joist shall be provided at the cantilevered end of the joists.
h. Linear interpolation shall be permitted for building widths and ground snow loads other than shown.

Chapter 11: Replace Entire Chapter
Part IV – Energy Conservation

Chapter 11
Energy Efficiency

Section N1101

N1101.1 Performance Objective
To provide cost-effective, energy-related requirements for design and construction of the building thermal envelope and heating-ventilating-air conditioning (HVAC) systems for one- and two-family dwellings.

N1101.2 Building Thermal Envelope
The minimum required installed R-value or maximum required U-value for all elements in the building thermal envelope (fenestration, roof/ceiling, opaque wall, floor, slab edge, crawl space wall, and basement wall) shall be determined by Table N1101, based on the building type and the climate zone where the building is located. Alternative compliance based on heat loss/gain calculations or systems analysis shall comply with Section N1101.

TABLE N1101
PRESCRIPTIVE BUILDING ENVELOPE REQUIREMENTS

BUILDING LOCATION		MAXIMUM U-VALUE		MINIMUM INSULATION					
ZONE	HDD	FENESTRATION	ROOF/ CEILING	FRAME WALL S3	MASS WALL S	FLOOR OVER OUTDOOR AIR OR UNCONDITIONED SPACE	SLAB EDGE WIDTH/DEPTH	CRAWL SPACE WALL	BASEMENTWALL
1	0-1,499	ANY	R-19	R-11	R-4	R-11	R-0	R-0	R-0
2	1,500 - 2,999	0.90	R-22	R-13	R-5	R-13	R-0	R-4	R-0
3	3,000-3,999	0.75	R-26	R-13	R-6	R-13	R-4, 2 FT	R-5	R-0
4	4,000–4,999	0.65	R-26	R-13	R-7	R-13	R-4 2 FT	R-8	R-4
5	5,000-6,999	0.55	R-30	R-13	R-8	R-19	R-4, 2 FT	R-8	R-4
6	7,000-8,999	0.45	R-30	R-13	R-8	R-19	R-5, 2 FT.	R-8	R-8
7	9,000-12,999	0.40	R-38	R-19	R-14	R-19	R-8, 4 FT.	R-10	R-8

NOTES:
1. Building envelopes must also meet air infiltration requirements of Section N1101.
2. Insulation materials shall be installed in accordance with manufacturers instructions.
3. The sum of the R-values of cavity insulation and sheathing shall be used to determine the installed R-value.
4. For slabs that incorporate heating ducts or pipes in climates above 1,000 HDD, add R-2 to the table values.
5. The required R-value shall extend down to design frost depth in Zones 4 and 5, and down to the basement floor in zones 6 and 7.

N1101.3 Floors

N1101.3.1 Floors Over Outdoor Air or Unconditioned Areas – Floors over outdoor air or unconditioned areas shall meet the minimum R-value for Floor Over Outdoor Air or Unconditioned Space in Table N1101, based on the climate zone where the building is located.

N1101.3.2 Slabs-on-Ground – Slabs-on-ground, or slabs 12 inches or less below finished grade, shall meet the minimum R-value and depth/width dimension for Slab Edge in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied to the exterior or interior of the foundation wall. Exterior insulation shall extend downward from the top of the slab and/or horizontally outward until the distance indicated in Table N1101 is reached. Interior insulation shall extend from the top of the slab downward and/or horizontally inward until the distance indicated in Table N1101 is reached. All horizontal insulation extending outward from the slab shall be covered by at least 10 inches of soil. The top edge of insulation installed between the exterior wall and the interior slab shall be permitted to be cut at a 45° angle to allow the concrete surface to extend to the wall. Slab edge insulation shall not be required in areas of "very heavy" termite infestation probability, in accordance with the Termite infestation Probability Map in Appendix A.

N1101.4 WALLS
N1101.4.1 Wall Insulation – Opaque walls and band joists exposed to outside air or to unconditioned space shall meet the minimum R-value for Frame Wall or Mass Wall in Table N1101, based on the wall type and the climate zone where the building is located. For Frame walls, the sum of the R-values of cavity insulation and insulated sheathing shall be used to determine the installed R-value. Walls exposed to unconditioned space shall have an R-value of R-13 when the minimum required R-value for the wall type in Table N1101 exceeds R-13.

N1101.4.2 Wood Frame Walls – Where insulated sheathing is used on wood frame walls in areas not otherwise required to have structural sheathing, the entire opaque wall shall be considered to be covered with the insulated sheathing for purposes of determining compliance with the minimum R-value fro Frame Wall in Table N1101.

N1101.4.3 Steel Frame Walls – When steel framing is used, insulated sheathing with An R-value not less than R-2.5 in Zones 3 and 4 (3,000 – 4,999 HDD), R-5 in Zone 5 (5,000 – 6,999 HDD) and R-10 in Zones 6 and 7 (7,000 – 12,999 HDD) shall be installed in addition to the minimum required R-value for Frame Wall in Table N1101.

N1101.4.4 Mass Walls – Masonry or concrete walls having a mass greater than or equal to 30 pounds per cubic foot (pcf), solid wall walls having a mass greater than or equal to 20 pcf, and any other walls having a heat capacity greater than or equal to 6 Btu/ftY 2° shall be considered mass walls. Mass walls with exterior insulation or masswalls with integral insulation (insulation and mass mixed, such as log walls) shall be permitted to meet the Mass Wall criteria in Table N1101 based on the building type and the climate zone where the building is located. The R-value of mass walls with integral insulation shall be based on consideration of all elements of the wall assembly. Other mass walls shall meet the frame wall criteria for the building type and the climate zone where the building is located, based on the sum of the R-values of interior and exterior insulation.

N1101.4.5 Crawl Space Walls – All walls enclosing crawl spaces where the floor above the crawl space is not insulated in accordance with Table N1101 shall meet the minimum R-value for Crawl Space Wall in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied to the inside or outside of the crawl space wall. The insulation shall extend downward from the sill plate to the level of the inside ground surface.

N1101.4.6 Basement Walls – All basement walls enclosing conditioned space shall meet the minimum R-value for Basement Wall in Table N1101, based on the climate zone where the building is located. The required R-value shall be applied on the inside or outside of the basement wall from the sill plate down to the design frost depth in Climate Zones 4 and 5, and to the basement floor in Zones 6 and 7. Buildings having basement walls with a maximum average exposure not greater than 12 inches above the adjacent grade, and having high efficiency equipment meeting the requirements specified in Table N1101.4.6 based on the climate zone where the building is located, are not required to meet the minimum R-value for Basement Wall in Table N1101.

TABLE N1101.4.6
EQUIPMENT TRADE-OFF FOR BASEMENT WALL INSULATION

BUILDING LOCATION		GAS FURNACE WITH CENTRAL AIR CONDITIONING	AIR SOURCE HEAT PUMP
Zone	HDD	Minimum AFUE	Minimum HSPF
1-3	0-3,999	---	---
4-5	4,000 – 6,999	88	7.8
6-7	7,000 – 12,999	90	8.0

N1101.4.5 Masonry Veneer – When insulation is placed on the exterior of a slab edge, crawl space wall, or basement wall supporting masonry veneer, the horizontal surface supporting the veneer shall not be required to be insulated.

N1101.4.6 Protection of Foundation Insulation – Exposed insulating materials applied to the exterior of foundation walls shall be protected to prevent degradation of thermal performance. The protection shall extend at least 6 inches below finished grade. Plastic foam insulation used below grade shall comply with ASTM C578.

N1101.5 FENESTRATION
N1101.5.1 Labeling – The U-value of fenestration products (windows and glazed doors) shall be indicated on a label affixed to these products by the manufacturer or, where such values are not indicated, the U-value shall be determined in accordance with Table N1101.5.1.

TABLE N1101.5.1
ASSUMED U-VALUE FOR WINDOWS AND GLAZED DOORS

FRAME MATERIAL AND PRODUCT TYPE	SINGLE GLAZED	DOUBLE GLAZED
Metal Without Thermal Break	1.13	0.70
Metal with Thermal Break	1.07	0.63
Reinforced Vinyl/Metal-Clad Wood/ Wood/Vinyl Fiberglass	0.90	0.55

N1101.5.2 Windows – For elements within the building thermal envelope, up to 6 square feet of glazed areas is exempt from the maximum required U-value in Table N1101.5.1

N1101.5.3 Skylights – Minimum skylight requirements shall be as follows:

Zone 1 (0-1, 499 HDD): Any skylight permitted.

Zones 2 3 (1,500 – 3,999 HDD): Any double glazed skylight permitted.

Zones 4 and above (4,000 HDD and above): Any double glazed skylight with a wood, vinyl or fiberglass frame. Metal clad frames shall be permitted.

N1101.5.4 Opaque Doors – Opaque doors shall have a maximum U-value of 0.39 or minimum R-value of 2.5. When the U-value of the door is not provided by the manufacturer, it shall be determined in accordance with Table N1101.5.1. One opaque door per dwelling unit shall be permitted to be exempt from this U-value requirement.

DOOR CONSTRUCTION	WITH FOAM CORE	WITHOUT FOAM CORE
Steel Doors (1 ¾ inches thick)	0.35	0.60
Wood Doors (1 ¾ inches thick)	Without Storm Door	With Storm Door
Panel Hollowcore flush Solid core flush	0.54 0.46 0.40	0.36 0.32 0.26

N1101.6 ROOFS AND CEILINGS

Roof/ceiling assemblies, including ceilings below unconditioned attics and cathedral ceilings, shall meet the minimum R-value for Roof/Ceiling in Table N1101, based on the climate zone where the building is located. Insulation can be compressed or reduced at eaves to accommodate roof framing or ventilation.

Exception: R-30 shall be required for cathedral ceilings whenever the required R-value for Roof/Ceiling in Table N1101 exceeds R-30.

N1102 MOISTURE CONTROL
In all framed walls, floors and roof/ceilings comprising elements of the building thermal envelope, an approved vapor retarder having a maximum rating of 1.0 perm shall be installed on the warm-in-winter side of the insulation.

Exception:
Where the insulated cavity of space is ventilated to allow moisture to escape.

In hot and humid climate areas as shown in Appendix A.

N1103 AIR INFILTRATION

The building envelope shall be designed and constructed to limit air infiltration to the conditioned area of the dwelling. All elements comprising the building thermal envelope, including all exterior joints, seams, or penetrations, shall be caulked, gasketed, taped or covered with moisture vapor permeable sheathing paper or house wrap on the exterior. All windows and doors installed in the building thermal envelope shall be weatherstripped, gasketed, or caulked.

N1104 HVAC SYSTEMS

N1104-1 HVAC AND WATER HEATING APPLIANCES

HVAC and service water heating appliances shall be labeled as complying with minimum efficiency requirements specified by the National Appliance Energy Conservation Act of 1987 and regulations adopted thereunder by the U. S. Department of Energy.

N1104-2 CONTROLS

Each heating, cooling, or combination heating and cooling system shall be provided with at least one adjustable thermostat for the regulation of temperature.

N1104-3 AIR HANDLING DUCT SYSTEM

N1104-3.1 DUCT SEALING – All supply and return ducts located outside the building thermal envelope shall have joints sealed with gaskets, mastics, tapes installed in accordance with the manufacturers instructions, or by other approved methods.

N1104-3.2 DUCT INSULATION – Minimum required duct insulation for all supply and return ducts located in unconditioned space shall be R-5 in all climatic zones.

N1104-4 HEATING AND COOLING PIPING INSULATION
All HVAC system piping carrying fluids with a temperature less than 55°F or greater than 120°F shall have minimum insulation thickness of ½ inch.

N1105 ALTERNATIVE COMPLIANCE

N1105-1 HEAT GAIN/HEAT LOSS CALCULATIONS

Alternative compliance with the requirements of Table N1101 shall be permitted to be determined through a heat gain or heat loss calculation as follows: the required R-value or U-value of an element in the building thermal envelope in Table N1101 may be increased or decreased, provided the total heat gain or loss for the entire building does not exceed the total resulting from conformance to the values specified in Table N1101.

N1105-2 SYSTEMS ANALYSIS
Alternative compliance with the requirements of this chapter shall be permitted to be determined through the use of a systems analysis using a standard design in accordance with Table N1101, and Section N1104. A proposed design complies with this chapter if it has a projected annual energy use for heating, cooling and service water heating not greater than the energy use of the standard design, calculated in accordance with accepted engineering practices. Energy use for both homes shall be calculated based on the same assumptions and building location. The standard design shall have the same floor area, envelope component areas, building orientation, glazing orientation, door areas, and building geometry as the proposed design.

~~The CABO One- and Two-Family Dwelling Code, 1995 Edition~~
~~EXCEPTION TO 314.2 Stairway: Design and Construction of Stair to be in accordance with the 1992 CABO one- and two-family dwelling code~~.

ICC/ANSI A1.1 Standards for Accessibility & Usable Buildings & Facilities, First Edition, 1998.

4.1.1 The following structures are not subject to inspection by local jurisdictions:

4.1.1.a. Group U utility structures and storage sheds comprising an area not more than 150 sq. ft. which have no plumbing or electrical connections and are utilized only for residential storage purposes. (Examples include ~~storage~~ sheds that are for the residential storage of lawnmowers, tools, bicycles or furniture.) Not included are those utility structures and storage sheds which have plumbing or electrical connections ~~or~~ are a non-residential use ~~used~~ or for the storage of explosives or other hazardous or explosive materials.

~~4.1.2 Exceptions:~~

~~4.1.2.a. References to the CABO Model Energy Code, 1995 Edition, in the various national standards and codes adopted in this section mean the BOCA National Energy Conservation Code, 1993 Edition, as adopted in this section.~~

4.2 A copy of the codes listed in Section 4.1 of this rule have been filed with the Secretary of State. These code books, collectively or separately, may be obtained by contacting the Building Officials & Code Administrators International, 4051 West Flossmoor Road, Country Club Hills, Illinois 60477-5795, telephone 708/799-2300; or BOCA ~~International Regional Offices, 3592 Corporate Drive, Suite 107, Columbus, Ohio 43231, telephone 614/890-1061~~. Mid-East Regional Office, 1245 South Sunbury Road, Suite 100, Westerville, OH 43081-9308, telephone (614) 890-1064.

87-4-5 ADOPTION BY LOCAL JURISDICTION

5.1 Each local jurisdiction adopting the State Building Code shall notify the State Fire Commission in writing. The local jurisdiction shall send a copy of the ordinance or order to the State Fire Marshal, West Virginia State Fire Commission, 1207 Quarrier Street, 2nd floor, Charleston, West Virginia 25301, within thirty (30) days of adoption.

5.2 Each local jurisdiction which adopts the State Building Code has responsibility for the enforcement of the building code as provided in West Virginia Code 7-1-3n and 8-12-13.

5.3 Throughout the national codes, as adopted in Section 4.1 of this rule, there are discretionary provisions which require further action by the adopting local jurisdiction in order to adapt these codes to various local conditions. It is therefore the intent of this rule to further authorize each local jurisdiction to further complete, by order or ordnance, those respective areas which are indicated to be completed by the adopting "jurisdiction".

5.4 Within the penalty sections of each of the national codes, as adopted in Section 4.1 of this rule, there is a penalty for imprisonment. The provision of imprisonment for any violation of this rule is optional with each adopting local jurisdiction.

5.5 Each of the national codes, as adopted in Section 4.1 of this rule, provides for a separate appeals board. However, the intent and requirements for an appeal board may be met with the creation by the local jurisdiction of a single appeals board for the entire "State Building Code."

87-4-6 EXISTING BUILDING CODES

6.1 All building codes which have been adopted by local jurisdictions prior to the passage of West Virginia Code 29-3-5b, are null and void.

WEST VIRGINIA

STATE BUILDING CODE

Rules
Of the West Virginia
State Fire Commission

Approved by Secretary, Department of Military Affairs and Public Safety

22 Jan 02
Date

Approved by State Fire Commission

5 Oct 2001
Date

STATE FIRE COMMISSION
1207 Quarrier Street, 2nd Floor
Charleston, WV 25301