

Regional training given by Spotsylvania,
Fredericksburg Stafford and King George
Building Offices

2009 Energy Code update training

WELCOME

Please be sure you signed in

**Presentation will be available on all four
localities websites**



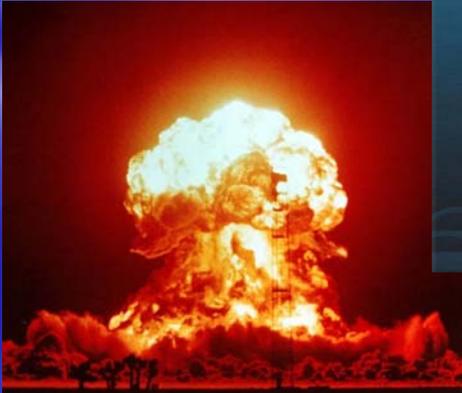
Please Turn Off ALL Cell Phones

NO



CELL PHONES!

CHAPTER 11: ENERGY



Energy Certificate

- Section N1101.9 Certificate

A Permanent certificate shall be posted on or in the electrical distribution panel.

- Deleted by USBC

ENERGY N1102: Building Thermal Envelope

The U-factor for fenestration has changed:

- .35 Btu/h ft² F for windows and doors
(previously .40)
- .60 Btu/h ft² F for skylights
- Fenestration definition includes doors, glass block and windows

Changed

 National Fenestration Rating Council CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	.30
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

ENERGY N1102.2.3: Access Doors

Access doors from conditioned space to unconditioned space

- Weatherstripped
- Insulated to R-38 door to attic
- Provided with a retainer when loose fill insulation is used
- Insulated to a level equivalent to the insulation on the surrounding surfaces
- Portions of a ceiling used for attic access door is a weak part of the building thermal envelope

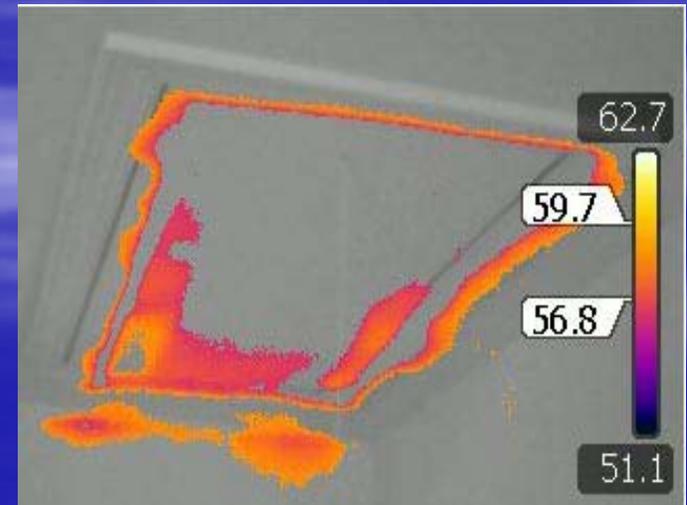
New



ENERGY N1102: Building Thermal Envelope



Effectiveness of insulating around pull down stairs



ENERGY N1102.4: Air leakage

Wood burning fireplaces must have:

- Gasketed doors, and
- Outdoor combustion air

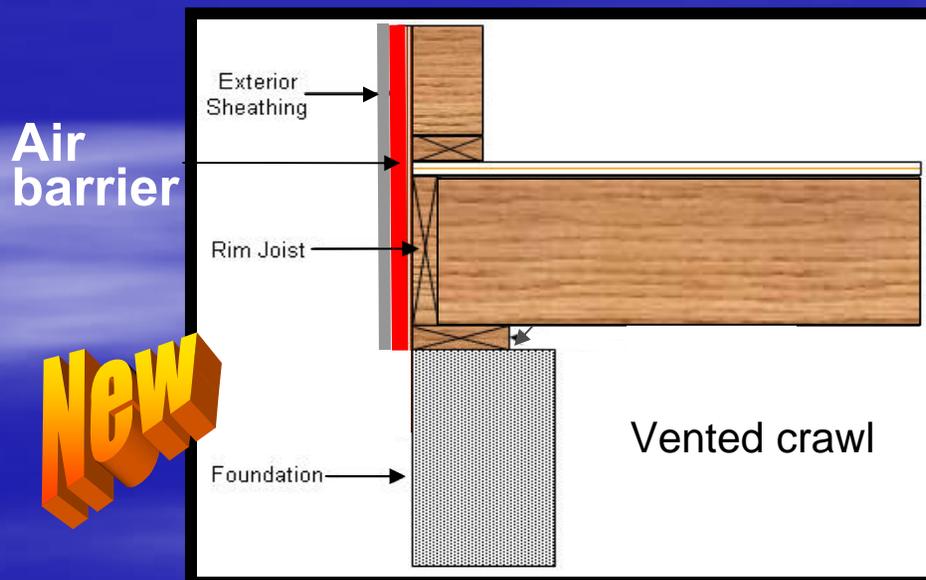
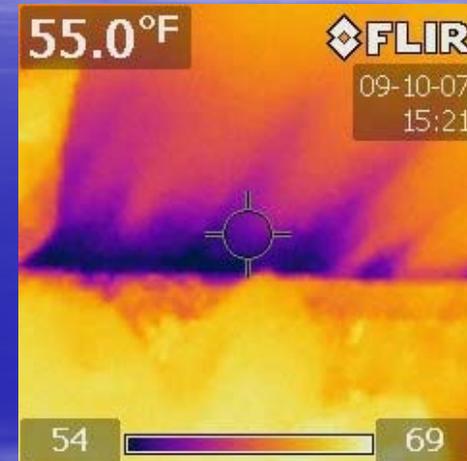
New



ENERGY N1102.4: Air leakage

To prevent infiltration:

- Rim joist junctions must be sealed, or
- Extend air barrier to sill plate



ENERGY N1102.4: Air leakage



Air barrier covering rim board at vented crawl

ENERGY N1103- 4: Energy Saving

New

House with forced air heating systems must have at least one programmable thermostat



50% of all lamp bulbs in permanently installed fixtures must be high efficacy (ex. compact fluorescent lamp) they use 80% less energy

“effectiveness”

IRC N1103.1.1 & IECC 403.1.1

Large, Clear Display with backlighting shows the current and set temperatures and time — even in the dark.

Menu Driven Programming makes set up effortless.

Beautiful Ergonomic Design — smart and sophisticated to match your lifestyle.

Touchscreen Interaction

Programmable Fan offers increased air quality when combined with a Honeywell Whole-house Air Cleaner.

Accuracy of +/- 1 degree

Armchair Programming allows you to remove the thermostat from the wall for programming.

Speed Same-Schedule Programming — no need to copy multiple days.

Various HOLD Options allow you to override the program schedule as desired.

Change/Check Reminders let you know when to service or replace filters, batteries, etc.

Real Time Clock keeps time during power failures and automatically updates to daylight savings.

"Saving Changes" Notification let's you know your changes have been saved.



IRC N1103.1.1 & IECC 403.1.1

- Programmable Thermostat – Controls
- If primary heating system is a forced-air furnace
 - ✘ At least one programmable thermostat per dwelling unit
 - ✘ Capability to set back or temporarily operate the system to maintain zone temperatures
 - down to 55°F (13°C) (heating) or
 - up to 85°F (29°C)(cooling)
 - ✘ Initially programmed with:
 - heating temperature set point no higher than 70°F (21°C) and
 - cooling temperature set point no lower than 78°F (26°C)

IRC N1103.2 & IECC 403.2

■ Ducts

- ✚ Insulation. Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.
- ✚ Exception: Ducts or portions thereof located completely inside the building thermal envelope.
- ✚ Sealing (Mandatory)
 - Joints and seams shall comply with IRC Section M1601.4.1

IRC N1103.2.2 & IECC 403.2.2

- Sealing and Duct Tightness Tests
 - ✘ All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed.
 - ✘ Duct tightness shall be verified by either –
 - ✘ Post construction test (USBC N1103.2.2.1 (1))
 - ✘ Rough Inn test (USBC N1103.2.2.1 (2))

continued... **IRC N1103.2.2 & IECC 403.2.2**

- USBC Amendments
- ✘ USBC permits the duct tightness test to be optional if the air handler and all ducts are located within conditioned space
- ✘ (USBC N1103.2.2.2) Visual inspection option- Must field verify duct tightness if in non-conditioned area
- ✘ Testing may be performed by approved qualified individuals

IRC 1103.3 & IECC 403.3

- Mechanical system piping insulation
- **Mechanical system piping capable of carrying fluids above 105 deg. F or below 55 deg. F shall be insulated to a minimum of R-3.**

ENERGY N1103.07: Pools

Pools require energy conserving measures:

- Pool heater shall have a readily accessible on-off switch
- LP or natural gas heaters shall not have continuous burning pilot light
- Pools with heaters and pumps are required to have timers that automatically turn them on-off



ENERGY N1103.07: Pools

Pools require energy conserving measures:

- Heated pools require a vapor retardant pool cover
- Covers on pools heated $> 90^{\circ}\text{F}$ require a minimum insulation value of R-12



New

IRC N1103.8.2 & IECC 403.9.2

- Time switches
- Time switches that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on swimming pool heaters and pumps.
- Exceptions:
 1. Where public health standards require 24-hour pump operation.
 2. Where pumps are required to operate solar- and waste-heat-recovery pool heating systems.

Questions and Answers

- ANY QUESTIONS ON THIS PORTION OF THE PRESENTATION?

