

## Residential Stretch Energy Code Requirements<sup>1</sup> for:

### Additions of any size

*[See wording on back for Sections 401.3 and 401.4]*

#### Prescriptive

Conformance to IECC 2009, Chapter 4, and fenestration U-factor requirements of ENERGY STAR Homes



ENERGY STAR Thermal Bypass Checklist<sup>3</sup>



Duct tightness requirements, see note below

#### Performance

HERS Rating<sup>2</sup> w/same area requirements as new home performance path



ENERGY STAR Thermal Bypass Checklist

Duct tightness requirements, see note below

### Alterations, Renovations, and Repairs

*[See wording on back for Sections 401.5 and 401.6]*

#### Prescriptive

*If accessing the building envelope, follow prescriptive requirements for additions, plus...*



...meet or exceed 2009 IECC insulation levels 402.1.1, or fully insulate cavities  $\geq R=3.5/\text{inch}$

#### Performance

HERS Rating\*

- 85 (0 – 1,999 s.f.)
- 80 ( $\geq 2,000$  s.f.)



ENERGY STAR Thermal Bypass Checklist<sup>3</sup>

#### NOTE on Ducts:

See code wording on back. If ducts are part of a new heating system in an addition or renovation, then the stretch code duct standards would apply; if ducts are added to an existing heating/cooling system, then ducts would not need to be tested.

#### EXAMPLES of Additions

- Stretch Code applies to additions of any size.
- Using the prescriptive option, only the addition has to meet the Stretch Code and the Thermal Bypass Checklist; energy upgrades are not required for the existing home (e.g., new heating system, new windows, more insulation, etc.).
- If the builder chooses the performance option for compliance, a HERS rating on the whole house, including the addition, would be required at the same HERS Index as a new home (65/70).

#### EXCLUSIONS

- Heating/cooling and water heating equipment located in the addition, because they are regulated by the Federal Government, not the State.
- Appliance choices for a kitchen located in a new addition are exempted by the Stretch Code.

#### EXAMPLES of Renovations/Alterations

- If you are replacing windows and opening part of a wall cavity when remodeling a kitchen or bathroom, the windows and wall insulation must meet the Stretch Code as the envelope is opened; appliance choices are exempt; other energy features of the existing home could be left as is.
- If replacing a heating system, efficiency specifications would be exempt from the Stretch Code and other efficiency upgrades like windows, insulation, water heater, etc. would not be triggered.
- Adding wall insulation must be at least an R-value of 3.5 per inch, but will not trigger window or heating equipment upgrades, for example.

#### EXCLUSIONS

- Storm windows installed over existing windows; repairs to existing windows
- Re-roofing or re-siding over uninsulated roofs or walls (when sheathing is not exposed)
- Existing ceiling, wall or floor cavities of the building envelope, exposed during construction, provided empty cavities are filled with insulation at least R3.5
- Kitchen appliances

<sup>1</sup> This handout was updated on 3-28-11 by the Center for EcoTechnology using materials from BBRs, DOER and statewide Energy Code Training materials. [www.cetonline.org](http://www.cetonline.org)

<sup>2</sup> HERS ratings can only be done on a whole house

<sup>3</sup> Unless one is seeking true ENERGY STAR certification, (the Stretch Code is not ENERGY STAR), then a HERS Rater is not required to fill out the Checklist and only the Builder has to verify Checklist items.

## **ADDITIONS**

**401.3 Prescriptive option for residential additions.** Additions to an existing building, building system or portion thereof shall conform to IECC 2009 Chapter 4, and shall further demonstrate compliance with:

- The Energy Star Qualified Homes Thermal Bypass Inspection Checklist<sup>1</sup>.
- Fenestration U-factor requirements as listed in Energy Star program requirements for Residential Doors, Windows and Skylights - Version 5.
- Ducts for new HVAC systems shall be sealed and tested post-construction to demonstrate leakage to outdoors of less than or equal to 4 cfm per 100 ft<sup>2</sup> of conditioned floor area, except where the air handler and all ducts are located within conditioned space.

**401.4 Performance option for residential additions.** The performance approach and HERS ratings of 401.2 may be followed in lieu of the prescriptive requirements of 401.3

## **ALTERATIONS, RENOVATIONS OR REPAIRS**

**401.5 Prescriptive option for alterations, renovations or repairs.** Alterations, renovations or repairs that involve accessing the building envelope shall require the affected portion of the envelope to comply with 401.3. Envelope insulation shall meet or exceed IECC 2009 requirements (Chapter 4, Section 402) for climate zone 5, or fully fill existing cavities with insulating material which meets or exceeds an R value of R 3.5/inch.

**401.6 Performance option for alterations, renovations or repairs.** In all cases of alterations, renovations or repairs the performance approach of 401.2 may be followed in lieu of the prescriptive requirements of 401.5 with the following HERS rating requirements:

- For units equal to or greater than 2,000 sq ft in conditioned floor space, a HERS rating of 80 or less is required.
- For units less than 2,000 sq ft, a HERS rating of 85 or less is required.
- Compliance with the Energy Star Qualified Homes Thermal Bypass Inspection Checklist

## *Q&A from BBRS Stretch Energy Code Q&A Document, February 2011*

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### **8. Does the stretch code apply to major renovation projects as well as new construction?**

For commercial buildings: no, for residential buildings: yes. The stretch code has less stringent energy performance requirements for renovations than for new buildings. In addition, those doing additions and renovations have the option of using a simple 'prescriptive' path to code compliance. The prescriptive path specifies a set of minimum energy efficiency requirements for different building materials and systems, instead of requiring energy performance modeling and testing. This flexibility is available due to the greater design constraints involved in working with an existing building.

**Simple and small repairs** (for example, patching drywall, replacing an existing door, repairing a window sash or frame, installing storm windows, replacing bulbs or ballasts in existing lighting) do not require a building permit and as a result are not required to meet stretch energy code requirements.

### **9. Does the stretch code apply to minor additions to existing buildings?**

Additions to existing buildings that are large enough to require code compliance are treated in the same way as new construction for commercial buildings, and in the same way as renovations in residential buildings. In both cases those doing additions can follow the performance approach to code compliance or a simplified prescriptive path. For residential additions, the prescriptive path is very similar to the base energy code but also requires the use of a checklist to ensure quality installation of insulation and air sealing, use of Energy Star windows, doors and skylights as appropriate, and tighter duct sealing for new heating and cooling systems.

### **12. How does the stretch code apply to historic buildings?**

Both the stretch code and the base energy code exempt historic buildings listed in state or national registers, or designated as a historic property under local or state designation law or survey, or with an opinion or certification that the property is eligible to be listed.