



# FCCIP NEWS



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## BBRS Adopts Stretch Energy Code

The Board of Building Regulations and Standards approved a code change proposal relating to energy conservation on May 12, 2009. The proposal, known as "the stretch energy code," will become an appendix to the MA State Building Code. If adopted by a town, the stretch energy code will govern rather than the less stringent regulations of the International Energy Code.

If a town were to adopt the Stretch Energy Code, a concurrency period of 6 months to a maximum of 12 months is to be granted, where owners, builders, or designers could choose to follow regulations of the Stretch Energy Code or the International Energy Code.

Below is a summary of the Stretch Energy Code. The entire appendix can be viewed at the following link: [Stretch Energy Code](#)

- ❖ The Stretch Energy Code is a performance-based code requiring a Home Energy Rating System (HERS)\* index score as follows: (a lower score means better efficiency).
- ❖ Residential (New Homes)
  - Hers index of 70 or less for homes with < 3000 sq. ft. conditioned space. ( In short, a 30% energy savings compared to a home based upon the Massachusetts Energy Code which would have a hers index of 100).
  - Hers index of 65 or less for homes with >3000 sq. ft. conditioned space.
  - Homes must show compliance with the Energy Star Qualified Homes Thermal Bypass Inspection Checklist.
- ❖ Residential additions must comply with one of the following:
  - Energy Star Qualified Homes Thermal Bypass Inspection Checklist
  - Prescriptive requirements of IECC 2009
  - Hers rating for new homes

## Website for Deck construction

Contractors, designers, and homeowners can find assistance in deck design and construction at <http://awc.org/Publications/DCA/DCA6/DCA6.pdf>.

The site includes beam tables, fastening schedules, ledger attachment details, nailing requirements, a table for footing sizes and much more. The website is a prescriptive guide based on the 2006 International Building Code.

## Problems in the Field

A few items we have observed:

- ❖ Foam insulation left exposed in basements and attics (See Sect.5314.1.2)
- ❖ Open risers (See Sect. 5311.5.3.3)
- ❖ Insufficient wall bracing for garage openings (See Sect.5301 and article below)
- ❖ Improper exterior corners (See Fig. 5602.10.5)
- ❖ Undersized rafters for raised ceilings (See Table 5802.5.1(6))
- ❖ Railing ends not returned or terminated into newell post (See Sect.5311.5.6.2)
- ❖ No safety glazing over tubs or within 2' of door (See Sect.5308.4)
- ❖ Exterior chimney tight to sheathing (See Sect.6001.15)

### FCCIP STAFF

Phone: 772-2026 Fax: 773-0896  
James Hawkins, Building Commissioner, Ext. 123  
James Cerone, Local Building Inspector, Ext. 124  
James Slowinski, Electrical Inspector, Ext. 126  
Andy French, Plumbing Inspector, Ext. 125  
Judy Bresciano, Administrative Assistant, Ext. 121  
Chris Brothers, Clerk, Ext. 122

Web Site: [www.fccip.org](http://www.fccip.org)

\*For a summary of the HERS index see:  
[http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.nh\\_HERS](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_HERS)

# Braced wall Requirements

780 CMR, Section 5301 requires all buildings and structures to safely support all loads, **including wind loads**. For the average house, the common practice of sheathing all exterior walls fulfills the requirements of this section and, until now, much thought has not been required in design or plan review. When it comes to massive window walls and garage door openings, wind loads must be considered in both the design and the plan review of the building inspector. Here a quick breakdown of the issues:

## Some definitions:

- A "shear wall" is an interior or exterior wall, **engineered** to resist lateral loads, such as winds.
- A "braced wall panel" is the prescriptive equivalent to a shear wall. Section 5602.10.4 requires that each braced wall panel be at least **48"** long.
- A "braced wall line" is a series of braced wall panels in a single story designed in accordance with 780 CMR to resist racking from...wind forces.

## What walls must be braced?

- All exterior walls
- Interior walls >35' from exterior wall.(Method 5 will suffice)

## What is the amount and location of braced wall panels in a braced wall line?

Table 5602.10.1 prescribes the amount and location of braced wall panels in a braced wall line, for different methods of wall bracing. For one and two story buildings with continuous sheathing (method 3), a braced wall panel must be located at each end(within 12.5') and at least every 25' o.c.

## Exception 1: Length of braced wall panels for continuous wood structural sheathing (typical of this area) shall be in accordance with 5602.10.5.

This exception allows the designer to use Table 5602.10.5 as long as exterior corners are nailed per figure 5602.10.5. Assuming that the example above had 8ft ceiling height, this table would allow a window as tall as 62" to be installed 24" from the corner. A 6'8" door could be placed as close as 32" to the corner. *Is there a way to get closer to the corner?*

## Garage Door Exception:

Table 5602.10.5 footnote b allows full-height sheathed wall segments to either side of garage openings, **that support light frame roofs only** to have a 4:1 aspect ratio (the ratio of the height of the opening to width of the sheathed segment. A garage door opening that has an 8ft ceiling and a 2ft corner wall, would have an aspect ratio of 4:1.

## Engineered products and designs

If none of the exceptions apply, besides hiring an engineer to design a shear wall, there are several engineered products such as Simpson Strong Wall and Hardywall that can be used if installed per manufacturer's specifications.

Additionally, the American Plywood Association's Portal Frame Bracing designs can be used. Garage walls at the corner of a door opening can be as small as 16" for an 8' ceiling. See: <http://www.wallbracing.org>

## Design requirements:

All plans should have the following:

- Elevations of all sides of building
- Identification of all braced panel lines
- Identification of all braced panel lengths
- Aspect ratio for garage door openings
- Identification of any special construction details to comply with braced wall requirements that are not prescribed

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425 Main St., Ste 25

Greenfield, MA 01301-3393