Webinar questions should be directed to:

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Building America Solution Center
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Building Science Solutions – Faster and Better

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Overview
World Class Research…

… at Your Finger Tips
Is:

Easy Access to World-Class Research:

• Guidance for Applying Targeted Energy Measures
• Tool for Users to Prepare Customized Project Content
• Source for Proven Performance
• Link to Full References

Is Not:

• Design Tool for Customized Energy Packages
Comprehensive Content Strategy

Solution Center Taxonomy

- Measure Category A
  - Measure Subcategory A.1
    - Measure A.1.1
    - Measure A.1.2
    - Measure A.1.3
    - Measure A.1.4
    - Measure A.1.5
  - Measure Subcategory A.2
    - Measure A.2.1
    - Measure A.2.2
    - Measure A.2.3
    - Measure A.2.4

- Measure Category B
  - Measure B.1

- Measure Category C
  - Measure Subcategory C.1
    - Measure C.1.1
    - Measure C.1.2
    - Measure C.1.3
    - Measure C.1.4
    - Measure C.1.5
  - Measure Subcategory C.2
    - Measure C.2.1
    - Measure C.2.2
    - Measure C.2.3
    - Measure C.2.4

- Measure Category D
  - Measure D.1
  - Measure D.2
  - Measure D.3
  - Measure D.4
  - Measure D.5

- Measure Category E
  - Measure Subcategory E.1
    - Measure E.1.1
    - Measure E.1.2
    - Measure E.1.3
    - Measure E.1.4
  - Measure Subcategory E.2
    - Measure E.2.1
    - Measure E.2.2
    - Measure E.2.3
    - Measure E.2.4
Content Development Process

- Building Science Research
- Measure Guidelines
- Content Development
- Solution Center
  - Taxonomy
  - Templates

Deployment Programs

Users

Researchers
Dynamic Content

Future Audience Engagement Becomes *Community Driven*

- Architects & Engineers
- Educators
- Builders & Remodelers
- Research Teams
- Labeling Programs
- Building Codes
- Solution Center
Existing Development Process

18 MONTHS

Future Development Process

4 MO.
Better Content

Existing Development Process

Building Science Research → Joule Reports → Document Prep → Peer Review → PDF

18 MONTHS

Users*

* If they can find it

Future Development Process

Building Science Research → Focused Measure Guidelines → Peer Review → Sol Center Prep → BA Solution Center

4 MO.

Users**

** Dramatically improved accessibility and interaction
“Fully Aligned Attic Barriers …In section A it says "…include barrier at interior edge of attic eave in all climate zones using a wind baffle that extends to the full height of the insulation". Either I'm not understanding the direction or there is a type-o. Shouldn't it say "exterior edge"?...

…Again, I don't mean to be overly critical. I think this site is awesome. As time goes on, we will almost certainly be using this site as a training tool, particularly for people newer to the industry.”
More Customizable Content

**MOBILE FIELD KIT**

The Building America Field Kit allows you to save items to your profile for review or use on-site.

- Sign Up
- or
- Log In

**DEMO'S FIELD KIT**

The Building America Field Kit allows you to save items to your profile for review or use on-site.

You have 3 items in your Field Kit.

View Field Kit
Home/Entry Page

Content

Component Explorer

Checklist Manager

Building Science Explorer
Continuous Improvement

- Support ENERGY STAR Version 3.
- Initial content based on existing Building America and ENERGY STAR resources.
- Future Development
  - DOE Challenge Home
  - Existing home renovation
Building America Solution Center Tour
The U.S. Department of Energy's Building America program strives to develop integrated energy systems that dramatically reduce annual energy use and peak energy loads in existing and new homes while also improving overall building quality, comfort, safety, and durability.
Log In for Customization
Log In for Customization (cont.)

• Look for the Field Kit icon to add content
• COMING: Mobile access to your Field Kit.
Heavy Membranes at Eaves in Cold Climates

This measure may not be appropriate for your climate. Please see the climate tab for more information.

Scope

Water Managed Roof Assembly

In 2009 IECC Climate Zones 5 and higher, self-sealing bituminous membrane or equivalent over sheathing at eaves from the edge of the roof line to > 2 feet up roof deck from the interior plane of the exterior wall.
Log In for Customization (cont.)

Attic Knee Walls
Please Register or Login to Provide Feedback.

Scope
Fully Aligned Air Barrier
A. Install a top and bottom plate or blocking at the top and bottom of all knee wall cavities.

Feedback
Measure or page name

Do you have suggestions to improve this measure content?

Did this page resolve your question or help you learn?
○ Yes
○ Maybe
○ No (please explain below)

Other Comments

Submit
Register and log in to

• Build and track your Field Kit
• Customize content to your climate
• Track your searches
• Provide comments and content
• Help DOE understand how the tool is used
Search

Search is based on keywords, titles, components and component subcategories

Search Help provides techniques for advanced searches

Search results include Guides, Images, Case Studies, References, and anything else associated with a Guide
Navigation Terminology: Taxonomy

- The Solution Center is organized around a single, hierarchical taxonomy.
- All content is associated with at least one taxonomy term, but can be associated with many terms.
- All Guides fall into a parent (highest level) taxonomy category.
- When a Guide is loaded, an icon is used to identify this parent.
Attic Knee Walls

Please Register or Login to Provide Feedback.

Scope

Fully Aligned Air Barrier

A. Install a top and bottom plate or blocking at the top and bottom of all knee wall cavities.
B. Back attic knee walls with a rigid air barrier or other supporting material to prevent insulation from sagging and create a continuous thermal barrier*
C. Seal all seams, gaps, and holes of the air barrier with caulk or foam.
D. Install insulation without misalignments, compressions, gaps, or voids in all knee wall cavities.

Taxonomy: Thermal Enclosures

MOBILE FIELDKIT

The Building America Field Kit allows you to save items to your profile for review or use on-site.

Sign Up
or
Log In
Bread crumbs take you to EERE, BTP, Building America, and the Solution Center Home Page.
Bread crumbs also help you know how you got here....
The Component Explorer displays images representing eight building-related component areas. Each component is further organized into Component Subcategories (e.g., air sealing, insulation, etc.). After selecting a subcategory, all guides associated with that subcategory are displayed.
Component Explorer (cont.)

Click a component to display subcategories
Click subcategories to display Guides
Component Explorer (cont.)

Component Explorer

Foundation » Insulation

IECC Code Level Insulation

Insulation Installation (RESNET Grade)

Slab Edge Insulation

Slab Edge Insulation

Scope

Reduced Thermal Bridging

For slabs on grade in Climate Zone 4 and higher, 100% of the slab edge is insulated to ≥ R-5 at the depth specified by the 2009 IECC and aligned with thermal boundary of the walls.

A. Install slab edge insulation to extend to the top of the slab so it provides a complete thermal break.

Notes:

Consistent with the 2009 IECC, slab edge insulation is only required for slab-on-grade floors with a floor surface less than 12 inches below grade. Slab insulation shall extend to the top of the slab to provide a complete thermal break. If the top edge of the insulation is installed between the exterior wall and the edge of the interior slab, it shall be permitted to be cut at a 45-degree angle away from the exterior wall.
• The Checklist Manager currently allows exploration of content specific to ENERGY STAR Version 3 checklists.
• The Checklist Manager does not provide pathways to additional, non-related data.
• Topics are displayed in the same order as they appear on the ENERGY STAR checklists.
• Users can drill down into the checklist to display Guides associated with each requirement.
• Checklists supporting other programs will be added in the future.
Prescriptive Path: Fenestration shall meet or exceed ENERGY STAR requirements

ENERGY STAR Windows

Please Register or Login to Provide Feedback.

Scope

ENERGY STAR Windows

Prescriptive Path: Fenestration shall meet or exceed ENERGY STAR requirements

A. Select windows, doors, and skylights to meet ENERGY STAR program requirements for windows, doors, and skylights.

B. Note that the U-value and the Solar Heat Gain Coefficient (SHGC) for doors apply to the whole door, not just the glazing portion.
COMING: Additional checklists will be added
- DOE Challenge Home Checklists
- Existing homes
Scope: Clearly defines and bounds the building topic in a way builders and remodelers can use to contractually obligate their subcontractors.

**Fully Aligned Air Barrier**

A. Install a top and bottom plate or blocking at the top and bottom of all knee wall cavities.
B. Back attic knee walls with a rigid air barrier or other supporting material to prevent insulation from sagging and create a continuous thermal barrier*.
C. Seal all seams, gaps, and holes of the air barrier with caulk or foam.
D. Install insulation without misalignments, compressions, gaps, or voids in all knee wall cavities.
Description: Provides an explanation of the building topic and specific “how-to” steps for implementing.
Ensuring Success: A big-picture discussion of health, safety, durability, performance issues, test-in/test-out requirements, and scheduling and sequencing considerations.
Climate: Cites climate-specific codes, standards, ENERGY STAR, and Challenge Home guidance.
Training: Includes educational resources such as Right/Wrong photographs of proper and improper installation.
COMING: Videos and presentations
CAD: Includes Architectural CAD files of the building topic in DWG and PDF forms.
Guides (cont.)

Compliance: Provides specific compliance references from applicable codes and standards.
More Info:

- References - Full citations with links for content.
- Case Studies - Summaries of Building America teams and builders who have applied best practices.
- Resources - Relevant information not previously cited as references.
- COMING: Innovations
Click on any image within the Guide to enlarge it in a sliding window. Scroll through all images in the Guide.
Building Science Explorer visualizes the content and its semantic mark-up. It allows a user to explore the classification of content, and to drill down to specific Guides.
Change content categorizations
Select categories to highlight articles linked to that category
Select maximize icons to switch views.
- After selecting Insulation, the related content is displayed.
- E.g. seven guides related to Insulation can be found under the Component Explorer Roof/Floor/Ceiling component.
Word Patterns explores word grouping in the content tagging.
### ARTICLES

<table>
<thead>
<tr>
<th>Title</th>
<th>Taxonomy</th>
<th>Construction Type</th>
<th>Component</th>
<th>Subcategory</th>
<th>ENERGY STAR</th>
<th>Notes</th>
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<tr>
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<td>PVC Ducts</td>
<td>New Homes</td>
<td>HVAC</td>
<td>Tight Ducts</td>
<td>ENERGY STAR</td>
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<td>Ducted Return Air</td>
<td>Walls, Advanced</td>
<td>New Homes</td>
<td>HVAC</td>
<td>HVAC Quality</td>
<td>ENERGY STAR</td>
<td>Bedrooms</td>
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<td>Walls/Openings</td>
<td>New Homes</td>
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<td>Tight Ducts</td>
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<td>Total Rater</td>
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<tr>
<td>Total Duct Length Fiber Board</td>
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<td>Tight Ducts</td>
<td>ENERGY STAR</td>
<td>Total Rater</td>
<td></td>
</tr>
</tbody>
</table>

Articles takes you directly to the Guides (Insulation selected)
• Click an image to enlarge in a sliding window.
High Performance Building Details: Garage Band Joist Air Barrier


Link: High Performance Building Details: Garage Band Joist Air Barrier
Authors: Consortium for Advanced Residential Buildings
Organization: Consortium for Advanced Residential Buildings

- Images can be displayed full size. Use Save As to save to file.
- COMING: Images will be saved in native/original format
- Use the “REF” icon to locate the source of the image
- Select the Field Kit icon to add to your Field Kit
Click the CAD file image to load in a slider window.
Browser: CAD Files

- CAD files can be saved in .dwg format
- CAD files can be converted to .pdf
- Use the “REF” icon to locate the source of the CAD file
- Save CAD files directly to your Field Kit
Faceted Search

All Browser media can be searched using faceted search or simply browsed.

Search filters include:
- Taxonomy
- Component Subcategory
- Climate Zone
- Keywords
- Author
- Organization
Faceted Search (cont.)

Resource Guides

- Back-Draft Dampers at Shared Common Exhaust Duct
- Bathroom Exhaust
- Common Exhaust Duct Not Shared by Fans in Separate Dwellings
- Kitchen Exhaust
- Proper Clothes Dryer Venting

CURRENT SEARCH

Search found 5 items
[all items]
(-) Kitchen Exhaust

FILTER BY TAXONOMY

(-) Kitchen Exhaust

FILTER BY CLIMATE ZONE:

- Zone 1 (5)
- Zone 2 (5)
- Zone 3 (5)
- Zone 4 (5)
- Zone 5 (5)
- Zone 6 (5)
- Zone 7 (5)
- Zone 8 (5)
Recently added Guides automatically show up on the home page.

All Guides can be quickly accessed as a list.

Recently added References automatically show up on the home page.

All References can be quickly accessed as a list.
Building America Solution Center

Wrap-Up
Summary

- At its core, the Solution Center is web-accessible, structured database of Building America best practices.
- The user interface consists of a number of tools to find focused content and to support partnering programs.
- Registered users are emphasized to give them more relevant information.
- The first priority has been developing tools and content to support ENERGY STAR Version 3.
- Initial content has been based on legacy information. New content will flow from Building America research.
- The Solution Center is a living database that will be continually populated and updated.
Important Dates

• Review comments submitted: 1 December 2012
• Public launch: January 2013
• DOE Challenge Home upgrade: October 2013
• Existing home renovation: 2014
• Content will be continuously populated and updated
Three Mechanisms for Comments for Registered Users

• Submit specific comments on each guide using the “FEEDBACK” links within the guides.
• A general comments and content submission feature will be added by Monday, 15 October.
• Email comments to:

basc@pnnl.gov
Access the Building America Solution Center at:

http://basc.pnnl.gov