Comment Form on Proposed Gut Rehabilitation Alternatives

Name: _____ Organization: _____ Email: _____

Instructions

Submission: Please submit this form to energystarhomes@energystar.gov by October 10th, 2012 with the subject line "Comments on Proposed Gut Rehabilitation Alternatives"

Comments:

- This form has a separate table for each item that will be in the Policy Record.
- Read through the "Issue" and "Resolution" language for background information.
- The "Proposed Language Change" section includes the specific language changes being proposed. New language is highlighted in yellow. Use this box to suggest any additional or alternative language either with track changes or highlighting the changes in a different color.
- The "Comments" box is for any supporting comments or general feedback relating to the specific item. If available, include standards or research that you can reference to support your comments. If you concur with the proposed item please note that in this box as well.
- At the end of the form is an open comment box where any general comments or comments about an additional item can be included. Where available and appropriate, please include specific language suggestions and supporting research or standards.

Topic	**ENERGY STAR certification of homes undergoing a 'gut rehabilitation'**	
Program Document and Classification	**National Program Requirements (Version 3, Rev. 06)**	**Comment**
Issue	Partners have asked if existing homes are permitted to be ENERGY STAR certified and if so, whether there are any exemptions or alternatives to the guidelines that apply to these homes.	
Resolution	Historically, EPA has allowed existing homes to earn the ENERGY STAR when all program requirements are met. EPA does recognize that some of the current program requirements present unique challenges for existing homes, even those undergoing a gut rehabilitation. Therefore, EPA has assessed whether there are alternative compliance options that would meet the intent of the current requirements and allow these homes to be ENERGY STAR certified. Note that the goal was not to develop a separate label, but rather to allow these homes to achieve the same intent of the ENERGY STAR Certified Home requirements through alternative options. While many requirements were analyzed, the Policy Record only contains the requirements for which an alternative compliance path was created or a clarification needed. While these alternative paths meet the original intent of the Items, for some Items they are not a best practice for new construction. Thus, some alternative options are only available to existing homes. Through this process, EPA has identified key components that may need to be in the scope of an existing home project to meet the ENERGY STAR requirements. These include the following: 1) Remove exterior cladding and the outer surface of roof to install and/or verify the components on the Water Management Builder Checklist and Thermal Enclosure System Rater Checklist 2) Replace or expose most systems, equipment, or components (e.g. HVAC and ducts, windows, insulation) 3) Grade the site and/or provide drains/swales	
Proposed Language Change	None	
Comments		

Topic	Item 4.2 - Slab edge insulation alternative for existing homes	
Program Document and Classification	Thermal Enclosure System Rater Checklist (Version 3, Rev. 06)	Change
Issue	Partners certifying existing homes have expressed concern that this requirement would require excavation around, or removal of, the slab, which is not typically within the scope even for a gut rehabilitation. If the slab edge is not already insulated, the perimeter around the slab would need to be excavated or the slab itself removed and replaced to add the required insulation.	
Resolution	Uninsulated sections of slabs reduce the efficiency of the thermal envelope and create comfort problems for homeowners. Uninsulated sections of slab create thermal bridges through which heat transfer occurs, which reduces the efficiency of the thermal envelope. Additionally, uninsulated sections of slabs create homeowner comfort problems because they facilitate cold floors. Insulating 100% of the slab edge eliminates thermal breaks that lead to homeowner discomfort and also improves the efficiency of the thermal envelope. To meet this same intent, rigid insulation ≥ R-5 can be installed on top of the slab prior to the installation of the flooring either as a floating floor or with sleepers. It should be noted that insulating the top of the slab also meets the requirement from Footnote 5 to provide a thermal break between the house and the unconditioned slab. This option is available for new and existing homes.	
Proposed Language Change	To reflect this alternative, Footnote 4 will be revised as follows: "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. Alternatively, the thermal break is permitted to be created using ≥ R-5 rigid insulation installed on top of the slab. In such cases, up to 10% of the slab surface is permitted to not be insulated to accommodate intentional designed details (e.g., sleepers, sill plates)."	
Comments		

Topic	Item 5.2.1 - Foam gasket beneath an existing sill plate	
Program Document and Classification	Thermal Enclosure System Rater Checklist (Version 3, Rev. 06)	Change
Issue	Partners certifying existing homes have expressed concern that it is not feasible to request the removal of the sill plates to place the gasket beneath, even for a gut rehabilitation.	
Resolution	Sill plates are a commonly overlooked place that is prone to infiltration due to uneven surfaces and adjacent dissimilar materials. A gasket combined with caulk is the preferred approach to minimizing leakage at this interface. To reach the same reduction in infiltration without the gasket, existing home projects can instead seal around all sill plates and bottom plates resting atop concrete or masonry and adjacent to conditioned space. This includes sealing the seam where the top exterior edge of the plate meets the sheeting and sealing the seam where the bottom interior edge of the plate meets the concrete or masonry.	
Proposed Language Change	A Footnote will be added to this Item that reads: "Existing sill plates resting atop concrete or masonry and adjacent to conditioned space (e.g., in a home undergoing a gut rehabilitation) are permitted, in lieu of using a gasket, to be sealed at both interior seam between the sill plate and the subfloor and the seam between the top of the sill plate and the sheathing."	
Comments		

Topic	Item 1.3 - Capillary break beneath existing slabs	
Program Document and Classification	Water Management System Builder Checklist (Version 3, Rev. 06)	Change
Issue	Partners certifying existing homes have expressed concern that the removal and reinstallation of slabs is not typically within the scope, even for a gut rehabilitation.	
Resolution	The capillary break beneath the slab prevents water from wicking up from the ground into the slab. To meet the intent of this requirement, existing homes will be permitted to have a well-sealed, and continuous capillary break above the slab that is a Class I or Class II Vapor Retarder. Some methods for achieving this include: • Applying a permanent and protected Class 1 Vapor Retarder that provides drainage space (e.g.an air gap membrane); OR • Applying a permanent and protected layer of extruded polystyrene insulation with taped joints or equivalent semi-permeable vapor barrier system; OR • Applying a surface-applied crystalline water-proofing treatment: OR • Applying an epoxy that is a Class I Vapor Retarder To prevent interruptions in the capillary break due to wear and tear, in occupiable spaces this capillary break must be durable enough to withstand occupant use or be protected with a durable floor surface. To prevent damage from moisture from the slab, Class I Vapor Retarders are not permitted to be installed on the interior side of air permeable insulation or other materials that are prone to moisture damage.	
Proposed Language Change	A new Footnote will be added to this Item that reads as follows: "For an existing slab (e.g., in a home undergoing a gut rehabilitation), in lieu of a capillary break beneath the slab, a continuous and sealed Class I or Class II Vapor Retarder (per Footnote 6) is permitted to be installed on top of the slab. In addition, for existing slabs in occupiable space, the Vapor Retarder shall be, or shall be protected by, a durable floor surface. If Class I Vapor Retarders are installed, they shall not be installed on the interior side of air permeable insulation or materials prone to moisture damage."	
Comments		

Topic	Item 1.4 - Capillary break at all existing crawlspace floors	
Program Document and Classification	Water Management System Builder Checklist (Version 3, Rev. 06)	Change
Issue	Partners certifying existing homes have expressed concern that the removal and reinstallation of slabs is not typically within the scope, even for a gut rehabilitation.	
Resolution	The capillary break beneath the slab prevents water from wicking up from the ground into the slab. To meet the intent of this requirement, existing homes will be permitted to have a well-sealed, and continuous capillary break above the slab that is a Class I or Class II Vapor Retarder. Some methods for achieving this include: • Applying a permanent and protected Class 1 Vapor Retarder that provides drainage space (e.g.an air gap membrane); OR • Applying a permanent and protected layer of extruded polystyrene insulation with taped joints or equivalent semi-permeable vapor barrier system; OR • Applying a surface-applied crystalline water-proofing treatment: OR	

	• Applying an epoxy that is a Class I Vapor Retarder To prevent interruptions in the capillary break due to wear and tear, in occupiable spaces this capillary break must be durable enough to withstand occupant use or be protected with a durable floor surface. To prevent damage from moisture from the slab, Class I Vapor Retarders are not permitted to be installed on the interior side of air permeable insulation or other materials that are prone to moisture damage.
Proposed Language Change	A new Footnote will be added to this Item that reads as follows: "For an existing slab (e.g., in a home undergoing a gut rehabilitation), in lieu of a capillary break beneath the slab, a continuous and sealed Class I or Class II Vapor Retarder (per Footnote 6) is permitted to be installed on top of the slab. In addition, for existing slabs in occupiable space, the Vapor Retarder shall be, or shall be protected by, a durable floor surface. If Class I Vapor Retarders are installed, they shall not be installed on the interior side of air permeable insulation or materials prone to moisture damage."
Comments	

Topic	**Item 1.4.1 - Location of capillary break**	
Program Document and Classification	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Comment**
Issue	EPA has identified that Item 1.4.1 may be misinterpreted as only allowing a capillary break to be placed under a structural slab, and not a 'rat slab' that many existing homes participating in the program may use.	
Resolution	A capillary break may be placed under any slab, even non-structural "rat slabs."	
Proposed Language Change	None	
Comments		

Topic	**Item 1.5 - Finishing of exterior surface of existing below-grade walls**	
Program Document and Classification	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Change**
Issue	Partners have expressed concern that the exterior surface of foundation walls in gut rehabilitation projects are already below grade with soil surrounding them. In order to comply with this requirement, the builder would be forced to excavate around the home, thoroughly clean the walls, and then apply the exterior coating.	
Resolution	The intent of item 1.5 is to protect below grade walls from damage caused by moisture migration and bulk water flow. Because below grade walls are in contact with the moist ground, water has the potential to wick through the wall and create durability problems in the wall assembly and indoor air quality problems in the home. For foundation walls not framed with wood, existing home projects can meet this same intent by managing the water that comes through the walls with an interior drainage system. For projects in soils that require a foundation drain, the system allows water to come through the wall and be directed into the drain, but blocks the water and vapor from coming into the basement space or crawlspace. This system includes a drainage plane, capillary break, Class I Vapor Retarder	

	and air barrier that leads into the foundation drainage system. In sandy soils, projects are able to manage the water by adhering a continuous capillary break directly to the wall, blocking the water and water vapor on the surface of the wall. The capillary break must also be a Class I Vapor Retarder.
Proposed Language Change	To clarify this alternative compliance pathway for existing homes, a Footnote will be added to this Item that reads as follows: "The interior surface of existing below-grade walls that are poured concrete, concrete masonry, or insulated concrete forms (e.g., in a home undergoing a gut rehabilitation) are permitted to be finished as follows: • Install a continuous and sealed drainage plane, capillary break, Class I Vapor Retarder (per Footnote 6) and air barrier that terminates into a foundation drainage system as specified in Item 1.8. This may be met with one or more materials such as the combination of spacer mesh and sealed foil-faced polyisocyanurate foam or a fully sealed air gap membrane; OR • If a drain tile is not required as specified in Footnote 7, adhere a Class I Vapor Retarder (per Footnote 6) directly to the wall with the edges taped/sealed to make it continuous. Note that no alternative compliance option is provided for existing below-grade wood-framed walls."
Comments	

Topic	**Item 1.8 - Drain tile**	
Program Document and Classification	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Change**
Issue	Partners certifying existing homes have expressed concern that compliance with this Item would require the complete excavation of the area around the foundation, which is not typically within the scope even for a gut rehabilitation.	
Resolution	The intent of this Item is to ensure water is transported away from the footings of the foundation walls. Existing home projects can meet the same intent through an internal drainage system such as an interior French drain. Any drain system installed must meet the criteria described in Item 1.8. In addition, basement foundations of existing homes installed in Group 1 soils will meet this same intent without the installation of a drain tile.	
Proposed Language Change	To clarify options compliance options for existing homes, Footnote 7 will be revised as follows: "Alternatively, either a drain tile that is pre-wrapped with a fabric filter or a Composite Foundation Drainage System (CFDS) that has been evaluated by ICC-ES according to AC 243 are permitted to be used to meet this Item. Note that the CFDS must include a soil strip drain or another ICC-ES evaluated perimeter drainage system to be eligible for use. In an existing home (e.g, in a home undergoing a gut rehabilitation) the installation of a drain tile that is only on the interior side of the footings is permitted. Additionally, a drain tile is not required when a certified hydrologist, soil scientist, or engineer has determined that a crawlspace foundation, or an existing basement foundation (e.g., in a home undergoing a gut rehabilitation), is installed in Group I Soils (i.e. well-drained ground or sand-gravel mixture soils), as defined by 2009 IRC Table R405.1."	
Comments		

Topic	**Item 2.1- Flashing at bottom of exterior walls**	
Program Document	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Change**

and Classification		
Issue	Partners have asked if flashing is needed for all types of brick veneer and siding clad walls.	
Resolution	The intent of item 2.1 is to provide a path for bulk water that has made its way behind the exterior cladding to properly drain to the ground. Brick veneer buildings can meet this intent without flashing when the step supporting the brick veneer is below the foundation and can act as a drainage plane. Additionally, flashing is not needed where the siding and drainage plane extends uninterrupted (e.g., no water table trim detail) below the elevation of the foundation. This option is available to all homes.	
Proposed Language Change	To clarify this exemption for brick veneers and siding clad walls without a water table trim, a new Footnote will be added to this Item that reads as follows: "Flashing at the base of an existing brick veneer wall is not required if a minimum ¾" horizontal space exists between the back of the brick veneer and the frame wall sheathing; the base of the brick veneer is provided with functional weep holes; and the supporting brick shelf is a minimum of two brick courses below the top elevation of the foundation. Flashing is not required for siding clad walls when the vertical drainage plane is not interrupted by a horizontal trim or other interruption and the drainage plane continues a minimum of 5" below the top elevation of the foundation."	
Comments		

Topic	**Item 2.2 – Drainage plane compliance for existing homes**	
Program Document and Classification	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Comment**
Issue	Partners certifying existing homes have expressed concern that the installation of a drainage plane requires the removal of the building's exterior cladding. Partners have expressed particular concern for brick veneer cladding which is not typically within the scope even for a gut rehabilitation. If the current drainage system and cladding are working properly, then the cladding may not need to be removed and re-installed.	
Resolution	[Issue under review]. This is an important characteristic. EPA will continue to look into alternative methods for brick veneer structures to be able to assess if a fully sealed continuous drainage plane behind the exterior cladding does exist already. In the meantime, brick veneer and all other structures must meet the intent of this Item in its entirety.	
Proposed Language Change	None	
Comments		

Topic	**Item 4.4. - Building materials with visible signs of water damage or mold**	
Program Document and Classification	**Water Management System Builder Checklist (Version 3, Rev. 06)**	**Clarification**
Issue	**Issue:** Partners certifying existing homes have expressed concerns that this Item may require the removal of structural building materials, which is not typically within the scope of a gut rehabilitation. Partners have questioned whether this Item applies to building materials that are already installed.	

Resolution	**Resolution:** Existing homes must meet this requirement in its entirety. An effort should be made to replace all existing structural building materials that have visible signs of water damage or mold. For existing structural building materials that are challenging to replace, an effort should be made to remove all visible signs of mold using detergent or other method per Footnote 14. If materials cannot be cleaned they must be removed.
Proposed Language Change	To clarify that existing homes must also remove materials with visible signs of water damage or mold, Item 4.4 will be revised as follows: **"**Building materials with visible signs of water damage, decay, or untreated mold *not* installed or allowed to remain."
Comments	

General Comments – Please use this space for comments that do not pertain to a specific item described above.