

## Appendix D: Allowable Materials

### Material Standards

All materials installed utilizing WAP funding shall meet the standards outlined in 10 CFR Part 440, Appendix A.

In addition, the Vermont WAP protocols outlined within this appendix shall be followed.

#### Top of Building

- Preference shall be given to cellulose whenever a blown-in insulation material is utilized at attic, ceiling and/or kneewall closet surfaces.
- The installation of blown-in fiberglass or blown-in rockwool is not allowable at attic, ceiling or kneewall closet surfaces unless one of the following conditions is present:
  1. When there are closed cavity areas that house chimneys/flues/SRJ's and insulation contact with those building components is unavoidable without demolition of finished interior surfaces. In this scenario, use of cellulose insulation is not allowable. Use of blown-in fiberglass or rockwool is allowable.
  2. When there are exposed masonry materials in the area to be insulated. An example would be a brick wall exposed to the attic. In this situation, a skim coating of closed-cell foam over the brick followed by the installation of blown cellulose is recommended. This technique provides a barrier between the masonry material and the blown cellulose insulation. Utilizing blown-in fiberglass in the area nearest to the masonry materials and then switching back to cellulose once adequate buffering has been accomplished with the blown-in fiberglass is also an allowable technique in this situation.
- Use of the following materials at attic, ceiling or kneewall closet surfaces is allowable:
  1. Polyisocyanurate (*HI-R*)
  2. Extruded polystyrene (*pink, blue or green board*)
  3. Closed-cell spray foam
  4. Expanded polystyrene (*white board*)\*

\*Preference shall be given to either polyisocyanurate (*HI-R*), extruded polystyrene (*pink, blue or green board*) or closed-cell spray foam unless (a) it is clearly demonstrated that expanded polystyrene is a more affordable material choice for a measure installation based on the cost of the R-value achieved and (b) the expanded polystyrene has a factory installed protective layer on both sides of the foam sheet to enhance product durability.
- Use of expanded polystyrene (*white board*) is allowable as the inner composition layer of access panels/hatches in attic and kneewall closets without additional cost justification.
- The installation of fiberglass batting as an insulation measure at attic, ceiling and/or kneewall closet surfaces is not allowable.



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#### Sides of Building

- Preference shall be given to cellulose whenever a blown-in insulation material is utilized at wall surfaces.
  - Use of the following materials to insulate the sides of buildings is allowable:
    1. Polyisocyanurate (*HI-R*)
    2. Extruded polystyrene (*pink, blue or green board*)
    3. Closed-cell spray foam
    4. Expanded polystyrene (*whiteboard*)\*
- \*Preference shall be given to either polyisocyanurate (*HI-R*), extruded polystyrene (*pink, blue or green board*), or closed-cell spray foam unless (a) it is clearly demonstrated that expanded polystyrene is a more affordable material choice for a measure installation based on the cost of the R-value achieved and (b) the expanded polystyrene has a factory installed protective layer on both sides of the foam sheet to enhance product durability.
- Installation of open-cell foams is not allowable as sidewall insulation in non-masonry buildings.
  - The installation of blown-in fiberglass or blown-in rockwool is not allowable at wall surfaces unless one of the following conditions are present:
    1. Masonry construction (structural masonry and/or masonry veneers) where there is no sheathing and/or vapor retardant coating to separate the interior side of the masonry wall materials from the insulation. The decision to insulate this type of wall system and the material choices are at the sole discretion of the WAP agency. Any chosen materials must meet 10 CFR 440, Appendix A.
    2. When there are closed cavity areas that house chimneys/flues and insulation contact with those building components is unavoidable without demolition of finished interior surfaces. In this scenario, use of cellulose insulation is not allowable. Use of blown-in fiberglass or rockwool is allowable.
  - The installation of fiberglass batting as an insulation measure at wall surfaces is not allowable.



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#### Bottom of Building

##### Boxsill

- The installation of polyisocyanurate (*HI-R*) or closed-cell spray foam as boxsill insulation is allowable.  
The installation of expanded polystyrene (*white board*)\*<sup>1</sup>, extruded polystyrene (*pink, blue or green board*), or open-cell spray foam as an insulation material at the boxsill/rim is not allowable unless a minimum of R-12 is achieved and it is clearly demonstrated that it is less expensive to achieve the needed R-value with one of these products than to achieve the same R-value performance with polyisocyanurate (*HI-R*) or closed-cell spray foam.
- The installation of fiberglass batting as an insulation measure at the boxsill/rim is not allowable.
- The installation of blown-in fiberglass is allowable as boxsill and/or foundation insulation in the cavity between a brick veneer and the structural foundation wall when the cavity is three inches deep or greater. Cellulose is not allowable in this installation scenario.

##### Foundation

- The installation of polyisocyanurate (*HI-R*), extruded polystyrene (*pink, blue or green board*), closed-cell spray foam, expanded polystyrene (*white board*)\*<sup>1</sup> and/or rockwool board products is allowable as foundation insulation.
- The installation of fiberglass batting/blankets or open-cell spray foam as an insulation measure at the foundation is not allowable.
- When there is a cavity between a brick veneer and the structural foundation wall that is three inches deep or greater, the installation of blown-in fiberglass into the cavity is allowable practice. Cellulose is not allowable in this installation scenario.

##### Floor

- The installation of extruded polystyrene (*pink or blue board*), polyisocyanurate (*HI-R*), closed-cell spray foam, expanded polystyrene (*white board*)\*, blown-in fiberglass, rockwool and/or cellulose is allowable as floor insulation.
- The installation of fiberglass batting or open-cell spray foam as floor insulation is not allowable.

<sup>1</sup> \*It is only allowable to use expanded polystyrene products that have a factory installed protective layer on both sides of the foam sheet to enhance product durability.



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### Material Standards

#### Material Choice Policy Exceptions

##### Exception for Weatherization Client Self-Help Project Components

If a project will incorporate self-help components in order to maximize the comprehensiveness of the Weatherization services, then the installation of WAP provided fiberglass batting material by the client is allowable.

Thorough guidance shall be provided to client by WAP staff to help ensure the client understands the importance of installing the batting materials in direct contact with all surfaces, leaving no air-gaps around the fiberglass batting materials. While this approach is allowable, WAP providers are encouraged to find alternate self-help approaches.

Alternate self-help examples include:

1. Have a client install WAP provided house-wrap materials and strapping to prepare for a weatherization crew to install densepacked cellulose.
2. Have a client install WAP provided foam-board materials.

##### Miscellaneous Exceptions

Weatherization providers that want to use materials that are not allowed by this TEC Manual section must submit a request in writing to the OEO prior to using the material during a project.

