



MINIMUM REQUIREMENTS FOR WAP CONTRACTORS

1. Insurance
Workman's compensation insurance is required
Liability - \$599,000 bodily injury
Liability - \$100,000 property damage
POI – Pollution Occurrence Insurance (for lead)
2. The subcontractor must be registered with the Office of Energy Resources as well as the Rhode Island Building Contractors Registration Board.
3. RI Lead Safe Renovator/Remodeler license.
4. Training in Lead Safe Work Practices.
4. The subcontractor must be supply all tools and equipment necessary to perform the work, including a Blower Door and a Hepa Vac.
5. The subcontractor must be able to work with low-income and minority households in a professional manner.
6. Material standards must comply with Department of Energy (DOE) 10 CFR 440.

Attachments:

Weatherization Assistance Program Installation Guidelines
Contractor Application Agreement
Equal Opportunity Statement
Statement Affirming Use of Recycled Materials
Certification Regarding Lobbying
Lead Safe Agreement
DOE CFR 440
2009 Standardized Price List
Weatherization Core Competencies

For more information, please contact:

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Minimum Tools Required of WAP Auditors and Contractors

- 1 Basic hand tools, hammer, nail set, screwdrivers, utility knife, small flat pry bar, extension cord, gas match
- 2 Blower door and smoke puffer
- 3 Brutech electric meter / monitor (meter for refrigerator and appliances etc.)
- 4 Carbon Monoxide Tester (Bacharach Monoxor II)
- 5 Combustible Gas Detector (Tif 8800 or equivalent)
- 6 Combustion Test Kit, (efficiency test kit complete with draft, thermometer, oxygen or CO2 and smoke testing - eg Fyrite Pro 125) and printer
- 7 Cordless electric drill (12-15 amp. min) complete with drill bits, screw driver bits
- 8 Electric Tester (Tig tester) for testing wiring
- 9 Flash Light
- 10 Folding or telescoping ladder, 6 ft. folding jump ladder or step ladder, 12-16 ft. extension ladder
- 11 GFI tester (tester for ground fault interrupter)
- 12 Lead Test Wipes, Swabs and Tubes
- 13 Measuring tape (both 20-25 ft. and 50-100 ft.)
- 14 Mirror
- 15 Pocket Thermometer
- 16 Safety Glasses and Dust Mask
- 17 Stainless Steel Flame Mirror
- 18 Zip tool for vinyl siding
- 19 Thermography Scanner
- 20 See Snake
- 21 Digital camera



EQUAL OPPORTUNITY STATEMENT

_____ is committed to Equal Opportunity and Affirmative Action practices based upon the Civil Rights Act of 1964. _____ Program hereby affirms and attests that no person, on the grounds of race, color, religion, national origin, sex, sexual orientation, age, handicap, political affiliation or belief, shall be excluded from participation in, be denied the benefit of, be subjected to discrimination under, or be denied employment in connection with any program or activity sponsored or receiving remuneration from _____.

In pursuit of this policy, _____ seeks to encourage all service vendors to pursue Equal Opportunity and Affirmative Action as well. The undersigned hereby states that (corporate name)

_____ is in compliance with this Equal Opportunity Statement in all of its business practices.

Date: _____

Signature: _____

**RHODE ISLAND OFFICE OF ENERGY RESOURCES
 LOW-INCOME HOME ENERGY ASSISTANCE PROGRAM/WEATHERIZATION PROGRAM
 (LIHEAP/WAP/AMP)
 STATEWIDE SERVICE AGENCIES AND AREAS SERVED**

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 East Bay Community Action Program
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 (WAP) Robert Swift (X117) Brian Wong (X105) Ed Turgeon (X119)

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 Portsmouth
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 Warren
 Middletown

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 Tri-Town Community Action
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 Chepachet
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 Smithfield
 North Providence
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 (WAP) 273-2000 Fax: 273-2007
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 Main # 654-4971 -- Liheap # 654-4969

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Joanne McGunagle, Director
 Comprehensive Community Action Programs
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 Cranston, RI 02910
 467-9610 Joanne Gregory (X125) Fax: 467-9030
 (LIHEAP) 467-7013 (Fax: 461-6581)
 (WAP) 467-9610 George Voit (X143)

Cranston
 Scituate
 Foster

(October 2008)



CERTIFICATION REGARDING LOBBYING

(Federal Register Vol. 55, No. 38, dated February 26, 1990)

(Excerpt from Appendix A to 10 CFR 601)

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-III, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 34, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



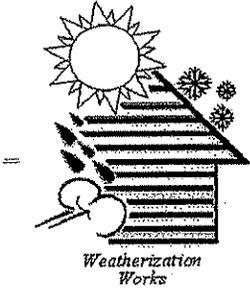
LEAD SAFE AGREEMENT

The contractor will have one person on each crew who holds a Rhode Island Lead Safe Remodeler/Renovator license.

The contractor agrees to practice Lead Safe Weatherization procedures on all homes. If the contractor fails to practice LSW, we will assume that contamination has occurred and the contractor will be responsible for cleaning the affected areas and pay for a lead clearance test. The contractor agrees to hold the agency harmless in matters relating to lead.

Signature

Date



RECYCLED MATERIALS

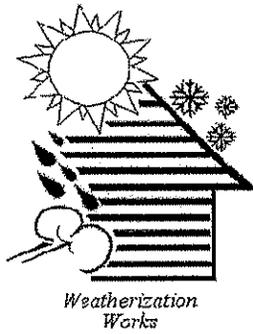
DATE: _____

I, _____

OWNER/OPERATOR OF

CERTIFY THAT I/MY COMPANY WILL USE RECYCLED MATERIALS AS OFTEN AS POSSIBLE.

SIGNATURE _____



DEPARTMENT OF ADMINISTRATION

DIVISION OF CENTRAL SERVICES

RHODE ISLAND STATE ENERGY OFFICE

WEATHERIZATION ASSISTANCE PROGRAM

GUIDELINES FOR THE INSTALLATION
OF
ENERGY CONSERVATION MEASURES

Revised January 2005

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INTRODUCTION

This booklet is intended to describe acceptable procedures for the installation of energy conservation measures, and to supplement the installation guidelines promulgated by the Federal Department of Energy for use in the Weatherization Assistance Program (WAP).

All contract work assignments must be performed in accordance with the specifications contained herein. Any deviation from these standards will be considered a violation, unless prior permission from State Energy Office personnel has been granted.

It is our hope that this document will serve as a useful tool to help resolve questions as they arise. **A copy of the standards should be kept with your vehicles to be brought to each job site for reference by your work crews.**

All contractors are required to contact the State Energy Office 574-9100 FAX 574-9125 prior to the start of any work on all client homes, failure to do so will result in a warning to the contractor. If a contractor still continues not to call in, we will decide what further action will be taken.

We stress Lead Safe Weatherization (LSW) throughout these guidelines. **If LSW is not practiced by a contractor, we will require that the home be cleared by a lead test. The lead test and any required cleanup will be at the contractor's expense.**

We are continuing the process of searching for new and better ways to insure the highest quality workmanship for the Rhode Islanders we serve. We invite your comments and questions on any of this material, and we look forward to your continued cooperation.

Michael A. Snitzer
Weatherization Program Manager

WALL INSULATION

Pre-installation Procedures

Prior to starting a job, a "walk through" must be conducted to determine any potential problems. These problems must be identified and addressed prior to the start of any work. Examples of some insulation problem areas are: recessed light fixtures, radiators, duct work in wall cavities, recessed bookshelves, stairways on exterior walls, loose or cracked plaster on walls, etc. Check all walls, interior and exterior for Knob & Tube wiring. Check all wall areas for valuables that should be removed prior to working on walls.

Block all openings in sidewalls through which the insulation may escape. Seal all wall cavities, which open into a basement or crawl space, with unfaced fiberglass batts before wall insulation is installed. Also check for pipes that enter kitchen cabinets and block them as necessary. Check with homeowner to see if they have paint to match house, in case it is later needed for touch-up work.

Get prior approval or denial in writing from the local electrical inspector if Knob and Tube wiring is present anywhere in the dwelling.

SIDING REMOVAL

All work must be performed practicing lead-safe work practices. If the siding is painted, place 6-mil plastic a minimum of 5 feet from the work area and secure it to the building. For contractors with multiple crews there must be at least one person on the job with a RI Lead-Safe Remodeler/Renovator license.

Wood Shingles

Wood shingles should be removed with great care to minimize stray knife marks, splits and broken shingles. A 45-degree bevel cut must be used when removing existing shingles. The bevel cut should be made at the butt of the shingle above, and should be as straight as possible. Use the butt of the shingle above as a guide.

Clapboards

Clapboards must also be removed using a 45-degree bevel cut. This cut must be made at the butt of the course above and should be as straight as possible. Do not follow the grain of the clapboard. The bevel cut should be as deep as possible to reduce the possibility of splits. A flat bar should be used to pry the clapboard away from the house far enough to remove the nails from the butt of the clapboard. Or, the clapboard may be removed without cutting it by carefully removing the nails from the base of the clapboard above the one that is to be removed and the base of the clapboard that is being removed.

Sometimes when removing clapboards, it is necessary to make a vertical cut and remove a portion of the clapboard. When this is done, the vertical cut must be perpendicular (straight up and down from the butt) to the courses of clapboards. This cut must be all the way through the clapboard before prying the clapboard from the house.

Vinyl Siding

Vinyl siding must be removed using a "zip tool" to unlock the siding. After the siding is unlocked, the nails in the top of the siding can be removed and the siding will come off the house.

Great care should be used when working around windows, doors, inside and outside corners to reduce the possibility of breaking or chipping the J-channels and corner posts.

When removing siding, worker's hands should be clean so that the siding does not have handprints and fingerprints on it. If fingerprints are left they should be cleaned off before leaving the job.

Aluminum Siding

In most cases, aluminum siding must be removed using a "zip tool". Once the siding is unlocked, follow the procedures for vinyl siding removal. In some cases, aluminum siding cannot be zipped off and must be cut. When this occurs, call this to the attention of the RISEO inspector and he will instruct you on how it should be removed. **Do not proceed with removal of siding if it varies from the normal procedure until RISEO or the CAP approved a different technique.**

To reduce the possibility of bending or denting aluminum siding, great care should be used when handling it.

Asbestos Siding

Single-nailed asbestos siding must be removed by removing the exposed nails at the butt of the shingle using "nippers" or straight "dykes". By placing the dykes on the shingle and pressing it against it, the nail head will be exposed and can be grabbed and removed. Once the nails are removed, the shingles will come off the house.

Double-nailed asbestos siding must be removed in the same manner as single nailed. The only additional step is to remove the nails in the butt of the shingle above that go through the top of the shingle to be removed. The process for nail removal would be the same as described previously.

Blind-nailed asbestos siding presents a unique problem. Any exposed nails must be removed first, using the procedures previously mentioned. The blind nails covered by the butt of the shingle above must be cut off before the shingle can be removed. To do this, use a reciprocating saw (sawz-all) with a hacksaw blade to cut the heads of the blind nails. Once this is done, the shingle can be removed.

Drill and Plug (D&P) Applications

Carefully explain to the homeowner that the plugs will show

Exterior drill and plug applications must be done as neatly as possible. Be sure to use sharp drill bits and the proper drill bit size for the wooden plug being used. A Stanley Power Bore Drill bit or equal must be used to provide a clean round hole. Speed bore bits should not be used for this application.

When drilling holes, a level line must be maintained to keep the plugs level across the wall.

Examples of this type of application are Texture 1-11, novelty siding, knotty pine siding, frieze boards, and any other sheathing type siding. Interior drill and plug applications would be attic stairway walls and exterior walls (when not done from the outside).

Holes should be drilled as neatly as possible through plaster and wallboard.

Installation Procedures

The State Energy Office requires that all walls be dense-packed. There are two methods (described below) that are acceptable, the preferred is tubing the walls, the other is a two hole method using a directional nozzle. CAP Auditors and SEO inspectors will be taking core samples to confirm the walls are dense-packed and if they are not, you will be recalled to the job to correct the problem.

Tubing

One hole preparation may be used with a tube and equipment that is approved for dense packing of insulation. Extra caution must be used when snaking the tube into the walls to prevent damage to wiring, piping, etc. It is imperative that a tube of the proper length be used, the tube must reach to the top plate and be proper type for winter or summer use.

Follow the manufacturer's recommendations for air pressure and density. Keep a record of the number of bags used to insure the installed insulation conforms to the manufacturer's recommended coverage shown on the material label.

Use only equipment compatible with the insulation material.

Do not leave holes in walls open overnight. All holes should be plugged at the end of the day. Any siding not reinstalled should be stored in an area where it will not be damaged and reinstalled as soon as possible.

Reinstallation of Siding

Since the siding on a house is the most obvious indicator a homeowner will have regarding the quality of an insulation job, it is extremely important that the siding work is done properly. All types of siding must be reinstalled as close to its original condition as possible. The most important aspect of siding reinstallation is to assure that the siding is weather tight. Siding must be replaced or repaired as necessary.

All clapboards and shingles that are split or broken as a result of installation must be replaced with materials that match the original. Any new siding must be primed white. It would be appropriate to carry a box of pre-primed wood shingles at all times. If the homeowner provides the paint to match the house, the contractor must paint any area requiring touch-up.

It is not acceptable to patch siding with materials that are not intended for exterior use, (i.e. plastic wood, spackle, joint compound). Patching must be done using a paintable siliconized acrylic caulking compound.

Prior to reinstalling siding, all open holes in a wall must be covered or closed with one of the following: 15lb. felt paper stapled in place, or wood, cork or Styrofoam plugs.

Wood Shingles

After installation, the shingle should be reinstalled by tapping the butt lightly, making sure the bevel cut is closed completely. Re-nail the shingle with at least two (2) four-penny galvanized finished nails through the butt of the shingle.

When replacing damaged shingles with new shingles, make a bevel cut on the new shingle and install it according to the above procedure. If the bevel cut does not match properly, clear siliconized acrylic caulking compound must be used to seal this area.

Touch up and paint as necessary.

Clapboards

After insulating, the clapboards should be reinstalled by tapping the butt lightly, making sure the bevel cut is closed completely. Nail the clapboard with four-penny galvanized finished nails through the butt of the clapboard. When nailing the clapboard do not nail into the existing nail holes. These holes must be filled with a clear paintable siliconized acrylic caulking compound and left flush with the clapboard.

When replacing damaged clapboards with new clapboards, remove the top of the clapboard that was originally cut including the nails through the butt of the clapboard above. Once this is done, install the entire new clapboard and nail in the butt of both the new clapboard and the clapboard above. Seal the old nail holes as previously mentioned. Do not simply cut the new clapboard.

Prime the new clapboard and paint to match if necessary. Touch up and paint as necessary.

Vinyl Siding

Reinstall the panels that were removed. Lock the bottom of the panel that was removed, and nail the top of that panel in the nailing strip using roofing nails. Once this is completed, lock the butt of the panel above with the top of the panel that was removed.

Do not face nail vinyl siding back in place.

Aluminum Siding

Reinstall the panels that were removed. Lock the bottom of the panel that was removed, and nail the top of that panel (in the nailing strip) using roofing nails. Once this is completed, lock the butt of the panel above with the top of the panel that was removed. If necessary, nail six-penny galvanized finish nails through the weep holes to secure the panels.

Do not face nail aluminum siding.

Asbestos Siding

Single-nailed asbestos siding can be put back in place and nailed through the existing holes. If the siding nails are not used, use a galvanized penny box nail.

Double-nailed asbestos can be put back in place and nailed through the existing holes in the same manner as double-nailed asbestos. The blind nails cannot be reinstalled.

Drill and Plug (D&P) Applications

Exterior drill and plug applications on painted surfaces must be completed in the following manner:

After installation, insert the plug so it is slightly (1/16") recessed. Apply one or two coats of an exterior sealer (DAP exterior vinyl spackling) and sand it flush to the exterior siding. Touch up as necessary with paint. This procedure also applies to drill and plug applications on windowsills, frieze boards and entrances.

Exterior drill and plug applications on stained surfaces must be completed in the following manner:

After installation, insert a plug so that it is flush with the existing siding. The plug should be installed by placing a block of wood over the plug and tapping it until the plug is flush with the siding.

Plugs must be stained to match when homeowner provides the stain. Pre-stain the plugs that are to be used.

Interior drill and plug applications must be completed in the following manner:

After installation, insert a plug so that it is slightly (1/16") recessed. Apply one or two coats of patching material flush to the existing surface.

Some examples of this application would be exterior walls (not done from the outside), stairway walls, garage ceilings, and slopes.

Post-Installation Procedures

Walk the entire job to ensure that all aspects of the job are completed.

Is all the siding repaired and/or reinstalled?

Is the paint touch-up complete?

Are the shutters reinstalled?

Is the yard cleaned up?

Is the basement/house cleaned of all debris?

Are all electric receptacle and light fixtures working?

ATTIC/CEILING INSULATION

Pre-Installation Procedures

Locate all recessed light fixtures and exhaust fans and install permanent baffles around them using unfaced fiberglass batts. A 3" clearance from these fixtures must be maintained, and the baffle must be 3" higher than the loose fill material. Permanent baffles must also be installed around all attic hatch covers, using unfaced fiberglass batts. They must be installed in such a manner so as not to interfere with the opening of the hatch cover. Ensure that the attic flat has been properly air sealed with an approved air sealant (foam etc.) prior to insulating. Air seal the cavity around all chimneys, plumbing vents, interior and exterior (if sidewalls are not insulated) wall cavities. Air-seal all top wall plates, wiring holes, pipes, etc.

Baffles (propa-vents) must be installed when soffit vents are installed or previously exist. They must be installed in the bay containing the soffit vents. The acceptable procedure for this is as follows:

Install propa-vents in each cavity where soffit vents are located. The propa-vent should be stapled to the roof sheathing. Once the propa-vent is installed, stuff unfaced fiberglass batting between the propa-vent and the plates for the exterior wall. This procedure will block-off the soffit area and allows airflow from the soffit area to the attic area. This procedure will help prevent chilling of the top plate of the exterior wall. Chilling may cause mold and mildew on the interior surface. This procedure must be completed before the attic is insulated.

Central air conditioning vents and whole house fans are to be covered tightly with polyethylene before blowing in insulation. After installation, remove the covering. Be sure to baffle around these devices with unfaced fiberglass batts. All HVAC ducts must be sealed.

Installation Procedures

Be sure all pre-installation procedures have been completed

Open blow attics must be installed to a uniform depth. They must be “raked-off” to a level condition when necessary.

Install loose fill material according to manufacturer’s specifications and the Agency work order (as per the energy audit) recommended densities to achieve accurate R-values. Use the least air pressure, which meets manufacturer’s instructions. Keep a record of the number of bags used to insure that the installed insulation conforms to the manufacturer’s recommended coverage shown on the material label.

Floored over attics must be blown to full cavity thickness. When attic flooring is removed, (one board every four feet), it must be reinstalled and nailed solid.

When drill and plug applications are done on garage ceilings and sloped ceilings, the holes should be no more than four linear feet apart. When insulating garage ceilings, it may be possible to use an alternative method rather than drill and plug. The RISEO or CAP inspector will review this possibility when he visits the job site. Do not attempt other methods until they are discussed with the inspector.

When drill and plug is done on attic stairs, the holes should be drilled in the risers between the stair stringers. The plugs should be flush with the risers. Work should be started at the bottom of the stairway and finished at the top.

Kneewall floor insulation must be installed in the same manner as attic insulation. Follow the appropriate procedures for either open attics or floored over attics. Prior to insulating any kneewall floor area, unfaced fiberglass batts must be placed in the joist cavity directly beneath the kneewall. This will eliminate any thermal bypasses to the floor area of the heated living area. In addition, it will provide a barrier to blow the insulation against. If the kneewall area is floored over, it will be necessary to remove the first full board near the kneewall and install unfaced fiberglass as described above.

Slope insulation is usually blown-in from the attic area down the slope. Prior to blowing the slope, unfaced fiberglass should be stuffed at the bottom of the slope to contain the loose fill material in the slope cavity.

Fiberglass batting in attics must be installed between the ceiling joists and tight to the headed surface (unless otherwise specified). If a vapor barrier is called for, it should be installed facing the heated area. The fiberglass should be installed to the full width between ceiling joists over the entire attic. It should extend to the exterior walls on all sides – but should not touch the roof sheathing. There must be a 2” clearance from the top of the insulation to the underside of the roof sheathing.

Kneewall insulation must be installed between the studs in the kneewall and tight against the wallboard. It is not acceptable to staple insulation to the outside of the kneewall studs. Kneewall insulation must be held in place by tiger teeth. The vapor barrier must be tightly installed toward the heated area and stapled in place.

Built-in drawers are to be air sealed prior to insulating. Draw units are to be insulated on the top and all sides and treated as a kneewall.

When slashing a vapor barrier, slash cuts should be no more than twelve (12) inches apart.

All insulation must be removed from the premises. When removing insulation from rafters behind a kneewall, the existing insulation must be cut at the top of the kneewall and not torn out.

When installing foam boards on access doors and attic doors, use foil-faced foam board R-19 or greater.

Insulate scuttle covers with unfaced fiberglass batts (R-30). Hold unfaced material in place using duct tape straps over the insulation stapled to hatch cover. Weather-stripping must be installed along the contact edge between the access panel and frame to reduce air infiltration. Locks must be installed to join the scuttle and frame tightly.

Post-Installation Procedures

Inspect all coverage and depth of insulation.

Inspect all baffles

Inspect insulation and weather-stripping on hatch

Conduct a blower door test to ensure that the dwelling is not too tight.

VENTILATION

Pre-installation Procedures

Ensure that all vents are installed according to the work order and sketch provided to you.
Ensure that all vents are properly sized to code and installed in the proper locations.

All vents must be screened. If there is no screening built into the vent, screening must be supplied and installed prior to installing the vent.

The size of the vents is specified on your contract. If a vent will not fit where it is supposed to be installed, call this to the attention of the agency inspector. Do not change vent sizes without authorization from the agency.

Clear eaves from soffit vent opening if eaves are blocked.
Check attic area and do not let debris from roof fall on articles in the attic. Either move these articles or cover them.

Installation Procedures

All roof vents are to be properly flashed with the roofing materials. It is not acceptable to surface mount any vents on roofs. Vents should be flashed with the roofing material so that no more than five (5) inches of the flange is exposed at the bottom of the vent. A bead of roof cement must be installed on the bottom of the roof vent prior to installation. Roof vents must be centered between rafters, and not installed over any rafters. All roof vents must be no less than 8" in diameter.

Openings cut into the roof are to be cut full to the proper size.

Ridge vents are to be installed according to manufacturer's specifications. All joints, end caps, exposed nail heads, and the underside of the ridge vent must be sealed with roof cement. Be sure to cut the roof sheathing on both sides of the ridge and screen the opening prior to installing the ridge vent. Metal ridge vents are not recommended when joined due to expansion and contraction.

Gable vents are to be flashed with the siding material. The opening is to be headed off at top and bottom and studs located in the opening must be removed (not notched). Screening is to be installed over the opening if the vent does not already have screening on it.

Soffit vents are to be squared and centered in the soffit. The cutouts for soffit vents must be the proper size for the appropriate vent size. It is not acceptable to drill holes in the soffit and install the vent over these holes. Soffit vents must be installed so **the louvers point toward the house**. This will help reduce wind chaffing of the top plate.

Flapper vents with flex hoses for bathroom exhaust fans must be flashed with the roofing material. The flex hose must be clamped to the flapper vent and the port on the exhaust fan. The flex hose should be installed with as little slack in it as possible and must be wrapped with duct insulation to prevent condensation. The duct insulation must wrap around the flex hose and be

taped and stapled to itself. If adapters are needed to connect to the exhaust port, they must be installed. The flex hose must then be clamped to the adapter.

Clothes Dryer ventilation must be installed with metal flex hose or pipe.

Spot vents are not acceptable as a soffit vent unless pre-approved by a RISEO or CAP inspector. Continuous soffit vents must be squared and centered in the soffit area. The opening must be cut to the proper length and width of the specified length of vent. Screening must be installed.

Vinyl/aluminum perforated soffit panels must match the existing system. The cutout openings must match the size of the perforated panels being installed. Screening must be installed on this type of vent. The old soffit panel should be removed from the premises.

When possible, roof vents, ridge vents, and flapper vents should match the roof color. This will be provided to you on your worksheet.

Post-Installation Procedures

Be sure all vents are installed.

Be sure all vents are flashed and sealed.

Clean up all debris outside the house and in attic.

BASEMENT CEILINGS AND CRAWL SPACE INSULATION

Pre-installation Procedures

Inspect the area to be insulated for signs of water damage from leaking fixtures above floor. If there are signs of this condition, do not insulate the area in question until it is inspected by the agency.

Where insulation is to be installed beneath floors over crawl spaces, install a 6-mil polyethylene ground sheet on the floor of the crawl space (dirt floors only). The joints in the polyethylene must overlap at least 6" and all leading edges must be weighted with a heavy material.

Properly air-seal the floor of the dwelling using approved materials prior to installing insulation.

Installation Procedures

Install insulation so that it fits tightly between framing members on all sides and tight to the floor of the heated area. Be sure to cut and fit insulation on all four sides to fit from the bottom of the floor to the top of the sill.

Install insulation so the vapor barrier faces the heated area (up).

When installing insulation around bridging or cross bracing, fit the insulation tightly around these obstructions and assure that there are no gaps in the insulation.

Insulation must be held securely in place for long service life. Fit insulation tightly between framing members and secure in place using wire supports (**tiger teeth**) spaced no more than **eighteen (18) inches apart**.

Post-Installation Procedures

Be sure insulation is not in contact with the ground or other sources of water.
Be sure insulation does not come into contact with any flue pipes.
Be sure entire area is insulated.

Clean area of all debris.

Leave some (approx 12-18) retaining rods with the homeowner

AIR SEALING

Pre-installation Procedures

Pre-test the dwelling by using a blower door. Record cubic feet per minute @ 50 Pascals, with all doors and windows closed and one additional test with the basement door open. All combustible appliances must be shut off. Special attention must be given to wood stoves and fireplaces to ensure that they have not been lit for at least 48 hours prior to the test or all ashes must be removed and extinguished.

Please contact the client prior to the date of the test and explain in detail what will take place with this test.

If the dwelling tests, 1250 CFM @ 50 Pascals, do not air seal.

If the test shows airflow greater than 1250 CFM @ 50 Pascals, air seal as directed on the work order.

Clean area to be air-sealed. Scrape any paint or old caulking to provide a clean surface for sealant.

Be sure surface is dry.

A clear paintable siliconized acrylic caulking must be used. Latex caulking is not allowed. Where appropriate, expandable and non-expandable foam sealant should be used.

Installation Procedures

Monitor the progress of the air sealing process to ensure that the dwelling is not sealed below 1250 CFM @ 50 Pascal's.

Follow priority list of air-sealing measures. Start with obvious holes in the building envelope, chimney chase, plumbing vents, and any ceiling penetration or broken windows. Ensure that open interior wall cavities are sealed top and bottom. Top plates, wiring holes, pipes, ducts, etc. must be sealed.

All Heating Ventilation and Air Condition (HVAC) ducts must be sealed with mastic and membrane cloth where joined. The duct boot must be sealed where it penetrates the floor, wall or ceiling. Remove the grate to ensure that the boot is secured. Seal the top of the boot with tin tape and mastic.

All air sealing is to be installed in a neat and workmanlike manner.

Follow all manufacturers' recommendations and specifications.

Post-Installation Procedures

Be sure all areas are completed.

Be sure sealant is neat and any stray foam or caulking is removed from area.

Post blower door tests CFM @ 50 Pascals must be completed

Ensure that the dwelling is not tighter than 1250 CFM @ 50 Pascals using a blower door.

WEATHER-STRIPPING

Installation Procedures

DOORS

Heavy-duty aluminum and vinyl-door weather-stripping should only be installed on doors when the job order calls for it.

Post Installation Procedure

After the installation of door weather-stripping, ask occupant to open and close doors to insure proper operation. If necessary, adjustments can be made prior to the close of the workday.

DOORSWEEPS

Pre-installation Procedures

Locate doors which are to receive door sweeps based on the job order. Positioning of door sweeps is normally done in the following manner:

In-swinging door: Stationary sweep on inside
 Spring loaded sweep on outside
Out-swinging door: Stationary sweep on outside
 Spring loaded sweep on inside

All door sweeps should be heavy-duty aluminum with a vinyl flap screwed in place.

Installation Procedures

Use all screws necessary to hold sweep in place
Cut to proper length.

Be sure height of sweep enables proper operation of the door and the sweep.

Post-Installation Procedures

Be sure all doors and door sweeps are operating properly.
Be sure all sweeps are installed according to contract.

PIPE INSULATION

Pre-installation Procedures

Locate pipes to be insulated.
Be sure pipe insulation is proper size (I.D.) for pipes to be insulated.

Installation Procedures

All Styrofoam pipe insulation should be glued at seams and tied with wire ties or banding wire.
Wrapped duct tape will not be allowed. The glue should be compatible with the pipe insulation.

All pipe insulation should be a minimum of ½" wall thickness.

All joints and turns should be neatly joined together.

Pipe insulation should not be installed on or within 6" of flue pipes.

All pipe insulation must be approved for the type of heating system.

Example: Styrofoam insulation is not allowed for steam pipes. This type of insulation is only for a system that is less than 200 degrees operating temperature.

Steam pipe insulation must be approved for steam pipes (micro lock fiber minimum R-5). All joints, tees and elbows must be covered with proper matching material (pre-formed tee's, elbows etc).

Post-Installation Procedures

- Be sure all pipes are insulated.
- Be sure all seams are either glued or stapled.
- Be sure all pipe insulation is compatible with the system.
- Be sure all pipe insulation is properly sized.

DUCT INSULATION

Pre-installation Procedures

- Locate all ducts to be insulated.
- Duct insulation should be 1 ½" vinyl faced fiberglass.
- Seal all joints with mastic and membrane cloth prior to insulating.

Installation Procedures

- All seams must be joined and must be stapled with a flaring stapler.
- Stickpins must be used where necessary.
- All insulation must be installed in a neat workmanlike manner.

Post-Installation Procedures

- Be sure all ducts are insulated properly.
- Be sure all seams are joined properly and all joints are sealed.

WATER CONSERVATION MEASURES

- Teflon tape must be installed on all showerheads.
- Test the operation of all faucet aerators and showerheads.
- All materials are to be installed and not left for the client to install.

REPLACEMENT PRIME WINDOWS

- All replacement windows must Low-E glass with a U value of 0.4 or less.
- Replacement windows must be installed plumb and square in openings.
- Prior to installing the replacement windows, all window weight cavities must be fully insulated.
- Caulking must be installed at both the exterior and interior of the replacement windows.
- All windows must be approved and in compliance with Department of Energy standards.

The following procedures are to be followed to ensure lead safe work practices.

REPLACING WINDOWS FROM THE INSIDE

1. Place 6-mil plastic inside and outside the building, a minimum of 5 feet from the interior wall and six inches from each side of the window. Secure with tape.
2. HEPA vacuum the windowsill, trough, and all friction surfaces.
3. Spray the area to be disturbed with lead cleaning detergent (LCD).
4. Score all painted seams with a utility knife.
5. Pry up the casing one to two inches and mist underneath with LCD.
6. Remove the stops and casings with a small pry bar.
7. HEPA vacuum exposed surfaces and mist with LCD.
8. Remove the sashes and place in a 6-mil disposal bag or wrap in 6-mil plastic.
9. Mist all surfaces to be disturbed with LCD and install the window.
10. HEPA vacuum the window area, mist with LCD, and fold the plastic in on itself and secure with tape.
11. HEPA vacuum the interior floor area, wash with LCD and rinse with clean water. Use clean cloths or paper towels to dry the area and dispose of as waste.
12. Follow procedures for clean up and disposal.

REPLACING WINDOWS FROM THE OUTSIDE

1. Seal inside of window using 6-mil plastic and tape.
2. Place 6-mil plastic outside the building, a minimum of 6 feet from the work area in all directions. Secure with tape.
3. Spray area to be disturbed with LCD.
4. Score all painted seams with a utility knife.
5. Pry up the casing one to two inches and mist underneath with LCD.
6. Remove the stops and castings with a small pry bar.
7. HEPA vacuum exposed surfaces and mist with LCD.
8. Remove exterior trim with a small pry bar.
9. Remove sashes and place them in a 6-mil plastic disposal bag or wrap in 6-mil plastic, secure with tape.
10. Mist all surfaces to be disturbed with LCD and install the replacement window.
11. HEPA vacuum the outside.
12. Mist the plastic on the interior of the window, fold in on itself and discard.
13. Follow procedures for clean up and disposal.

REPAIRING WINDOW SASHES OR REPLACING BROKEN GLASS

1. Prepare a lead-safe work zone outside the living space by placing 6-mil plastic sheeting on the ground 10-foot square.
2. Place sawhorses and any needed tools into the lead-safe work zone.
3. Place 6-mil plastic inside and outside the building a minimum of 5 feet from the interior wall and six inches from each side of the window. Secure with tape.
4. HEPA vacuum the windowsill, trough, and all friction surfaces.
5. Spray the area to be disturbed with LCD.
6. Score all painted seams with a utility knife.
7. Pry up the casing one to two inches and mist underneath with LCD.
8. Remove casings with a small pry bar.
9. HEPA vacuum exposed surfaces and mist with LCD.
10. Remove the sash and place in a 6-mil disposal bag or wrap in 6-mil disposal bag or wrap in 6-mil plastic.
11. Take sash to lead-safe work zone and complete the repair or replacement.
12. Be sure to complete all repairs or glass replacements using wet methods by misting down the surfaces of the sash often with LCD.
13. Return to the residence with sash.
14. Mist surfaces with LCD and re-install sash and casing.
15. HEPA vacuum the window area, mist with LCD, and fold the plastic in on itself and secure with tape.
16. HEPA vacuum the interior floor area, wash with the LCD and rinse with clean water. Use clean cloths or paper towels to dry the area.
17. Follow procedures for clean up and disposal.

INSTALLING STORM WINDOWS

1. Seal inside of window using 6-mil plastic and tape.
2. Place 6-mil plastic outside the building, a minimum of 5 feet from the work area in all directions. Secure with tape.
3. Mist the area to be disturbed with LCD.
4. Carefully scrape exterior surfaces as needed to secure an even fit; alternatively, a secure fit may often be achieved by imbedding the storm window in a caulk bed.
5. Mist all surfaces with LCD and install storm window.
6. HEPA vacuum the outside area.
7. Mist the plastic on the interior of the window, fold onto itself, and discard.
8. Follow procedures for clean up and disposal.

Storm windows must be centered and square in the opening.

Caulking compound (clear siliconized acrylic) must be installed on all the flanges of all units prior to screwing in place.

The expander bar at the bottom of the storm windows must be caulked from the inside. Be sure to leave openings for the weep holes.

All windows must be approved and in compliance with Department of Energy standards: 10 CFR part 440.

ACCESS OPENINGS

Access openings and roof vent accesses must be left open until insulation is inspected.

Surface Opening: Cut existing wallboard halfway on two studs. When closing the opening, the new material must be flush with existing wall material taped and covered with one coat of joint compound.

Plywood Opening: Cut existing wall between two studs. Close opening with ½" plywood (GIS/AC) with four 1 ½" x 8 flat head wood screws secured into studs.

Finish Opening: Cut existing ceiling. Head off opening. Install 2 ½" clamshell casing around rough opening. Allow a 3/8" reveal into opening to receive ½" plywood (GIS/AC) to complete opening. Plywood covers to be weather-stripped and insulated. Clamshell casing to be mitered neatly.

Roof Sheathing Access: Cut opening in roof boards to gain access from main attic to dormer flat. Do not replace boards when completed.

Paneling Access: Remove one sheet of paneling. Cut access opening in sidewall to gain access to crawl area. When work is completed, cover opening with fiberglass batts, re-nail wall section that was removed and reinstall paneling.

Roof Opening Closed with Vent: Cut opening in roof large enough to gain access to attic area. Remove entire roof shingles. Do not cut shingles. Reinstall sheathing material and close opening with a roof vent flashed properly with existing roofing materials.

Strip Opening: Remove roofing shingles and sheathing boards to gain access to attic area. When work is completed, replace sheathing and reinstall roof shingles.

Sidewall opening (wood siding only): Remove shingles or clapboards and sheathing to gain access. Complete insulation work and close opening with existing materials.

SMOKE & CARBON MONOXIDE DETECTORS

Pre-installation Procedures

All detectors must be installed in compliance with all local, state and federal codes.

All detectors must be approved by industry standards.

A smoke detector must be installed in each area that is a separated part of the dwelling.

Example: Basement, garage, and first floor, second floor, breezeway area, etc.

Replace any smoke detectors over five (5) years old.

Installation Procedures

Ensure proper location. All detectors must be installed in compliance with all local, state and federal codes.

Secure with screws and anchors; do not screw directly into plaster without anchors, or without ensuring that the screws are embedded into a ceiling joist or a solid portion of the dwelling's framing.

CO Detector must be located and installed as per agency work order.

Post-Installation Procedures

Test all detectors to ensure that they are working properly.

Explain to the client how the detector works.

Explain when and how to change the batteries etc.

NOTE

Throughout these standards, reference is made to several brand name products. These products are mentioned as examples of the type of materials that are acceptable only. The Rhode Island State Energy Office does not recommend or endorse specific brand names. Other equivalent or superior products may also be acceptable. Check with the RISEO or CAP inspector if you have any questions about the acceptability of any product.