

10.10 WEATHERIZATION (STANDARD INCOME)

Weatherization measures include insulation, prime window replacement, exterior insulated doors and air sealing. All weatherization measures in single-family and manufactured homes must be installed according to the 2016 BPA Residential Weatherization Specifications in the IM Document Library. Weatherization measures must be installed in homes with an electric heating system as the primary system (see definitions); or the homes must have one of the following as an existing heating system:

1. A permanently installed electric heating system with either (a) no other functioning nonelectric heating system; or (b) a wood stove, pellet stove, fireplace, fireplace insert (wood or pellet); or (c) wood furnace;
2. An electric heat pump system integrated with a nonelectric heating system (e.g., natural gas, propane or wood supplementary/backup system);
3. A wood stove or pellet stove with no other nonelectric space heating system, accompanied by the current usage of plug-in electric space heaters; or
4. An electric heat system and a separate functional or nonfunctional, nonelectric space heating system (i.e., oil, natural gas or wood furnace) with the entire nonelectric space heating system decommissioned, removed, all penetrations sealed, and all fuel (electric, gas or oil) connections to the decommissioned heating system disconnected. System equipment includes furnace, air-handler, fuel lines and fuel tanks (abated in compliance with local code). If, however, construction limitations prevent the removal of the entire nonelectric system (or other portions of the space heating equipment), then the remainder of the system must be decommissioned, removed, all penetrations sealed, and all fuel (electric, gas or oil) connections to the decommissioned heating system disconnected.

10.10.2 Prime window and Patio Door Replacement

Basis for Energy Savings

The base case (pre-existing state) is a single-pane window or patio door with any frame type, or a double-pane window or patio door with a metal frame. The efficient case for prime window replacement measures is the U-factor for the efficient replacement window. Energy savings for prime window replacement measures are estimated using SEEM, an energy modeling software calibrated to real world energy consumption using prototype homes representative of Northwest construction, assuming that all other weatherization measures have been installed in the home.

“Average electric heat” measures are a weighted average of homes with an electric furnace, electric zonal, or a heat pump based on the RBSA. Savings are reduced by the percentage of heat supplied by supplemental fuels for an average home. BPA Documentation Requirements consider these factors. More detailed information is available on the RTF’s Unit Energy Savings (UES) Measures Webpage.

Requirements and Specifications

Pre-existing windows and patio doors must be: (1) single-pane with/without storms, any frame type (e.g., metal, wood or vinyl); or (2) double-pane, metal frame only. The weighted average of replacement windows must have a National Fenestration Rating Council (NFRC) minimum U-value of 0.30 or 0.22 for windows, and 0.35 or 0.30 for patio doors. Multifamily mid-/high-rise buildings are not eligible for patio door replacement. Window and patio door measures in single-family and manufactured homes must be installed according to the 2016 BPA Residential Weatherization. Specifications found in the IM Document Library.

Documentation Requirements

DOCUMENTATION DESCRIPTION	RETENTION/SUBMITTAL LOCATIONS		
	BPA ENERGY EFFICIENCY REPORTING SYSTEM	EEDOCS@BPA.GOV OR FAX 1-866-535-7955	CUSTOMER FILE
End-user identifying information, including unique site ID and address.	X		X
Equipment/contractor invoice showing (a) the measure requirements have been met (e.g., manufacturer, model number, type, size and quantity of equipment or product installed/used); (b) the order/purchase date; and (c) cost.			X
NRFC stickers or other verification of U-value			X
Documentation (a) of number and square footage of windows or patio doors replaced, (b) precondition (frame type, i.e., wood, metal, single/double-pane), and (c) post-condition U-value.			X
Description of home (single-family, multifamily or manufactured)			X
Description of primary heating type (electric zonal, electric forced-air furnace, air source heat pump, ground/water source heat pump or ductless heat pump).			X

Payment

PAYMENT (PER SQUARE FOOT)				
Single-Family	Single-pane window, any frame type or double-pane window, metal frame type.	0.30	Any Electric	\$3
			EFAF	\$4
			Zonal/DHP	\$3
			Ducted HP	\$2
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.35	Any Electric	\$3
			EFAF	\$4
			Zonal/DHP	\$3
			Ducted HP	\$2
	Single-pane window, any frame type or double-pane window, metal frame type.	0.22	Any Electric	\$4
			EFAF	\$5
			Zonal/DHP	\$4
			Ducted HP	\$3
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.30	Any Electric	\$4
			EFAF	\$5
			Zonal/DHP	\$4
			Ducted HP	\$3

Manufactured	Single-pane window, any frame type or double-pane window, metal frame type.	0.30	Any Electric	\$3
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.35	Any Electric	\$3
	Single-pane window, any frame type or double-pane window, metal frame type.	0.22	Any Electric	\$4
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.30	Any Electric	\$4
Multifamily	Single-pane window, any frame type or double-pane window, metal frame type.	0.30	Any Electric	\$6
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.35	Any Electric	\$6
	Single-pane window, any frame type or double-pane window, metal frame type.	0.22	Any Electric	\$8
	Single-pane patio door, any frame type or double-pane patio door, metal frame type.	0.30	Any Electric	\$8
Multifamily Mid-/High-Rise	Single-pane window, any frame type or double-pane window, metal frame type.	0.30	Any Electric	\$3-\$6