



# Housing Authority of the City of Pittsburgh

Contracting Officer  
100 Ross Street  
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**April 4, 2017**

## **Window Removal and Installation at Various Units In Northview Heights IFB #300-09-17**

### **ADDENDUM NO.1**

This addendum issued April 4, 2017 becomes in its entirety a part of the Invitation for Bid for Window Removal and Installation at Various Units In Northview Heights as is fully set forth herein:

**Item 1:**      **Q.**      As stated in the specs for the windows, Double Hung window units are required. Comparing the specs with an Andersen 100 Series window, the 100 series meets or exceeds all specs required except for being a double hung unit. With a single hung unit there are fewer moving parts making maintenance easier and they only require a half screen making the cost much lower than the double hung unit. Is it possible that the Andersen 100 Series window could be considered in future projects with the Pittsburgh Housing Authority?

**A.**      **We are requesting fiberglass double hung windows. Windows must be equal to our specs.**

**Item 2:**      **Q:**      Under the General Information, Duracast is listed as a spec. Can you please describe in detail what Duracast is or what it consists of? Is this something that is brand specific or is just a general term used in the window industry that we are not familiar with?

**A.**      **Duracast is a specific fiberglass used by Pella Windows and Doors, we will except an "as equal" fiberglass window.**

**Item 3:**      **Q:**      Can you please email me the specific codes that the city of Pittsburgh requires for the replacement windows being installed at the Northview Heights Project. What UV factor is required to pass code for the City of Pittsburgh?

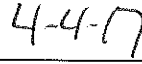
**A:**      **Please see Attachment A.**

**Item 4:** The proposal due date is changed to April 10, 2017 and the time and location remain unchanged at 2:00 PM at the HACP Procurement Dept., 100 Ross St. 2<sup>nd</sup> Floor, Suite 200, Pittsburgh, PA 15219.

**END OF ADDENDUM NO. 1**



Mr. Kim Detrick  
Procurement Director/Contracting Officer



Date



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## **ATTACHMENT A**

## CHAPTER 4

# RESIDENTIAL ENERGY EFFICIENCY

### SECTION 401 GENERAL

**401.1 Scope.** This chapter applies to residential buildings.

**401.2 Compliance.** Projects shall comply with Sections 401, 402.4, 402.5, and 403.1, 403.2.2, 403.2.3, and 403.3 through 403.9 (referred to as the mandatory provisions) and either:

1. Sections 402.1 through 402.3, 403.2.1 and 404.1 (prescriptive); or
2. Section 405 (performance).

**401.3 Certificate.** A permanent certificate shall be posted on or in the electrical distribution panel. The certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall be completed by the builder or registered design professional. The certificate shall list the predominant *R*-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and/or floor) and ducts outside conditioned spaces; *U*-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration. Where there is more than one value for each component, the certificate shall list the value covering the largest area. The certificate shall list the types and efficien-

cies of heating, cooling and service water heating equipment. Where a gas-fired unvented room heater, electric furnace, or baseboard electric heater is installed in the residence, the certificate shall list "gas-fired unvented room heater," "electric furnace" or "baseboard electric heater," as appropriate. An efficiency shall not be listed for gas-fired unvented room heaters, electric furnaces or electric baseboard heaters.

### SECTION 402 BUILDING THERMAL ENVELOPE

**402.1 General (Prescriptive).**

**402.1.1 Insulation and fenestration criteria.** The *building thermal envelope* shall meet the requirements of Table 402.1.1 based on the climate zone specified in Chapter 3.

**402.1.2 *R*-value computation.** Insulation material used in layers, such as framing cavity insulation and insulating sheathing, shall be summed to compute the component *R*-value. The manufacturer's settled *R*-value shall be used for blown insulation. Computed *R*-values shall not include an *R*-value for other building materials or air films.

TABLE 402.1.1  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT <sup>b</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>b,c</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE <sup>e</sup>	FLOOR R-VALUE	BASEMENT <sup>d</sup> WALL R-VALUE	SLAB <sup>d</sup> R-VALUE & DEPTH	CRAWL SPACE <sup>d</sup> WALL R-VALUE
1	1.2	0.75	0.30	30	13	3/4	13	0	0	0
2	0.65 <sup>j</sup>	0.75	0.30	30	13	4/6	13	0	0	0
3	0.50 <sup>j</sup>	0.65	0.30	30	13	5/8	19	5/13 <sup>f</sup>	0	5/13
4 except Marine	0.35	0.60	NR	38	13	5/10	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.35	0.60	NR	38	20 or 13+5 <sup>h</sup>	13/17	30 <sup>g</sup>	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	20 or 13+5 <sup>h</sup>	15/19	30 <sup>g</sup>	15/19	10, 4 ft	10/13
7 and 8	0.35	0.60	NR	49	21	19/21	38 <sup>g</sup>	15/19	10, 4 ft	10/13

For SI: 1 foot = 304.8 mm.

- a. *R*-values are minimums. *U*-factors and SHGC are maximums. *R*-19 batts compressed into a nominal 2 x 6 framing cavity such that the *R*-value is reduced by *R*-1 or more shall be marked with the compressed batt *R*-value in addition to the full thickness *R*-value.
- b. The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- c. "15/19" means *R*-15 continuous insulated sheathing on the interior or exterior of the home or *R*-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with *R*-13 cavity insulation on the interior of the basement wall plus *R*-5 continuous insulated sheathing on the interior or exterior of the home. "10/13" means *R*-10 continuous insulated sheathing on the interior or exterior of the home or *R*-13 cavity insulation at the interior of the basement wall.
- d. *R*-5 shall be added to the required slab edge *R*-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Zones 1 through 3 for heated slabs.
- e. There are no SHGC requirements in the Marine Zone.
- f. Basement wall insulation is not required in warm-humid locations as defined by Figure 301.1 and Table 301.1.
- g. Or insulation sufficient to fill the framing cavity, *R*-19 minimum.
- h. "13+5" means *R*-13 cavity insulation plus *R*-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least *R*-2.
- i. The second *R*-value applies when more than half the insulation is on the interior of the mass wall.
- j. For impact rated fenestration complying with Section R301.2.1.2 of the *International Residential Code* or Section 1609.1.2 of the *International Building Code*, the maximum *U*-factor shall be 0.75 in Zone 2 and 0.65 in Zone 3.

**MANUAL.** Capable of being operated by personal intervention (see "Automatic").

**NAMEPLATE HORSEPOWER.** The nominal motor horsepower rating stamped on the motor nameplate.

**PROPOSED DESIGN.** A description of the proposed building used to estimate annual energy use for determining compliance based on total building performance.

**READILY ACCESSIBLE.** Capable of being reached quickly for operation, renewal or inspection without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders or access equipment (see "Accessible").

**REPAIR.** The reconstruction or renewal of any part of an existing building.

**RESIDENTIAL BUILDING.** For this code, includes R-3 buildings, as well as R-2 and R-4 buildings three stories or less in height above grade.

**ROOF ASSEMBLY.** A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof covering, underlayment, roof deck, insulation, vapor retarder and interior finish.

**R-VALUE (THERMAL RESISTANCE).** The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area ( $h \cdot ft^2 \cdot ^\circ F/Btu$ ) [ $m^2 \cdot K/W$ ].

**SCREW LAMP HOLDERS.** A lamp base that requires a screw-in-type lamp, such as a compact-fluorescent, incandescent, or tungsten-halogen bulb.

**SERVICE WATER HEATING.** Supply of hot water for purposes other than comfort heating.

**SKYLIGHT.** Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Glazing material in skylights, including unit skylights, solariums, sunrooms, roofs and sloped walls is included in this definition.

**SLEEPING UNIT.** A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

**SOLAR HEAT GAIN COEFFICIENT (SHGC).** The ratio of the solar heat gain entering the space through the fenestration assembly to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation which is then reradiated, conducted or convected into the space.

**STANDARD REFERENCE DESIGN.** A version of the proposed design that meets the minimum requirements of this code and is used to determine the maximum annual energy use requirement for compliance based on total building performance.

**STOREFRONT.** A nonresidential system of doors and windows mullied as a composite fenestration structure that has been designed to resist heavy use. Storefront systems include, but are not limited to, exterior fenestration systems that span from the floor level or above to the ceiling of the same story on commercial buildings.

**SUNROOM.** A one-story structure attached to a dwelling with a glazing area in excess of 40 percent of the gross area of the structure's exterior walls and roof.

**THERMAL ISOLATION.** Physical and space conditioning separation from conditioned space(s). The conditioned space(s) shall be controlled as separate zones for heating and cooling or conditioned by separate equipment.

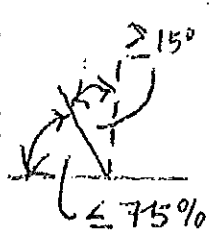
**THERMOSTAT.** An automatic control device used to maintain temperature at a fixed or adjustable set point.

**U-FACTOR (THERMAL TRANSMITTANCE).** The coefficient of heat transmission (air to air) through a building component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films ( $Btu/h \cdot ft^2 \cdot ^\circ F$ ) [ $W/(m^2 \cdot K)$ ].

**VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

**VENTILATION AIR.** That portion of supply air that comes from outside (outdoors) plus any recirculated air that has been treated to maintain the desired quality of air within a designated space.

**ZONE.** A space or group of spaces within a building with heating or cooling requirements that are sufficiently similar so that desired conditions can be maintained throughout using a single controlling device.



labeled and certified by the manufacturer and shall not exceed the values in Section 402.4.2.

**Exception:** Site-constructed windows and doors that are weatherstripped or sealed in accordance with Section 502.4.3.

**502.4.2 Curtain wall, storefront glazing and commercial entrance doors.** Curtain wall, storefront glazing and commercial-glazed swinging entrance doors and revolving doors shall be tested for air leakage at 1.57 pounds per square foot (psf) (75 Pa) in accordance with ASTM E 283. For curtain walls and storefront glazing, the maximum air leakage rate shall be 0.3 cubic foot per minute per square foot (cfm/ft<sup>2</sup>) (5.5 m<sup>3</sup>/h × m<sup>2</sup>) of fenestration area. For commercial glazed swinging entrance doors and revolving doors, the maximum air leakage rate shall be 1.00 cfm/ft<sup>2</sup> (18.3 m<sup>3</sup>/h × m<sup>2</sup>) of door area when tested in accordance with ASTM E 283.

**502.4.3 Sealing of the building envelope.** Openings and penetrations in the building envelope shall be sealed with caulking materials or closed with gasketing systems compatible with the construction materials and location. Joints and seams shall be sealed in the same manner or taped or covered with a moisture vapor-permeable wrapping material. Sealing materials spanning joints between construction

materials shall allow for expansion and contraction of the construction materials.

**502.4.5 Outdoor air intakes and exhaust openings.** Stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be equipped with not less than a Class I motorized, leakage-rated damper with a maximum leakage rate of 4 cfm per square foot (6.8 L/s × C m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (1250 Pa) when tested in accordance with AMCA 500D.

**Exception:** Gravity (nonmotorized) dampers are permitted to be used in buildings less than three stories in height above grade.

**502.4.6 Loading dock weather-seals.** Cargo doors and loading dock doors shall be equipped with weather-seals to restrict infiltration when vehicles are parked in the doorway.

**502.4.7 Vestibules.** A door that separates conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time.

**Exceptions:**

1. Buildings in climate Zones 1 and 2 as indicated in Figure 301.1 and Table 301.1.

TABLE 502.3  
BUILDING ENVELOPE REQUIREMENTS: FENESTRATION

CLIMATE ZONE	1	2	3	4 & 5 EXCEPT MARINE 4 AND MARINE 5	6	7	8
Vertical fenestration (40% maximum of above-grade wall)							
<i>U</i> -factor							
Framing materials other than metal with or without metal reinforcement or cladding							
<i>U</i> -factor	1.20	0.75	0.65	0.40	0.35	0.35	0.35
Metal framing with or without thermal break							
Curtain wall/storefront <i>U</i> -factor	1.20	0.70	0.60	0.50	0.45	0.45	0.40
Entrance door <i>U</i> -factor	1.20	1.10	0.90	0.85	0.80	0.80	0.80
All other <i>U</i> -factor <sup>a</sup>	1.20	0.75	0.65	0.55	0.55	0.55	0.45
SHGC-all frame types							
SHGC: PF < 0.25	0.25	0.25	0.25	0.40	0.40	0.40	0.45
SHGC: 0.25 ≤ PF < 0.5	0.33	0.33	0.33	NR	NR	NR	NR
SHGC: PF ≥ 0.5	0.40	0.40	0.40	NR	NR	NR	NR
Skylights (3% maximum)							
<i>U</i> -factor	0.75	0.75	0.65	0.60	0.60	0.60	0.60
SHGC	0.35	0.35	0.35	0.40	0.40	0.40	NR

NR = No requirement.

PF = Projection factor (see Section 502.3.2).

a. All others includes operable windows, fixed windows and nonentrance doors.