



January 21, 2020

Diane Glenn, Chair
Washington State Building Code Council
1500 Jefferson Avenue Southeast
Post Office Box 41449
Olympia, Washington 98504-1449

Subject: Request for SBCC code opinion

Dear Ms. Glenn:

On behalf of a local architect, please find attached a request for State Building Code Council's opinion on whether trickle vents controls on windows are required to accessible. That is, must the controls:

1. Be provided with a clear floor space,
2. Be within reach ranges, and
3. Be operable with one hand, without any tight grasping, pinching, or twisting of the wrist and with 5 pounds maximum operable force ?

Thank you and the rest of the SBCC for your consideration of this question.

Sincerely,

A handwritten signature in black ink that reads "Jonathan C. Siu".

Jonathan C. Siu, PE, SE
Principal Engineer/Building Official

Cc: Dr. Richard Brown, SBCC Director
Micah Chappell, SDCI

**REQUEST FOR CODE OPINION
WASHINGTON STATE BUILDING CODE COUNCIL**

Question:

Are air inlets installed within exterior windows (aka trickle vents) in Accessible, Type A, and Type B residential dwelling units “environmental controls,” and therefore, required to be accessible?

Proposed solution:

Yes.

Air inlet controls are considered environmental controls. They permit the occupant to control the amount of outside air being introduced into a dwelling unit. The outside air is being provided to comply with the requirement for ventilation air. The amount of outside air being introduced into the unit will affect the environment of the unit, in terms of temperature and air quality.

As such, air inlet controls are required to be accessible, in accordance with 2009 ICC A117.1 (A117.1), Section 309, Operable Parts, as follows:

- The air inlet controls are required by the Washington State amendments to 2015 IMC Section 403.4.6.1, Item 1.2, which then points to the requirement that environmental controls be accessible (2015 IBC Section 1109.13).
- Separately, the exception to IBC Section 1109.1 requires Accessible, Type A, and Type B units to comply with A117.1 Chapter 10. Sections 1002.9, 1003.9, and 1004.9 require environmental controls to be accessible.
- A117.1 Section 309 requires controls to be:
 - Provided with a 30”x48” clear floor space compliant with A117.1 Section 305 (ref. Section 309.2);
 - Located within one of the reach ranges listed in A117.1 Section 308 (ref. Section 309.3); and
 - Operable with one hand without any tight grasping, pinching, or twisting of the wrist and with 5 pounds maximum operable force (ref. Section 309.4)

Code References:

Washington amendments to 2015 IMC –

403.8.6.1 Outdoor air. Exhaust fan only ventilation systems shall provide outdoor air to each occupiable space through one of the following methods:

1. Outdoor air may be drawn through air inlets installed in exterior walls or windows. The air inlets shall comply with all of the following:
 - 1.1 Inlets shall have controllable, secure openings and shall be designed to not compromise the thermal properties of the building envelope.
 - 1.2 Inlets shall be accessible to occupants, including compliance with Section 1109.13 of the *International Building Code* for designated accessible units, Type A units and Type B units.
 - 1.3 Inlets shall be screened or otherwise protected from entry by insects, leaves, or other material.
 - 1.4 Inlets shall provide not less than 4 square inches of net free area of opening for each 10 cfm of outdoor air required in Table 403.3.1.1 or Table 403.8.1.
 - 1.5 Any inlet or combination of inlets which provide 10 cfm at 10 Pascals as determined by the Home Ventilation Institute Air Flow Test Standard (HVI 901 (November 1996)) are deemed equivalent to 4 square inches of net free area.
 - 1.6 Each occupiable space shall have a minimum of one air inlet that has a minimum of 4 square inches of net free area.
2. Outdoor air may be drawn in through operable openings to the outdoors. Each habitable space shall be provided with operable openings with an openable area of not less than 4 square inches of net free area of opening for each 10 cfm of outdoor air required by Table 403.3.1.1 or Table 403.8.1. Doors exiting to a corridor, court or public way shall not be used to provide outdoor air. The operable openings shall comply with the following:
 - 2.1 Openings shall be controllable, securable, and shall be designed to not compromise the thermal properties of the building envelope.
 - 2.2 Openings shall be accessible to occupants, including compliance with Section 1109.13 of the *International Building Code* for designated accessible units, Type A units and Type B units.
 - 2.3 Openings shall be screened or otherwise protected from entry by leaves or other material.

2015 IBC –

1109.13 Controls, operating mechanisms and hardware.

Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible.

Exceptions:

1. Operable parts that are intended for use only by service or maintenance personnel shall not be required to be accessible.
2. Electrical or communication receptacles serving a dedicated use shall not be required to be accessible.
3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to be accessible.
4. Floor electrical receptacles shall not be required to be accessible.
5. HVAC diffusers shall not be required to be accessible.
6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be accessible.
7. Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with Section 1010.1.9.2.

**SECTION 1109
OTHER FEATURES AND FACILITIES**

1109.1 General. Accessible building features and facilities shall be provided in accordance with Sections 1109.2 through 1109.15.

Exception: Accessible units, Type A units and Type B units shall comply with Chapter 10 of ICC A117.1.

2009 ICC/ANSI A117.1 – Requirements for Accessible (1002), Type A (1003), and Type B (1004) Units

1002.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Section 309.

EXCEPTIONS:

1. Receptacle outlets serving a dedicated use.
2. Where two or more receptacle outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one receptacle outlet shall not be required to comply with 309.
3. Floor receptacle outlets.
4. HVAC diffusers.
5. Controls mounted on ceiling fans.
6. Where redundant controls other than light switches are provided for a single element, one control in each space shall not be required to be accessible.
7. Reset buttons and shut-offs serving appliances, piping and plumbing fixtures.
8. Electrical panelboards shall not be required to comply with Section 309.4.

1003.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Section 309.

EXCEPTIONS:

1. Receptacle outlets serving a dedicated use.
2. Where two or more receptacle outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one receptacle outlet shall not be required to comply with Section 309.
3. Floor receptacle outlets.
4. HVAC diffusers.
5. Controls mounted on ceiling fans.
6. Where redundant controls other than light switches are provided for a single element, one control in each space shall not be required to be accessible.
7. Reset buttons and shut-offs serving appliances, piping and plumbing fixtures.
8. Electrical panelboards shall not be required to comply with Section 309.4.

1004.9 Operable Parts. Lighting controls, electrical switches and receptacle outlets, environmental controls, electrical panelboards, and user controls for security or intercom systems shall comply with Sections 309.2 and 309.3.

EXCEPTIONS:

1. Receptacle outlets serving a dedicated use.
 2. Where two or more receptacle outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one receptacle outlet shall not be required to comply with Section 309.
 3. Floor receptacle outlets.
 4. HVAC diffusers.
 5. Controls mounted on ceiling fans.
 6. Controls or switches mounted on appliances.
 7. Plumbing fixture controls.
-
8. Reset buttons and shut-offs serving appliances, piping and plumbing fixtures.
 9. Where redundant controls other than light switches are provided for a single element, one control in each space shall not be required to be accessible.
 10. Within kitchens and bathrooms, lighting controls, electrical switches and receptacle outlets are permitted to be located over cabinets with counter tops 36 inches (915 mm) maximum in height and 25 1/2 inches (650 mm) maximum in depth.

309 Operable Parts

309.1 General. Operable parts required to be accessible shall comply with Section 309.

309.2 Clear Floor Space. A clear floor space complying with Section 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in Section 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5.0 pounds (22.2 N) maximum.

308 Reach Ranges

308.1 General. Reach ranges shall comply with Section 308.

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.

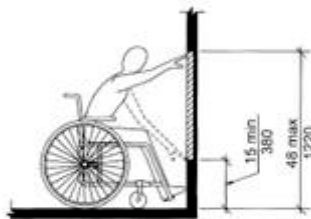


FIG. 308.2.1
UNOBSTRUCTED FORWARD REACH

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space complying with Section 305 shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum above the floor where the reach depth is 20 inches (510mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum above the floor, and the reach depth shall be 25 inches (635 mm) maximum.

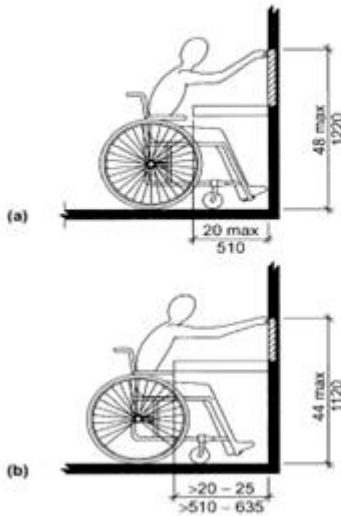


FIG. 308.2.2
OBSTRUCTED HIGH FORWARD REACH

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the edge of the clear floor space is 10 inches (255 mm) maximum from the

element, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the floor.

EXCEPTION: Existing elements that are not altered shall be permitted at 54 inches (1370 mm) maximum above the floor.

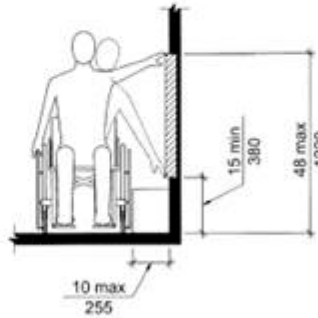


FIG. 308.3.1
UNOBSTRUCTED SIDE REACH

308.3.2 Obstructed High Reach. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum above the floor and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum above the floor for a reach depth of 10 inches (255 mm) maxi-

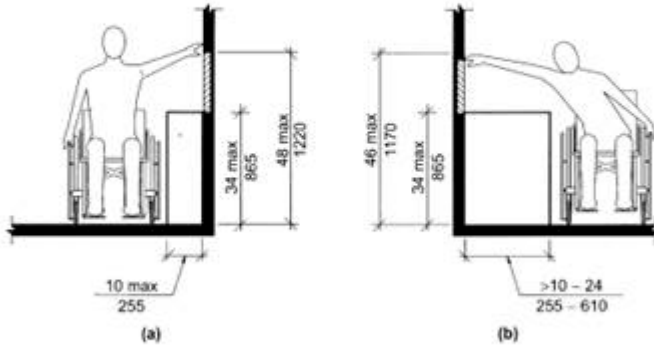


FIG. 308.3.2
OBSTRUCTED HIGH SIDE REACH

um. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum above the floor for a reach depth of 24 inches (610 mm) maximum.

EXCEPTION: At washing machines and clothes dryers, the height of the obstruction shall be permitted to be 36 inches (915 mm) maximum above the floor.