

MASTER TEXT ONLY

SECTION DC B2 EXTERIOR ENCLOSURE CRITERIA

OPTIONAL CHECKLIST

The function of this document is <<to define design criteria for a design-build contract; as a record of design-criteria for a design-bid-build project; or as a preliminary project description at an early stage for a design-bid-build contract>>.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior enclosure comprises the essentially vertical separation between exterior and interior conditioned space, including <<exterior walls; exterior windows; exterior doors; other openings; exterior wall fixtures; other exterior enclosure elements; and _____>>.
- B. Exterior Walls: The supporting structure; the exterior skin, vapor retarders, air barriers, and insulation; glazed walls; the interior skin if an integral part of the wall; exterior screens and railings; balcony walls and parapets; exterior soffits unless they do not form a weather barrier; firestopping and draftstopping within wall and between wall and floors; and other exterior wall elements.
- C. Exterior Windows and Other Openings: Windows, fixed glazing other than glazed walls, ventilation openings, protection devices for openings, and elements that form or complete the openings, unless an integral part of another element.
- D. Exterior Doors: See Section **DC B3** for additional requirements.
- E. Exterior Wall Appurtenances: All elements attached to the outside of the exterior walls, unless consisting of equipment or services fixtures. Exterior wall appurtenances **required are <<those defined in the project program, made necessary by the design, and the following>>; those defined in the project program and those made necessary by the design.; those made necessary by the design and the following>>; those defined in the project program.; those made necessary by the design.; the following>>; or _____>>**
 - 1. _____.
- F. Other Exterior Enclosure Elements:
 - 1. _____.
- G. Products: Where specific products are **required or allowed, use products complying** with the additional requirements specified elsewhere.

1.02 RELATED REQUIREMENTS

- A. Section **DC0** - Facility Design Criteria: Criteria that apply to all relevant elements of the facility.
- B. Section **DC B3** - Exterior Doors Criteria: Additional requirements for doors in exterior enclosure.
- C. Section **DC C2** - Interior Finishes Criteria: Interior finish of exterior walls.
- D. Section **DC C31** - Information Fixtures Criteria: Exterior wall-mounted signs.
- E. Section **DC D4** - HVAC Criteria: Additional requirements for air intake and exhaust openings.
- F. Section **DC G1** - Site Improvements Criteria: Exterior wall-mounted flagpoles.
- G. Section **01 3050** - Design Procedures and Substantiation Requirements.

1.03 REFERENCE STANDARDS

- A. AAMA 1503 - Voluntary Test Method for Thermal Transmission and Condensation Resistance of Windows, Doors, and Glazed Wall Sections; **1998**.
- B. AMCA 511 - Certified Ratings for Air Control Devices; **2007**.
- C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; **2005**.

MASTER TEXT ONLY

- D. ASTM C 755 - Standard Practice for Selection of Vapor Retarders for Thermal Insulation; **2003**.
- E. ASTM C 1199 - Standard Test Method for Measuring the Steady State Thermal Transmittance of Fenestration Systems Using Hot Box Methods; **2000**.
- F. ASTM C 1363 - Standard Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus; **2005**.
- G. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; **2004**.
- H. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; **2005**.
- I. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; **2004**.
- J. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; **2002**.
- K. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls By Uniform Static Air Pressure Difference; **2000**.
- L. ASTM E 336 - Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings; **2007**.
- M. ASTM E 413 - Classification for Rating Sound Insulation; **2004**.
- N. ASTM E 547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Differential; **2000**.
- O. ASTM E 695 - Standard Method for Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading; **2003**.
- P. ASTM E 1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; **2007**.
- Q. ASTM E 1677 - Standard Specification for Air Barrier (AB) Material or System for Low-Rise Framed Building Walls; **2005**.
- R. ASTM E 2486 - Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS); **2006**.
- S. ASTM F 588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact; **2007**.
- T. ASTM F 1233 - Standard Test Method for Security Glazing Materials and Systems; **1998 (Reapproved 2004)**.
- U. NAAMM FP 1001 - Guide Specifications for Design Loads of Metal Flagpoles; **1997**.
- V. NFRC (CPD) - Certified Product Directory; National Fenestration Rating Council; **online at cpd.nfrc.org**.

1.04 FIELD CONDITIONS

- A. The following existing exterior enclosure elements **must** be preserved:
 - 1. _____.
- B. The following existing exterior enclosure elements **must** be removed to accomplish new construction:
 - 1. _____.

PART 2 PRODUCTS << (NOT USED); OR NONE - N/A>>

2.01 EXTERIOR WALL ELEMENTS

- A. Exterior Skin of Exterior Walls:
 - 1. **Match** existing exterior skin <<on ____; or None - N/A>>.
 - 2. **Use one of the following:**
 - a. Precast concrete <<at ____; or None - N/A>>.
 - b. Exposed aggregate faced precast concrete <<at ____; or None - N/A>>.

MASTER TEXT ONLY

- c. Bush hammered precast concrete <<at ____; or None - N/A>>.
 - d. Face brick <<at ____; or None - N/A>>.
 - e. Ceramic glazed face brick <<at ____; or None - N/A>>.
 - f. Glazed concrete block <<at ____; or None - N/A>>.
 - g. Split face concrete block <<at ____; or None - N/A>>.
 - h. Ground face concrete block <<at ____; or None - N/A>>.
 - i. Patterned concrete block <<at ____; or None - N/A>>.
 - j. Glazed structural clay tile <<at ____; or None - N/A>>.
 - k. Unglazed structural clay tile <<at ____; or None - N/A>>.
 - l. Stone <<at ____; or None - N/A>>.
 - m. Limestone <<at ____; or None - N/A>>.
 - n. Granite <<at ____; or None - N/A>>.
 - o. Marble <<at ____; or None - N/A>>.
 - p. Travertine <<at ____; or None - N/A>>.
 - q. Slate <<at ____; or None - N/A>>.
 - r. Sandstone <<at ____; or None - N/A>>.
 - s. Exterior insulation and finish system (EIFS) <<at ____; or None - N/A>>.
 - t. Galvanized steel panels, <<prefinished; or unfinished>>, <<at ____; or None - N/A>>.
 - u. Aluminum-zinc alloy-coated steel panels, <<prefinished; or unfinished>>, <<at ____; or None - N/A>>.
 - v. Aluminum panels, <<prefinished; or unfinished>>, <<at ____; or None - N/A>>.
 - w. Aluminum siding <<at ____; or None - N/A>>.
 - x. Steel siding <<at ____; or None - N/A>>.
 - y. PVC siding <<at ____; or None - N/A>>.
 - a`. Wood board siding <<at ____; or None - N/A>>.
 - aa. Hardboard panel siding <<at ____; or None - N/A>>.
 - ab. Plywood siding <<at ____; or None - N/A>>.
 - ac. Mineral fiber cement panel siding <<at ____; or None - N/A>>.
 - ad. Plastic panel siding <<at ____; or None - N/A>>.
 - ae. Composite panel siding <<of ____; or None - N/A>> <<at ____; or None - N/A>>.
 - af. Glass <<at ____; or None - N/A>>.
 - ag. Portland cement <<plaster; stucco; None - N/A; or plaster or stucco>> <<at ____; or None - N/A>>.
 - ah. Tile <<at ____; or None - N/A>>.
 - ai. Glazed ceramic tile <<at ____; or None - N/A>>.
 - aj. Unglazed ceramic tile <<at ____; or None - N/A>>.
 - ak. Unglazed ceramic mosaic tile <<at ____; or None - N/A>>.
 - al. Glazed quarry tile <<at ____; or None - N/A>>.
 - am. Unglazed quarry tile <<at ____; or None - N/A>>.
 - an. Porcelain tile <<at ____; or None - N/A>>.
 - ao. ____.
3. **Do** not use:
- a. Precast concrete.
 - b. Masonry.
 - c. Stone.
 - d. Exterior insulation and finish system.
 - e. Siding panels.
 - f. Glass.
 - g. Portland cement <<plaster; stucco; None - N/A; or plaster or stucco>>.
 - h. Tile.
 - i. ____.
4. Joint Sealers in Exterior Skin:

MASTER TEXT ONLY

- a. **Use one of the following:**
 - 1) Silicone sealant <<at ____; or None - N/A>>.
 - 2) Polyurethane sealant <<at ____; or None - N/A>>.
 - 3) Preformed compressible foam sealant <<at ____; or None - N/A>>.
 - 4) Hollow neoprene gaskets <<at ____; or None - N/A>>.
 - 5) _____.
 - b. **Do not use:**
 - 1) Silicone sealant.
 - 2) Polyurethane sealant.
 - 3) Preformed compressible foam sealant.
 - 4) Hollow neoprene gaskets.
 - 5) _____.
5. Air Barrier:
- a. **Use one of the following:**
 - 1) Reinforced rubber <<at ____; or None - N/A>>.
 - 2) Plastic sheet <<at ____; or None - N/A>>.
 - 3) Board materials <<at ____; or None - N/A>>.
 - 4) Cement parging <<at ____; or None - N/A>>.
 - 5) _____.
 - b. **Do not use:**
 - 1) Reinforced rubber.
 - 2) Plastic sheet.
 - 3) Board materials.
 - 4) Cement parging.
 - 5) _____.
6. Vapor Retarder:
- a. **Use <<one of; or None - N/A>> the following:**
 - 1) Reinforced rubber <<at ____; or None - N/A>>.
 - 2) Plastic sheet <<at ____; or None - N/A>>.
 - 3) _____.
 - b. **Do not use:**
 - 1) Reinforced rubber.
 - 2) Plastic sheet.
 - 3) _____.
7. Insulation:
- a. **Use one of the following:**
 - 1) Board insulation <<at ____; or None - N/A>>.
 - 2) Batt insulation <<at ____; or None - N/A>>.
 - 3) Foamed-in-place insulation <<at ____; or None - N/A>>.
 - 4) Loose fill insulation <<at ____; or None - N/A>>.
 - 5) Blown insulation <<at ____; or None - N/A>>.
 - 6) Sprayed insulation <<at ____; or None - N/A>>.
 - 7) _____.
 - b. **Do not use:**
 - 1) Board insulation.
 - 2) Batt insulation.
 - 3) Foamed-in-place insulation.
 - 4) Loose fill insulation.
 - 5) Blown insulation.
 - 6) Sprayed insulation.
 - 7) _____.
- B. Supporting Structure of Exterior Walls:
1. **Match** existing supporting structure <<on ____; or None - N/A>>.

MASTER TEXT ONLY

2. **Use one of the following:**
 - a. Cast-in-place concrete <<at ____; or None - N/A>>.
 - b. Insulated concrete form walls.
 - c. Precast concrete <<at ____; or None - N/A>>.
 - d. Tilt-up wall construction.
 - e. Load-bearing unit masonry assemblies <<at ____; or None - N/A>>.
 - f. Non-load-bearing unit masonry assemblies <<at ____; or None - N/A>>.
 - g. Surface bonded masonry construction.
 - h. Secondary structural steel members <<at ____; or None - N/A>>.
 - i. Shop fabricated wall panels for field assembly.
 - j. Cold formed metal framing <<at ____; or None - N/A>>.
 - k. Wood stud framing <<at ____; or None - N/A>>.
 - l. Glazed <<aluminum; bronze; stainless steel; ____; or None - N/A>> curtain wall <<at ____; or None - N/A>>.
 - m. Structural glass curtain wall <<at ____; or None - N/A>>.
 - n. Translucent wall panel assembly <<at ____; or None - N/A>>.
 - o. ____.
 3. **Do not use any of the of the following for the supporting structure of walls:**
 - a. Cast-in-place concrete.
 - b. Insulated concrete form walls.
 - c. Precast concrete.
 - d. Tilt-up wall construction.
 - e. Load-bearing unit masonry assemblies.
 - f. Non-load-bearing unit masonry assemblies.
 - g. Surface bonded masonry construction.
 - h. Secondary structural steel members.
 - i. Cold formed metal framing.
 - j. Wood stud framing.
 - k. Glazed curtain wall.
 - l. Structural glass curtain wall.
 - m. Translucent wall panel assembly.
 - n. ____.
- C. Exterior Ceilings and Soffits:
1. **Use one of the following:**
 - a. Construction similar to exterior walls <<at ____; or None - N/A>> .
 - b. Exterior insulation and finish system (EIFS) <<at ____; or None - N/A>>.
 - c. Portland cement <<plaster; stucco; None - N/A; or plaster or stucco>> <<at ____; or None - N/A>>.
 - d. Gypsum exterior soffit board soffits <<at ____; or None - N/A>>.
 - e. Linear metal ceiling <<at ____; or None - N/A>>.
 - f. ____
 2. **Do not use:**
 - a. Exterior insulation and finish system (EIFS).
 - b. Portland cement <<plaster; stucco; or plaster or stucco>>.
 - c. Gypsum exterior soffit board.
 - d. Linear metal ceiling.
 - e. ____
- D. Exterior Screens:
1. **Match** existing screens <<on ____; or None - N/A>>.
 2. **Use one of the following:**
 - a. Construction similar to exterior walls <<at ____; or None - N/A>>.
 - b. Cast-in-place concrete <<at ____; or None - N/A>>.
 - c. Precast concrete <<(03400); None - N/A; or ____>> <<at ____; or None - N/A>>.

MASTER TEXT ONLY

- d. Masonry <<(04200) and (04800); None - N/A; or ____>> <<at ____; or None - N/A>>.
 - e. Galvanized steel screens <<at ____; or None - N/A>>.
 - f. Aluminum screens <<at ____; or None - N/A>>.
 - g. Wood screens <<at ____; or None - N/A>>.
 - h. Plastic screens <<at ____; or None - N/A>>.
 - i. ____.
3. **Do** not use:
- a. Cast-in-place concrete.
 - b. Precast concrete.
 - c. Masonry.
 - d. Galvanized steel.
 - e. Aluminum.
 - f. Wood.
 - g. Plastic.
 - h. ____.
- E. Exterior Railings:
- 1. **Match** existing exterior railings <<on ____; or None - N/A>>.
 - 2. **Use one of the following:**
 - a. Construction similar to exterior walls.
 - b. Concrete <<at ____; or None - N/A>>.
 - c. Galvanized steel <<at ____; or None - N/A>>.
 - d. Aluminum <<at ____; or None - N/A>>.
 - e. Stainless steel <<at ____; or None - N/A>>.
 - f. Wood <<at ____; or None - N/A>>.
 - g. ____.
 - 3. **Do** not use:
 - a. Concrete.
 - b. Galvanized steel.
 - c. Aluminum.
 - d. Stainless steel.
 - e. Wood.
 - f. Plastic.
 - g. ____.
- F. Other Exterior Wall Elements:
- 1. **Use one of the following:**
 - a. ____.
 - 2. **Do** not use:
 - a. ____.

2.02 WINDOWS

- A. Windows (Operable and Fixed):
- 1. **Match** the existing operable windows <<on ____; or None - N/A>>.
 - 2. Window Operation: **Use** <<one of; or None - N/A>> the following:
 - a. <<**Double; Single; Double or single; None - N/A; or ____**>> hung windows <<at ____; or None - N/A>>.
 - b. Casement <<**outswinging; inswinging; None - N/A; outswinging or inswinging; or ____**>> windows <<at ____; or None - N/A>>.
 - c. Projected <<**outswinging awning; inswinging hopper; None - N/A; or ____**>> windows <<at ____; or None - N/A>>.
 - d. Pivoting windows <<at ____; or None - N/A>>.
 - e. Horizontal sliding windows <<at ____; or None - N/A>>.
 - f. Fixed non-operable windows <<at ____; or None - N/A>>.

MASTER TEXT ONLY

- g. ____ windows <<at ____; or None - N/A>>.
 3. Glazing: <<**Double pane insulated units; Triple pane insulated units; Double or triple pane insulated units; Single pane glazing; or ____**>>.
 4. Provide integral window blinds between glazing lites <<at ____; or None - N/A>>.
 5. **Use** storm windows <<**only; or None - N/A**>> <<at ____; or None - N/A>>.
 6. **Use** one of the following:
 - a. Metal windows <<at ____; or None - N/A>>.
 - b. Aluminum windows <<at ____; or None - N/A>>.
 - c. Steel windows <<at ____; or None - N/A>>.
 - d. Bronze windows <<at ____; or None - N/A>>.
 - e. Wood windows <<at ____; or None - N/A>>.
 - f. Metal-clad wood windows <<at ____; or None - N/A>>.
 - g. Plastic-clad wood windows <<at ____; or None - N/A>>.
 - h. Tubular plastic windows <<at ____; or None - N/A>>.
 - i. Composite windows <<at ____; or None - N/A>>.
 - j. ____.
 7. **Do** not use:
 - a. Metal windows.
 - b. Wood windows.
 - c. Metal-clad wood windows.
 - d. Plastic-clad wood windows.
 - e. Tubular plastic windows.
 - f. Composite windows.
 - g. ____.
- B. Fixed Glazing:
1. **Match** the existing fixed glazing <<on ____; or None - N/A>>.
 2. Glazing: <<**Double pane insulated units; Triple pane insulated units; Double or triple pane insulated units; Single pane glazing; or ____**>>.
 3. **Use** one of the following:
 - a. Windows matching operable windows, but without operating sash<<, at "**punched**" **openings not requiring operation; or None - N/A**>>.
 - b. Metal-framed storefront <<at ____; or None - N/A>>.
 - c. Aluminum-framed storefront <<at ____; or None - N/A>>.
 - d. Stainless steel-framed storefront <<at ____; or None - N/A>>.
 - e. Bronze-framed storefront <<at ____; or None - N/A>>.
 - f. ____.
 4. **Do** not use:
 - a. Storefronts.
 - b. Metal windows.
 - c. Wood windows.
 - d. Metal-clad wood windows.
 - e. Plastic-clad wood windows.
 - f. Tubular plastic fixed windows.
 - g. Composite windows.
 - h. ____.
- C. Existing Windows:
1. Where necessary to modify performance properties, **use one of the following:** <<**reflective plastic film; heat absorbing acrylic coating; or ____**>>.
- D. Glazing: <<**None - N/A; Glass; Plastic; or Glass and plastic**>> <<(08800); ____; or None - N/A>>.
1. **Use** <<**one of; or None - N/A**>> the following:
 - a. Heat-strengthened glass <<at ____; or None - N/A>>.

MASTER TEXT ONLY

- b. Fully tempered glass <<at ____; or None - N/A>>.
 - c. Tinted glass <<at ____; or None - N/A>>.
 - d. Low E glass <<at ____; or None - N/A>>.
 - e. Heat absorbing glass <<at ____; or None - N/A>>.
 - f. Laminated glass <<at ____; or None - N/A>>.
 - g. Spandrel glass <<at ____; or None - N/A>>.
 - h. Patterned glass <<at ____; or None - N/A>>.
 - i. Wired glass at <<lites in fire-rated openings; and ____>>.
 - j. Ceramic glass <<at ____; or None - N/A>>.
 - k. <<**Double pane; Triple pane; Double or triple pane; or ____**>> insulated glass units.
 - l. Polycarbonate sheet <<at ____; or None - N/A>>.
 - m. Acrylic sheet <<at ____; or None - N/A>>.
 - n. <<**Reflective plastic films; Heat absorbing acrylic coatings; or ____**>> <<at existing windows; at ____; or None - N/A>>.
 - o. ____ glass <<at ____; or None - N/A>>.
2. **Do** not use:
- a. Heat-strengthened glass.
 - b. Fully tempered glass.
 - c. Tinted glass.
 - d. Low E glass.
 - e. Heat absorbing glass.
 - f. Laminated glass.
 - g. Spandrel glass.
 - h. Patterned glass.
 - i. Wired glass.
 - j. Ceramic glass.
 - k. Insulated glass units.
 - l. Polycarbonate sheet.
 - m. Acrylic sheet,
 - n. Reflective plastic films.
 - o. Heat absorbing coatings.
 - p. _____.

2.03 OTHER EXTERIOR OPENINGS

- A. Ventilation Openings: Cover all natural and mechanical ventilation openings.
1. **Match** the existing ventilation openings <<on ____; or None - N/A>>.
 2. Material: <<**Aluminum; steel; stainless steel; wood; plastic; or ____**>>.
 3. **Use** one of the following:
 - a. Stationary blade vents or louvers <<at ____; or None - N/A>>.
 - b. Operable vents or louvers <<at ____; or None - N/A>>.
 - c. Grilles <<at ____; or None - N/A>>.
 - d. _____.
 4. **Do** not use:
 - a. Stationary blade vents or louvers.
 - b. Operable vents or louvers where operating parts are exposed on the exterior of the building.
 - c. Grilles.
 - d. _____.
- B. Protection Devices for Openings: **Provide** all protection devices required to comply with performance requirements.
1. **Match** the existing protection devices <<on ____; or None - N/A>>.
 2. **Use one of the following:**
 - a. Sun control devices <<at ____; or None - N/A>>.

MASTER TEXT ONLY

- b. Insulation panels <<at ____; or None - N/A>>.
 - c. Shutters <<at ____; or None - N/A>>.
 - d. Security window screens <<at ____; or None - N/A>>.
 - e. Storm panels <<at ____; or None - N/A>>.
 - f. Awnings <<at ____; or None - N/A>>.
 - g. ____.
3. **Do** not use:
- a. Sun control devices.
 - b. Insulation panels.
 - c. Shutters.
 - d. Security window screens.
 - e. Storm panels.
 - f. Awnings.
 - g. ____.

2.04 EXTERIOR WALL APPURTENANCES

- A. Exterior Wall Appurtenances:
- 1. **Use one of the following:**
 - a. ____.
 - 2. **Do** not use:
 - a. ____.

2.05 OTHER EXTERIOR ENCLOSURE ELEMENTS

- A. Lintels:
- 1. **Use** one of the following:
 - a. Cast-in-place concrete <<at ____; or None - N/A>>.
 - b. Precast concrete <<at ____; or None - N/A>>.
 - c. Unit masonry <<at ____; or None - N/A>>.
 - d. Stone <<at ____; or None - N/A>>.
 - e. Steel <<at ____; or None - N/A>>.
 - f. ____.
 - 2. **Do** not use:
 - a. Cast-in-place concrete.
 - b. Precast concrete.
 - c. Unit masonry.
 - d. Stone.
 - e. Steel.
 - f. ____.
- B. Sills:
- 1. **Use** one of the following:
 - a. Cast-in-place concrete <<at ____; or None - N/A>>.
 - b. Precast concrete <<at ____; or None - N/A>>.
 - c. Unit masonry <<at ____; or None - N/A>>.
 - d. Stone <<at ____; or None - N/A>>.
 - e. ____.
 - 2. **Do** not use:
 - a. Cast-in-place concrete.
 - b. Precast concrete.
 - c. Unit masonry.
 - d. Stone.
 - e. ____.
- C. Opaque Panels in Openings:
- 1. **Use** one of the following:

MASTER TEXT ONLY

- a. Aluminum panels.
 - b. Steel panels.
 - c. _____.
2. **Do not use:**
- a. Aluminum panels.
 - b. Steel panels.
 - c. _____.
- D. Concealed Flashings:
1. **Use one of the following:**
 - a. Aluminum flashing <<**at** _____; **or None - N/A**>>.
 - b. Galvanized steel flashing <<**at** _____; **or None - N/A**>>.
 - c. Stainless steel flashing <<**at** _____; **or None - N/A**>>.
 - d. Copper flashing <<**at** _____; **or None - N/A**>>.
 - e. Plastic flashing <<**at** _____; **or None - N/A**>>.
 - f. _____.
 2. **Do not use:**
 - a. Aluminum flashing.
 - b. Galvanized steel flashing.
 - c. Stainless steel flashing.
 - d. Copper flashing.
 - e. Plastic flashing.
 - f. Paper flashing.
 - g. Uncoated steel flashing.
 - h. _____.

PART 3 DESIGN CRITERIA

3.01 BASIC FUNCTION

- A. **Provide** an essentially vertical separation between exterior and interior conditioned space, that keeps out weather, uninvited people, and animals and insects, without unusual action by occupants, while providing convenient movement of occupants between inside and outside, desirable natural light, and views from inside to outside.
- B. **Fill**, cover, close, or otherwise protect all openings in the exterior walls (other than doors) so that the entire exterior enclosure functions as specified, using windows and other opening elements as specified <<, **without using components that must be installed at changes of season; or None - N/A**>>.
- C. Balcony Walls: Same requirements as exterior walls, except thermal performance is not required.
- D. Parapets: **Do not use parapets**.
- E. Parapets: Same requirements as associated walls, except thermal performance is not required.
- F. Where exterior enclosure elements also must function as elements defined within another element group, meet requirements of both element groups.
- G. In addition to the requirements of this section, **comply** with all applicable requirements of Section **DC0** - Facility Design Criteria.

3.02 AMENITY AND COMFORT CRITERIA

- A. Thermal Performance:
 1. Thermal performance requirements are not applicable to parapets or balcony walls.
 2. Provide continuous insulation over entire enclosure.
 3. Entire Exterior Enclosure Average Thermal Transmittance: U-value of _____ **IP** (_____ **SI**), maximum, over entire Exterior Enclosure.
 4. Vertical Walls Average Thermal Transmittance: U-value of _____ **IP** (_____ **SI**), maximum.

MASTER TEXT ONLY

5. Any Portion of Vertical Walls Average Thermal Transmittance: U-value of ____ *IP* (____ *SI*), maximum.
 6. Any Individual Component Maximum Thermal Transmittance: U-value of <<0.50 *Btu/sq ft/hr/deg F* (2.8 *W/sq m K*); ____ *Btu/sq ft/hr/deg F* (____ *W/sq m K*)>> when tested in accordance with ASTM C 1363 or ASTM C 1199.
 7. Glazing and Frames: Minimum Condensation Resistance Factor of <<35; 20; or ____>> when measured in accordance with AAMA 1503.
 8. Exterior Soffits and Ceilings: Same requirements as exterior walls.
 - a. Exception: If the space between soffit and floor/roof above is not required to be conditioned space, thermal performance requirements do not apply.
 9. Substantiation:
 - a. Construction: For standard manufactured products, certification of specified properties by <<NFRC or other; ____ or other; or None - N/A>> testing agency acceptable to **Owner**; for custom-fabricated elements, test reports.
- B. Water Penetration Resistance:
1. <<When Mock-Up Test is Specifically Required; Mock-Up Test is Required; Mock-Up Will Be Tested; or ____>>: Static pressure test in accordance with ASTM E 331, at <<2.86 *psf* (137 *Pa*); 6.24 *psf* (298 *Pa*); 1.57 *psf* (75 *Pa*); ____ *psf* (____ *Pa*)>> and <<5.0 *gal/sf/hr* (3.4 *L/sq m/min*); ____ *gal/sf/hr* (____ *L/sq m/min*)>>.
 2. <<When Mock-Up Test is Specifically Required; Mock-Up Test is Required; Mock-Up Will Be Tested; or ____>>: Cyclic static pressure test in accordance with ASTM E 547, at <<2.86 *psf* (137 *Pa*); 6.24 *psf* (298 *Pa*); 1.57 *psf* (75 *Pa*); ____ *psf* (____ *Pa*)>> and <<5.0 *gal/sf/hr* (3.4 *L/sq m/min*); ____ *gal/sf/hr* (____ *L/sq m/min*)>>.
 3. Where interior skin is not integral part of exterior enclosure, test without interior skin installed.
- C. Air Infiltration Resistance: Provide continuous separate membrane <<over entire exterior enclosure; over areas of enclosure that do not have minimum performance specified; or None - N/A>> that allows moisture vapor transmission while preventing air infiltration.
1. Air Leakage Rate: Maximum of <<____ *cfm/sq ft* (____ *L/s/sq m*)>> when tested in accordance with ASTM E 1677.
 2. Vapor Permeance: At least <<1 *perm* (57 *ng/Pa/s/sq m*); ____ *perm* (____ *ng/Pa/s/sq m*)>>, when tested in accordance with ASTM E 96/E 96M.
- D. Air Infiltration Resistance:
1. Operable Openings Intended to be Normally Closed: Maximum of <<0.3 *cfm/sq ft* (5 *cu m/h/sq m*); 0.1 *cfm/sq ft* (2 *cu m/h/sq m*); ____ *cfm/sq ft* (____ *cu m/h/sq m*)>>, measured in accordance with ASTM E 283 at differential pressure of <<1.57 *psf* (75 *Pa*); 6.24 *psf* (300 *Pa*); ____ *psf* (____ *Pa*)>>.
 2. Mechanical Ventilation Openings: Automatically closed when ventilation is not required. Unless ducted, maximum of <<0.3 *cfm/sq ft* (5 *cu m/h/sq m*); ____ *cfm/sq ft* (____ *cu m/h/sq m*)>> of crack when closed, measured in accordance with ASTM E 283 at differential pressure of <<1.57 *psf* (75 *Pa*); 6.24 *psf* (298 *Pa*); ____ *psf* (____ *Pa*)>>.
 3. Substantiation:
 - a. Construction: For standard manufactured fenestration products, certification of specified properties by <<NFRC or other; ____ or other; or None - N/A>> testing agency acceptable to **Owner**; for other elements, test reports.
- E. Airborne Sound Transmission Resistance: Achieve the following minimum outdoor-indoor level reductions (OILR values) for perimeter spaces, when tested in accordance with ASTM E 966 and classified in accordance with ASTM E 413:
1. Quiet space (NC values of 20-30) and low exterior noise source (dBA values of 40 or lower): OILR <<30; 33; or ____>>.
 2. Quiet space (NC values of 20-30) and moderate exterior noise source (dBA values of 40-60): OILR <<33; 35; or ____>>.

MASTER TEXT ONLY

3. Quiet space (NC values of 20-30) and loud exterior noise source (dBA values of 60-70): OILR <<**36; 39; 42; or _____**>>.
 4. Quiet space (NC values of 20-30) and very loud exterior noise source (dBA values of 70-80): OILR <<**42; 47; 52; or _____**>>.
 5. Quiet space (NC values of 20-30) and deafening exterior noise source (dBA values above 80): OILR <<**52; 56; 60; or _____**>>.
 6. Moderately noisy space (NC values of 30-40) and moderate exterior noise source (dBA values of 40-60): OILR <<**30; 33; or _____**>>.
 7. Moderately noisy space (NC values of 30-40) and loud exterior noise source (dBA values of 60-70): OILR <<**33; 35; or _____**>>.
 8. Moderately noisy space (NC values of 30-40) and very loud exterior noise source (dBA values of 70-80): OILR <<**36; 39; 43; or _____**>>.
 9. Moderately noisy space (NC values of 30-40) and deafening exterior noise source (dBA values above 80): OILR <<**37; 42; 47; or _____**>>.
 10. Noisy space (NC values of 40-50) and loud exterior noise source (dBA values of 60-70): OILR <<**30; 33; or _____**>>.
 11. Noisy space (NC values of 40-50) and very loud exterior noise source (dBA values of 70-80): OILR <<**33; 36; or _____**>>.
 12. Noisy space (NC values of 40-50) and deafening exterior noise source (dBA values above 80): OILR <<**36; 39; 42; or _____**>>.
 13. Very noisy space (NC values of 50-60) and very loud exterior noise source (dBA values of 70-80): OILR <<**30; 33; or _____**>>.
 14. Very noisy space (NC values of 50-60) and deafening exterior noise source (dBA values over 80): OILR <<**33; 36; or _____**>>.
- F. Acoustical Isolation:
1. **Provide** composite STC values not less than OILR values required for the exterior enclosure, when individual components are tested in accordance with ASTM E 90 and classified in accordance with ASTM E 413.
 2. **Provide** composite STC values not less than <<**3; 5; or _____**>> dB greater than OILR values required for the exterior enclosure, when individual components are tested in accordance with ASTM E 90 and classified in accordance with ASTM E 413.
 3. **Provide** composite STC value at _____ of not less than _____, when individual components are tested in accordance with ASTM E 90 and classified in accordance with ASTM E 413.
 4. **Provide** apparent transmission loss (ATL) of not less than _____ at _____ Hz for facade at _____, when measured in accordance with ASTM E 336.
 5. **Provide** field transmission loss (FTL) of not less than _____ at _____ Hz for facade at _____, when measured in accordance with ASTM E 336.
- G. Acoustical Performance:
1. Window Sound Transmission Class: Minimum <<**31; 35; 39; 51; or _____**>> STC <<**at _____; or None - N/A**>>, as measured in accordance with ASTM E 90 and classified in accordance with ASTM E 413.
 2. Window Transmission Loss: Minimum TL values <<**at _____; or None - N/A**>> as follows, when measured in accordance with ASTM E 90:
 - a. 100 Hz: <<**28; or _____**>> dB.
 - b. 125 Hz: <<**20; or _____**>> dB.
 - c. 160 Hz: <<**29; or _____**>> dB.
 - d. 200 Hz: <<**24; or _____**>> dB.
 - e. 250 Hz: <<**26; or _____**>> dB.
 - f. 315 Hz: <<**30; or _____**>> dB.
 - g. 400 Hz: <<**34; or _____**>> dB.
 - h. 500 Hz: <<**36; or _____**>> dB.
 - i. 630 Hz: <<**39; or _____**>> dB.
 - j. 800 Hz: <<**42; or _____**>> dB.
 - k. 1000 Hz: <<**43; or _____**>> dB.

MASTER TEXT ONLY

- l. 1250 Hz: <<44; or ____>> dB.
 - m. 1600 Hz: <<44; or ____>> dB.
 - n. 2000 Hz: <<41; or ____>> dB.
 - o. 2500 Hz: <<40; or ____>> dB.
 - p. 3150 Hz: <<47; or ____>> dB.
 - q. 4000 Hz: <<52; or ____>> dB.
 - r. 5000 Hz: <<56; or ____>> dB.
 3. Louvers: No objectionable air movement noise.
 4. Louvers: Minimum <<**Noise Reduction (NR); or Transmission Loss (TL)**>> values as follows, when measured in accordance with ASTM E 90:
 - a. 63 Hz: <<15; 19; or ____>> dB.
 - b. 125 Hz: <<13; 7; or ____>> dB.
 - c. 250 Hz: <<16; 10; or ____>> dB.
 - d. 500 Hz: <<20; 14; or ____>> dB.
 - e. 1000 Hz: <<28; 22; or ____>> dB.
 - f. 2000 Hz: <<30; 24; or ____>> dB.
 - g. 4000 Hz: <<29; 23; or ____>> dB.
 - h. 8000 Hz: <<28; 22; or ____>> dB.
- H. Appearance:
 1. Surface Texture: **Provide** exterior wall surfaces with <<**multiple contrasting textures; smooth texture; moderate texture; coarse texture; or ____**>> with visual interest.
 2. Rhythm: **Design to develop** rhythm within building elevations consistent with building scale by varying <<**patterns; placement; color; or ____**>> of finish materials
 3. Glazing:
 - a. Tint: **Do not** use tinted glazing.
 - b. Tint: **Use** as little tint as possible while complying with other requirements.
 - c. Tint: **Do not** use <<**bronze; green; blue; gray; pink; or ____**>> tinted glazing.
 - d. Reflectivity: **Do not** use glass that has been treated to increase its natural reflectivity.
 - e. Reflectivity: **Select reflectivity to** comply with performance requirements.
 - f. Reflectivity, Outdoor: Minimum <<**10; 20; 30; 40; or ____**>> percent, visible light; minimum <<**10; 20; 30; or ____**>> percent, total solar energy.
 4. Windows and Other Openings:
 - a. Sight Lines of Glazed Areas: **Provide** maximum glazing area with minimum interruption by framing members.
 - b. Frames: **Design frames of openings** to give a <<**flush; nearly flush; recessed; or ____**>> appearance <<**without shadow lines; with minimal shadow lines; with significant shadow lines; ____; or None - N/A**>>.
 - c. Glazed Areas: <<**Muntins for true divided lites; Snap-in muntins for divided lite appearance; or ____**>> <<**at ____; or None - N/A**>>.
 - d. Exposed Blade Louvers: Concealed vertical mullions.

3.03 HEALTH AND SAFETY CRITERIA

- A. Fire Resistance:
 1. All Materials of Exterior Enclosure: Non-combustible <<**, no exceptions; , with exceptions permitted by code; None - N/A; or ____**>>.
 2. Elevations Facing Public Rights-of-Way: <<**1; 2; 3; 4; or ____**>> hour fire rated when located within <<**____ feet (____ m; or ____**>> of the <<**edge of the right-of-way; centerline of the right-of-way; or ____**>>.
 3. Elevations Facing Inside Property Lines: <<**1; 2; 3; 4; or ____**>> hour fire rated when located within <<**____ feet (____ m; or ____**>> of the property line.
 4. Facades Enclosing Stairs: <<**2; 1; or ____**>> hour rated, unless higher rating is required for other reasons.

MASTER TEXT ONLY

5. Facades Exposing **<<Stairs; Stair Enclosures; Stairs or Stair Enclosures; or ____>>**: **<<1; or ____>>** hour rated within **<<10 feet (3 m)>>** horizontally and vertically of a stair enclosure.
6. Openings: Rating as required to maintain fire resistance rating of exterior wall in which they occur.
- B. Emergency Escape: **Provide** minimum opening size as required by code for bedroom windows **<<below the fourth floor; None - N/A; or ____>>**.
- C. Physical Security: **Design and construct to provide** protection as follows:
 1. Opaque Elements **<<at Ground Level; ____; or None - N/A>>**: Use materials that give the impression of strength, for discouragement of opportunistic attempts at intrusion.
 2. Opaque Elements **<<at Ground Level; ____; or None - N/A>>**: Resist penetration by chainsaw or **10 lb (4.5 kg)** sledge hammer (10 blows) wielded by one individual.
 3. **<<Any Element; Opaque Elements; Glazing; or ____>>** **<<at Ground Level; ____; or None - N/A>>**: Forced entry resistance of **<<Class I; Class II; Class III; Class IV; or Class V>>** in accordance with ASTM F 1233, minimum, and **<<Grade 10; Grade 20; Grade 30; Grade 40; or ____>>**, minimum, in accordance with ASTM F 476 adapted to suit element.
 4. Glazed Elements **<<at Ground Level; ____; or None - N/A>>**: Minimize size and locate where under surveillance by staff at their normal workstations.
 5. Glazing **<<at Ground Level; None - N/A; or ____>>**: UL 972 burglary resistant rating.
 6. Glazing at **<<Ground Level; Teller Windows; Drive-Up Windows; Other Similar Applications; and ____>>**: Ballistic resistance of **<<Level 1; Level 2; Level 3; Level 4; Level 5; Level 6; Level 7; or Level 8>>** **<< with Supplementary Shotgun; or None - N/A>>** resistance, minimum, in accordance with UL 752.
 7. Glazing at **<<Ground Level; Teller Windows; Drive-Up Windows; Other Similar Applications; and ____>>**: Ballistic resistance of **<<9 mm/submachine gun; .44 magnum/handgun; .38 super/handgun; 7.62 mm/rifle; .30-.06 armor-piercing/rifle; or 12-gage/shotgun>>**, minimum, in accordance with ASTM F 1233.
 8. Doors: ASTM F 476 or ASTM F 842 as appropriate, **<<Grade 10; Grade 20; Grade 30; Grade 40; different levels of protection for different locations; see Section B23; or ____>>**.
 9. **<<Openings At the Ground Floor; None - N/A; All Openings; or ____>>**: **<<Class I; Class II; Class III; Class IV; or Class V>>** in accordance with ASTM F 1233, minimum, and **<<Grade 10; Grade 20; Grade 30; Grade 40; or ____>>**, minimum, in accordance with ASTM F 588.
 10. **<<Openings Above the Ground Floor; Openings Below the Third Floor; None - N/A; All Openings; or ____>>**: **<<Class I; Class II; Class III; Class IV; or Class V>>** in accordance with ASTM F 1233, minimum, and **<<Grade 10; Grade 20; Grade 30; Grade 40; or ____>>**, minimum, in accordance with ASTM F 588
- D. Prevention of Accidental Injury: Do not use fully tempered glass more than **<<25 feet (7.6 m); ____ feet (____ m)>>** above grade.
- E. Vermin Resistance: Provide openable openings and ventilation openings with means of keeping insects, birds, and animals out.

3.04 STRUCTURAL CRITERIA

- A. Design Loads:
 1. Wind:
 - a. Up to ____ **feet (____ m)** above grade:
 - 1) Uniform inward pressure: ____ **psf (____ kPa)**.
 - 2) Uniform outward pressure: ____ **psf (____ kPa)**.
 - 3) Pressure within ____ **feet (____ m)** of corners: ____ **psf (____ kPa)**.
 - b. Up to ____ **feet (____ m)** above grade:
 - 1) Uniform inward pressure: ____ **psf (____ kPa)**.

MASTER TEXT ONLY

- 2) Uniform outward pressure: ____ *psf* (____ *kPa*).
- 3) Pressure within ____ *feet* (____ *m*) of corners: ____ *psf* (____ *kPa*).
2. Snow Load on Sloped Walls: ____ *psf* (____ *kPa*) <<including the following;>> ____; or **None - N/A**>>.
 - a. Unbalanced Snow Loads: ____.
 - b. Drifting Snow Loads: ____.
 - c. Sliding Snow Loads: ____.
3. Other Loads: ____.
- B. Wind Design: No damage when tested in accordance with ASTM E 330 at <<1.5 times; ____>> or **None - N/A**>> positive and negative design wind loads using <<10 second; or ____>> duration of maximum load.
 1. Members Not Supporting Glass: Maximum deflection of <<1/180; 1/240; 1/360; or ____>> of span, unless otherwise indicated.
 2. Unit Masonry: Maximum deflection of <<1/180; 1/360; 1/720; 1/900; or ____>> of span.
 3. Unit Masonry Veneer: Maximum deflection of <<1/720; 1/900; or ____>> of span.
 4. Members Supporting Glass: Maximum deflection of <<flexure limit of glass; 3/4 inch (19 mm); ____ inch (____ mm); 1/200 of span; or ____ of span>>; with full recovery of glazing materials.
 5. Substantiation:
 - a. Design Development: Design accomplished by an engineer experienced in the design of architectural elements and cladding.
 - b. Construction: Proven-by-mock-up construction, with laboratory test of full-scale mock-up.
- C. Lintels: Constructed to span openings and support loads imposed by exterior wall; maximum deflection of <<1/180; 1/360; or ____>> of span, vertically and horizontally.
- D. Railing Assemblies: Resistant to required forces in accordance with ASCE 7.
- E. Anchorage of Wall Fixtures: **Design** wall fixtures to be supported from building structural frame rather than from exterior wall.

3.05 DURABILITY CRITERIA

- A. Expected Service Life Span: <<Same as for facility as a whole.; or Same as for facility as a whole, except as follows:>>
 1. Wall Primary Weather-Barrier Elements: Minimum <<50; or ____>> years functional and aesthetic service life<<, excluding joint sealers; ____; or None - N/A>>.
 2. Transparent Elements (Glazing): Same as other wall primary weather-barrier elements, except accidental breakage is considered normal wear-and-tear.
 3. Joint Sealers in Exterior Skin: Life span expectancy equal to that specified for primary weather barriers.
 - a. Exception: Lesser life span, with minimum of <<20; or ____>> years, is acceptable providing the joint surface does not exceed <<1; or ____>> percent of the face surface of the jointed area and the joint design provides secondary water-shedding design.
 4. Surfaces Exposed to View: Minimum <<20; or ____>> years aesthetic service life; in addition, deterioration includes color fading, crazing, and delamination of applied coatings.
 5. Substantiation: As specified for expected service life span in Section **DC 0**, including <<service life analysis; life cycle cost analysis; and ____>>.
- B. Temperature Endurance: Allow for daily expansion and contraction within and between elements caused by temperature range from most extreme low temperature to <<70 degrees F (39 degrees C); ____ deg F (____ deg C)>> greater than the most extreme high temperature, in any year, without causing detrimental effect to components and anchorage.
- C. Water Penetration Resistance:
 1. Drain water, moisture, and condensation entering assemblies to the exterior.

MASTER TEXT ONLY

- a. Top of Openings: If wall construction does not provide its own methods of drainage, **use** separate flashing to prevent water from entering opening components or the interior of the building.
- b. Bottom of Openings: Integral or separate sill or flashing to prevent water running over or draining out of opening components from entering the wall construction below or the interior of the building.
2. Air Intake and Exhaust Openings: Minimize rainwater penetration and protect adjacent interior spaces from damage from water.
 - a. Maximum Water Leakage: **<<0.01 oz/sf (0.027 ml/sq m); ____ oz/sf (____ ml/sq m)>>** under most extreme conditions.
 - b. Test Air Velocity: For exhaust openings: 0; for intake openings: normal operational velocity.
 - c. Substantiation:
 - 1) Construction: Identify air velocity; show AMCA 511 certified water penetration ratings.
3. **<<When Mock-Up Test is Specifically Required; Mock-Up Test is Required; Mock-Up Will Be Tested; or ____>>**: Static pressure test in accordance with ASTM E 331, at **<<2.86 psf (137 Pa); 6.24 psf (298 Pa); 1.57 psf (75 Pa); ____ psf (____ Pa)>>** and **<<5.0 gal/sf/hr (3.4 L/sq m/min); ____ gal/sf/hr (____ L/sq m/min)>>**.
4. **<<When Mock-Up Test is Specifically Required; Mock-Up Test is Required; Mock-Up Will Be Tested; or ____>>**: Cyclic static pressure test in accordance with ASTM E 547, at **<<2.86 psf (137 Pa); 6.24 psf (298 Pa); 1.57 psf (75 Pa); ____ psf (____ Pa)>>** and **<<5.0 gal/sf/hr (3.4 L/sq m/min); ____ gal/sf/hr (____ L/sq m/min)>>**.
5. Examine test assembly to determine extent of water penetration into assembly.
6. Where interior skin is not integral part of exterior enclosure, test without interior skin installed.
7. Exterior Wall Fixtures: **Maintain** integrity of exterior wall water penetration resistance at points of wall fixture attachment to supporting structure.
- D. Moisture Vapor Transmission Resistance: Provide continuous separate membrane **<<over entire exterior enclosure; over areas of enclosure that do not have minimum performance specified; or None - N/A>>**, located on the warm side of the **<<winter; summer; or None - N/A>>** dew point.
 1. Vapor Permeance: **<<1 perm (57 ng/Pa/s/sq m); ____ perm (____ ng/Pa/s/sq m)>>**, maximum when tested in accordance with ASTM E 96/E 96M.
 2. **Design and select materials** in accordance with ASTM E 1677, including appendixes, and ASTM C 755.
- E. Weathering Resistance:
 1. Surface Finish of Exterior Wall Fixtures: Minimum service life of **<<10; 20; or ____>>** years without color deterioration**<<, except for flags; or None - N/A>>**.
- F. Impact Resistance:
 1. Elements Adjacent to Traffic Lanes: **Resist** damage from accidental **<<passenger; ____; or None - N/A>>** vehicular impact **<<at 5 mph (8 km/hr) maximum velocity; ____ mph (____ km/h) maximum velocity; or None - N/A>>**.
 2. Exterior Insulation and Finish Systems: Resistant to permanent damage to supporting structure and exterior skin when tested in accordance with ASTM E 2486 with a test force of **<<25-49 inch-lbs (2.8-5.5 N*m); 50-89 inch-lbs (5.6-10.0 N*m); 90-150 inch-lbs (10.1-16.9 N*m); 151-175 inch-lbs (17.0-19.7 N*m); ____ inch-lbs (____ N*m)>>**.
 3. **<<Precast Concrete; Reinforced Masonry; Metal Siding; and ____>>**: Resistant to permanent damage to supporting structure and exterior skin when tested in accordance with ASTM E 695 and a test weight of ____.
- G. Glass Breakage Resistance:

MASTER TEXT ONLY

1. Type and thickness in accordance with ASTM E 1300 combined with other applicable factors <<*minimum thickness 6 mm; ; minimum thickness ____ mm; or None - N/A*>> <<*for each lite; or None - N/A*>>.
2. **Protect** glazed openings from glass breakage caused by vandalism.

H. Integral Interior Surfaces: Comply with requirements for interior finish.

3.06 OPERATION AND MAINTENANCE CRITERIA

- A. Expected Service Life Span:
 1. Operating Components: Remaining operable <<*for 10 years; for 20 years; for service life of enclosure elements specified in Section B2; ____; or None - N/A*>> under normal exposure conditions for the project site.
- B. Ease of Use:
 1. Operators for Moving Parts: <<*Electric motor-operated; Pneumatically-operated; or Electric motor- or pneumatically-operated*>>.
- C. Prevention of Misuse: Provide mechanical ventilation openings without moving parts on exterior of building or where accessible to occupants.
- D. Ease of Cleaning: **Design glazed openings** to permit the exterior surface to be cleaned from <<*inside; outside; inside or outside; or ____*>> <<*without removing window sash; with permanent scaffolding; with temporary scaffolding; ____; or None - N/A*>>.

END OF SECTION