

## 1.0 GENERAL

### 1.1 **Related Work and UBC Guidelines**

- .1 Division 03 and relevant TG sections therein
- .2 Division 04 and relevant TG sections therein
- .3 Division 06 and relevant TG sections therein
- .4 Division 07 and relevant TG sections therein
- .5 Section 08 and relevant TG sections therein
- .6 Division 09 and relevant sections therein
- .7 Divisions 20, 22, 23, 25, 26, 27 and 28
- .8 UBC LEED Implementation Guide
- .9 UBC Energy Modelling Guidelines
- .10 Owner's Project Requirements
- .11 UBC Bird-Friendly Design Guidelines
- .12 UBC Resilience-Based Design Guide for Nonstructural Systems

### 1.2 **Related External Documents**

- 1. Latest edition of the British Columbia Building Code (BCBC).
- 2. CAN/CSA-A440.2-09/A440.3-09 - Fenestration energy performance/User guide to CSA A440.2-09, Fenestration energy performance.
- 3. CAN/CSA-A440.4 "Window and Door Installation"

### 1.3 **Description**

- 1. General design and performance requirements for doors, windows and curtainwall systems.

### 1.4 **Coordination**

- 1. In instances where conflicts are found between these guidelines and provincial regulations or codes, please notify the UBCV Technical Review Team Architect or UBCO Facilities Management.
- 2. These guidelines are intended to be read by design consultants and their content integrated into construction drawings and specifications. Construction documents are not to reference the technical guidelines directly.
- 3. The Coordinating Registered Professional (CRP) is required to coordinate these requirements with other disciplines.
- 4. Input from a Building Envelope (BE) consultant is required in the design development process. The BE consultant is to review all BE details, and review comments are to be incorporated prior to tender and Building Permit issuances.
- 5. Input from the structural consultant is required during the design process. The structural consultant is to review and provide all base building structural requirements.
- 6. Provide window, curtain wall and door hardware schedules for review by UBC Access and Security and Locksmith Shop prior to tender and Building Permit.

### 1.5 **Submittals**

- .1 Refer to specific submittal requirements in sections 08 11 00 Metal Doors and Frames, 08 41 13 aluminum-Framed Entrances and Storefronts, 08 44 13 Glazed aluminum Curtain Walls and 08 50 00 Windows.

## 2.0 DESIGN AND PERFORMANCE REQUIREMENTS

### 2.1 **Design Requirements – Windows and Curtain Wall Systems**

- .1 All seals between frame and glazing to be made with compressed gaskets.
- .2 Frames to be glazed with internal or external removable stops or using tamper proof fasteners where security is required. Glazing to be designed to enable glass replacement without deconstruction of adjoining assemblies.

- .3 Window and curtain wall installations need to accommodate building movements including inter-storey drift during seismic loading.
- .4 Sound transmission ratings for windows to be selected based upon Acoustical Report where available for a project. For learning spaces acoustical requirements, refer to Section 10 00 10 Special Room Requirements.
- .5 While operable windows are encouraged, operable windows are not to be provided in laboratories or spaces where pressure differentials need to be maintained. This will allow negative pressures to be maintained relative to adjacent spaces and to prevent draft conditions.
- .6 Windows in laboratory spaces to be openable only with a controlled tool, for use only in the event of a mechanical system shut-down/failure.
- .7 Hardware and seals of operable units should be designed so that hardware can be adjusted and seals maintained or replaced over the life of the window to maintain air and weather tightness. Proprietary hardware should not be provided.
- .8 Frames need to be supplied with receiving surfaces for sealing to air and vapour barrier materials, insulation, and cladding of exterior wall assemblies.
- .9 Coordinate fritting requirements with the UBC Brid-friendly Design Guidelines. Frit placement within insulated glazed units should not conflict with the low-e coating location as per Section 08 80 00 Glazing.
- .10 Make provision for window washing on the exterior with the use of a genie lift or boom lift. Coordinate sidewalk width, manlift and other smaller vehicular loading requirements on sidewalks with the civil engineer, after consultation with the UBCV Technical Review Team Architect or UBCO Facilities Management.

## 2.2 Design Requirements – Doors

**This Section applies to doors in Sections 08 11 00 Metal Doors and Frames, 08 41 13 Aluminum-Framed Entrances and Storefronts and 08 44 13 Glazed Aluminum Curtain Walls.**

- .1 Water tightness rating for exterior exposed doors to be selected based upon exposure to elements related to location on the facade and site conditions per AAMA/WDMS/CSA 101/I.S.2/A440-17.
- .2 Maximum exterior and interior door height to be 2,134 mm (7'-0"). Door above this height will require a variance.
- .3 Exterior doors:
  - .1 Install all exterior doors not able to meet required water tightness performance in protected locations under the cover of an overhang with an overhang ratio (horizontal projection of overhang to overhang to height above door sill) appropriate for the door type. All measurements are taken from the exterior edge of the door threshold.
  - .2 Overhang projection outward from plane of door:
    - .1 Out-swing door: ..... 1:4 min
    - .2 Sliding door: ..... 1:4 min
    - .3 In-swing: ..... 1:2 min
    - .4 Double swing: ..... 1:2 min
    - .5 Double slider: ..... 1:2 min
    - .6 Wood door: ..... 1:2 min
    - .7 Outswing Press steel door: ..... 1:2 min
  - .3 Overhang projection to jamb in plane of door 1:4 minimum.
  - .4 Any door with less than a 1:2 overhang ratio (Out-swing door and sliding doors in table above) must also meet the minimum water penetration test resistance requirements for windows located in the wall at that location, and be verified through field testing.
  - .5 Exceptions to the above rules may also be made for outward opening or sliding doors that can resist water penetration in the lab and in the field at pressures in excess of 500 Pa with multi point locking system.

- .4 Frames to be glazed with internal removable stops or using tamper proof fasteners where security is required.
- .5 Where fire-rated doors are required, use hollow metal, thermally broken doors. At other locations, it is acceptable to use wide stile thermally broken aluminum doors or fiberglass doors with pressed metal frames.
- .6 All doors with glazed assemblies (floor to door height or floor to ceiling height) to be tempered glass.
- .7 Where panels of vision or opaque glass is located in a required fire separation, use fire-rated safety glass such as Firelite, not wired glass.
- .8 Use of floor checks, pivots, concealed closers and/or concealed panic devices is not permitted. Coordinate with Section 08 71 00 Door Hardware.
- .9 Glazed doors must have stiles and rails. Refer to Section 08 11 00 Metal Doors and Frames.
- .10 Frameless glass doors are not recommended for use. Maintenance considerations are to be evaluated when proposing the use of frameless glass doors.
- .11 Service room door swings should be as noted in Sections 10 00 10 Special Room Requirements, 20 00 05 Mechanical – General Requirements and 27 05 05 Communications Rooms Design Guidelines. Acoustic seal to be provided for doors to these rooms.
- .12 Any exterior or interior vestibule doors that swing over walk-off mats must have sufficient clearance underneath to clear the mats without having to make special provisions in the mats such as cutaways.
- .13 Door sub sill pans need to be integrated with terminations of roofing membranes.
- .14 Check roof overflow scuppers for height relative to door sills at roof level. Overflow scuppers should be below door threshold waterproofing height.
- .15 Sill accessories and flashing material shall be connected with waterproof joints or shall be underlaid with continuous secondary waterproofing. Joints shall remain waterproof while accommodating thermal movement for the life of the installation.

### 2.3 Performance Requirements

- 1. Refer to individual sections in Division 8.

### 3.0 **MATERIALS**

- 1. Refer to individual sections in Division 8.

\*\*\*END OF SECTION\*\*\*