

## Table of Contents

<b>A. Substructure</b> .....	<b>1</b>
Foundation .....	1
STANDARD FOUNDATION SUPPLEMENTARY COMPONENTS (A1010.90).....	1
Subgrade Enclosures (A20) .....	1
WALLS FOR SUB-GRADE ENCLOSURES (A2010).....	1
SUBGRADE ENCLOSURE WALL SUPPLEMENTARY COMPONENTS (A2010.90).....	1
Slabs On Grade (A40) .....	2
SLAB-ON-GRADE SUPPLEMENTARY COMPONENTS (A4090).....	2
<b>B. Shell</b> .....	<b>3</b>
Superstructure (B10).....	3
STAIRS (B1080) .....	3
STAIR CONSTRUCTION (B1080.10) .....	3
METAL WALKWAYS (B1080.70) .....	3
LADDERS (B1080.80).....	3
Exterior Vertical Enclosure (B20) .....	3
EXTERIOR WALLS (B2010).....	3
EXTERIOR WALL VENEER (B2010.10).....	3
EXTERIOR WALL CONSTRUCTION (B2010.20).....	6
FABRICATED EXTERIOR WALL ASSEMBLIES (B2010.40).....	6
PARAPETS (B2010.50).....	7
EXTERIOR WALL SUPPLEMENTARY COMPONENTS (B2010.80).....	7
EXTERIOR WALL OPENING SUPPLEMENTARY COMPONENTS (B2010.90).....	8
EXTERIOR WINDOWS (B2020) .....	9
EXTERIOR OPERATING AND FIXED WINDOWS (B2020.20).....	9
EXTERIOR WINDOW WALL (B2020.30).....	10
Exterior Horizontal Enclosure (B30) .....	10
ROOFING (B3010) .....	10
LOW-SLOPE ROOFING (B3010.50).....	10
ROOFING SUPPLEMENTARY COMPONENTS (B3010.90) .....	11
ROOF APPURTENANCE (B3020).....	12
ROOF ACCESORIES (B3020.10) .....	12
RAINWATER (B3020.70) .....	14
HORIZONTAL (GLAZED) OPENINGS AND GLAZED ROOFS (B3060) .....	14
<b>C. Interiors</b> .....	<b>14</b>
Construction (C10) .....	14
INTERIOR DOORS (C1030) .....	14
INTERIOR SWINGING DOORS (Body C1030.10).....	14
INTERIOR ACCESS DOORS AND PANELS (C1030.80).....	15
INTERIOR DOOR SUPPLEMENTARY COMPONENTS (C1030.90) .....	15
INTERIOR DOOR STANDARD SPECIFICATIONS (08 71 00).....	16
SUSPENDED CEILING CONSTRUCTION DOORS (C1070).....	20
Finishes (C20).....	21
WALL FINISHES (C2010).....	21
FLOORING (C2030) .....	21
<b>D. Services</b> .....	<b>22</b>
Plumbing (D20) .....	22

DOMESTIC WATER DISTRIBUTION.....	22
<b>E. Site Work .....</b>	<b>22</b>
Site Improvements (G20) .....	22
PEDESTRIAN PLAZAS AND WALKWAYS (G2030).....	22

# Architectural

---

## A. Substructure

### Foundation

#### STANDARD FOUNDATION SUPPLEMENTARY COMPONENTS (A1010.90)

1. All cold joints in concrete foundations shall have water stops.
2. When geotechnical reports indicate that a subgrade perimeter (footing) drainage system is required, the acceptable drainage course used is a three dimensional, crush-proof drainage course with a non-woven needle punched filter fabric system.

### Subgrade Enclosures (A20)

#### WALLS FOR SUB-GRADE ENCLOSURES (A2010)

#### SUBGRADE ENCLOSURE WALL SUPPLEMENTARY COMPONENTS (A2010.90)

### Commissioning

**This section requires commissioning as outlined in (BECx).**

### Waterproofing (07 10 00)

1. Vertical surfaces below grade adjacent to occupied or service spaces shall be treated with a fully adhered membrane waterproofing system. The acceptable waterproofing membrane used on campus buildings is hot fluid-applied rubberized asphalt (cold fluid applied applications in limited conditions with Facilities Architect approval). Damp-proofing may be used at utility rooms in parking garages when soil exploration determines no ground water is present.
2. Protection board for applied membrane is required to prevent damage from backfill or other construction activities. Protection board used is extruded polystyrene that complies with ASTM C 578, Type IV, with compressive strength of 25 psi and R-value of 10. Other systems are acceptable if they meet or exceed the technical performance criteria of the above system.
3. Extend the waterproof membrane up walls and curbs adjacent to a roof or horizontal surface a minimum of 1 foot, and a minimum of 4 inches above pavers, sidewalks or planting soils, whichever is greater. Terminate the membrane with continuously sealed joint and protect with metal counter-flashing set in a reglet or other reveal. Tie the waterproofing to the building enclosure weather air barrier.
4. The acceptable flexible flashing compatible with the waterproof membrane system used is uncured neoprene sheet.
5. New waterproofing products and/or systems must be submitted to FA for consideration in any new construction.
6. Where a hot fluid-applied rubberized membrane is technically infeasible (e.g. over-excavation not possible) on below-grade walls and around utility tunnel construction, a

sheet waterproofing system may be approved by FA. Basis of Design is an expandable, self-sealing bentonite geotextile composite sheet system.

7. Where sheet water-proofing is approved, vertical laps are preferred. Make water tight per manufacturer's standard recommendations.
8. At penetrations make water tight. Follow manufacturer's standard recommendations.
9. 2-year minimum installation warranty required for ALL waterproofing systems from date of Substantial Completion. The installed waterproofing system shall have a no dollar limit life time warranty.
10. Protect all edges, termination, etc. from foreign objects during construction.
11. Products damaged during construction shall be replaced.

### **Insulation (07 20 00)**

1. Install all rigid insulation with tight joints (no gaps).

## **Slabs On Grade (A40)**

### SLAB-ON-GRADE SUPPLEMENTARY COMPONENTS (A4090)

#### **A4090.20 Vapor Retarder (07 26 00)**

1. Maintain permeance of less than 0.01 Perms. (Coordinate with requirements of floor finish materials).
2. Strength: ASTM E1745 Class A.
3. Thickness: 20 mils minimum
4. Laps and penetration shall be sealed water tight.
5. Products damaged during construction shall be replaced.

#### **A4090.30 Waterproofing (07 10 00)**

1. If the soil report indicates any ground water above the lowest slab level or is recommended by soils investigation, an under-slab waterproof barrier and drainage system is required. Basis of Design is an expandable, self-sealing bentonite geotextile composite sheet system.
2. All elevator pits shall have an under-slab waterproof barrier.
3. Products damaged during construction shall be replaced.
4. Water stops shall be installed in all cold joints.
5. Laps and penetrations shall be made water tight.

## B. Shell

### Superstructure (B10)

#### STAIRS (B1080)

##### STAIR CONSTRUCTION (B1080.10)

#### **Precast Concrete Stairs (03 41 23)**

1. Fabricator Qualifications: Plant must be certified by the Precast/Prestressed Concrete Institute (PCI) Plant Certification Program and shall be certified in category C4.
2. Quality Control: PCI MNL 116, "Manual for Quality Control for Plants and Production of Precast Concrete Products" and the PCI MNL 135, "Tolerance Manual for Precast and Prestressed Concrete Construction".

#### **Treads, Nosings and Landings (05 55 00)**

1. No extruded aluminum nosings at exterior applications.

##### METAL WALKWAYS (B1080.70)

#### **Metal Catwalks (05 51 36.13)**

1. Aluminum is not allowed.
2. Walking surfaces shall be non-slip or abrasive.
3. Minimum finish is to be galvanized (G90).

##### LADDERS (B1080.80)

#### **Roof Ladders**

1. Ladders are required at roof hatches and exterior access to different roof elevations that are not provided with separate roof hatches.
2. No offset stepladders.
3. Vertical members to be 1-1/2" standard pipe. Rungs to be 3/4" round minimum with non-slip surfaces.

### Exterior Vertical Enclosure (B20)

#### EXTERIOR WALLS (B2010)

##### EXTERIOR WALL VENEER (B2010.10)

#### **Commissioning**

1. Include all work under this section in Building Enclosure Commissioning (BECx).

### **Precast Concrete (03 40 00)**

1. Stainless steel anchors and picks shall be used on exterior precast concrete.
2. All exterior application of concrete cladding shall be a ventilated rain screen system.

### **Unit Masonry (04 20 00)**

1. Masonry or brick veneer shall not be used below grade.
2. Steel reinforcing in cast stone that is less than a ¼" thick or has less than a 1.5" cover shall be non-corrosive.
3. Use stainless steel anchors and picks.
4. Use materials that inhibit efflorescence.
5. Joints between dissimilar materials to accommodate thermal movement in horizontal and vertical direction.
6. During installation of masonry systems, the open top of the cavity must be covered with a canopy at the conclusion of the work day to prevent water intrusion and future efflorescence.
7. Material overstock is required when specialty masonry is used; quantities TBD.
8. Type-N mortar is preferred, tooled concave joint face.
9. Use only fresh mortar, no re-tempering, remove fins and droppings from cavities.
10. Set in full mortar beds; do not move once initial set has taken hold.
11. Place in lifts no greater than 4 feet: hold down from tops of wall 1 inch minimum.
12. Masonry Ledger Supports
  - a. Galvanized (G-90) steel angles and bent plates, ¼-inch thickness or greater. Shop fabricate and galvanize (G-90); make no field cuts; set level, allow ¼ inch between pieces for movement.
  - b. Insert wedge anchors, Galvanized (G90).
  - c. Stainless steel expansion anchors may be used when cast-in-place anchors miss their mark.
  - d. Epoxy anchors are not acceptable to support ledger angles and in grouted CMU construction.
13. Wall Ties
  - a. 12 gauge stainless steel plate and 11 gauge stainless steel pintle accepting 9 gauge stainless steel wire. Install ties with 2 anchors each (minimum).
  - b. Dovetail type anchors are not acceptable.
14. Masonry Embedded Flashing
  - a. Stainless steel (26 ga when concealed, 24 ga when exposed) or copper (24 oz.) under masonry. Both with hemmed drip.
  - b. Counter flashing to back-up wall may be metal or flexible membrane.
  - c. Horizontal surfaces must slope to exterior.
  - d. Terminate flexible flashing with metal bar; anchor to wall at 12 inches on center; seal top edge, form corners and ends carefully to promote drainage.
  - e. Shop fabricate corners and ends, weld or solder seams; laps to be 4 inches minimum; set laps in sealant.
15. Masonry Cavity Drainage, Weep holes, and Vents

- a. Open head joints at 24-inches on center.
  - b. Bottom and top of walls.
  - c. Keep clear of mortar; use open head joints.
  - d. Slotted weep holes only. No round weeps. No rope weeps.
  - e. Air Space (at Drainage Wall)
    - i. 2-inch minimum clear,
    - ii. Keep clear of all materials,
    - iii. Consider using pvc mesh.
16. Shims for Setting Masonry
- a. Use Non-corrosive or non-metallic shims only,
  - b. Use Galvanized (G90) steel shims to be used for brick,
  - c. Shims in setting beds shall not be exposed.
17. Seismic Stabilization of Existing Masonry Veneer
- a. When masonry repairs or restoration occurs, the existing masonry veneer around entrances shall be anchored to structural frame:
    - i. A distance of 20' from edge of door from grade to top of parapet.
    - ii. From top of door to parapet.
    - iii. From grade to top of parapet when exit path is adjacent to exterior wall.

### **Exterior Insulation and Finish Systems (07 24 00)**

1. No EIFS systems shall be used.

### **Wall Panels (07 42 00)**

1. Wall panels shall be open joint rain screen system.
2. System shall be thoroughly designed, tested and detailed by the systems supplier prior to the start of work.
3. All fasteners shall be concealed.
4. Barrier wall systems prohibited.
5. Metal panels shall have no noticeable oil canning.
6. Rain screen manufacturer shall provide on-site inspection and 25-year warranty of product.
7. Panel Support Systems must perform as designed for the lifetime of the panel material.

### **Faced Panels (07 44 00)**

1. Panel Support Systems must perform as designed for the lifetime of the panel material.

### **Siding (07 46 00)**

1. Vinyl siding prohibited.
2. Wood may be used in appropriate applications with prior approval from FA. Teak / Pressure treated Pine and hardwoods are preferred for longer life. Wood that requires resealing every few years should be avoided for exterior applications.
3. Manufacturer recommended and approved fasteners must be used in all pressure-treated wood applications.

4. Treat all exposed edges.
5. Field modified cladding edges need to be retreated with protective coating.

### **Water Repellents (07 19 00)**

1. All porous masonry materials shall be treated with a solvent based water repellent sealer system.
2. Penetrating type graffiti sealing is required on all non-historic building envelopes to top of the second-level at a minimum. Application method of sealant must not come into contact with the ground or waste water systems.

## EXTERIOR WALL CONSTRUCTION (B2010.20)

### **Unit Masonry (04 20 00)**

1. Unit masonry shall have fully grouted cells.

### **Metal stud framing (05 41 00)**

1. Metal stud framing at masonry veneer walls - entire wall system shall be designed to meet BIA Tech Notes on Brick Construction 28B (e.g. Restrict allowable out-of-plane deflection of steel studs to L/600 using service level load).
2. Minimum 18 gauge galvanized G60 metal stud @ 16" O.C.
3. Exterior metal framing to be designed to carry all applicable loads (e.g. cladding, windows, etc.).
4. If cold formed metal framing is incapable of sufficiently carrying applied loads, additional structural framing shall be provided.
5. Only screwed or welded connections shall be used in exterior framing. Crimped connections prohibited.
6. Provide detailed shop drawing elevations showing framing, openings, dimensions of rough openings, connection points for all elements supported by framing.

### **Wood framing**

1. All exterior wood framing outside the weather barrier to be preservative treated.

## FABRICATED EXTERIOR WALL ASSEMBLIES (B2010.40)

### **Commissioning**

1. Include all work under this section in Building Enclosure Commissioning (BECx).

### **Curtain Wall Assemblies (08 44 00)**

1. No reflective glazing or reflective window film shall be used.
2. Interior Wet/Dry Method (Tape and Sealant) or Interior Dry Method (Tape and Tape) are permitted.
3. Provide minimum manufacturer's warranty period of ten (10) years from the date of

- manufacture for dual seal units vertically glazed. Insulating units in sloped glazing applications shall be warranted for a period of five (5) years from date of manufacture. Warranty to include all costs associated with unit replacement.
4. On-site representation from manufacturer during construction
    - a. To assist with unforeseen conditions,
    - b. To assist in quality assurance,
    - c. To assist with intersections with other systems, i.e., metal wall systems.
  5. Curtain wall and window performance criteria: All systems shall meet the following minimum criteria in addition to industry standard practice:
    - a. Air infiltration: As required by the Seattle Energy Code or International Energy Conservation Code (the most strict shall take precedence). Test in accordance with ASTM E283.
    - b. Water penetration: Test in accordance with ASTM E331. At a pressure of 8psf, no water shall penetrate to any inside surface.
    - c. Coordinate with requirements for "Safe Access and Fall Protection".
  6. Curtain wall designs that utilize custom extrusions are highly discouraged. If custom extrusions are proposed, the following steps shall be taken:
    - a. Design, manufacture and test a performance mock-up of the proposed system in accordance with project design and performance criteria.
    - b. Test finished system in place. Test shall be performed in accordance with the Curtain wall Performance Criteria above. Hybrid systems of curtain wall which include other elements such as entry doors, metal panels and operating sash shall be tested as part of the curtain wall.
    - c. Requirements for a mock-up of custom designs may be waived if sufficient documentation can be produced to prove the performance of the custom design.
    - d. Testing procedures shall be approved by FA.

#### PARAPETS (B2010.50)

1. Parapets shall be 42" +/- 3" or higher.
2. Parapets shall have permanent waterproof coping, flashing, or capstones.
3. Parapets with capstones or masonry shall have through wall flashing over the moisture protection membrane.
4. Secure capstones to the parapet with stainless steel dowels. Seal dowels at through wall flashing with flexible flashing and sealant.

#### EXTERIOR WALL SUPPLEMENTARY COMPONENTS (B2010.80)

##### **Weather Air Barriers (WAB) (07 25 00)**

1. Must be continuous around the entire building enclosure.
2. Sealants shall never be used for the primary weather barrier.
3. Materials specified in exterior wall shall have manufacturer's statement of compatibility with adjacent materials and finishes.

4. Weather barrier manufacturer shall provide on-site inspection and product warranty of 25 years. Warranty to include replacement of weather barrier system along with all other associated components/damage at no cost to UW.
5. Weather barrier to have and installation warranty of 10 years. Warranty to include repair of weather barrier system along with all other associated components/damage at no cost to UW.
6. Damp proofing shall not be used as a weather barrier.
7. Loose applied sheet products shall not be used as a weather barrier.
8. Fluid applied weather barrier shall be used.
9. Weather barrier shall be continuous thru joints without depending on sealant or tape for performance.
10. Protect exposed weather barrier systems as recommended by manufacturer against degradation by UV, moisture, etc.
11. Protect building enclosure at each phase of installation from weather damage & exposure. Check daily for damage in previously installed work prior to continuing installation of new building enclosure materials. Damaged materials must be removed and replaced.
12. Personnel installing the products shall provide evidence of factory training and certification. Certification of individuals is required, not just certification of installing contactor.
13. During warranty periods, water damage to any other building component and/or building contents due to product defect and/or incorrect installation requires correction at no cost and no dollar limit to the UW.

### **Fasteners (05 05 23)**

1. All exterior fasteners in the drainage plan or a ¼" diameter or smaller are to be stainless steel.

### **Expansion Joints (07 95 00)**

1. Sealants at dissimilar cladding materials to accommodate thermal movement in horizontal and vertical directions without failure.
2. Sealants at exterior systems to have 50% elasticity elongation.
3. Sealants at exterior systems shall have minimum of 15 year warrantied life.
4. Sealants shall be UV stable.
5. Closed cell backer rods are preferred in exterior joints.
6. Provide for adhesion tests for all materials and sealants.
7. Prime joints where required for adhesion.
8. Consider sand textured finish on masonry sealant joints.

## **EXTERIOR WALL OPENING SUPPLEMENTARY COMPONENTS (B2010.90)**

### **Flashing (07 60 00)**

1. All flashing shall be designed to accommodate expansion without buckling, "oil canning", or warping.
2. All corners and horizontal to vertical transitions shall be shop fabricated and made water

- tight.
3. Provide for thermal movements from the maximum change in ambient and surface temperatures as specified by manufacturers.
  4. Provide clips that resist rotation and avoid shear stress as a result of thermal movement.
  5. To accommodate horizontal and vertical construction tolerances, consider using 2-piece flashing systems. Counter flashing may be a material other than metal.
  6. All penetrations, openings, etc. through the exterior skin of the building must be protected by head and sill (with back pan design) flashing.
  7. All exposed and through wall flashing shall be metal.
  8. Metal flashing shall be minimum thickness as follows:
    - a. Stainless steel, 24Ga. (.018 inch),
    - b. Copper, 16oz. per square foot,
    - c. Coated galvanized steel, 24Ga (before coating and galvanizing),
    - d. Aluminum, .032 inch.
  9. Coatings for flashing shall be high-performance coatings, e.g. epoxy, polyurethane and fluoropolymer.
  10. 5-year installation warranty required for all flashing, from date of Substantial Completion. Warranty includes installation, leaks, displacement, failed joints, and damages to other building components impacted by failure.

## EXTERIOR WINDOWS (B2020)

### EXTERIOR OPERATING AND FIXED WINDOWS (B2020.20)

#### **Windows (08 50 00)**

1. Materials:
  - a. Frame: Extruded aluminum. Other materials used for historic restoration may be considered with approval from the FA.
  - b. Anchoring elements: Stainless steel or aluminum or approved by FA.
  - c. Shims: No-corrosive metal or high density plastic.
  - d. Hollow metal is not acceptable.
  - e. Operable ground level windows opening out are to have 6-inch limiters to avoid entry or injury from the exterior.
  - f. Finishes:
    - i. High performance fluoropolymer coating: Comply with AAMA 2605-98
    - ii. Anodized aluminum: Comply with Class I anodizing conforming to AAMA 611-98
    - iii. Powder coating: Comply with AAMA 605.2-90
    - iv. Other high-performance coatings as approved for interior surfaces.

## EXTERIOR WINDOW WALL (B2020.30)

### Storefronts (08 43 00)

1. Entrances and Storefronts shall have an (AAMA, most recent addition) Certification Label and comply with applicable provisions of (ANSI, most recent addition) (AWS, most recent addition), (OSHA, most recent addition) (AA, most recent addition) and (WISHA, most recent addition).
2. Coordinate storefronts and windows with adjacent cladding systems and support framing.
3. Storefronts and similar systems shall not be used when exposed to weather.
4. On-site representation by the manufacturer is required to advise on coordination with unforeseen conditions, for quality assurance and to assist with intersections at other building systems.

## Exterior Horizontal Enclosure (B30)

### ROOFING (B3010)

#### LOW-SLOPE ROOFING (B3010.50)

##### Low-Slope roofing Membrane (07 50 00)

1. 30-year manufacturer warranty required for all roofing systems from date of Substantial Completion unless stated otherwise.
2. The preferred membrane roofing system is a Torch-Applied SBS (Styrene-Butadiene-Syrene) Modified Bituminous Membrane. See [Preferred Manufacturer List](#) for accepted products.
3. Single ply and ballasted roofing systems are prohibited.
4. Adhere to the standards and details of the latest editions of the NRCA Roofing Manual and manufacturer's product data.
5. Hot rubberized asphalt waterproofing shall be used on horizontal surfaces over occupied spaces (e.g. plaza decks). Any drains installed at fixed pavers shall have two level inlets, at the finish surface and at the membrane level.
6. All roofing work to be done by a qualified roofer certified by product manufacturer to do the work.
7. Any alterations to the existing building enclosure<sup>1</sup> must be coordinated with FA prior to setting scope & budget.
8. For existing building repairs, selected roofing materials must be compatible with existing roofing materials to maintain original warranties.
9. When modifying existing roofing, protect the building from water infiltration.
10. All penetrations of the building enclosure must be air and watertight.
11. Slope the structural framing under plazas, decks, roofs and any below-grade space ¼"/ft. minimum towards drains or over the edge of foundation walls to accommodate

---

<sup>1</sup> Building enclosure – includes roofs, exterior walls, exterior windows & curtain walls, exterior doors, below grade construction, balconies, canopies, decks, patios, utilities and other elements attached to the exterior of a building.

- drainage. Avoid using insulation to achieve roof drainage except at crickets and saddles.
14. In new construction vapor barrier may be used as a temporary roof during construction. Protect vapor barrier while performing other construction on the roof. Apply a new layer of vapor barrier prior to completion of roof installation.
  15. Vapor barrier must extend vertically at all curbs, parapets and other penetrations minimum 6" higher than adjacent finished roof or overburden.
  16. At all horizontal enclosures over occupied spaces (e.g. plaza decks, roofs, etc.), provide for leak detection testing for the primary water proofing barrier (electronic leak detection or flood testing).

## ROOFING SUPPLEMENTARY COMPONENTS (B3010.90)

### **Substrate Board (09 28 00)**

1. Substrate boards over steel decking and over insulation shall be cement board.

### **Deck Insulation (07 22 00)**

1. When insulation is applied to underside of roof deck, that insulation must be compatible with roof deck and vapor barrier must be continuous and completely sealed at perimeters.

### **Vapor Retarder (07 26 00)**

1. Vapor retarders must be continuous and fully sealed.

### **Air Weather Barrier (07 27 00)**

1. Air Weather Barriers must be continuous and fully sealed.

### **Sheet Metal Counter Flashing and Trim (includes seismic joint covers) (07 62 00)**

1. All roof flashing must be metal.
2. Pre-manufactured seismic joint covers are prohibited.
3. Follow SMACMA manual for suggested details.

### **Roofing Flashing (07 65 00)**

1. Must be compatible with roofing material.
2. Fluid applied flashing must be installed under strict conditions acceptable to the product manufacturer.

### **Copings (07 71 13)**

1. At metal copings provide standing seam joints in copings unless material thickness prevents the forming of a watertight coping joint. The standing seam shall be sealed internally with Butyl Sealant.

## ROOF APPURTENANCE (B3020)

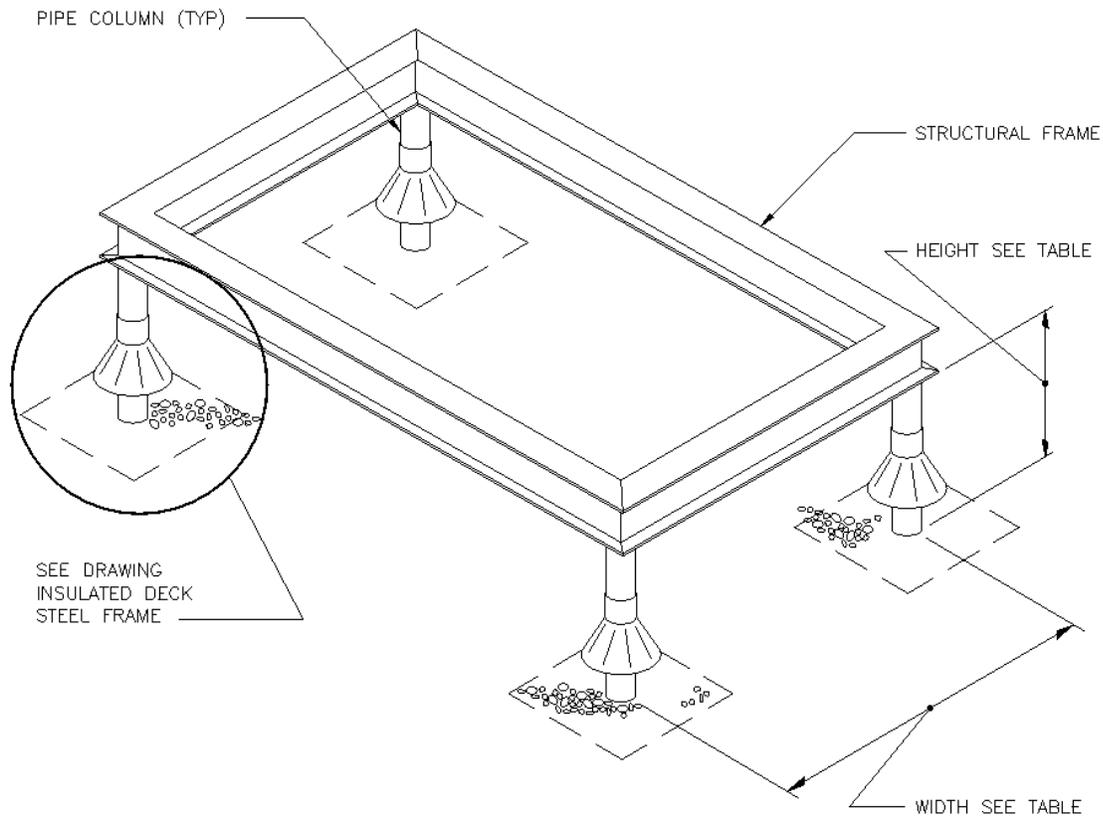
### ROOF ACCESORIES (B3020.10)

#### **Roof Ladders (05 51 33)**

See also: [Ladders: B1080.80](#)

#### **Roof Curbs (07 72 13)**

1. Roof mounted equipment is not desired. Place all equipment within a penthouse to reduce foot traffic and therefore reduce leaks.
2. If roof mounted equipment is unavoidable, the support base shall be either a concrete slab designed for the specific equipment and tied into the structural deck or a stand according to attached drawings "Mechanical Equipment Stand and Insulated Deck Steel Frame" or a curb 1'-0" above finished roof surface, minimum.
3. Any equipment sitting on top of a curb shall be attached to the sides of the curb. Penetrations to the top of the curbs are prohibited.



WIDTH OF EQUIPMENT	HEIGHT OF LEGS
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"

NOTE :

THIS DETAIL IS PREFERABLE WHEN THE CONCENTRATED LOAD CAN BE LOCATED DIRECTLY OVER COLUMNS OR HEAVY GIRDERS IN THE STRUCTURE OF THE BUILDING. THIS DETAIL CAN BE ADAPTED FOR OTHER USES, SUCH AS SIGN SUPPORTS.

SD-A-15

*MECHANICAL EQUIPMENT STAND DETAIL*

### RAINWATER (B3020.70)

1. Perimeter drainage of roofing with scupper overflow is preferred over interior drains.
2. Where drains are not located at the exterior wall, they shall be at points of maximum deflection of the structural roof deck. Drains shall be located off of centerline to minimize interference with columns, beams and bearing walls.
3. All drains and overflow drains shall be located in a sump.
4. Flash all drains with 4 lb. per square foot sheet lead in addition to the membrane flashing.

### HORIZONTAL (GLAZED) OPENINGS AND GLAZED ROOFS (B3060)

#### **B3060.10 - Roof Windows and Skylights (08 60 00)**

1. Roof penetrations must be a part of and integrate with the building Weather Air Barrier (WAB).
2. All roof opening shall sit on either a roof curb or stem wall. Curbs shall extend a minimum 1'- 0" above the roof surface.
3. Water penetration: Test in accordance with ASTM E331; at a pressure of 8psf, no water shall penetrate to any inside surface.
4. On-site representation from manufacturer during construction
  - a. To assist with unforeseen conditions
  - b. To assist in quality assurance
  - c. To assist with intersections with other systems, i.e., metal wall systems
    - i. All skylight assemblies shall be a thermally broken system.
    - ii. All exterior fasteners in the drainage plan or a ¼" diameter or smaller are to be stainless steel.
    - iii. Horizontal glazing shall be designed for 25 lbs. live load.
    - iv. Finishes:
      - (a) High performance fluoropolymer coating: Comply with AAMA 2605-98
      - (b) Anodized aluminum: Comply with Class I anodizing conforming to AAMA 611-98
      - (c) Powder coating: Comply with AAMA 605.2-90
      - (d) Other high-performance coatings as approved for interior surfaces.

## C. Interiors

### **Construction (C10)**

#### INTERIOR DOORS (C1030)

##### INTERIOR SWINGING DOORS (Body C1030.10)

1. Interior metal doors – 18ga. cold rolled steel. Seamless – tack weld, grind smooth, fill and touch-up paint.

2. Exterior metal doors – 18ga. A60 galvanized. Seamless – tack weld, grind smooth, fill and touch-up paint.
3. Metal doors shall be internally reinforced for surface mounted hardware and cut-out, drilled and tapped to receive mortised hardware.
4. Wood doors shall be 5-ply with engineered core at non-rated and 20 min. openings and Mineral core at 45, 60 and 90 min. rated openings.
5. Wood doors shall be internally reinforced for attachment of hardware.
6. Glass doors must be able to receive an automatic door opener.

#### INTERIOR ACCESS DOORS AND PANELS (C1030.80)

1. No plastic access doors and/or panels.
2. No key access. Access must be possible by hand-actuated quarter turn hardware; removal of multiple screw is also not acceptable.

#### INTERIOR DOOR SUPPLEMENTARY COMPONENTS (C1030.90)

##### **Frames (08 10 00)**

1. Interior hollow metal - 16ga. cold-rolled steel. Continuous face welded, dressed and ground smooth.
2. Exterior hollow metal – 16ga. A60 galvanized. Continuous face welded, dressed and ground smooth.
3. No knock down aluminum door frames.
4. All internal supports for hardware block-outs shall be adequate to support the door.

##### **Glazing (08 80 00)**

1. Vision panels shall be installed in doors intended for frequent use that swing into circulation. They shall be installed at max. 43" AFF.

##### **Hardware (08 71 00)**

1. Construction keying and final keying is by Facility Services.
2. NO narrow style hardware is allowed; medium or wide styles only.
3. Oversized doors are to use wide-style hardware only.
4. NO floor closers and floor hinges at exterior doors.
5. Continuous hinges are to be used at exterior, oversized, and heavily used doors.
6. Out swinging lockable doors shall have NRP hinges.
7. Provide (1) intermediate pivot for every additional 30" of door height over 60".
8. All exterior doors must have bottom latches and strikes. Surface mounted strikes with vertical rods are preferred. No concealed cable rods are permitted on University of Washington buildings.
9. Doors in building separation walls and horizontal exits shall be proprietary. See [Preferred Manufacturer List](#).
10. See [Preferred Manufacturer List](#) for allowed door hardware.

## INTERIOR DOOR STANDARD SPECIFICATIONS (08 71 00)

### 1.01 PRODUCTS

#### A. GENERAL

1. The purpose of this standard is to define Door Hardware requirements for University of Washington Seattle Campus new construction and renovation projects. Deviations for the standards must be requested in writing.

#### B. HINGES

1. Manufacturer: Bommer
2. Acceptable Substitutions: Hager, Stanley
3. Types: Five Knuckle, Flat Button Tips, Square Corners
4. Finish: US32D (BHMA 630) Stain Stainless Steel exterior, US26D (BHMA 652) Interior
5. Pins: Hinges shall have non-removable pins (NRP – Set Screw in Barrel).
6. Provide Anchor Hinges, Bommer BB5034 or BB5036 at Entry Doors, Interior Heavy use Doors such as Gymnasiums.
7. Continuous Hinges: Provide Heavy Duty Continuous Gear Hinges at Aluminum Entries.
8. Electrified Hinges: Provide Concealed 4 Wire Hinges rated for 3.5 amps and 16 amp pulse.

#### C. LOCKSETS

1. Manufacturer and Series: Schlage L9000
2. Acceptable Substitutions: Corbin ML2000 (with approval by UW Lock Shop)
3. Lever and Rose Design: 06B
4. Finish: US32D (BHMA 630) Stain Stainless Steel.
5. Handing shall be factory set. Locks requiring field modification shall have mechanical means of securing the re-handing.
6. Electrified Locksets:
  - a. Provide 24VDC. Maximum continuous current 330mA.
  - b. Provide Storeroom function unless otherwise directed.
  - c. Locks shall be by OEM, or modification by ACSI.

#### D. CYLINDERS

1. Manufacturer: Medeco
2. Acceptable Substitutions: None
3. Types: 6 Pin standard non-interchangeable core. Use Yales style interchangeable core types at Rim and Vertical Exit Device, Removable Mullions, and Key Switches.
4. Finish: US26D (BHMA 626) Stain Chrome Plated

#### E. EXIT DEVICES

1. Manufacturer and Series: Von Duprin 35 and 98
2. Acceptable Substitutions: Corbin ED4000 and ED5000
3. Trim: 996L with 06 Lever Design
4. Dogging: Provide Hex Key Dogging at Non Rated Doors.

5. Limit use of Vertical Rod Type Exit Devices to Main Cross Corridor Doors that are predominantly held open.
6. Finish: US32D (BHMA 630) Stain Stainless Steel
7. Removable Mullions: Provide Key Removable Steel Mullions, Von Duprin KR4954 or 9954. Aluminum Mullions are unacceptable.
8. Furnish Sex Bolts for all Wood Doors.
9. Electrified Devices:
  - a. Electric Latch Retraction shall be Motor Drive Type.
  - b. Power Requirements: 24VDC + 10%. 1 Amp inrush, 400 mA MAX Holding.
  - c. Motor Drive Latch Retraction shall be installed in tested Devices at the factory. Field installed retrofit kits are unacceptable.
  - d. Provide EPT Power Transfers for Electrified Exit Device applications.
  - e. Provide Night Latch Function for Electrified Devices.

#### F. DOOR CLOSERS

1. Manufacturer and Series: LCN 4040XP Series
2. Acceptable Substitutions: Norton 7500 Series
3. Furnish Shoulder Through Bolts for all Wood Doors.
4. Finish: Painted Aluminum (BHMA 689)
5. Furnish Phillip Head Machine Screws for all Hollow Metal Door and Frame applications. Self-drilling and tapping fasteners are unacceptable.
6. Door Closers shall be mounted on room side of Door.
7. Floor Closers are unacceptable.
8. Concealed Overhead Door Closers are unacceptable.

#### G. AUTOMATIC OPERATORS AND ACCESSORIES

1. Manufacturer: Record
2. Acceptable Substitutions: None
3. Series:
  - a. 8100 for exterior, vestibule, service, and cross corridors.
  - b. 6100 for suite entries.
4. Covers shall be secured with mechanical fasteners.
5. Programming ports shall be mounted to be accessible from the exterior of the unit without requiring removal of the cover.
6. Finish: Clear Anodized Aluminum
7. Switches:
  - a. Provide Activation Switches with ADA compliant Logo. Allen wrench concealed mounting fasteners.
  - b. Acceptable Manufacturers: Camden, Larco
8. Coordinate applications at Doors scheduled to receive Card Readers with UW CAAMS.

#### H. KICK, MOP, AND ARMOR PLATES

1. Manufacturer: Trimco

2. Acceptable Substitutions: Hager, Ives
  3. Types: Beveled Four Edges
  4. Finish: US32D (BHMA 630) Stain Stainless Steel
- I. OVERHEAD STOPS
1. Manufacturer: Glynn Johnson
  2. Acceptable Substitutions: ABH
  3. Types: Cast
  4. Finish: US32D (BHMA 630) Stain Stainless Steel
- J. WALL STOPS
1. Manufacturer: Trimco
  2. Acceptable Substitutions: Hager, Ives
  3. Types: Cast 1270CX-SV
  4. Finish: US26D (BHMA 626) Satin Chrome Plated
- K. FLOOR STOPS
1. Manufacturer: Trimco
  2. Acceptable Substitutions: Hager
  3. Types: Cast two screw mounting, Trimco 1215CKU
  4. Finish: US26D (BHMA 626) Satin Chrome Plated
  5. Only use where Wall Stop cannot be used. Do not use where the Stop could create hazardous condition.
- L. PIPE STOPS
1. Manufacturer: Trimco
  2. Acceptable Substitutions: Rockwood
  3. Types: 1209HA
  4. Finish: US32D (BHMA 630) Stain Stainless Steel
- M. PIPE STOP AND HOLDERS
1. Manufacturer: ABH Manufacturing
  2. Acceptable Substitutions: None
  3. Types: 1804
  4. Finish: US32D (BHMA 630) Stain Stainless Steel
  5. Minimize use.
- N. ELECTRO-MAGNETIC WALL HOLDERS
1. Manufacturer: ABH
  2. Acceptable Substitutions: DynaLock, LCN
  3. Types: Recessed, Cast Zinc Housings
  4. Finish: Painted Aluminum (BHMA 689)
  5. Voltage: Holders shall be capable of accepting 24VAC/DC or 120VAC.
  6. Holding Force: 35 lbs.
- O. THRESHOLDS, WEATHERSTRIP, AND SMOKE GASKET
1. Manufacturer: National Guard
  2. Acceptable Substitutions: Reese, Zero

3. Finish: Mill Finish or Clear Anodized Aluminum
4. Provide Thresholds with ¼-20 x 2" Phillips Flat Head Sleeve Anchors.
5. Furnish weatherstrip and gaskets for complete perimeter of opening, including mullions, and astragals. Furnish weatherstrip at sill of four (4) sided frames.

## 1.02 MISCELLANEOUS HARDWARE REQUIREMENTS

- A. Miscellaneous Lock Cylinders: Provide Cylinders, keyed to system, for Elevator Controls. Coordinate Cylinder and Cam types with equipment Elevator Manufacturer.
- B. Provide key cabinets integrated with UW CAAMS for Temp Key issuances. See CAAMS Standard Specifications for key cabinet requirements. Requirements to be agreed with UW Building Access Group.
- C. Key Pad Locksets: Schlage AD200 series, MTK keypad, RHO Trim
- D. Classroom Auditorium Podium Locks: Podium Locks: Provide Schlage Cabinet Locks, model CL-1000PB-E keyway for all Podiums. See drawings for quantities. Coordinate locations, quantities, and installation with Section 06 40 00, Architectural Woodwork.
- E. Provide door closures on all doors leading to non-public spaces like mechanical and electrical rooms to help ensure that doors are not inadvertently left open.

## 1.03 KEYING

- A. All Keyed products specified under this Section shall be keyed to the existing Medeco 3 Key System.
- B. Provide Construction Cylinders and Keys during the construction period.
- C. The Door Hardware/ Cylinder Supplier shall meet with the Owner to prepare the permanent keying schedule.
  1. Provide a completed door/room/hardware/cylinder data spreadsheet as provided by the UW Lock Shop, including out of main scope doors.
  2. All UW building cylinders shall be included – coordinate door hardware/cylinder/keying in one spreadsheet.
  3. Coordinate Owner/UW keying meetings 12 weeks before Cylinders are required for installation.
- D. UW Lock Shop shall be responsible for:
  1. Developing keying system based on Owner/operational needs.
  2. Providing all instructions to the factory.
  3. Transmitting all keying system data to the manufacturer.
  4. Receiving and testing all cut keys and cylinders from the factory. Transmitting all cylinders to the General Contractor to coordinate installation.
  5. Distributing Keys and key records to the Owner.
  6. Temporary check out of installation Key Rings to the installer
  7. Issuing all keys to operational and support groups including but not limited to UWPD, Campus Ops, Maintenance Zone, Fire Alarm Shop, Building Coordinator, and Building Services.
  8. Developing and maintaining Key Records.
- E. The General Contractor shall be responsible for:

1. The installation of all cylinders and security of all Permanent Key System keys checked out during the installation and job close out and punchlist phase of the project.
- F. The Permanent Cylinders, Change Keys, and Control Keys, prepared according to the approved keying schedule, shall be transmitted directly from the lock manufacturer via traceable carrier to the UW Lock Shop.
- G. Key Stamping:
  1. Coined "Do Not Duplicate"
  2. Coined with Registry Number
  3. Stamped Key Number
  4. Stamped Sub/Issue Number

#### **1.04 APPLICATION NOTES**

- A. Lockset and Exit Device Functions:
  1. Classroom Locksets: Double Cylinder locking, Schlage L9071
  2. Office Locksets: Schlage L9050
  3. Interior Privacy Locksets: L9040 with Occupancy Indicator L283-722
  4. Corridor Multiple Occupancy Restrooms: Classroom Deadlock L463
- B. Wall, Floor, and Overhead Stops:
  1. Minimize use of Overhead Stops.
  2. Wall Stops are the preferred application.
  3. Use Floor Stops where Wall Stop cannot be used. Do not use where the Stop could create a hazardous condition.
  4. Stops should be located no more than 1/3 Door width from the latch edge of the Door.
- C. Automatic Flush Bolts: Use of Automatic Flush Bolts is unacceptable. Review applications that require use of Automatic Flush Bolts for possible alternatives.
- D. Doors:
  1. Restrict Doors to commons sizes for ease of replacement and repair. Review use of Doors over 8'-0" height with UW Carpentry Shop.
  2. Glass Door Hardware to be approved by Building Access Group during design.

#### **SUSPENDED CEILING CONSTRUCTION (C1070)**

##### **C1070.10 - Acoustical suspended Ceilings (09 51 00)**

1. NO spline ceilings.
2. T-bar grid to be a standard 1" in width.
3. No fiberglass batt insulation at removable ceilings.
4. Porous ceilings (tiles and/or systems) are not to be used in 'wet', clean, or sterile applications.

## Finishes (C20)

### WALL FINISHES (C2010)

#### **Painting and Coating (C2010.70)**

1. All interior finishes shall be low VOC.
2. Clean pipe, conduit, and similar features before applying paint or other finishing materials.
3. NO painted galvanized.
4. NO 'cold' or spray-on galvanizing.
5. Do not cover or paint any signs, labels, identification, etc. If covered or painted, the contractor is required to replace items.
6. Finishing of exposed Mechanical and Electrical Equipment:
  - a. Prime and paint exposed pipes, conduit, boxes, ducts, hangers, brackets, collars and supports, except where items are shop finished or insulated.
  - b. Paint interior exposed conduit and electrical equipment except in mechanical rooms. Galvanized conduit must be pickled, primed, and receive 2 finish coats.
  - c. When painting ventilation grills, access panels, etc., remove item(s) and paint separately.
7. Exterior metal accessories:
  - a. Galvanized when accessories are poured in place and/or not removable for refinishing.

#### **Wall Finish Supplementary Components (C2010.90)**

1. Wall (e.g. wall guards, chair rails, etc.) and corner protection must be installed in all public areas.

### FLOORING (C2030)

#### **Flooring Treatment (C2030.10)**

1. All floor finishes shall have a dry static Coefficient of Friction (COF) of 0.6 on any flat or horizontal surfaces both wet and dry. All inclined or ramp areas shall have a COF of 0.8, as tested using the ASTM C1028.
2. Polished concrete in public areas is preferred.
3. The number of transitions from hard to soft flooring is to be minimized.
4. All concrete slabs are to be sealed unless concrete is polished or receives additional floor coverings.

## D. Services

### Plumbing (D20)

#### DOMESTIC WATER DISTRIBUTION

##### **D2010.60 – Plumbing Fixtures (22 44 00)**

1. Drinking Fountains and Water Coolers
  - a. All new drinking fountains shall have water bottle filling capabilities.
  - b. When bi-level drinking fountains are installed, the bottle filling station shall be installed on the lower unit.
  - c. See the Mechanical section of the [Preferred Manufacturer List](#) for manufacturer requirements.

## E. Site Work

### Site Improvements (G20)

#### PEDESTRIAN PLAZAS AND WALKWAYS (G2030)

##### **G2030.10 - Pedestrian Pavement**

1. Acid-etched and/or sandblasted finishes are not allowed on walking surfaces.
2. No sealant between concrete sections in site paving. Use 3/8" asphalt impregnated fiber expansion joint filler.

##### **G2030.40 - Tactile Warning Surface (32 17 26)**

1. Tactile warning surfaces for sidewalks leading up to a vehicular roadway or route shall be "white".