

# UCDH FACILITY STANDARDS ARCHITECTURAL

## SUMMARY OF UPDATES

### **Precast Architectural Concrete – 03 45 00**

1. Added item A.3 to define design standard for quality. (04/02/24)

### **Metal Fabrications – 05 50 00**

1. Added A.3 and A.4 to define general locations for coated (galvanized) and uncoated steel. (04/02/24)
2. Added A.5 and A.6 to define standard for material quality. (04/02/24)

### **Metal Stairs – 05 51 00**

1. Added A.10 and A.11 to define general locations for coated (galvanized) and uncoated steel. (04/02/24)

### **Architectural Woodwork – 06 40 00**

1. Added A.1.a to define requirements related to gaps with modular systems furniture. (04/02/24)
2. Added A.2.a to define edge banding requirements. (04/02/24)
3. Added B and all subsections of B to define requirements for cabinets. (04/02/24)
  - a. Subsections 1 & 2.
  - b. Subsections 3 & 4.
3. Added C and all subsections of C to define requirements for countertops. (04/02/24)
4. Added D and all subsections of D to define requirements for decorative paneling. (04/02/24)

### **Thermal & Moisture Protection – 07 00 00**

1. Added A.2 to define preference for roof access. (04/02/24)

### **Thermoplastic Membrane Roofing – 07 54 00**

1. Added language to A.1 to define physical properties of the roofing membrane. (04/02/24)

### **Flashing & Sheet Metal – 07 60 00**

1. Added B to define requirements for copings and roof edge flashings. (04/02/24)

### **Specialty Doors and Frames – 08 30 00**

1. Added D and all subsections of D to define requirements and locations for barn-type sliding doors.

### **Entrances, Storefronts and Curtain Walls – 08 40 00**

1. Added F and all subsections of F to define energy performance requirements. (04/02/24)

### **Automatic Entrances – 08 42 29**

2. Revised language in A.1 to define where automatic entrances shall be provided. (04/02/24)
3. Added A.2 to define a manufacturer. (04/02/24)

### **Aluminum Windows – 08 51 13**

1. Added language to A.1 to clarify the type of finish. (04/02/24)

**Door Hardware – 08 71 00**

1. Added C.1 and all subsections of C.1 to define a manufacturer and products as well as related requirements. (04/02/24)
2. Added D.1 to define a manufacturer and product as well as related requirements. (04/02/24)
3. Added K.1 to define a manufacturer. (04/02/24)

**Finishes – 09 00 00**

1. Added A to provide an overview of finish requirements. (04/02/24)
2. Added language to B.1 to clarify requirements. (04/02/24)
3. Added B.3 to provide requirements related to light. (04/02/24)
4. Added B.6 and all subsections of B.6 to provide requirements related to reviewing materials and finishes and with what parties they are to be reviewed. (04/02/24)

**Cement Plastering – 09 24 00**

1. Added C, D, E, F, and G to define standard for material quality. (04/02/24)

**Gypsum Board – 09 29 00**

1. Added A to define locations for water-resistant gypsum board. (04/02/24)
2. Added B to define locations for cementitious backing board. (04/02/24)
3. Added D to define locations for wall protection. (04/02/24)
4. Added E and all subsections of E to define requirements of low-height walls. (04/02/24)

**Tiling – 09 30 00**

1. Added A.1 – A1.8 to define requirements for tiling. (04/02/24)

**Acoustical Ceilings – 09 51 00**

1. Added A and all subsections of A to define general requirements. (04/02/24)
2. Added B and all subsections of B to define code and design standard requirements. (04/02/24)

**Resilient Flooring – 09 65 00**

1. Added A.1 to define requirements related to sustainability. (04/02/24)
2. Added A.2 to clarify requirements related to slips, trips, and falls. (04/02/24)
3. Revised A.8 to clarify where to use quick set or peel and stick adhesive. (04/02/24)
4. Added B and all subsections of B to define requirements for resilient sheet flooring. (04/02/24)
5. Added C and all subsections of C to define requirements for resilient tile flooring. (04/02/24)

**Resilient Flooring Accessories – 09 65 13**

1. Revised A to clarify approval for thermoplastic vinyl (TV) base. (04/02/24)
2. Added A.2.a to define areas to receive coved base. (04/02/24)
3. Added A.3.a to clarify when quick set or peel and stick adhesive may be used. (04/02/24)

**Fluid-Applied Flooring – 09 67 00**

1. Added A.1 to clarify when fluid-applied resinous flooring may be used. (04/02/24)

**Carpeting – 09 68 00**

1. Added A.1 to clarify when broadloom carpet may be used. (04/02/24)
2. Added B and all subsections of B to clarify where walk-off carpet is to be used and provide requirements. (04/02/24)

**Painting and Coatings – 09 90 00**

1. Added A.5 to define a manufacturer. (04/02/24)

**Toilet Compartments – 10 21 13**

1. Revised A to clarify compartment material. (04/02/24)

**Cubicle Curtains and Tracks – 10 21 23**

1. Added B to define material requirements. (04/02/24)

**Lockers – 10 51 00**

1. Revised A to clarify material requirement. (04/02/24)
2. Added B to clarify requirement for sloped tops. (04/02/24)

**Countertops – 12 36 00**

1. Added A.1 and A.2 to define standards for material quality. (04/02/24)

**Entrance Floor Mats and Frames – 12 48 13**

3. Added B to reference related requirements. (04/02/24)

**Furniture – 12 50 00**

1. Added B and all subsections of B to clarify procurement and acceptable manufacturers. (04/02/24)
2. Added C to clarify design flow. (04/02/24)
3. Revised D to clarify with whom the coordination is required. (04/02/24)

**Basis of Design (Or Equal) Products (Architectural) – Appendix B**

1. Added in its entirety. (04/02/24)
2. Attachment added in its entirety. (04/02/24)

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**HAZARDOUS MATERIAL ASSESSMENT**

**02 26 00**

**A. GENERAL**

1. The University Representative can provide the most updated and/or project specific lead and asbestos abatement requirements, if any. Any variation from UC Davis Health’s Standard Specifications must be reviewed and approved by UC Davis Health Environmental Health & Safety (EH&S). Records must be maintained for addressing protocols, monitoring, record keeping and manifesting of the waste.
2. Numerous other hazardous materials are found on the UC Davis Health campus and will be identified and addressed by the University Representative. These may be chemical, radiological, or biological and include, but are not limited to: mercury found in traps, drains and sumps and fluorescent light tubes; PCBs found in light ballasts, transformers, freons found in refrigerators and other refrigeration units, batteries found in smoke alarms and radioactivity found in exit signs, smoke detectors and as potential contamination in labs, radon, etc.
3. Prior to any significant earthmoving or grading activities, soil sampling shall be conducted by a third party to determine if naturally occurring asbestos (NOA) is present. Review Division 01 for specific sampling requirements. The sampling may take place at the same time as the geotechnical work, if required. If NOA is found at the site by method CARB 435, all site work must be conducted in accordance with the California’s Air Resources Board’s Asbestos Airborne Toxic Control Measure (ATCM) standards. Results shall be provided to the University Representative.
4. All hazardous materials must be disposed of in strict accordance with Federal, State, and UC Davis Health disposal requirements. Refer to project specific Geotechnical Report and Division 01.

**DEMOLITION**

**02 41 00**

**A. GENERAL**

1. When demolishing buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. Coordinate with the university representative for all demolition projects located in areas with highly sensitive air quality or infection control requirements.

**CONCRETE GENERAL**

**03 00 00**

**A. CONCRETE FINISHES**

1. Concrete finishes are reviewed on a project-by-project basis for quality and visual consistency. UC Davis Health seeks designs that unify UC Davis Health campus ‘neighborhoods’ in visual character and intuitive way- finding. The consistency of finishes and visual relationship to adjacent buildings are reviewed for contextual appropriateness.
  - a. Interior and exterior architectural concrete at locations where appearance is prominent, requires formwork design submittals and material mock-ups for review and approval by the University Representative.
  - b. Forms that are to be reused shall be carefully inspected after each use to ensure that they have not become damaged, distorted, disassembled, or otherwise be unable to perform as designed. Concrete forms and formwork shall remain leak-proof for each use.

**B. QUALITY ASSURANCE**

1. A quality assurance program shall be developed and implemented in accordance with the requirements of the CBC.

C. PROJECT CONDITIONS: Reference ACI (American Concrete Institute) standards

1. Hot-weather concreting that includes production, delivery, placement, curing and protection of concrete shall be in accordance with ACI 305.
2. Cold-weather concreting that includes production, delivery, placing, curing and protection of concrete shall be in accordance with ACI 306.
  - a. Use of calcium chloride as an accelerating admixture is prohibited.
3. Method of concrete curing shall be in accordance with ACI 308 and based upon the type of floor finishes and environmental conditions.
  - a. Curing compounds shall not be used on surfaces that are meant to receive additional concrete, paint, or tile that requires a positive bond, unless it has been demonstrated that the membrane can be satisfactorily removed before the subsequent application is made, or that the membrane can serve satisfactorily as a base for the later application.
  - b. Where finished flooring is to be installed over the curing compound, the Contractor shall test the compatibility of the mastic/adhesive from the flooring with the curing compound prior to applying the curing compound.
  - c. Items described above shall not be subjected to rusting or other deterioration.

D. SLABS ON GRADE

1. Excessive moisture in concrete can cause adhesion problems with flooring materials installed over concrete slabs, especially slabs on grade. Implement precautionary moisture control measures to ensure there will not be adhesion problems, deterioration, or other conditions that will limit the expected life span of the flooring or void the material and installation warranties or the warranties of adjacent installations.
2. At interior slabs to receive flooring, provide a minimum 15 mil under-slab vapor barrier. Project specific requirements may supersede or require greater moisture mitigation measures.
3. Review the geotechnical soils report for each project and confirm recommendations.

E. DESIGN OF FLOOR SLABS IN WET AREAS

1. In restrooms, showers, locker rooms, mechanical rooms above the first floor, or other areas subject to flooding or wash down, slabs shall be constructed with integral 6" curbs at perimeter and interior walls. Integral waterproofing system required unless otherwise approved by the University Representative.

F. WET LABS

1. Wet labs shall be provided with sleeves that extend 4" above the floor to prevent the migration of water down to the floors or under the slab on grade. Sleeves shall be sealed watertight.

**CAST-IN-PLACE CONCRETE**

**03 30 00**

A. GENERAL REQUIREMENTS

1. Concrete shall be designed and detailed to meet all applicable CBC requirements, including requirements for structural strength, stability, short- and long-term deformation and fire resistance.
2. Concrete elements shall also be designed for serviceability, including specific consideration of long-term deformations, crack control, durability of both concrete materials and other building components embedded in or in contact with concrete materials and vibration.

3. Concrete used in buildings, including slabs-on-grade, shall have a minimum compressive strength, (f'c) of at least 3,000 psi at 28 days. Higher strength concretes are permitted.
4. Concrete floors shall be designed to provide satisfactory vibration performance for each space type to achieve optimum performance for both occupant comfort and the operation of vibration - sensitive equipment, where applicable. Vibration performance shall be reviewed and confirmed in early design phases.
5. Concrete roof slabs, including concrete slabs placed on metal deck, shall be designed to support the weight and seismic mass of one (1) re-roofing without removal of the original roofing.
6. Concrete roof slabs, including concrete slabs placed on metal deck, shall be designed to support the weight and seismic mass of a rooftop photovoltaic array in all areas of the roof not occupied by other equipment of rooftop structures.
7. Clearly indicate requirements for crack control joints or other crack control measures in all concrete construction following recommendations by the American Concrete Institute (ACI), the Concrete Reinforcing Steel Institute, and other relevant industry standards.
8. Avoid thin concrete sections and unreinforced projections that could crack or spall over time. All concrete sections shall be reinforced.
9. Show all slab openings, depressions, curbs, and pads on structural drawings, clearly indicating reinforcing requirements and provisions for maintaining minimum structural section depth at all locations.
10. Show openings and penetrations through concrete walls and through or below concrete footings on structural drawings. Include locations of penetrations for pipes, conduits, ducts and other building components on drawings.
11. Provide requirements for shoring, reshoring, concrete pour joints and pour sequencing at all locations where these construction means and methods affect the short- or long-term structural performance or finished aesthetics of the construction.
12. Provide structural details that include scaled representations of all reinforcing steel including rebar configurations and other embedded items in enough detail to ensure constructability of the element including consideration of at least the following: constructability of formwork, flow of wet concrete through rebar and other embedded items.
13. Concrete placed in contact with soil shall be designed and specified for long -term durability in consideration of such soil-related effects as sulfate exposure, permeability of concrete, corrosivity and expansion potential of soils.

**PRECAST ARCHITECTURAL CONCRETE**

**03 45 00**

**A. GENERAL**

1. Precast concrete may be used for exterior walls and other areas if approved by the University Representative. Construction of precast concrete will require tight tolerances to be maintained and double waterproofing at joints and seams. Mockup of precast panels shall be approved at the plant where the panel is manufactured.
2. Precast architectural concrete elements and their anchorage to the building frame or foundation shall be designed by a licensed California Structural Engineer considering all gravity and environmental loads. Should this design be performed by an engineer other than the Structural Engineer of Record (SEOR) of the building, the SEOR shall review all pre-cast concrete details and calculations for conformance with the design intent, including loads imposed on the structure, deformation compatibility (both vertical and lateral) with the structure, and coordination between precast elements, their connections and other structural and non- structural building components.

3. Precast architectural elements that are attached at more than one floor level or that attach to other building elements, including other pre-cast concrete elements shall be designed to accommodate the maximum inter-story displacement between floors. This requirement applies to both vertical (gravity) deflection and lateral (seismic and/or wind) drift between floors.
4. Design Standards: Comply with ACI 318 (ACI 318M) and design recommendations of PCI MNL 120, PCI Design Handbook - Precast and Prestressed Concrete, applicable to types of architectural precast concrete units indicated.

**MASONRY**

**04 00 00**

**A. GENERAL**

1. For masonry finishes, where masonry is exposed to the exterior, utilize integral water-repellent admixtures in lieu of surface applied sealers. Use graffiti -resistant coatings where feasible to protect exposed finishes. Verify requirement for graffiti-resistant coating with the University Representative prior to specifying.
2. Seal exposed masonry and control joints inside and out before additional wall finish materials are applied. Pretest all surface-applied sealants and coatings by mock-up when integral mixtures are not used.

**B. PROTECTION AND STORAGE DURING CONSTRUCTION**

1. Protect all masonry materials including packaged mortar materials, sand, and related materials from weather conditions such as rain, snow, ice, etc. All materials for any project shall be kept in a manner consistent with the manufacturers' requirements and warranties.
2. Protect unfinished masonry from the elements a minimum of two feet on all sides. Do not apply construction loads that exceed the safe superimposed load capacity of the masonry.

**C. QUALITY ASSURANCE**

1. A quality assurance program shall be developed and implemented in accordance with the requirements of the CBC.
2. Establishment of the required compressive strength (f'm) of masonry shall be in accordance with CBC.

**D. GROUTED MASONRY**

1. All cells in the masonry units shall be fully grouted. Prior to grouting, clear the masonry cells of extraneous materials, mortar projections greater than ¼ inch, mortar droppings and other foreign materials.
2. Low-lift and high-lift grouting construction shall be in accordance with the CBC. High-lift grouting has the potential for block blow-out during grouting. Repair all blowouts during grouting procedures.

**E. EMBEDDED CONDUITS, PIPES AND SLEEVES**

3. Conduits, pipes, and sleeves of any material to be embedded in masonry shall be compatible with masonry and meet the following requirements.
  - a. Design shall consider the structural effects resulting from the removal of masonry to allow for the placement of pipes or conduits and shall not displace more than 2% of the net cross section.

- b. Conduits, pipes, and sleeves in masonry shall be no closer than three (3) diameters on center.
- c. Do not embed pipes that contain liquid, gas, or vapor at temperatures greater than 150 degrees F, water or liquids that are subject to freezing, or under pressure in excess of 55 psi. Do not embed any pipes that may require future maintenance or reconfiguration.

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**F. PROJECT CONDITIONS**

1. When ambient air temperature is below 40 degrees F, implement cold weather procedures in ACI (American Concrete Institute) 530.
2. When ambient air temperature exceeds 100 degrees F or exceeds 90 degrees F with a wind velocity greater than 8 mph, implement hot weather construction as instructed by ACI 350.

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**CONCRETE UNIT MASONRY****04 22 00**

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**A. GENERAL**

1. Where CMU is exposed to view, utilize integral admixtures for water resistance, graffiti resistance, etc. Verify requirement for graffiti-resistant coating with the University Representative prior to specifying.
2. Design and detail CMU to meet all applicable CBC requirements, including requirements for structural strength, stability, short- and long-term deformation, and fire resistance. Design CMU for serviceability, including specific consideration of crack control, and durability of both CMU wall materials and other building components embedded in or in contact with the CMU walls.
3. CMU wall and wall opening dimensions shall be multiples of base CMU block unit dimensions to minimize cut masonry material, to the greatest extent possible.
4. Clearly indicate requirements for expansion joints, crack control joints or other crack control measures in all building and site CMU wall construction following recommendations by the American Concrete Institute, the Concrete Reinforcing Steel Institute, The Masonry Society, The Concrete Masonry Association of California and Nevada and other relevant industry standards.
5. Show all openings and penetrations through CMU walls on structural drawings. Include locations of penetrations for pipes, conduits, ducts, and other building components.
6. Maximum reinforcing bar size in CMU construction shall be #8.
7. All cells in CMU construction shall be fully grouted.

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**MASONRY VENEER****04 26 00**

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**A. GENERAL**

1. Masonry Veneer require Water/Graffiti Resistance
  - a. Where concrete facing brick is exposed to view, utilize integral admixtures for water resistance, graffiti resistance, etc.
  - b. Where face brick is exposed to view, utilize compatible topical coatings for water resistance, graffiti resistance, etc.
2. Masonry wall and wall opening dimensions shall be multiples of base masonry unit dimensions to minimize cut masonry material to the greatest extent possible.
3. Clearly indicate requirements for expansion joints, crack control joints or other crack control measures in all building and site masonry wall construction following recommendations of the Brick Industry Association (BIA) and other relevant industry standards.



4. Show all openings and penetrations through masonry walls on structural drawings. Include locations of penetrations for pipes, conduits, ducts, and other building components.
5. Masonry
  - a. Standard: Comply with TMS 602, except as modified by project requirements.
  - b. Defective Units: Do not use defective units that comply with referenced standards where such defects will be exposed in the completed work.
6. Adjustable Masonry-Veneer Anchors: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
7. Do not use calcium chloride in mortar or grout.

**METALS**

**05 00 00**

**A. GENERAL**

1. Metal fabrications are required to be detailed and coordinated with adjacent materials to ensure installation does not have long-term maintenance requirements. Steel may be exposed when approved by the University Representative.
2. All metals exposed to an exterior environment (including prefabricated items such as steel doors or stairs) require a protective finish coating. Exposed metals may be either factory- finished with a corrosion and sulfate-resistant finish, stainless steel, hot-dip galvanized, or finished with a high-performance coating.
3. Architecturally Exposed Structural Steel (AESS) compliant mockup is required for all projects. The University Representative has the right to waive this requirement for smaller scopes of work as desired.
4. Interior metal shall be primed painted to a minimum thin-film thickness of two mills unless described in the respective project as unpainted. Some members or portions thereof may be designated as unpainted. Examples may represent metal that will be in contact and acting compositely with concrete and / or members that are to receive spray-applied fire protection materials.
5. All materials shall be identified with appropriate ASTM designations and fabricator’s identification mark. Materials without minimum specification, or under a specification that is less rigorous than the applicable ASTM standard or without certified mill test reports shall not be used without the approval of the University Representative.

**B. QUALITY CONTROL**

1. Quality assurance program shall be developed and implemented in accordance with the requirements of the California Building Code.

**STRUCTURAL STEEL FRAMING**

**05 12 00**

**A. GENERAL**

1. Structural steel shall be designed and detailed to meet all applicable C.B.C. requirements including but not limited to requirements for strength, stability, deformation, and fire resistance. Steel systems shall also be designed for serviceability, including specific consideration of deflection, durability, and vibration.
2. Steel framed floors shall be designed to meet the vibration requirements for occupant comfort as described in Design Guide 11, latest edition, published by the American Institute of Steel Construction (AISC) as a minimum standard requirement. More stringent performance requirements shall be

determined as needed per project-by-project type and specifically related to vibrationally-sensitive equipment requirements.

3. Steel-framed roofs shall be designed to support the weight and seismic mass of one re-roofing without removal of original roofing.
4. Steel-framed roofs shall be designed to support the weight and seismic mass of a rooftop photovoltaic array in all areas of the roof not occupied by other equipment or rooftop structures.
5. Steel framing supporting concrete-filled metal decks shall be designed to accommodate any excess weight or mass caused by over-pouring as may be needed to provide a slab meeting the project floor flatness and levelness requirements, taking into account deck and supporting beam pre-composite deflections and beam camber.
6. Structures shall be designed to accommodate the dimensional changes of steel material caused by temperature changes.
7. Exterior steel elements shall specify a material thickness of at least 1/4”.
8. All details that include connections of steel to other materials shall include provision for field adjustment or leveling, including but not limited to base plate connections to foundations and steel beam/ledger connections to concrete and masonry walls.

**METAL DECKING**

**05 30 00**

**A. GENERAL**

1. As standard use minimum 18-gauge deck.
2. Metal decking below concrete slabs shall be vented to promote consistent concrete curing.
3. Metal deck supported concrete slabs shall be designed to accommodate any excess weight or mass caused by over-pouring as may be needed to provide a slab meeting the project floor flatness and levelness requirements, taking into account deck and supporting beam pre-composite deflections.
4. Acoustical metal deck may be considered in exposed conditions when there is an acoustical concern. The specific type of deck shall be determined by the Acoustical Engineer to meet project requirements and approved by the University Representative.
5. Coordinate openings in metal decking with each design discipline. The cutting and reinforcing of openings will require SEOR review and confirmation adjacent areas are not negatively affected. Reinforcement executed by welding will need to comply with the American Welding Society (AWS) current requirements.
6. Requested modifications or any deviations of any metal decking originally specified for a project, such as vented decks, needs to be brought to the attention and reviewed by the SEOR and approved by the University Representative.

**STRUCTURAL METAL STUD FRAMING**

**05 41 00**

**A. GENERAL**

1. Provide metal stud types designed for screw application of gypsum wallboard. Studs shall be fabricated by a manufacturer that belongs to the Steel Stud Manufacturers Association (SSMA) and shall meet requirements of the latest edition of the International Code Council Evaluation Service (ICC-ES) Evaluation Report #3064P.

**B. METAL STUDS**

1. Provide ASTM C645, non-load bearing type with punched webs; roll formed electro galvanized steel sheet in the following minimum gages:
2. 20ga (33 mil) typical framing (non-OSHPD projects).
3. 16ga (54 mil) typical framing (OSHPD projects).
4. 16ga (54 mil) for king and trimmer studs at door/window openings and wing wall ends.

**METAL FABRICATIONS**

**05 50 00**

**A. GENERAL**

1. All provided metal fabrications will need to comply with the current C.B.C. and ASTM specifications applicable to these fabrications. Laboratory test results will need to be provided to confirm compliance with each project's specifications. All steel grades will need to be reviewed and confirmed for each project and for each use type. Steel tubing, piping, bolts, bars and woven wire meshes may require galvanization prior to installation. Field cut edges will need treatment applied if protective coatings are damaged or removed by the field installation process.
2. Dissimilar metals will need separation when in contact or in close proximity to non-compatible metals. Anchor bolts that fasten through metal fabrications shall be stainless steel.
3. Exterior Fabrications: Hot-dip galvanized steel, shop primed.
4. Interior Fabrications: Ferrous steel, shop primed.
5. Stainless Steel: Type 304. Type 316 for corrosive environments.
6. Aluminum: Alloy 6061-T6.

**METAL STAIRS**

**05 51 00**

**A. GENERAL**

1. Design by SEOR or review by SEOR for compliance to design loads for all interior monumental stairs.
2. Standard is metal stair fabrication with concrete-filled pan treads. Stair design and fabrications are both functional and aesthetic. Designs should create a "finished" appearance, to encourage use of all stairways serving the public (including egress stairs).
3. At a minimum, all soffits at stairs and landings shall conform to current code-required vertical clearances to the bottom of the finished soffit. Exposed metal fabrication is discouraged. Use of metal treads is NOT permitted, unless approved by the University Representative due to special circumstances for non-public use. Special focus should be paid to adequate coefficient of friction for safe walking surface.
4. Provide contrasting strip at EVERY tread, on exterior stairs to assist in visual acuity for navigating risers. UC Davis Health has standardized contrasting risers, regardless of stair type or location (applies to indoors, outdoors, public, private and egress stairs).
5. Coordinate floor finishes to extend from adjacent service area into landing at each stair. Provide finished materials at stairwells.
6. Stair design to comply with current C.B.C. requirements. The preferred rise and tread combinations are (6 1/2", 11 5/8") and (6 3/4", 11 1/4").
7. Stair fabrications require shop drawing review.

8. Provide at least one stairwell up to a roof containing air handling units, pumps, boilers, large exhaust fans and other equipment. (Ships ladders are not acceptable, unless approved by the University Representative under special circumstances).
9. Walkway canopies, handrails, guardrails, and similar assemblies should discourage climbing, skateboarding, roller-blading and similar nuisance activities.
10. Exterior Fabrications: Hot-dip galvanized steel, shop primed.
11. Interior Fabrications: Ferrous steel, shop primed.

**METAL RAILINGS**

**05 52 00**

**A. GENERAL**

1. Exterior guardrails and handrails shall be stainless steel or hot dipped galvanized steel with bolted connections. For both stainless steel and hot dipped galvanized, use SS316 bolts and mechanical fasteners at railing connections. Painted finishes are discouraged, as they do not stand up to heavy use and require regular ongoing maintenance. Interior handrails may be stainless or have a painted finish, with the approval from the University Representative.
2. Nonwelded connections that use mechanical fasteners require fasteners to be of the same metal and finish as the railings. Material compatibility is required for supporting brackets, flanges, fittings, anchors, and inserts. When selecting non-welded fasteners, special attention to dissimilar metals is required. Where possible, use fasteners of the same material as metal fabrication, stainless steel, or provide neoprene separation between dissimilar metals.
3. Where railings are sheared or punched, surfaces shall be cleaned, and edges eased to a radius of 1/32.” Design weep holes and water-directing devices into the system to prevent entrapment of water in assemblies.

**B. HANDRAIL EXTENSION MEASUREMENT**

1. Handrail extension, whether top of stair or bottom of stair shall be measured to the near side / inside material diameter to handrail extension material thickness meets or exceeds code minimum extension relative to stair tread.

**C. GRAB BAR SIZE**

1. When selecting and documenting grab bars, provide the next longer size, particularly at side reach, to ensure that code minimum reach range are met (for example in lieu of 42” select 48”).

**WOOD, PLASTICS AND COMPOSITES**

**06 00 00**

**A. GENERAL**

1. Use of wood in UC Davis Health buildings is generally limited to casework and rough carpentry. Due to the lack of durability and a high degree of maintenance involved with exterior uses, wood is discouraged for most project types on the UC Davis Health campus.
  - a. Engineered wood systems can be considered for strategies to reduce embodied carbon footprint in new construction.
  - b. CLT or panelized wood systems will be considered on a project-specific basis for appropriateness and with approval from the University Representative.
2. Provide wood products conforming to the Forest Stewardship Council Guidelines for certified wood building components.

3. For use in building interiors, composite wood and agrifiber products (including core materials) shall not contain added urea formaldehyde resins. Adhesives used in field and shop-fabricated assemblies containing these products shall not contain urea-formaldehyde.

**ROUGH CARPENTRY**

**06 10 00**

A. GENERAL

1. Form release agents used on wood concrete forms shall be biodegradable to enable the wood to be recycled.
2. Provide preservative-treated wood in conjunction with roofing (nailers, curbs, etc.) and for any wood in contact with masonry, cement, or the earth. Provide material safety data sheets for all wood preservative for review and approval by the University Representative and EH&S.
3. Provide plywood backboards with a minimum 3/4" fire treated CDX for all wall-mounted boxes and boards in mechanical or electrical rooms. Alternate support details for boxes and boards will be considered on a project-by-project basis and with approval by the University Representative. Each project will need to confirm use of rough carpentry for compliance of each project's construction type.
4. Provide products that have Health Product Declaration (HPDs) and Environmental Product Declarations (EPDs) available.
5. Wood construction used to support structural loads shall be designed and detailed to meet all applicable structural provisions of the CBC including all requirements for strength, stability, short- and long-term deformation, and fire resistance. Wood elements shall also be designed for serviceability, including specific consideration of durability wood and connector materials.
6. Lumber grading rules and wood species shall conform to Product Standard PS – 20 -70 and West Coast Lumber Inspection Bureau (WCLIB) requirements.
7. Wood-framed roofs shall be designed to support the weight and seismic mass of one re-roofing without removal of the original roofing.
8. Wood-framed roofs shall be designed to support the weight and seismic mass of a rooftop photovoltaic array in all areas of the roof not occupied by equipment or other rooftop structures.
9. Wood stud walls and partitions adjacent to shower or toilet rooms or a room with other similar sources of water shall bear on concrete curbs extending at least 6" above finished floor.
10. Exterior wood walls shall bear on concrete curbs extending at least 6" above finished floor.
11. Use 6" minimum nominal framing for all structural wood stud walls.
12. Provide specific details to describe the conditions that allow wood studs and plates to be notched or cored for piping and conduit within walls.

**FINISH CARPENTRY**

**06 20 00**

A. GENERAL

1. Materials, workmanship, and installation shall be "Premium Grade" in accordance with Woodwork Institute's Architectural Woodwork Standards, current edition.
2. Wood fabricated from old growth timber is not permitted. Provide sustainably harvested wood, certified or labeled.
3. Where feasible, shop finish carpentry and casework fabrication, rather than site finish.
4. Wood shall be pressure-treated and/or fire-resistant, where required by CBC or other applicable codes.

5. Avoid wood finishes in locations that are subject to high traffic, or impact damage.

**ARCHITECTURAL WOODWORK**

**06 40 00**

**A. GENERAL**

1. The UC Davis Health encourages the use of modularity and systems furniture in place of built-in casework for uses such as nurses’ stations, reception desks, etc. The flexibility and reconfiguration possible by use of modular design allows adaptability as space needs and workflow changes.
  - a. When utilizing modular systems furniture within patient care settings, gaps between furniture systems and flooring are not acceptable and shall be mitigated.
2. For built-in woodwork, materials, workmanship, and installation shall be “Premium Grade” in accordance with Woodwork Institute’s Architectural Woodwork Standards, current edition.
  - a. Specify polyvinyl chloride-free edge band products, when possible, for furniture and casework. Verify minimum yardage requirements with the vendor.

**B. CABINETS**

1. Cabinets shall be made of moisture resistant particle board panels with NAF, MR10 rating.
  - a. Custom Grade is acceptable but only with UCDH prior approval.
  - b. Melamine interior is acceptable
2. Upper cabinets shall have sloped top when ceiling height is over 18” above cabinet.
3. Base Cabinets:
  - a. Drawer slides have a capacity of 150 lbs. preferred.
  - b. Loose toe kicks with plywood bases will be used.
    - 1) Provide a 4-inch, top-set resilient base where casework meet the floor and at the casework toe space. Always provide a toe space where standing or queuing occurs.
      - a) As required per code or operations, provide a 6-inch base.
  - c. At sink locations, cabinet to have a sloped skirt for accessibility.
4. Hardware:
  - a. Self-closing hardware. A magnet catch is not required.
    - 1) Manufacturer: Blum or equal.
  - b. Exposed hardware finish to be Satin Stainless Steel.
  - c. Shelf rests/clips shall be plastic institutional shelf supports.
  - d. Manufacturer for Keyed Cabinet Locks: Olympus or equal.
  - e. Manufacturer for Drawer Slides: Accuride or equal.

**C. COUNTERTOPS**

1. All countertops shall be solid surface regardless of use.
2. Provide splashguards on countertops at all locations where printers are adjacent to sinks.
3. Sinks:
  - a. Public sinks shall be solid surface with an under-mount installation.

- b. Non-laboratory(clinic) sinks shall be stainless steel with a top-mount installation.
- 4. In laboratory locations, refer to Section 12 35 53 Laboratory Casework within the Campus Design Guidelines for additional requirements.
  - a. Countertops shall be solid surface epoxy resin, phenolic resin, or other equivalent solid material. Do not specify plastic countertops.
  - b. Cabinets shall be resistant to heat, chemical, impact, and bacteria. Provide manufacturer’s data sheet to University Representative for review.
  - c. Sinks shall be top-mount with color matched silicone for easy sink replacement.

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**D. DECORATIVE PANELING**

- 1. The use of decorative paneling as accents for portals, walls, and/or ceilings is acceptable within main entries and public lobbies. Minimize the use of wood panels in areas prone to damage from carts, gurneys, wheelchairs, strollers, or other equipment.
  - a. Use finished sealed wood to mitigate the potential adverse impacts to indoor air quality and patient health.

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**THERMAL & MOISTURE PROTECTION**

**07 00 00**

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**A. GENERAL**

- 1. The principles and criteria in this division are critical in developing thermal and moisture protection designs that will prevent serious problems over time.
- 2. Roof access ladders and stairways to roof shall not be alternating tread type.
- 3. Elevator access is preferred for roof access.
- 4. Provide 18-gauge sheet metal flashing at roof locations that are accessible to building occupants to prevent damage and vandalism.
- 5. All rooftop-mounted equipment shall be mounted on platforms (curbs). Coordinate curb heights with top of roofing elevations so that minimum base flashing heights and roof warranties are maintained.
- 6. All platforms (curbs) shall be a minimum of 8”in height from the finished roof surface. Walk pads shall be provided from roof access points to and around all rooftop equipment. Walk pad installation shall be fully adhered to roofing to avoid restricting storm water pathway to drains. Walk pads shall be installed with 1” gap and between walk pad placement and valley lines.
- 7. All conduits and piping shall be elevated to a 4” minimum height and all conduit and piping supports shall be from a manufactured composite rubber base pipe support system. No pipe supports may breach roof warranties. Additional roof membranes or coatings may be necessary at pipe support locations.
- 8. Below-grade foundation walls, retaining walls, above-grade concrete or masonry planters, and any other structures subject to hydrostatic pressure shall receive an appropriate waterproofing system. Perimeter drainage shall be equipped with cleanouts located in planter areas for future maintenance.
- 9. Each building design shall be carefully analyzed to locate conditions that require waterproofing, including retaining walls, basement walls, on-grade slabs, plaster walls, elevator pits and any other sub-grade conditions where the passage of water can create a problem.
- 10. For renovation projects: When rooftop equipment is removed and not replaced in the roof area, all associated components shall be removed as well, including the complete removal of any curbs, supports, piping, conduits, electrical lines, blocking, etc. All roof areas touched by this removal shall be patched and repaired to maintain all existing warranties.

**DAMPPROOFING AND WATERPROOFING****07 10 00****A. GENERAL**

1. Provide testing and inspection as required by Air Barrier Association of America standards. ICC- ES AC38 – Acceptance criteria for Water-Resistive Barriers. Refer to ICC-ES AC148 Acceptance Criteria for Flexible Flashing Materials.

**SHEET WATERPROOFING****07 13 00****A. GENERAL**

1. Prior to installation of any product below grade, all areas shall be clean and have an approved primer applied per manufacturer's specification. All non-exposed areas shall be a minimum of 60mil self-adhering sheet, composed of butyl rubber-based adhesive, and backed by a layer of protection board, separating it from contact with soil or other damaging elements.

**WATER REPELLENTS****07 19 00****A. GENERAL**

1. All exterior exposed masonry and concrete (that will not be receiving additional finish) shall be treated with a clear, penetrating water repellent.
2. Concrete masonry units with integral dry block additives do not require additional waterproofing sealers.

**ROOFING AND SIDING PANELS****07 40 00****A. GENERAL**

1. All exterior masonry and concrete (that will not be receiving additional finish) shall be treated with a clear, penetrating water repellent.
2. Concrete masonry units with integral dry block additives do not require additional waterproofing sealers.

**METAL ROOF PANELS****07 41 13****A. GENERAL**

1. Standing seam roofing system shall consist of integral self-locking seams with a minimum seam height of 1 3/4". Standing seam roofing system shall have no exposed fasteners. Panels shall have clips designed to allow for thermal expansion and contraction. Design metal roof system to accommodate both wind load and any future PV system or infrastructure, to be confirmed by the University Representative.
2. Use a minimum of 30lb felt underlayment or 30-mil roof underlayment or better. All underlayments at metal roof shall have a high-heat performance capability. For special applications, consult the University Representative. Sealants shall be gunnable grade single component polyurethane caulk or gunnable grade butyl. Tape Sealant shall be Butyl.
3. The completed metal roof and flashing assembly shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling; producing excess stress on structure, anchors or fasteners; or reducing performance ability. System design shall not rely on deformation of any element to allow for expansion/contraction.



4. Manufacturer shall provide a standard 25-year coating performance warranty. All installations shall be in accordance with specified manufacturer guidelines.

**THERMOPLASTIC MEMBRANE ROOFING**

**07 54 00**

**A. GENERAL**

1. Polyvinyl Chloride (PVC): PVC sheet ASTM D4434, Type III, fabric-reinforced and optional fleece-backed, 80 mil thickness, Single-Ply Membrane Roofing System (SMR) is the standard thermoplastic membrane roofing system for low-sloped applications. Thermoplastic Olefin (TPO) membranes are NOT approved.
2. Single Ply Membrane Roofing (SMR) systems shall be fully adhered or mechanically fastened and qualify for a UL Class A Roof Covering with Factory Mutual 1-90 Windstorm Classification as needed to meet the current code requirements for the ultimate design wind speed designated for the building classification. The SMR system shall be covered by the material manufacturer’s 20- Year Total System warranty covering all roofing components installed above the roof deck upon completion and acceptance of work.
3. Roof systems shall comply with NRCA (National Roofing Contractors Association) Roofing and Waterproofing Manual, current edition. Designs shall provide minimum roof slope of ¼ inch per foot, including valleys at crickets. Provide greater slopes if possible.
4. All roofing systems shall meet ASTM standards per their respective systems. Roofing materials shall meet ASTM D4434, minimum 80 mil thickness and have a Solar Reflectance Index (SRI) as required below for a minimum of 75 percent of the roof surface. (Product shall meet current CA Title 24 Requirements for reflectivity.)

Roof Type Slope SRI

Low-Sloped Roof ≤ 2:12 78

Steep-Sloped Roof > 2:12 29

5. For special applications, consult the University Representative. All installations shall be in accordance with manufacturer recommendations.
6. Materials and adhesives shall be selected to comply with UC Davis Health Sustainability Initiatives, Code, and performance standards while also being no - or low-VOC.

**FLASHING & SHEET METAL**

**07 60 00**

**A. BASE FLASHING / SPRING-LOCK COUNTER FLASHING**

1. At all areas, base flashing shall extend 8” minimum above the highest point of the roof system and be continuous and level all around the entire perimeter of the roof. Roofs shall generally have a spring - lock counter flashing to accommodate future re-roofing without destroying the balance of metal flashing system. Designs shall conform to SMACNA standards (Sheet Metal and Air Conditioning Contractor’s National Association).

**B. COPINGS AND ROOF EDGE FLASHINGS**

1. Copings and roof edge flashings that are ANSI/SPRI/FM 4435/ES-1 tested, shop shall be NRCA listed or shall provide other evidence acceptable to University Representative as able to fabricate required details as tested and approved.

**ROOF SPECIALITIES AND ACCESSORIES**

**07 70 00**

**A. GENERAL**

1. This applies to all roof hatches that are in addition to the minimum required (one per stair to roof).

**B. ROOF HATCHES**

1. Standard roof hatch size is 30" x 36" inches. Roof hatches that are larger than the standard size shall require hydraulic or spring-loaded hinges. Special applications or sizes shall be reviewed and approved by the University Representative.
2. Roof hatches shall be designed to comply with Cal OSHA Title 8 Section 3212 and to provide safe egress and ingress through roof and access hatches.
3. Roof hatches shall be designed such that opening and closing of the roof hatch can be done with three points of contact on the ladder at all times.
4. Consideration shall be given for the safe exit and approach to the hatch and ladder. The roof hatch shall be located such that there is sufficient clear space directly in front of the ladder at the roof level. Shop drawings shall be reviewed with the University Representative prior to construction.

**C. EXTERIOR FIXED LADDER**

1. Where buildings don't provide a roof hatch, an exterior fixed ladder that complies with Cal OSHA Title 8 section 3277 shall be provided. Lighting at the roof hatch shall be no less than 5' candles, switched in the room.

**ROOF FALL PROTECTION**

**07 72 60**

**A. GENERAL**

1. All areas that expose workers to a fall of 6' or greater shall be protected by parapet walls or permanent guardrails that comply with Cal OSHA Title 8 section 3209. When guardrails or parapets are not feasible, provide one of the following:
  - a. Horizontal Lifelines as part of a complete fall arrest system that is compliant with Cal OSHA Title 8 section 1670 designed by a "Qualified Person" as defined by ANSI/ASSE Z359.0-2007- 2.109.
  - b. Anchorages that comply with Cal OSHA Title 8 section 1670 as designed by a "Qualified Person" as defined by ANSI/ASSE Z359.0-2007-2.109.
  - c. All fall protection systems shall comply with Federal OSHA and Cal OSHA Title 8 requirements, of which the most stringent shall apply.
2. Whenever possible, projects shall be designed in such a way that specialty equipment and/or personal protective equipment shall not be required for fall protection.
3. Compliance may be a combination of 42" parapets, guardrails, or low-profile anchorage points. No exceptions shall be made unless authorized by the University Representative.
4. When an alternative fall protection system is agreed by the University Representative, the project shall strictly adhere to the following requirements for all permanently installed fall protection equipment, including anchors, horizontal lifelines, vertical lifelines, fall arrest, restraint, or positioning, ladder safety systems, and other active fall protection systems in accordance with the latest revision of the ANSI 359.6 Standard.

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**B. DESIGN REQUIREMENTS**

1. Identify where fall protection is required and review with the University Representative on all projects are required.
2. Define the type of fall protection system being designed (fall arrest, restraint, or positioning).
3. Shall meet CAL OSHA requirements.
4. Provide dedicated fall protection drawings showing the layout of the system.
5. The structural engineer shall provide calculations for the following:
  - a. Minimum required strength of anchorages.
  - b. Sizes and minimum breaking strengths.
  - c. Maximum arrest load (MAL).
  - d. Maximum loading on all components demonstrating that the fall protection equipment/system will meet the lb.-f requirements as designed and defined in Table 1 below.
  - e. Detail drawing and additional requirements to meet project needs.
    - 1) Provide necessary specification.
    - 2) Require Contractor to provide shop drawing and calculations.
    - 3) Fall protection design can be a deferred submittal. Consult with the University Representative to identify submittal requirements.

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**C. INSTALLATION REQUIREMENTS**

1. Identify fall protection systems (i.e., anchors, horizontal lifelines, vertical lifelines, fall arrest, restraint, or positioning, ladder safety systems, and other active fall protection systems).
2. Provide documentation illustrating ANSI Z359.6 compliance.
3. Demonstrate compliance with design requirements.
4. Show number of workers and provide minimum/maximum forces the system is designed to support in the event of a fall to include the following:
  - a. Maximum arrest force (MAF).
  - b. Deployment of energy absorbers.
5. Provide the manufacturer, make/model and serial numbers of all system components being installed.
6. Provide shop drawing with supporting details and calculations.
7. Provide for horizontal lifelines to include the following data.
  - a. Sag, deflections, elongation and fall arrest.
  - b. Harness effect and D-ring slide.
  - c. Temperature impacts.
  - d. Clearance requirements given these factors.
8. Provide additional items to meet ANSI and project specific requirements for acceptance.
9. Provide the manufacturer's instructions for inspection and maintenance. Verify whether the system requires installation by certified installers.
10. Certify compliance with ANSI Z359.6 and submit certification for acceptance.

**JOINT SEALANTS****07 92 00****A. GENERAL**

1. All materials used shall be top-of-the line available and suited for the conditions being sealed while also in compliance with the following VOC requirements. Comply with current CAL Green Chapter- 4 requirements.
2. Generally, horizontal joints shall be made watertight by mechanical connections. Sealants shall be used on vertical joints.
3. Limit width to depth ratio of 2:1 with maximum hourglass depth of 0.375 inch and provide sealant backer. Sealants shall be compatible with the materials and the expected movement where they are being applied.

**B. FIRE AND SMOKE PROTECTION**

1. Systems and products shall be tested and approved by Underwriter's Laboratories in accordance with applicable codes. Fire-stopping and smoke-stopping materials are subject to approval of the UC Davis Health's Fire Marshal and shall carry a UL Listing.

**METAL DOORS AND FRAMES****08 11 00****A. DOOR SIZES**

1. Door sizes shall be based upon functional use. Standard sizes are listed below. Door widths and heights may exceed these minimums with approval from the University Representative.
  - a. 36" wide when serving staff employees.
  - b. 42" wide when serving public access.
  - c. 48" wide when serving hospital gurneys or beds.
  - d. The door height standard is 7'-0" typical but may be modified for project specific requirements.

**B. DOOR TYPES**

1. The standard for doors is SDI (Steel Door Institute) Level 2 Heavy Duty, shop primed, 1-3/4" thickness. Door reinforcing for hardware to per ANSI / SDI A250.6 typical.

**C. FRAMES**

1. Projects requiring OSHPD approval.
  - a. Extra Heavy Duty. Fully welded with mortar boxes for all hardware. Frames for all exterior openings and interior openings that are 4' wide or wider shall be 14-gauge steel. Interior frames shall be 16-gauge steel with hospital stops. Exterior frames shall be galvanized.
2. Educational and Office-Buildings
  - a. Interior Knock-down (KD) type included with mortar boxes for all hardware. 18 -gauge steel with applied casing.
  - b. Exterior doors are 14-gauge galvanized Extra Heavy Duty fully welded with mortar boxes for all hardware.
3. For remodel projects confirm with the University Representative on whether to match existing building standards or modify for newer standards.

D. DOOR / SIDELIGHTS

1. Door vision lights shall be a minimum 6” x 24” at all double, dual egress, and single doors where door swing could cause injury.
2. Sidelights are encouraged at doors to offices, classrooms, and general -purpose rooms.

E. DOOR PROTECTION

1. Doors subject to high traffic of carts, equipment, and other items that could damage the door surface shall have a 48” high by full door width stainless steel or polyethylene terephthalate glycol (PETG) armor plate. Plate shall be included as part of certification labeling.
2. Doors subject to medium traffic and wheelchair use shall have a 12” high x full door width stainless steel or PETG kick plate. Plate shall be included as part of certification labeling.

F. DOOR LABELING / CERTIFICATION

1. All doors and frames shall have rating labels from Underwriters Laboratory or Warnock Hersey. Provide recertification for altered doors and frames.
2. Fire rated glazing assemblies shall be used at rated wall openings for fixed windows or glazing in rated doors.

**WOOD DOORS**

**08 14 00**

A. GENERAL

1. Wood doors should generally only be used for light duty areas such as offices, conference rooms, and cross-corridor doors on hold-open devices. Wood doors shall be permitted only with approval from the University Representative.
2. Wood doors to comply with or exceed Woodwork Standards Section 9 for premium grade wood doors. Selection of wood doors shall consider fire rating requirements.
3. When closers are used that may conflict with the maximum opening force of 5 lbs. per the CBC, auto door openers shall be considered. Wood doors shall not be used for exterior conditions.

B. DOOR / SIDELIGHTS

1. Door vision panels shall be a minimum 6” x 24” at all double, dual egress, and single doors where door swing could cause injury.
2. Sidelights are encouraged at doors to offices, classrooms, and general-purpose rooms.

C. DOOR PROTECTION

1. Doors subject to high traffic of carts, equipment, and other items that could damage the door surface shall have a 48” high by full door width stainless steel or polyethylene terephthalate glycol (PETG) armor plate. Plate shall be included as part of certification labeling.
2. Doors subject to medium traffic and wheelchair use shall have a 12” high x full door width stainless steel or PETG kick plate. Plate shall be included as part of certification labeling.

D. DOOR LABELING / CERTIFICATION

1. All doors and frames shall have rating labels from Underwriters Laboratory or Warnock Hersey. Provide recertification for altered doors and frames. Fire rated glazing assemblies shall be used at rated wall openings for fixed windows or glazing in rated doors.

**SPECIALTY DOORS AND FRAMES**

**08 30 00**

A. FIBERGLASS REINFORCED POLYESTER DOORS

1. Fiberglass reinforced polyester (FRP) doors are recommended for use in areas with excessive moisture or corrosives. Core material shall be foam urethane with a minimum of 5 lb/ft<sup>3</sup> density, free of chlorofluorocarbons (CFC) and hydrofluorocarbons (HCFC). Color shall be permanently bonded through the full thickness of the fiberglass door faces.

B. DOOR & FRAME SIZES

1. Door frames subject to excessive and consistent moisture or corrosives shall be fabricated of 304 stainless steel. Refer to Design Guidelines Section 08 11 00 for frame requirements.

C. ACCESS DOORS

1. Access doors and panels shall be factory primed and painted at wet areas, doors and panels shall be stainless steel. Doors shall be secured by either screw turn or key lock. Minimum size to be 24" x 24". Rated access doors shall be selected to meet wall or ceiling construction rating typical.

D. BARN (SLIDING) DOORS

1. Door leaf shall have sill guide activated acoustic door bottom.
2. Manufacturer: AD Systems or equal.
3. Locations: Exam rooms.

**COILING DOORS**

**08 33 00**

A. GENERAL

1. Loading dock doors shall be overhead coiling, electric motor operated with manual opening device for use in case of power or motor failure.
2. If overhead or coiling doors/grilles are used in public spaces special consideration is required for lockdown procedures and emergency function.

**ENTRANCES, STOREFRONTS AND CURTAIN WALLS**

**08 40 00**

A. ALUMINUM DOORS

1. Aluminum and glass entrance doors shall be constructed with wide stiles and top rails with ¼" hardware reinforcement and insulated glazing. Finish shall be clear anodized or high performance (Kynar or equal) color coated. Colors and finishes shall be reviewed by the University Representative.
2. Minimum acceptable component dimensions:
  - a. Metal thickness: 3/16"
  - b. Head rail size: 6-½" x 1-¾"
  - c. Stile size: 5-½" x 1-¾"

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**B. BOTTOM RAIL**

1. Size: 12-½" x 1-¾"

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**C. STOREFRONTS AND CURTAINWALLS**

1. Storefront and Curtainwall systems shall be a minimum nominal size of 6" x 2" and accommodate a minimum of 1" insulated glazing units. Systems shall be designed for structural, wind and seismic requirements which may require larger nominal system profiles.
2. Finishes shall be selected from the manufacturer's premium finishes. Consult the University Representative prior to selecting custom colors or finishes.

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**D. WARRANTY**

1. Provide a full product ten-year warranty at no extra cost covering materials, installation, and workmanship for repair or replacement due to defects; warrant against air and water infiltration from any source.

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**E. PROVIDE SET UP FOR WINDOW/CURTAIN WALL WASHING.**

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**F. ENERGY PERFORMANCE**

1. Thermal Transmittance (U-factor) - Fixed Vision Glazing and Framing Areas: U-factor as determined in accordance with NFRC 100.
  - a. Maximum U-Factor: As indicated on Drawings, comply with building energy performance model for this project.
2. Thermal Transmittance (U-factor) - Fixed Spandrel Glazing, Metal Panels and Framing Areas: U-factor as determined in accordance with NFRC 100.
  - a. Maximum U-Factor: As indicated on Drawings, comply with building energy performance model for this project.
3. Solar Heat Gain Coefficient (SHGC) - Fixed Glazing and Framing Areas: Solar Heat Gain Coefficient as determined in accordance with NFRC 200.
  - a. Maximum SHGC: As indicated on Drawings, comply with building energy performance model for this project.
4. Air Leakage:
  - a. Air leakage for the system of not more than 0.06 cfm/sf (0.30 L/s/sm) at a minimum static-air-pressure differential of 6.24 lbf/sf (300 Pa) when tested in accordance with ASTM E 283.
5. Condensation Resistance: Condensation resistance as determined in accordance with NFRC 500.
  - a. Fixed Glazing and Framing Areas: No condensation allowed under design conditions indicated.

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**AUTOMATIC ENTRANCES****08 42 29**

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**A. GENERAL**

1. Provide automatic doors at main entries and public multi-stall restrooms of every new building on the UC Davis Health campus.
2. Manufacturer: Gildor Sliding Doors or equal.

3. The preferred type of automatic door is non-telescoping, by-pass, sliding type. Automatic doors shall be activated by hardwired interior and exterior push pads at two (2) levels or vertical bar type actuators. Both upper and lower push device shall activate the door operation.
4. At specific employee and emergency entry doors, operation may be sensors, radio frequency remote control (for handheld transmitter), card access or a preferred combination reviewed and approved by the University Representative.

**ALUMINUM WINDOWS****08 51 13****A. GENERAL**

1. When operable windows are selected, sensor shall be installed connecting to the BMS. Finishes shall be anodized or high performance (Kynar or equal) color coating, as selected.
2. All aluminum frames shall be thermally broken and accept a minimum of 1" dual glazed windowpane.

**DOOR HARDWARE****08 70 00****A. GENERAL**

1. Door hardware shall match manufacturers make and style as specified, submitted, and approved for all doors in project scope. Provide a hardware submittal from the aluminum entrance and storefront manufacturer for review by the University Representative.

**B. CODE REQUIREMENTS**

1. Doors from rooms that do not have panic bar shall have lever-type handles that do not require any special knowledge or effort to operate. All locks, electrified or otherwise, may not restrict egress.
2. Hardware for labeled openings, such as locks, latches, butts, door closers, coordinating and exit devices, etc. shall be to carry State Fire Marshal and Underwriters Laboratories, Inc. (UL) listed and approved for opening classification.

**C. EMERGENCY KEY CABINETS**

1. Provide emergency key cabinets / Knox Box(es) at the main entrance(s) for all new buildings. The University Representative shall coordinate locations as determined by the Campus Fire Marshal.

**D. LOCKS AND KEYING**

1. Lock functions and finishes shall be furnished as indicated in the hardware schedule, or equal. The contractor shall provide the specified locksets with temporary 6-pin construction cylinder and keys. Provide temporary cylinders only in locations where it is necessary to secure the project during the construction process. In addition, provide five (5) sets construction keys to the University Representative. Upon acceptance of the building or space, UC Davis Health shall provide permanent keys and Schlage EF Keyway lock cylinders to replace the construction cylinders. The Contractor shall verify that all doors and locksets easily accept permanent cylinders with no extra effort or modification. Construction lock cylinders shall be returned to the contractor. When replacing existing locksets, the cylinders shall be tagged and returned to the University Representative (then returned to Lock Shop).
2. Install hardware after doors are finish painted.
3. Door strike lip plates shall be curved and comply with ANSI 4-7/8" for all cylindrical locks. Exterior locks, latches, and deadlocks shall have wrought boxes.



**E. FASTENERS AND ANCHORS**

1. Thru-bolts for door closers attached to wood doors are to be avoided. Specify doors with closer reinforcement for surface fastening. Hardware fastened to concrete, or masonry shall be installed with machine screws and “star” type double expansion shields, or for screw sizes less than ¼”, fasten with wood screws and plastic anchors. Do not use lead shields or tamp-ins.
2. Door hardware mounting heights throughout a project shall be uniform. Renovation and remodel project hardware placement shall match that of the existing doors throughout the building. This shall be field verified and approved by the University Representative.

**F. HINGES**

1. Hinges types shall be selected for each door type performance, use and location. Pivot, swing- clear or standard butt hinges are to be listed in each hardware group. Butt hinges shall have five (5) knuckles typical with non-removable pins.
2. Standard hinge properties include 3/16” thick, 1-½” widths. The hinge pin shall have a continuous machined surface and use concealed, stainless steel ball bearings. Hinge fasteners shall be either stainless steel or silicone bronze. Hinge pins may be in contact with swaging of the door leaf.
3. Hinge spacing and quantity is based upon door leaf size. 36” wide doors require three (3) hinges. Any doors wider than 36” require a minimum of four (4) hinges.
4. Hinges on aluminum and glass type storefront doors, fiberglass reinforced polyester (FRP), and heavy lead shielded doors shall be geared continuous hinges.

**G. CLOSERS**

1. Door closer cylinder construction to provide low wear operating capabilities of internal parts throughout the life of installation. All door closers shall be tested to American National Standards Institute (ANSI)/ Builders Hardware Manufacturers Association (BHMA) A156.4 test requirements by BHMA certified testing laboratory. All closers shall be fully hydraulic and have a full rack and pinion action. Universal type closer are preferred. Handed closers shall be avoided. All closers shall be non-sized to provide a full range of closing power for all sizes of door. For barrier-free applications, closer spring power shall be adjustable to provide less than 5 lbs. opening force for doors 36” to 48” wide. Fire-rated doors shall be adjustable to 15 lbs. maximum force. All closers shall utilize temperature stable fluid that is capable of withstanding temperature ranges from 120°F to -30°F without requiring seasonal adjustment of closer speed to properly close the door.

**H. POWER ASSISTED OPERATORS**

1. Single, double, or dual egress doors that serve areas of high cart or patient bed/gurney traffic shall have power-assisted operators installed to mitigate door damage and injury to staff.

**I. AUTOMATIC DOOR OPERATORS**

1. Manufacturer for Interior Doors: Stanley Access Technologies or equal.
2. The door shall have the ability to function as an automatic door or, in an emergency, via manually operated break-out swing panels.
3. Door operators shall be surface-mounted and enclosed in an extruded aluminum case extending the full width of door frame. Access to the operator shall be obtained by removing the casing. All wiring for the automatic entrance components shall be concealed. Exposed conduit, wire-mold or electrical pathways are not permitted.
4. A keyed shut off switch keyed to the UC Davis Health master key system shall be provided to shunt power to auto door openers after normal hours of operation. Access to the building after normal hours

of operation shall be provided by either a handheld radio frequency remote control or card access system. A locked door motor protection circuit shall be supplied that will shut off current to the motor when the door is locked or otherwise prevented from opening.

5. Coordinate door operation with security devices, such as card key entry systems. Locate sensors at correct distance from the door for safe clearances and proper travel time. If the door encounters an obstruction, the master control unit shall provide immediate reversal of door motion without undue strain on the drive train by providing stepped voltage to the motor. The opening and closing speed shall be between four (4) and six (6) seconds. The master controller unit shall allow fine tune adjustments in close times, delays, and expiration of signal to doors. The opening force shall be able to be adjusted without affecting the opening speed. The opening and closing force, measured 1” out from the lock stile of the door and shall not exceed 15lbs force in either direction.

**J. DOOR OPERATORS FOR EXTERIOR DOORS**

1. Refer to design standard Automatic Entrances 08 42 29 above for specific functional requirements

**K. MANUFACTURERS**

1. The manufacturer shall have a minimum of five (5) years' successful experience in the fabrication of automatic operators of the type required for the project.

**L. EXIT DEVICES**

1. Panic Rim: All devices shall be ANSI A156.3, 2001, Grade 1 certified and have a 3-year manufacturer's warranty.
2. Panic w/ vertical rods: Surface external rods are preferred, and internal concealed rods are to be avoided. Provide only top vertical rods and bottom fire bolts.
3. All moving parts shall be easily removable for repair and maintenance; moving parts that are riveted or swaged in place are not acceptable.
4. All wide stile devices shall have dead latching latch bolts to ensure safe and secure opening.
5. All devices shall use durable compression spring design. De vices, latches, trim or controls, incorporating tension springs are not acceptable.
6. Incorporate a dampener type mechanism to decelerate the push bar on its return stroke eliminating noise associated with the device's operation.
7. Devices shall be ANSIA156.3, 2001, Grade 1 certified and have a three-year manufacturer's warranty. Surface external rods or internal concealed rods are to be evaluated per project.
8. Brass or moving parts made of die-cast "pot" or "white" metals are not permitted.

**M. PUSH AND PULL PLATES.**

1. Plates to be stainless steel.
2. Pull plates shall be without screw holes and when used with pulls. Pulls shall be bolted through the door under the push plate at the grip only.

**N. SURFACE AND FLUSH BOLTS.**

1. Flush bolts shall have a lever arm that is not friction-operated, connected to the bolt mechanism and mechanically fastened, not press fitted. Face plates shall be shaped to match the door edge. The operating mechanism for the bottom flush bolt shall not be more than 12” from the floor; the top flush bolt shall not be more than 72” from the floor. All surface or flush bolts shall have dustproof strikes where engaging the floor, threshold, or curb.

2. Flush bolts that require the top and bottom corners of wood doors to be mortised out are not acceptable.

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**O. STOPS AND HOLDERS**

1. Provide door stops for each door leaf. If stops are wall mounted, provide backing in the wall for proper mounting installation.
2. Floor Stops are preferred. Wall stops are acceptable when floor stop is not appropriate. Overhead stops may be used in limited instances when floor or wall stops are inadvisable. If an overhead stop is used, pair it with heavy duty hinges, or continuous hinges. Do not provide hold open stops when using overhead style.
3. Ives, Glynn Johnson, or equal are the standard of quality for stops.

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**P. SILENCERS**

1. Provide silencers for all interior doors, except on weather stripped or smoke sealed doors.
2. Single doors shall have three (3) silencers each, located on stop and at strike side of the frame. Double doors shall have one (1) silencer per door leaf at frame head, plus three (3) each on astragal.

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**Q. SMOKE AND WEATHER DOOR SEALS**

1. Where required, provide adhesive jamb weather-strip.

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**R. FINISHES**

1. All hardware finishes shall conform to BHMA product standards, materials, and finishes. UC Davis Health's standard is 626 Satin Chrome. Finishes for hardware in existing facilities shall be as listed above or to match existing.

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**S. HARDWARE INSTALLATION**

1. Center lever hardware is at 38" above finished floor. Lo cate top hinge 5" below the head of the frame, and the bottom hinge at 11" above the finished floor. Place intermediate hinges equally between top and bottom hinge.

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**GLAZING****08 80 00**

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**A. BASIS OF DESIGN**

1. The basis of design for fire rated glazing is TGP or equal.

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**B. EXTERIOR GLASS**

1. Determination of light transmittance, visibility, color, and performance requirements is unique to each project, and the specific functional requirements. The general guideline is to provide the best thermal performance, while as the same time offering the best visibility and transparency into the building.
2. Performance requirements must meet Title-24 requirements.
3. Exterior glazing shall be 1" insulated units with a low-e coating.

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**C. INTERIOR GLASS**

1. Safety Glass: Provide where required by codes.
2. Door Glazing: Refer to Design Guidelines Section 08 11 00 for vision lights.

D. MIRRORS

1. Minimum ¼” thick. Provide smooth round safety edge.
2. ASTM C-1503-01 for silvered flat glass mirror.
3. Attach to walls with mechanical cleat-type anchors to metal studs or solid backing and apply mirror adhesive.

E. GLAZING ACCESSORIES

1. Provide reglets, spacers, gaskets, trim, and applied stops with caulking to secure glazing in place.

**FINISHES**

**09 00 00**

A. OVERVIEW

1. The design guidelines for finishes focuses on the materials and finishes appropriate for UC Davis Health Facilities. These components enable project teams and operations staff to build and maintain sustainable buildings and manage risks to the organization, including cost, safety issues, legal and regulatory compliance, and functionality.

B. GENERAL

1. Provide low-maintenance finishes and design low-maintenance details. Finishes must stand up to the rigorous abuse of classrooms, offices, laboratories, outpatient and inpatient facilities over the life of a building. Given the extended life cycles of buildings and the infrequent facility refreshes, it is advisable to specify only the most durable materials and finishes.
2. Exterior finishes shall be durable and designed to a 70-year standard without extensive maintenance, and with no deferred or anticipated maintenance for the first 20 years. Painting of exterior Surfaces shall be kept to a minimum, and if provided, must be a high-performance system.
3. Prevent vision impairment by specific surface reflectance values that improve task and overall illumination. Provide color contrast, lighting levels, and matte/non glare finishes on ceilings, painted walls, work surfaces, and floors. Avoid bold patterns with dominant contrast, as they can be misperceived as obstacles or objects to avoid.
4. Submit EPDs and HPDs for all finish materials.
5. All architectural finishes selected for use in ISO Classrooms within UC Davis Health sterile compounding facilities shall comply with ISO 14644-1 airborne contamination requirements, USP 797 and/or USP 800 cleaning requirements, and all State Board of Pharmacy requirements.
6. Review project materials, finishes, and colors with the FP&D Interior Design Manager, Plant Operations & Maintenance (PO&M), Workplace Safety, Infection Prevention, and Environmental Service departments during the design process to ensure appropriate selections.
  - a. Working with these departments ensures that building maintenance, repair, safety, and replacement concerns are included in the design process.
  - b. Regular routine cleaning of the Health Care Facilities premises can be carried out more efficiently if the design of the building has fully addressed surface finishes appropriate to the functional use. For example, unnecessary horizontal, textured, moisture retaining surfaces or inaccessible areas where moisture or dust can accumulate should be avoided, where possible.

**CEMENT PLASTERING**

**09 24 00**

**A. LATH AND PLASTER**

1. Avoid lath and plaster systems as a primary exterior cladding material for new projects. The system's lack of longevity is a key reason to opt towards more durable finishes.

**B. CEMENT PLASTER**

1. Cement plaster shall be a traditional 7/8" three-coat system consisting of a Portland cement scratch coat, Portland cement brown coat and acrylic modified sand finish coat. Scratch coat shall contain "fiber mesh" type glass fiber reinforcing to control cracking. Finish coat shall be integrally colored, and colorant shall not be waived in lieu of surface painting. Surface painting is required over finish coat. Integral plaster color shall best match surface paint color. Well-designed control joints of areas not to exceed 100 square feet shall be clearly documented to limit cracking and repair maintenance work.

**C. MATERIALS**

1. Portland Cement: ASTM C 150, Type I; except Type III may be used for cold-weather construction.
2. Hydrated Lime: ASTM C 206, Type S.
3. Sand Aggregate: ASTM C 897.
4. Reinforcing Fiber: Alkaline-resistant glass or polypropylene, 1/2 in (12 mm) long, free of contaminants, manufactured for use in Portland cement plaster.
5. Water: Potable.

**GYPSUM BOARD**

**09 29 00**

**A. WATER RESISTANT GYPSUM BOARD**

1. Specify water-resistant gypsum board at walls exposed to light moisture (examples: lavatories, drinking fountains, urinals, eyewash stations, and hand wash stations).

**B. CEMENTITIOUS BACKING BOARD AT WALLS AND CEILING**

1. Specify cementitious backing board at walls and ceilings with moderate to heavy moisture or humidity (examples: showers, hydrotherapy rooms, central sterile, and cart wash areas).
  - a. Gypsum board and water-resistant gypsum board are not appropriate for these areas as they can swell and de-laminate in wet conditions, fail to provide a firm backing for ceramic or other tile installations and can be a source of microbial growth.

**C. GYPSUM BOARD FINISH LEVELS**

1. Level 1: Not used.
2. Level 2: Concealed spaces, such as shafts and above -ceiling areas, and areas where Gypsum board is used as a substrate for tile.
3. Level 3: Medium Texture: Unoccupied areas, such as storage and mechanical rooms
4. Level 4: Light Texture: Occupied spaces and surfaces exposed to public view.
5. Level 5: Smooth finish for areas receiving markerboard wallcovering or as approved by the University Representative.

D. WALL PROTECTION

1. Use wall protection in areas prone to abrasion and heavy scuffs. For example, equipment and cart traffic.

E. LOW HEIGHT WALL LOCATIONS

1. At low-height wall locations, the wall shall be capped with a durable and impervious material that can be easily cleaned and maintained.
  - a. Solid surface material is preferred.

**TILING**

**09 30 00**

A. GENERAL

1. Provide tile as required per CBC code sections 1209 & 1224.4.11.
2. Both mortar-set and thin-set tile systems may be used where appropriate. System selection shall be based both on the suitability of the material and the project requirements and approved by the University Representative. When using mortar-set systems, recess floor slabs to maintain level and accessible surfaces between rooms. Porous materials may not be used.
3. Use of ceramic (porcelain) tile is acceptable in areas with excessive water and/or cleaning, such as restroom floors and walls. The grout used for ceramic floor tiles shall be sealed with a VOC compliant sealer. Provide epoxy and/or epoxy hybrid grout at tile in wet areas.
  - a. Specify full-height tile in shower areas.
4. Provide marble or solid surface thresholds at entrances to rooms with ceramic tile floors.
5. Ceramic tile may not be used in shower floors because the grout breaks down creating an infection control problem.
6. Floor tile, tested, both wet and dry, shall have a minimum static coefficient of friction of 0.60 for level surfaces, and 0.80 for ramps, in accordance with ASTM C1028.
7. Coordinate tile locations with equipment and accessories.
  - a. If equipment, accessories, and signage is to be installed on tile, ensure tile face is adequate and acceptable to install items.
8. Refer to Tile Council of North America (TCNA) for installation methods.

**ACOUSTICAL CEILINGS**

**09 51 00**

A. GENERAL REQUIREMENTS

1. Suspended acoustical ceilings shall be installed in accordance with the provisions of ASTM C 635 (materials) and ASTM C 636 (installation). Provide heavy-duty exposed tee suspension system.
2. Tegular and square lay-in edge profiles for ceiling tiles are acceptable. Concealed spline systems are not acceptable. Clean rooms and other infectious controlled environments such as kitchen preparation & storage areas and staff or patient occupied areas as noted per code, require a mylar coated ceiling tile, or similar. Children's areas can have tiles with decorative embossed themes. Provide white tiles and suspension grids unless approved otherwise by the University Representative.
  - a. Where the disruption of particle matter may interfere with infection control, acoustic and/or lay-in ceilings should be avoided.

3. Recommend specifying biophilic inspired ceiling visuals within Imaging Rooms to dissipate the confined feeling and enhance the patient experience.
4. Manufacturer: Armstrong Ceilings or equal.

**B. CODES AND STANDARDS**

1. Ceiling design shall comply with CBC Section 1613.1 Earthquake Loads. Every structure and portion thereof, including non-structural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE 7, excluding Chapter 14 and Appendix 11A. Determine the seismic design category for the structure in accordance with Section 1613 or ASCE 7.
2. In accordance with ASCE 7-10 Chapter 13, acoustical tile or lay-in panel ceilings in Seismic Design Categories D, E and F shall be designed and installed in accordance with ASTM C 635, ASTM C 636 and ASTM E580, Section 5-Seismic Design Categories D, E and F as modified by this section.

**RESILIENT FLOORING**

**09 65 00**

**A. GENERAL**

1. Specify a commercial grade flooring in accordance with UC Sustainable Practices Policy. Projects should strive to eliminate the specification of products which contain Polyvinyl chloride (PVC).
2. All materials shall meet or exceed the stringent codes related to slips, trips, and falls.
3. Areas where liquids are used, stored, or have chance of spillage shall have watertight flooring system with heat or chemical welded seams with at least a 4-inch continuous coved base. Weld method to be approved by the University Representative. Provide a cant strip for support under the coved base with metal trim at the top. Use a commercial grade sheet flooring with a welded coved base. VOC compliant poured flooring systems will be considered, especially in food preparation areas or shower rooms.
4. Areas void of liquid spills can use sheet flooring with a topset rubber base and a variety of materials and manufactures are acceptable.
5. Sheet products are to be unbacked, nonlayered, polyurethane-coated, homogeneous vinyl with a wear layer. Color and pattern detail shall be dispersed uniformly throughout the product.
6. Patient areas – shall have flooring products with good sound absorption, easy maintenance, and appropriate slip/fall coefficient. Rubber flooring is preferred and will maintain well if the finish process described by the manufacturer is followed carefully after the product is installed and prior to occupancy.
7. Projects with fresh concrete subfloors intended to receive resilient flooring products shall be tested for moisture and PH with the current standard test method. Provide test results to the University Representative for review and approval prior to any flooring material being installed. Consult with flooring manufacturer for appropriate adhesive for moisture and PH levels of concrete.
8. In projects with tight schedules and/ or for ease of phasing in occupied spaces, use a quick set or peel and stick adhesive that meets current VOC requirements.
9. Aerosol adhesives shall not exceed the VOC limits specified in the Green Seal Standard GS-36-Current Version.
10. Non-aerosol adhesives and primers shall not exceed the VOC limits specified in the South Coast Air Quality District Rule 1168, current version.
11. Flooring at Permanent Cabinets: Resilient flooring is required under fixed floor cases and cabinets.

**B. RESILIENT SHEET**

1. Resilient flooring is required to be installed under fixed/ permanent floor cases and cabinets.
2. If floor cases and cabinets are existing to remain, resilient flooring can be installed to cabinet edge with appropriate wall base and not installed underneath cabinet.

**C. RESILIENT TILE**

1. Specify luxury resilient tiles and/ or plank tile systems (concrete/ wood-looks) within areas void of liquids to achieve an upgraded appearance in public spaces (corridors/waiting areas), administrative office settings, and patient care areas for design-focused and oriented projects with moderate budgets. Flooring shall have a coefficient of friction of 0.7 or greater.
2. Installation of resilient tiles over existing VCT flooring should be avoided as much as possible. However, if there is asbestos in the existing mastic and the flooring is in stable condition, it may be an option on a case-by-case assessment by University Representative and PO&M approval.
3. In areas with heavy rolling equipment such as loading dock, rubber floor tiles may be specified.

**RESILIENT FLOORING ACCESSORIES**

**09 65 13**

**A. GENERAL**

1. Wall Base: Rubber base preferred for durability and sustainability. Thermoplastic rubber (TR) or thermoset vulcanized rubber (TS) shall be used as standard. Thermoplastic vinyl (TV) base only to be used with the University Representative’s approval and concurrence by the Interior Design Review Committee.
  - a. Use 6” base in patient areas and 4” in administrative areas. Use only topset base, straight base may not be used.
  - b. In areas requiring sheet flooring with a coved base, provide a concealed cant strip for support and metal trim at the top.
    - 1) Specify at all clinical areas, food preparation areas and other areas subject to frequent wetting due to cleaning methods. Ensure wall base is installed tightly sealed against the wall and constructed without voids.
  - c. Adhesives
    - 1) Quick set or peel and stick adhesive the meets current VOC requirements may be specified due to compacted project schedules.
    - 2) Aerosol adhesives shall not exceed the VOC limits specified in the Green Seal Standard GS- 36, current version.
    - 3) Non-aerosol adhesives and primers shall not exceed the VOC limits specified in the South Coast Air Quality District Rule 1168, current version.

**RESILIENT TILE FLOORING**

**09 65 19**

**A. GENERAL**

1. Refer to Section 09 65 00 Resilient Flooring.



**FLUID-APPLIED FLOORING**

**09 67 00**

**A. GENERAL**

1. A fluid-applied resinous flooring can only be specified and installed with the approval of both the University Representative and concurrence from the Interior Design Review Committee.
2. Resinous flooring material may be used in high-traffic areas with or are subject to extreme water usage, such as operating rooms, tub rooms, food preparation areas, waste collection sites, staff showers and decontamination/disinfection areas.
3. Fluid applied (epoxy) floors shall be non-slip and meet any additional requirements of the facility, such as conductivity.
4. Resinous flooring system to be comprised of: Bisphenol-A Epichlorohydrin condensate type resin formulation consisting of bond coat, base coat, texture coat, and finish coat, ¼” total thickness; flexibilized with a reactive diluent; other additives consisting of an inert color pigment, curing agent, and high SiO2 filler.

**B. INSTALLATION ACCESSORIES**

1. Divider Strips shall be: ¼” wide heavy top strip and made of zinc.
2. Antimicrobial chemical additive shall be used to prevent growth of most bacteria, fungi, algae, and actinomycetes and applied as recommended or approved by flooring manufacturer.

**C. FINISH SURFACE**

1. Finish Surface shall be: Semi-gloss, dense, nonporous, smooth texture, unless specified otherwise and approved by the University Representative.

**CARPETING**

**09 68 00**

**A. GENERAL**

1. Specify carpet tiles. Broadloom carpet shall only be specified upon approval by Facilities Services.
2. Carpet tiles shall be a commercial grade multi-colored, non-directional patterned loop or tip- sheer to hide soil. Cut pile carpets may be used in high-end administrative areas if desired. Colors and shades selected shall be of medium intensity (not so light as to easily show soiling or so dark as to show dust and lint). Solid color carpet shall not be used.
3. Wear Rating: Heavy or Extra Heavy Commercial: Vetterman Drum wear test- Rating of 3 or better DIN 54323- ISO-TR 10361.
4. Face Weight:
  - a. 20 oz. minimum.
5. Face Yarn:
  - a. 100% first quality bulk continuous filament (BCF). Acceptable specifications include type 6,6 nylon, type 6,6 Antron nylon combined with polymer made from renewable resource or type 6 with inherent stain resistance by means of cationic dye process.
6. Acceptable Commercial Fiber Shapes for optimum soil-hiding capability
  - a. Fiber identification at AATTCC 20 test method
  - b. Modification ration of 1.7 or less
  - c. Dye Method: 100% Solution Dyed

- d. Gauge: 1/8" min
  - e. Construction: Tufted
  - f. Surface/Style: Level Loop or Multi Level Loop
  - g. Color: To be approved by the University Representative
  - h. Density Factor: 5,000 min.
7. Stain Resistance: Stain resistance properties MUST be inherent. Topical Stain resistance treatment will not be acceptable. Stain Resistance properties must be permanent and cannot be removed by commercial cleaning or abrasive wear. Must pass the AATCC 175 red dye 40 tests. Carpet is required to retain permanent stain protection against acid type spills for the life of the carpet as measured by General Services Administration (GSA) test for permanence SIN 31-8.
  8. Edge Ravel: Limited lifetime Warranty against Edge Ravel. Preference will be given to carpet manufacturers that do NOT require the edges of the carpet to be seam sealed to guarantee 20 years of edge unraveling.
  9. Tuft Bind: Wet: Limited Lifetime Warranty against zippering
  10. Color fastness-light/color: Carpet is required to resist color loss from light exposure for 10 years. Manufacturer is required to provide a 10-year warranty for colorfastness after exposure to light as measured by AATCC Test Method 16E- International Gray scale rating after 160 AFU's should be 4 or better.
  11. Colorfastness-ozone: Carpet will resist color loss from Atmospheric Contamination for 10 years. Carpet manufacturer is required to provide a 10-year warranty for colorfastness after exposure to atmospheric contaminates as measured by AATCC Test Method 129- Ozone minimum shade change rating after five cycles shall be no less than International Gray scale rating of 4 or better.
  12. Colorfastness-crocking: Rating shall be 4 or better (wet and dry) AATCC transference scale AATCC 165.
    - a. Carpet is required to resist color transfer from wear for the life of the carpet. Carpet shall exhibit permanent colorfastness (wet or dry) for the lifetime of the installation as measured by AATCC Test method 8, minimum stain rating of 4 or better compared to AATCC color transference scale.
    - b. The carpet shall also exhibit permanent wetfastness for the lifetime of the installation as measured by AATCC Test Method 107, minimum shade change should be no less than International Gray Scale rating of 4 or better. water: 4 or better AATCC transference scale AATCC 107
  13. Flammability NBS smoke:
    - <450 Flaming Mode NFP258
  14. Flammability Radiant Panel: Class 1 fire rated ASTM E-648.
  15. Class A fire rated per ASTM E-84.
  16. Carpet shall be certified by the California Gold Sustainable Carpet Standard at the Gold or Platinum level. Carpet tile systems shall not exceed the target emissions factors of the Carpet and Rug Institute's following programs:
    - a. Carpet: Green Label Plus Program and Testing Procedures.
    - b. Carpet Cushion: Green Label Program and Testing Procedure
    - c. Carpet Adhesive: Green Label Program and Testing Procedure.

**B. WALK-OFF CARPET TILES**

1. Specify walk-off carpet at all building entrances. Install carpet flush with adjoining floor surface and meet ADA requirements.
  - a. Install walk-off a minimum of twelve feet in length in the direction of path of travel.

**PAINTING AND COATING**

**09 90 00**

**A. GENERAL**

1. Materials shall be “best” commercial quality products by firms with over 5 years manufacturing experience with a full product line. Prime coats and finish coats for any 1-paint system shall be the products of the same manufacturer.
2. Architectural coatings shall comply with the Green Seal Standards GS-11 and the most current LEED Requirements, whichever is more stringent.
3. Visible surfaces behind vents, grilles, etc., shall be painted flat black.
4. Inside wood surfaces of all drawers, shelves inside cabinets, and other wood surfaces where scheduled or noted, shall be given one coat of clear gloss lacquer, or clear polyurethane-base varnish.
5. Manufacturer: Dunn Edwards or equal.

**VISUAL DISPLAY UNITS**

**10 11 00**

**A. GENERAL**

1. Provide support backing in the wall for both furnished and future visual display boards.

**SIGNAGE**

**10 14 00**

**A. SIGNAGE CONSULTANT**

1. will be retained either by UC Davis Health or the Architect of Record to develop signage documents and schedules based on the UC Davis Health’s signage standards. These documents might be incorporated into the bid documents or bid separately. The University Representative shall determine how the signage consultant will be retained for the project and how the signs will be bid.

**B. EXTERIOR SIGNAGE**

1. Regulatory signs required for projects shall adhere to the current California Uniform Traffic Control Devices or (MUTCD) standards. Regulatory signs include “Stop” signs, and street directional signs such as “No Right Turn” etc. Regulatory signs shall have a high intensity prismatic sheeting (HIP) applied.
2. Regulatory Signposts: 2” OD round extruded aluminum with 1/8” thick wall thickness, alloy 6063 with cap at the top. Poles will be either anodized aluminum or painted silver with a DTM paint. Posts shall be set in concrete footings a minimum of 12 wide x 18” deep with a through bolt through the post to prevent the sign from turning. The top of the sign, when installed on the post, shall be 75” above the footing.

**TOILET COMPARTMENTS**

**10 21 13**

**A. TYPE**

1. Type: Floor-mounted, overhead braced, through-color solid phenolic, privacy (zero gap) partitions.

**B. CONSTRUCTION**

1. Construction: Interlocking doors and stiles, maximum height doors (72”) and panels, floor clearance between 1” – 4”

**C. ADA**

1. ADA accessible toilet compartments must be made wide enough to accommodate the UC Davis Health’s choice of tissue dispensers and surface mounted sanitary napkin disposals where required.

**D. HIGH-ABUSE-RESISTANT**

1. If the Project Program indicates a need for high-abuse-resistant design, provide institutional hardware for partitions, including extra-heavy-duty hardware, concealed attachments, and concealed screws on doors.

**CUBICLE CURTAINS AND TRACK**

**10 21 23**

**A. CUBICLE CURTAINS**

1. In hospital settings, cubicle curtains shall be required around every patient bed and shall be approved by the University Representative. Disposable Privacy Curtains are the UC Davis Health’s standard, unless otherwise approved by the University Representative.

**B. TRACK**

1. Aluminum tracks and barrel type hooks.

**PATIENT BED SERVICE WALLS**

**10 25 13**

**A. PATIENT BED SERVICE WALLS**

1. Patient bed service walls shall be modular systems, with field customization options. Finishes and surfaces shall be bleachable and high impact.

**WALL AND DOOR PROTECTION**

**10 26 00**

**A. HOSPITAL CORRIDORS**

1. Hospital corridors shall have wall protection as a typical; including crash rails, handrails, or a combination of both with the crash rail located just above the wall base.
  - a. In high-abuse patient areas, provide sheet wall protection between the handrail and crash rail.
  - b. In hospital corridors the hand and crash rails often match the base color and patient room door frame color to create a continuous line down a corridor.
  - c. Provide corner guards on hospital corridors and any area subject to high abuse, especially from carts and gurneys. Corner guards shall be full height starting from top of wall base.

**B. OTHER BUILDING TYPES**

1. In other building types, provide corner guards at outside corners of all high -traffic circulation typical.

**TOILET ACCESSORIES**

**10 28 13**

**A. STANDARDIZATION**

1. The following categories of restroom accessories are those for which UC Davis Health requires standardization from project to project.
  - a. Roll Hand Towel Dispenser: Wall Mount ADA compliant with touchless feature.
  - b. Hand Soap Dispenser: Surface mount or counter mount, touchless design
  - c. Toilet Tissue Dispenser: Dimensions must be a four-roll vertical coreless bathroom tissue dispensing system. Dispenser must hold up to 6,000 2 -ply or 12,000 1-ply sheets. Dispenser must have a dependable roll advancing system; dispenser must facilitate full roll usage.
  - d. Sanitary Napkin Dispenser: Surface mounted feminine napkin/tampon vendor; stainless steel; \$0.50 coin mechanism.
  - e. Mirrors: Mirrors shall be 1/4" thickness with solid backing. Frames shall be 1/2 inch by 1/2 inch by 1/2-inch heavy-duty stainless-steel angle, with all corners mitered and welded. Tilt mirrors shall be stainless steel with tilt built into frame.

**B. TOWEL DISPOSAL UNITS**

1. Towel disposal units are not required in any new or remodel work. These units will be freestanding, provided by UC Davis Health.

**FIRE EXTINGUISHERS**

**10 44 16**

**A. GENERAL**

1. Fire extinguishers shall be provided at locations as required by current edition of California Building Code and as approved by the University Representative. Recessed, lockable stainless-steel cabinets shall be provided for fire extinguishers in corridors and other public places. Extinguishers shall be refillable.

**LOCKERS**

**10 51 00**

1. Lockers shall be phenolic with heavy-duty hinges. Lockers shall be securely attached to backing plates in the walls.
2. Lockers shall have a sloped top.

**WINDOW WASHING EQUIPMENT**

**11 24 23**

**A. GENERAL**

1. Tie-off anchors shall be designed and installed on all new roofs per ANSI/IWCA I-14.1.
2. A minimum of 10% of the tie-off anchors shall be tested on site using load cell apparatus in accordance with manufacturer’s recommendations. Tests shall be conducted by an independent agency, and test reports shall be sent to the University Representative.
3. All anchors relying upon chemical adhesive fasteners shall be 100% tested on site at the test load as recommended by the SEOR, using load cell apparatus in accordance with manufacturer’s recommendations. Tests shall be conducted by an independent agency in the presence of the UC Davis Health’s assigned special inspector, and test reports shall be sent to the University Representative.

**A. GENERAL FUME HOOD REQUIREMENTS**

1. Published specifications, standards, tests or recommended methods of trade, industry or governmental organizations shall apply to all work in this section.
  - a. NFPA 45 - Standard on fire protection for laboratories using chemicals. Chapter 6: Ventilating System, Chapter 9-2.8: Laboratory Hoods.
  - b. NFPA 56C - Safety standard for laboratories in health-related institutions, chapter 3-3.5: Fume hoods.
  - c. ASHRAE 110, Method for Testing Performance of Laboratory Fume Hoods.
2. Requirements of Regulatory Agencies
  - a. Flammable liquid storage cabinets shall conform to all certification requirements as specified by the Campus Fire Marshall and NFPA 30.
3. Fume Hood Design shall comply with the following Standards.
  - a. Scientific Equipment and Furniture Association (SEFA), latest edition.
  - b. ASHRAE Handbook - HVAC Applications: Chapter 16 - Laboratories: Part 16.3: Fume Hoods
  - c. ANSI Z 9.5 Laboratory Ventilation Standard
  - d. National Sanitation Foundation (NSF) Standard 49
  - e. Guidelines for Design and Construction of Health Care Facilities - Facility Guidelines Institute; Part 6 Ventilation of Health Care Facilities - Sections 410: Laboratory Ventilating Systems and Hoods.
  - f. Balance, test, and certify each fume hood in accordance with the latest edition of ASHRAE 110 Testing Requirements. Fume hood field tests shall be performed by a qualified independent testing company on each hood to determine face velocity, containment, response time (for hoods installed on a VAV/lab airflow control system), cross drafts, and air flow patterns. Test results shall be submitted to the University Representative.
4. General Design Issues
  - a. Fume hoods shall be operated 24 hours a day. No user-controlled shut-off switch is allowed.
  - b. Fume hood ducts may be ganged onto exhaust plenum w/ multiple fans, with the exception of hot-acid, radioactive, or other special use hood.
  - c. Full by-pass fume hoods shall be used for constant volume applications. Variable air volume (VAV)hoods (partial by-pass) shall be used in conjunction with a VAV general ventilation system (e.g., Phoenix Controls, or equal).
  - d. Ductless or auxiliary air hoods are not acceptable.
  - e. Only removable baffles with three fixed horizontal slots or perforated baffles shall be provided. If slots are to be provided, they shall be continuous across the back of the fume hood. Engineered perforations are acceptable. Operator adjustable baffles and monolithic rear panels are not acceptable.
  - f. The manufacturer’s standard tissue screens shall be provided to prevent tissues from entering mechanical systems.

**B. CHEMICAL FUME HOODS**

1. General Product Requirements

- a. All chemical fume hoods shall be reviewed and approved by the University Representative.
  - b. Shall have been in commercial production and usage for a minimum of 5 years.
  - c. Shall be tested using most current American National Standards Institute (ANSI)/ASHRAE 110 method.
  - d. Noise generated by the functioning hood within 6 inches of the plane of the sash and by-pass opening in any position shall not exceed 60 dBA.
  - e. Unused holes (interior and exterior) shall be plugged or blanked.
2. Sash
- a. Sashes shall be vertical-type or frameless. Vertical-type: ¼-inch thick laminated safety glass, complete with ¼-inch deep stainless steel metal channels on sides, top and bottom.
  - b. Combination sashes shall be approved by the University Representative.
  - c. Mechanical stops (not friction) shall be provided to ensure that sash work opening is 18 inches, as measured from the top of the fume hood work surface to the bottom of the sash.
  - d. A manual override shall be required to allow the vertical sash to be raised above the maximum opening to allow lab apparatus to be installed or removed.
  - e. Operating face velocity at 18 inches shall be set between 100-120 fpm.
3. Provide a fume hood air flow indicator/alarm. The hood shall be prepared at the factory to receive the specified alarm/monitor. As a minimum, the alarm shall accommodate the following:
- a. The Safety Monitor/Alarm System shall monitor face velocity and provide audible and visual alarm if face velocity drops below 90 fpm or rises above 125 fpm. Audible alarm shall pulse at 80 dBA.
  - b. The monitor shall be UL listed, with all alarm circuit electric components, external tubing, restrictors and manifolds furnished complete. Monitor shall have light emitting diode display, which provides clear indication of airflow conditions. Safety monitor shall be tamperproof.
  - c. Alarm signal(s) shall have an audible pulsating signal and a visual, large flashing red light emitting diode.
    - 1) The alarm system shall provide a silence push button, which temporarily overrides the audible alarm for a period no longer than 5 minutes and shall be accessible on the front of the Safety Monitor. Note: Teaching laboratory hood alarm override shall not exceed a one-minute period. Once the “unsafe” operating condition has been corrected, the audio alarm shall automatically reset.
    - 2) During a temporary silence of audible alarm, the visual alarm shall remain activated until the alarm condition is corrected.
    - 3) When the alarm condition is corrected and face velocity and volume is return to specified levels, the safety monitor shall automatically reset and begin routine monitoring. Test circuit shall be provided to verify proper safety monitor operation.
  - d. Test circuit shall be provided to verify proper safety monitor operation.
  - e. Electrical Rating: Maximum 15 VDC and maximum current rating of 200 MA.
  - f. Connect between fume hood and the filter or damper.
  - g. Flow tube device (floating indicators), magnehelic, or ribbons hanging in the air stream are not acceptable airflow indicators.
4. Electrical Items

- a. All electrical items shall be pre-wired, and accessible for service from outside the hood. No fan switches shall be located at the fume hood.
  - b. Run internal electric wiring in conduit. Do not run conduit through hood interior or across hood front.
5. Utilities (gas, air, water, steam, and vacuum)
- a. Utilities controls shall be located outside of hood interior for convenient access and use. No plumbing utilities may run through the hood interior or across the front of hood.
  - b. When cold water is required, provide vacuum breaker.
  - c. Access panel to service utilities shall be gasketed with gasket material specific to use.
  - d. Pre-plumb all utilities.
6. Duct Work
- a. Materials shall be non-reactive, acid resistant and compatible with intended usage.
  - b. Include trim damper in duct above fume hood.
  - c. Duct outlet shall be round. Provide a square-to-round transition when equipment manufacturer system uses square profile.
7. Fan: Use only acid-resistant metallic fan protected by an inorganic coating.
8. Flammable storage cabinets shall be UL listed and/or NFPA approved.
- a. Flammable liquid storage cabinets do not require venting. If flammable liquid storage cabinets are vented, they shall be vented separately from the fume hood exhaust. The vent may be connected at the point where the fume hood exhaust duct enters the general fume hood exhaust manifold. Cabinets shall not be vented directly into the fume hood or through the fume hood work surface. Vents shall be stainless steel. All equipment subject to review and approval from Campus Fire Marshall.
  - b. Acid storage cabinets are approved for under-fume hood storage. Acid/corrosive storage cabinets do not require venting. If acid/corrosive storage cabinets are vented, they shall be separate from the fume hood exhaust. The vent may be connected at the point where the fume hood exhaust duct enters the general fume hood exhaust manifold. Cabinets shall not be vented directly into the fume hood, through the fume hood work surface. Vents shall be PVC, polypropylene, or other appropriate material.

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**C. ACID FUME HOODS**

- 1. Additional Product Requirements for Acid Fume hoods (Perchloric, other hot inorganic acid digestions, etc.)
  - a. Constant volume hood with by-pass feature.
  - b. Perchloric acid and other hot acid digestion hoods shall be on a dedicated system and have an automatic wash down system. High use solvent extraction and solvent use hoods (ether, other flammable solvents, etc.) shall be on a dedicated system designed for their intended purpose.
  - c. Under fume hood storage cabinets: Flammable liquid storage cabinets are not approved for installation under acid fume hoods.

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**D. HYDROFLUORIC (HF) ACID FUME HOOD**

- 1. HF acid fume hoods shall be a constant volume hood with bi-pass feature and shall be on a dedicated system.



- a. Flammable liquid storage cabinets are not approved for installation under HF acid fume hoods.
- 2. Sash
  - a. Sashes shall be a polycarbonate resin (Lexan) or similar. Glass is not acceptable. Contact the University Representative for project specific information.
  - b. No combination sashes shall be allowed.
- 3. The lens on light fixture(s) shall be polycarbonate resin (Lexan).

**E. OTHER SPECIALTY HOODS AND LOCAL EXHAUST**

- 1. Histology hoods, specimen hoods, and other local exhaust specialty hoods shall have a minimum operating face velocity of 100 fpm with a range of 100-120 fpm. An audible/visual flow alarm may be required depending on use.
- 2. Glove Hoods (Glove Boxes)
  - a. Glove hood (box) may be required for special applications using highly toxic, extremely reactive or California Occupational Safety and Health Act (Cal OSHA) regulated chemical carcinogens.
  - b. Glove hoods shall be a totally enclosed, ventilated cabinet of leak-tight construction with operations in the cabinet conducted through attached rubber gloves. The cabinet shall be maintained under negative air pressure of at least 0.50 in. w.g. (120 Pa). Glove hoods shall meet ANSI standard Z9.5, "Standard on Lab Ventilation" and the American Glove Box Society Standard, "Guidelines for Glove Boxes."

**BIOLOGICAL SAFETY CABINETS**

**11 53 53**

**A. GENERAL**

- 1. All Biological Safety Cabinets (BCS) shall meet the specifications within the most recent edition of the National Sanitation Standard 49 – Class II (Laminar Flow) Biosafety Cabinetry.
- 2. The BSC make and model must be on the National Sanitation Foundation (NSF) website of certified BSCs.
- 3. Do not provide any class/type of biosafety cabinet other than Class II Type A2 without prior authorization from the University Representative.
- 4. Biosafety cabinets shall not be connected to laboratory gas lines.

**HEALTHCARE EQUIPMENT**

**11 70 00**

**A. GENERAL**

- 1. An equipment list showing all items of equipment necessary to operate the facility shall be included in the contract documents. This list will assist in the overall coordination of the acquisition, installation, and relocation of equipment. The equipment list should include the classifications OFOI, OFCI, etc. and whether the items are new, existing to be relocated, owner provided, or not-in-contract.

**WINDOW TREATMENTS**

**12 20 00**

**A. SOLAR**

- 1. Solar roller shades are preferred for light filtering and reducing glare.

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**B.     MOTORIZATION NEW CONSTRUCTION**

1. Motorization used in new construction for patient rooms, which eliminates ligature risk.

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**C.     MOTORIZED SHADES – CONFERENCE ROOMS**

1. Motorized shades at conference rooms – dual shades with blackout and light filtering combination.

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**LABORATORY CASEWORK****12 35 53**

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**A.     CASEWORK**

1. Casework shall be provided as detailed in the Project Program. Construction of laboratory tops, stainless steel fabrications, laboratory wood casework, laboratory metal casework, special purpose cabinets, and miscellaneous laboratory furnishings shall be in accordance with the Project Program Requirements.

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**B.     MATERIALS**

1. Materials used for the construction of laboratory casework shall be the best of their respective kinds for the purpose intended including specialized materials, finishes and special forms conforming to product characteristics identified in the Project Program requirements.

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**C.     SHELVING**

1. Seismic rods shall be provided for all open shelving.

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**COUNTERTOPS****12 36 00**

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**A.     GENERAL**

1. Provide solid surface countertops at high use areas for durability and infection control.
  - a. Solid Surface Material: Homogeneous-filled plastic resin complying with ISFA 2-01.
  - b. Quartz Agglomerate: Solid sheets consisting of quartz aggregates bound together with a matrix of polymers, resins, and pigment and complying with ISFA 3-01.

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**ENTRANCE FLOOR MATS AND FRAMES****12 48 13**

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**A.     ENTRYWAYS**

1. Follow Cal Green standards for entrance floor mats - install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors.

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**B.     CARPETING COORDINATION**

1. Coordinate with requirements in Section 09 68 00 Carpeting.

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**FURNITURE****12 50 00**

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**A.     INTERIOR**

1. All interior furnishings listed below shall be “Owner Furnished/Owner Installed” (OFOI), including but not limited to:
  - a. Systems workstations.

- b. Visual display units.
- c. Metal file cabinets, bookcases, and storage cabinets.
- d. Task seating.
- e. Waiting area seating.

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**B. PURCHASING AGREEMENT**

- 1. University of California Office of the President (UCOP) has entered into a system wide agreement with following furniture vendors and their local vendor/installer to provide and install product types listed above:
  - a. Steelcase | One Workplace
  - b. MillerKnoll | MTA or KBM Hogue
  - c. Kimball | Seats and Stations

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**C. OTHER MANUFACTURERS**

- 1. In conjunction with UCDH Furniture Project Manager, the design professional shall coordinate design efforts with UCDH selected furniture vendor. The vendor shall provide furniture plan shop drawings to the design professional in PDF and CAD formats to be incorporated into the design drawings.

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**D. DESIGNER COORDINATION**

- 1. The design professional shall coordinate design efforts with appropriate vendor. The furniture vendor shall provide furniture plan shop drawings to the designer in PDF and CAD formats to be incorporated into the design drawings.

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**E. DESIGN RESPONSIBILITY**

- 1. The design professional shall be responsible to provide anchorage structural calculations and details for all furniture items needing non-structural seismic anchorage as required by building codes.

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**F. STATIONARY WORKSTATIONS**

- 1. Stationary workstations in the office/laboratory setting follow ergonomic principles by providing height adjustable work surfaces, openings adequate for leg and knee clearances and sufficient overhead space to allow adjustments to vertical equipment placement. The ANSI/HFES100 (current version) "Human Factors Engineering of Computer Workstations" shall be reviewed by the Design Professional.

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**INTERIOR PUBLIC SPACE FURNISHINGS**

**12 93 00**

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**A. TRASH RECEPTACLES**

- 1. Provide built-in trash receptacle at all public, staff and patient restrooms. Trash receptors at all other areas as well as recycle bins will be the responsibility of UC Davis Health. In high-traffic areas (including restrooms), UC Davis Health may add additional trash receptacles as needed. Recycle bins are multi- purpose receptacles for cardboard, mixed paper, bottles and cans, and trash.
- 2. Compost collection compartments shall be required in 20 22 by code.

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**B. IN CORRIDOR**

- 1. In Corridors, all trash receptacles and recycle bins proposed to be in any corridors shall be reviewed and approved by the Fire Marshal.

C. PROPER SIGNAGE

2. Proper Signage Proper signage is required, ideally at eye level or on the lid or opening, to avoid contamination. Verify with the University Representative for current signage requirements.

D. HOSPITAL GRADE

1. Hospital Grade Trash receptacles shall be hospital grade.

**SPECIAL CONSTRUCTION**

**13 00 00**

1. Special construction covers a wide range of items from aquatics, animal handling, clean rooms, cold rooms, engineered structures, building modules and radiation Protection. Projects on the UC Davis Health campus may not always contain such specialty equipment. When special equipment is identified in the program, the Design Build partner will coordinate with the University Representative to further define specialized requirements, in consultation with FP&D and PO&M.

**CONVEYING EQUIPMENT**

**14 00 00**

A. ELEVATOR TYPES

1. Elevator types may include but are not limited to pedestrian, patient, service, helistop -type elevators. Specific requirements for each elevator use such as in capacity, speed, roping platform size and inside clear size are further described in the project requirements.

B. LOCATIONS

1. Provide elevators in buildings two (2) stories and greater in height. Provide elevator service to each floor including basements, mechanical rooms, and roof top mechanical penthouses. Where elevators extend to the roof, provide an exit path to a code -required egress stair.

C. PASSENGER ELEVATORS

1. Passenger elevators shall be non-hydraulic, energy efficient and electric traction style unless otherwise approved.

D. CONTROLLERS

1. Select only non-proprietary elevator system controllers with a microprocessor, SCR-DC devices, or variable frequency AC drive. Elevator control systems may not be used if they require proprietary interfaces, diagnostic tools, devices, or test equipment to maintain or trouble shoot. Connect components directly to the control system without any unique manufacturer’s protocol or “black box”-type equipment.

E. SYSTEM DESIGN

1. System design to comply with regulatory requirements of ASMEA17.1, "Safety Code for Elevators and Escalators" and current CBC code.

F. HYDRAULIC ELEVATOR TYPES

1. For hydraulic elevator types, neither hydraulic pump nor motor can be submersible. Equipment arrangement will need to be confirmed at the early design stages as to provide adequate space for all supporting equipment. The elevator machine room shall be located adjacent to elevator. A hook- up phone line in machine room will be needed. Remote hydraulic stations are not permitted. If a remote station is required, obtain written approval from the University Representative. Biodegradable oil may be used, but it must be submitted for approval by the University Representative.

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**G. HOISTWAY PITS**

1. Hoist way pits must be waterproof. Special attention to detailing of pits and below grade joints are required.

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**H. MACHINE ROOM EQUIPMENT**

Arrange machine room equipment to allow a minimum of 30” working clearance around all equipment. In the case of controllers, electrical switches etc. working clearances shall be in accordance with CEC.

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**I. STANDBY POWER**

Provide standby power of the same voltage characteristics via normal electrical feeders to run one (1) elevator at a time in each elevator group, and single elevator unit, at full-rated car speed. Provide standby single-phase power to group controller, and each elevator controller for lighting, exhaust blower, emergency call bell, intercom amplifier. Building announcement speakers. Firefighters Telephone Jack.

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**J. MEDICAL EMERGENCY SERVICES**

1. Medical Emergency Services will need to have controls to call Elevator Numbers directly to any floor and allow an attendant to operate for medical emergency purposes.

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**K. CARD KEY ACCESS SYSTEMS**

1. When appropriate to the project requirements, provide cardkey access systems to limit access to individual floors.

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**L. SIGNALING EQUIPMENT**

1. Provide signaling equipment for each elevator or group of elevators. Signaling to consist of illuminated hall-call and car call buttons that remain lit until the call function has been fulfilled.

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**M. TELEPHONE AND ALARM SYSTEM**

1. Provide each car with code required telephone and alarm system.

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**N. PHOTO EYE DETECTION**

1. Provide each car with photo-eye detection devices for user safety.

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**O. CAR EQUIPMENT**

1. Car and counterweight safeties: instantaneous type for car speeds of 150 fpm or less and type B, flexible guide clap for speeds of 150fpm or more.
2. Provide work lights and GFI convenience outlets on top and bottom of the elevator car.

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**P. ENTRANCE EQUIPMENT**

1. Doors of passenger and service elevators are to be equipped with 1 ½ hour fire rating.
2. Frames, doors, and sight guards to be stainless steel construction typical.

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**DUMBWAITERS****14 10 10**

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**A. DESIGN**

1. Design of dumbwaiters will be reviewed on a case-by-case basis. The design and installation of systems are to be coordinated through the manufacturer of the system and approved by the University Representative. No proprietary equipment is permitted.

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**B. SELF-SUPPORTING**

1. Select dumbwaiter units that are self-supporting, with a structural steel hoist way framing designed for vertical-load support at the base of hoist way and lateral support at landing levels. Locate machine components inside the shaft, at the bottom of the hoist way.

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**C. CONTROL SYSTEM**

1. Provide fully automatic Control Systems for dumbwaiters with a call-and-send control system that responds to momentary push-button signals at each landing. Provide signaling equipment at each landing.

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**D. FINISHES**

1. Dumbwaiter finish to be Stainless Steel satin finish typical. Car construct on to be formed, reinforced and sound-deadened steel sheets with welded joints or metal-clad plywood on all sides.

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**E. DESIGN SPEED**

1. Design Speed: 50 ft/min.

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**ELECTRIC TRACTION ELEVATORS****14 21 00**

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**A. NOISE LEVEL**

1. To help minimize noise and control vibration, mechanically isolate elevator equipment (including hoist machines, deflector sheaves, power-conversion units, and support equipment) from the structure, electrically isolate controllers, machine motors, and power conversion units. Noise level relating to elevator equipment and its operation should be limited to no more than 50 dBA in elevator cars under any condition including door operation and exhaust blower on highest speed.

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**B. GEAR HOIST MACHINES**

1. For geared hoist machines use worm gear motor, brake, drive sheave and deflector sheave mounted on a common structural frame. Locate in machine room.

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**C. GEARLESS MACHINES**

1. For gearless machines use direct drive type motor with integral sheave.

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**D. GUARDS**

1. To prevent injuries to service personnel, provide guards around hoistway cables, sheaves and/or any cable pinch points. Install lighting and convenience outlets in elevator pits and machine rooms.

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**E. ISOLATION**

Mechanically and electrically isolate elevator equipment from the building structure.

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**HYDRAULIC ELEVATORS****14 24 00**

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**A. USE**

1. To help minimize noise and control vibration, mechanically isolate elevator equipment.

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**B. SPECIFIC PROVISIONS**

1. Hydraulic elevators will be considered only after thorough evaluation of all other options.

2. Provide manufacturers standard single -acting under-car hydraulic plunger-cylinder unit for each elevator with electric pump-tank-control system equipment in machine room.

**PNEUMATIC TUBE SYSTEM****14 58 00****A. GRAPHIC USER INTERFACE**

1. Provide a centrally located station control panel with Graphic User Interface for monitoring movement of system records and traffic flow.

**B. AIR POWER UNIT SYSTEM**

1. If an Air Power Unit (APU) system is selected provide energy conservation controls to automatically turn-off during periods of non-usage Provide an Automatic Station Shutdown for each station on the network.

**C. SOUND ATTENUATION CONTROL**

1. When designing a pneumatic tube system, design sound attenuation control providing, proper clearances from other systems including partition studs, building systems, and other devices wherever sound would be transmitted through physical contact.

**D. SMOKE DETECTORS**

1. Provide smoke detectors for exhaust air lines at each APU to provide immediate shutdown and system alarm.

**APPENDIX A ABBREVIATIONS & DEFINITIONS**

ACI	American Concrete Institute
ADA	Americans with Disabilities Act Accessibility Guidelines
AESS	Architecturally Exposed Structural Steel
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
BHMA	Builders Hardware Manufacturers Association
BSC	Biological Safety Cabinets
CAL OSHA	California Division of Occupational Safety and Health
CBC	California Building Code
CCCPD	Chancellors Committee on Campus Planning and Design
CCR	California Code of Regulations
CSI	Construction Specifications Institute
DPP	Detailed Project Program
DSA	Division of the State Architect
EDP	<b>EXECUTIVE DESIGN PROFESSIONAL:</b> The Design Professional contracted by the University to prepare Construction Documents for a particular project. In this document, the term “Executive Design Professional” may refer to an architect, landscape architect, planner, interior designer, or an engineer of record.
EH&S	Environmental Health & Safety
EIR	Environmental Impact Report
ENR	Engineering News Record
ER	Entrance Facility Room
ESR	Evaluation Service Report – developed by ICC – product approval for adherence to code standards
FD&C	Facilities Design and Construction
FRP	Fiberglass reinforced polyester
FSC	Forest Stewardship Council



GA	Gypsum Association
GFCI	Ground Fault Circuit Interrupter
HDPE	High Density Polyethylene
ICC	International Code Council
ICC-ES	ICC Evaluation Service
LRDP	Long Range Development Plan for UC Davis Health
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NOA	Naturally Occurring Asbestos
OSHPD	Office of Statewide Health Planning and Development
PCB's	Polychlorinated biphenyls – manmade chemicals banned by the USEPA in 1979 widely used in electrical equipment like capacitors and transformers
PETG	Polyethylene terephthalate glycol
PO&M	Plant Operations & Maintenance
PPG	Project Planning Guide
PSI	Pounds per Square Inch
SDI	Steel Door Institute
SFM	State Fire Marshal
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSMA	Steel Stud Manufacturers Association
UBC	Uniform Building Code
SDI	Steel Door Institute
TS	Telecommunications Spaces
TR	Entrance Facility Room
UNIVERSITY REPRESENTATIVE	The person designated by UC Davis Health to represent the University to the Contractor, Design Professionals, and/or Project Engineers.
UPC	Uniform Plumbing Code
VOC	Volatile Organic Compound - organic chemicals that have a high vapor pressure at ordinary room temperature.

**APPENDIX B BASIS OF DESIGN (OR EQUAL) PRODUCTS (ARCHITECTURAL)**

1. Basis of Design (Product Standard): UC Davis Health has selected certain products and systems to establish a standard of quality. Other manufacturers offering products having equivalent characteristics may be considered, provided deviations are minor and comply with the requirements of the Contract Documents.
2. Refer to the attachment that follows.

## APPENDIX B - BASIS OF DESIGN (OR EQUAL) PRODUCTS (ARCHITECTURAL)

	Description	Division	Section	Manufacturer	Product	Notes
1	Moisture-Resistant Particle Board Panels	6	06 40 00	Apex	MR10	
2	Cabinet Locks (Keyless)	6	06 40 00	CompX	RegulatoR	REG-S-V-3, self-lock, vertical mount, 1 - 3/16" cylinder length, "non-suffix standard silver housing and knob"
3	Cabinet Shelf Rests	6	06 40 00	Tenn Tex	T-803-00	
4	Locksets	8	08 70 00	Schlage	ND Series	Any variation must be reviewed and approved through the University Representative.
5	Panic Hardware	8	08 70 00	Von Duprin	94/94 or 98/98 series	For recessed panics use 94/94 series. For standard panics use 98/98 series. For 98/98 series, use fire pin instead of bottom rod.
6	Mortise Hardware	8	08 70 00	Schlage	L283-722 (w/ indicator)	This can be used because we have a coin turn. If they use a key, use 09-611 instead.
7	Closers	8	08 70 00	LCN	4040 XP with RW-PA Arm	
8	Panic Rim Exit Devices	8	08 70 00	Von Duprin	Series 98	Includes panics with vertical rods.
9	Stops and Holders	8	08 70 00	Trimco	1211	
10	Smoke and Weather Door Seals	8	08 70 00	Pemko	S88, S44W, or equal	
11	Hand/Crash Rail	10	10 26 00	Acrovyn	HRB-10CN	Architect of record to confirm that it is used in conformance with applicable CBC requirements, including 1014.2, 1003.3.3.1 & 1224.4.7
12	Roll Hand Towel Dispenser (Large)	10	10 28 13	TORK	Part #552528	Color - black. Public and staff restrooms as space allows.
13	Roll Hand Towel Dispenser (Mini)	10	10 28 13	TORK	Part #552538	Color - black. Use if large model will not fit.
14	Hand Towel Dispenser (Mini)	10	10 28 13	TORK	Part #552228	Color - black. Multi-fold towels.
15	Hand Soap Dispenser	10	10 28 13	Ecolab	Model #9202-1193	Color - white. Touch free.
16	Hand Soap Dispenser	10	10 28 13	Ecolab	Model #9202-3603.	Color - white. 1250 mL.
17	Toilet Tissue Dispenser	10	10 28 13	TORK	Part #SCA5555290	Color - black. Use with Part #TJ1222A. If single roll dispenser is required, use Part #67TR.

18	Toilet Seat Cover Dispenser	10	10 28 13	Bobrick	B-221	
19	Sanitary Napkin Disposal	10	10 28 13	Bobrick	B-270	Use in public, women's, and unisex restrooms.
20	Baby Changing Station	10	10 28 13	Bobrick (Koala Kare)	KB-200-00	Use in public restrooms.
21	Facial Tissue Dispenser	10	10 28 13	Bobrick	B-8397	
22	Chemical Dispenser	10	10 28 13	3M	Part #47131805 or 70-0713-1519-9	For EVS closets
23	Caution Cone (30")	10	10 28 13	Rubbermaid	Part #FG9S0100YEL	
24	Caution Cone (20")	10	10 28 13	Rubbermaid	Part #RCP9S0000YW	
25	Trash Can (8 Gallon)	10	10 28 13	Rubbermaid	Part #1883456	
26	Trash Can (13 Gallon)	10	10 28 13	Rubbermaid	Part #1883458	
27	Trash Can (24 Gallon)	10	10 28 13	Rubbermaid	Part #1883552	
28	Recycling Bin (23 Gallon)	10	10 28 13	Rubbermaid	Part #H-1385BLU	
29	Recycling Bin (32 Gallon)	10	10 28 13	Rubbermaid	Part #H-1478BLU	
30	Bio Hazard Bin (8 Gallon)	10	10 28 13	Rubbermaid	Part #FG614300RED	
31	Bio Hazard Bin (18 Gallon)	10	10 28 13	Rubbermaid	Part #FG614500RED	
32	Bio Hazard Bin (23 Gallon)	10	10 28 13	Rubbermaid	Part #FG614600RED	
33	Locker Locks	10	10 51 00	CompX	RegulatoR	REG-S-V-3, self-lock, vertical mount, 1 - 3/16" cylinder length, "non-suffix standard silver housing and knob"
34	Roller Shade	12	12 20 00	Draper, Inc.	FlexShade NEXD	Clutch-operated