

Category	Subcategory	USC ID	Requirement
General Laboratory	ADA	GL.ADA.1	Adjustable work surface within the range 27" to 37" from the floor
General Laboratory	ADA	GL.ADA.2	A minimum width of 36" to allow for leg space for the seated individual
General Laboratory	ADA	GL.ADA.3	The utility and equipment controls are placed within easy reach
General Laboratory	Basic	GL.B.1	Bounded by four walls and a roof or ceiling
General Laboratory	Basic	GL.B.2	Non-porous walls and painted with a durable, impervious finish (e.g. high gloss paint) to facilitate decontamination
General Laboratory	Basic	GL.B.3	Well-lit to avoid spills and other accidents that could result in contamination build-up
General Laboratory	Basic	GL.B.4	Ergonomic workstations to minimize musculo-skeletal injuries and stress from repetitive motion. Consult with EH&S Ergonomics specialist
General Laboratory	Basic	GL.B.5	At least 2.5 linear feet of chemical fume hood space per student/researcher
General Laboratory	Basic	GL.B.6	Noise levels at laboratory benches not to exceed 55 dB
General Laboratory	Basic	GL.B.7	Mechanical climate controls to offset heat generated from electrical appliances (e.g., REVCO freezer, incubator, and autoclave)
General Laboratory	Basic	GL.B.8	Fixed, non-operable windows in labs and laboratory buildings
General Laboratory	Basic	GL.B.9	Hand washing – soap dispenser, paper towel holder
General Laboratory	Basic	GL.B.10	Drying racks (inert, non-reactive) for labware and glassware above the sinks
General Laboratory	Casework	GL.C.1	Constructed of metal coated with an inert polymer or other non-reactive materials
General Laboratory	Casework	GL.C.2	Vacuum pump use – vented, sound-insulated, and, equipped with convenience outlets. Provide access hole to accommodate vacuum line from cabinet to bench top.
General Laboratory	Entry/Exit/Aisle Width	GL.EA.1	Minimum clearance of 36" for main emergency egress from the laboratory.
General Laboratory	Entry/Exit/Aisle Width	GL.EA.2	Laboratories having a floor area of 200 square feet (18.6 m2) or more need two separate exits. All portions of the laboratory must be within 75 feet of an exit.
General Laboratory	Entry/Exit/Aisle Width	GL.EA.3	72" or more of space between adjacent workstations and laboratory benches to provide ease of access.
General Laboratory	Entry/Exit/Aisle Width	GL.EA.4	Automatic self-closing laboratory doors.
General Laboratory	Entry/Exit/Aisle Width	GL.EA.5	All exit and emergency doors equipped with panic hardware and swing in the direction of exit travel regardless of occupant load.
General Laboratory	Flooring	GL.F.1	One piece with covings to the wall in chemical use areas and biological containment facilities
General Laboratory	Flooring	GL.F.1.1	Chemically-resistant
General Laboratory	Flooring	GL.F.1.2	Liquid-tight construction areas for corrosive liquids storage.
General Laboratory	Flooring	GL.F.1.3	Skid-proof
General Laboratory	Flooring	GL.F.1.4	Waxed and sealed vinyl floor tiles for low-hazard areas.
General Laboratory	Seismic Safety	GL.SS.1	Passive restraining system such as seismic shelf lips (3/4" or greater) for all shelves; shelves firmly affixed so as not to vibrate out of place and allow the shelf contents to fall.
General Laboratory	Seismic Safety	GL.SS.2	Brace or anchor any equipment, appliance, furniture, etc. 42" or higher to the wall and/or floor.
General Laboratory	Work Surfaces	GL.WS.1	Impervious to chemicals/materials used in the laboratory and moderate heat (e.g. black epoxy resin). NOTE: Wood and Fiberglas surfaces are inappropriate
General Laboratory	Work Surfaces	GL.WS.1.1	Seamless one-piece design to prevent contamination
General Laboratory	Work Surfaces	GL.WS.1.2	Coved or backsplash when against the wall
General Laboratory	Work Surfaces	GL.WS.1.3	Easy to clean
General Laboratory	Work Surfaces	GL.WS.1.4	Incorporate a lip to prevent run-off onto floor
General Laboratory	Work Surfaces	GL.WS.1.5	Sturdy able to support anticipated loads
General Laboratory	Work Surfaces	GL.WS.1.6	Penetrations for electrical, plumbing, etc. completely sealed.
QUESTIONS? Contact USC EH&S @ 213-740-6448 UPC or 323-442-2200 HSC			

Category	Subcategory	USC ID	Requirement
BSL 2	Basic	BSL2.B.1	Use smooth, cleanable tiles (Mylar face with a smooth surface, or the equivalent) in drop ceilings
BSL 2	Basic	BSL2.B.2	Ceiling height must accommodate an 18-inch clearance for biological safety cabinet(s)
BSL 2	Basic	BSL2.B.3	Each laboratory must have a handwashing sink; the sink may be manually, hands-free, or automatically operated.
BSL 2	Basic	BSL2.B.4	Sink must be located near the exit, have chemical-resistant traps (for disinfectants), a coved backsplash, and a hot-cold water, pre-mixing faucet.
BSL 2	Basic	BSL2.B.5	Paper-towel dispenser and a hands-free soap dispenser will be mounted within easy reach.
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Radiation Lab	Basic	RL.B.1	Sinks constructed of impervious material (e.g., stainless steel); foot-, elbow-, or knee-operated faucets. Plumbing smooth and easily cleaned
Radiation Lab	Basic	RL.B.2	Radiation shielding to be approved by Radiation Safety Officer (RSO)
Radiation Lab	Basic	RL.B.3	Shielding and equipment will be designed and installed to meet seismic-restraint requirements
Radiation Lab	Basic	RL.B.4	Emergency "Off" (mushroom) switches required in areas where exposures to individuals could exceed limits if administrative or engineering controls should fail; centrally located and in sufficient number so each potential user has convenient access.
Radiation Lab	Basic	RL.B.5	Warning lights and audible signals will be in compliance with the requirements in 10 CFR 20.1601. Signage will be in compliance with the requirements in 10 CFR 20.1902.
Radiation Lab	Basic	RL.B.6	Install radiation area monitors
Radiation Lab	Equipment	RL.E.1	Single-floor facilities with machines of energies less than 150 kVp, shielding will be 7-feet high. In multi-floor/level facilities, shielding in walls \geq 7 feet.
Radiation Lab	Equipment	RL.E.2	Single-floor facilities with high-energy sources that produce "skyshine", shielding extended to the ceiling; ceilings shielded as well
Radiation Lab	Equipment	RL.E.3	Source controls located so that no first-scattered radiation reaches control area (except DEXA bone density, veterinary, and dental units); exposures from primary and secondary radiation will not exceed regulatory limits when use and occupancy factors are taken into account.
Radiation Lab	Equipment	RL.E.4	Required on access doors to radiation sources or on required shielding components that are movable. Interlocks will be fail-safe and tamper-resistant
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Category	Subcategory	USC ID	Requirement
NIR	Laser	NIR.L.1	Doors providing access to spaces containing open-beam Class-4 lasers will be fitted with interlocks to prevent emission from lasers if doors are opened; must also deny outside-to-inside entry during laser emission
NIR	Laser	NIR.L.2	All doors to Class-3b and Class-4 laser areas will have ANSI Z136.1 (2000) specification laser warning signs.
NIR	Laser	NIR.L.3	Appropriate barriers will be provided to prevent Class-3b or Class-4 laser beams from leaving the confines of a laser lab through doorways, windows, etc.
NIR	Laser	NIR.L.4	Class-3b or Class-4 laser beam paths that cross between optical tables/equipment benches or pass through barriers will be properly enclosed and prominently marked identifying the hazard. All enclosures will be compatible with the laser wavelength and beam power. All laser-beam paths will be maintained at a height either above or below the eye level of standing/sitting persons who may be exposed.
NIR	Laser	NIR.L.5	Laser enclosures, beam stops, beam barriers, and other exposed surfaces will be diffusely reflective at the laser wavelength used. Surfaces that may create a specular reflection at the laser wavelength will not be used.
NIR	Laser	NIR.L.6	Optical benches will be secured to prevent substantial movement during an earthquake. This involves anchoring a sturdy frame to the laboratory floor that surrounds and is close to, but not touching, the optical bench (i.e., 1/2-inch clearance between the frame and the bench).
NIR	Laser - Class 4	NIR.LC4.1	Red, mushroom-type, room/area emergency power shutoffs will be installed in conspicuous locations that are easily accessible from the laboratory entrances. The switches will be clearly and conspicuously marked with the words "Notice — In Emergency, Push Button to Shut Down Laser."
NIR	Laser - Excimer	NIR.LE.1	Halogen gas mixtures will normally be stored in ventilated gas storage cabinets. All transfer lines and components in contact with halogens will be made of compatible (nonreactive) materials.
NIR	Laser - Excimer	NIR.LE.2	The gas discharge from both the excimer laser and the associated halogen gas storage cabinet will be connected to an appropriate exhaust ventilation system capable of maintaining an average face velocity of 200 fpm at the cabinet's window opening when the window is fully opened. An alarming airflow meter should be used to monitor and indicate low-flow conditions in the gas cabinet
NIR	Laser - Excimer	NIR.LE.3	Closed, nonventilated excimer laser systems will have halogen scrubber devices
NIR	Other	NIR.O.1	Protect against exposure to radio frequencies and microwave devices (30 kHz to 300 GHz) that exceed Maximum Permissible Exposure (MPE) through use of shielding, barriers and/or cages.
NIR	Other	NIR.O.2	Restrict access to locations where electric power frequency (60 Hz) magnetic- and electric-field strengths could be hazardous to persons with cardiac pacemakers or other similar electronic medical devices (>1 G and >1000 V/m).
NIR	Other	NIR.O.3	Prevent access to places where whole body magnetic fields exceed 600 G. Areas such as hallways, stairways, and offices shall be located where fields are < 5 G to allow completely unrestricted access.
NIR	Other	NIR.O.4	Appropriate ANSI Z535 specification warnings signs will be provided to identify such areas.
NIR	Other	NIR.O.5	Appropriate discharge will be made to direct cryogenic gases from a quenched superconducting magnet to a safe, unoccupied location to avoid exposing people to an oxygen-deficient atmosphere.
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Ventilation	Basic	V.B.1	100 % outside supply air to all lab spaces; exhaust 100% lab room air to the outside. No return of fume hood and laboratory exhaust back into building
Ventilation	Basic	V.B.2	Negative pressurization in laboratories by adjusting make-up air flow to 90 % of exhaust air flow.
Ventilation	Basic	V.B.3	10 air changes per hour of ventilation for laboratories; 6 air changes per hour after hours or when the space is unoccupied. Room light switches will not be used to control either hood exhaust flow rates or room air exchange rates.
Ventilation	Basic	V.B.4	Provide additional exhaust outlets where necessary to maintain air change rates and temperature control.
Ventilation	Basic	V.B.5	Do not install fume hoods adjacent to an exit unless a second exit or another means for exiting is provided
Ventilation	Basic	V.B.6	Locate hoods away from activities or facilities which produce air currents or turbulence, e.g., high pedestrian or vehicular traffic areas, air supply diffusers, doors
Ventilation	Basic	V.B.7	Exhaust ductwork will be fire- and corrosion-resistant. Exhaust system materials will be noncombustible if perchloric acid or similar oxidizing agents that pose a fire or explosion hazard are used
Ventilation	Basic	V.B.8	Seal duct joints to protect against chemical attack
Ventilation	Basic	V.B.9	Slope all horizontal ducting down towards the fume hood (recommended guideline: slope equals 1 inch to 10 feet)
Ventilation	Basic	V.B.10	Laboratory supply ventilation system ductwork will not be internally insulated. Sound baffles or external acoustical insulation at the source should be used for noise control
Ventilation	Basic	V.B.11	Per NFPA 45, fume hood exhaust fans will not be shut down automatically when smoke alert signal is detected in supply air system
Ventilation	Basic	V.B.12	Exhaust flues/motors will be labeled with the room(s)/fume hood(s) they service
Ventilation	Basic	V.B.12.1	Laboratory ventilation exhaust fans will be spark-proof and constructed of materials or coated with corrosion-resistant materials
Ventilation	Basic	V.B.12.2	Isolation dampers on individual exhaust stacks; Isolation dampers on all centralized exhaust system fans that discharge into a common exhaust stack or plenum
Ventilation	Basic	V.B.12.3	Fume hood exhaust stacks at least 10 feet above the roof deck or two feet above the top of any parapet wall, whichever is greater. Aesthetic conditions concerning external appearance will not supersede these requirements. Do not collocate with air intake systems. NOTE: Wind engineering evaluations (3-D modeling) will be conducted for all wind directions to optimize stack location vis-a-vis building air intake, air intake at nearby buildings, and discharge concentrations at ground level.
Ventilation	Basic	V.B.12.4	Access to ductwork or rooftop stacks will be clear of obstruction and protected from fall hazards (railing, 4' parapet, room to open A-frame ladder, etc.) should maintenance be required
Ventilation	Basic	V.B.12.5	Discharge velocity recommended at 3,000 fpm; lower velocities are acceptable if discharged hazmat concentrations are shown to be at safe levels
Ventilation	Fume Hood	V.FH.1	Transparent movable sash constructed of shatter-resistant, flame resistant material and capable of closing the entire front face
Ventilation	Fume Hood	V.FH.2	Vertical sash w/horizontal sliding panels: panels will be 12 to 15 inches in width.
Ventilation	Fume Hood	V.FH.3	A minimum of 2.5 linear feet of fume hood for each researcher.
Ventilation	Fume Hood	V.FH.4	Average face velocity: 100 - 125 fpm for general work. 125 - 150 fpm for all radioactive, corrosive, or highly toxic materials
Ventilation	Fume Hood	V.FH.5	Fume hood noise not to exceed 60dBA within 6 inches of the plane of the sash and by-pass opening in any position.
Ventilation	Fume Hood	V.FH.6	Constant air volume fume hoods will have dedicated exhaust flues/motors
Ventilation	Fume Hood	V.FH.7	Do not manifold ducts from radioisotope, carcinogen, or hot acid (perchloric) fume hoods. They will be single-ducted
Ventilation	Fume Hood	V.FH.8	On/off switch to fume hood will not be located in the laboratory. Exhaust fans will run continuously without direct local control from laboratories. The switch could be inadvertently turned off if it is located in the laboratory.
Ventilation	Fume Hood	V.FH.9	New fume hoods will be standard products that meet SEFA standards. All fume hood designs must demonstrate containment of tracer gas less than 4.0 AM 0.05 according to ASHRAE Test Standard 110-1995
Ventilation	Fume Hood	V.FH.10	Fume hood must be equipped with air flow monitor
Ventilation	Fume Hood	V.FH.11	Portable, non-ducted fume hoods are not permitted; Exceptions will be reviewed and approved by EH&S.
Ventilation	Fume Hood	V.FH.12	Do not mount power strips in fume hoods
Ventilation	Fume Hood	V.FH.13	Do not mount shelving in fume hoods

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Ventilation	Fume Hood - Iodination	V.FHI.1	Hood inserts are only permitted for iodination procedures specifically approved by the Radiation Safety Officer
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.1	Where perchloric or other acids will be heated above ambient temperature, a dedicated acid hood will be installed or provisions made to trap and scrub vapors at the point of emission, before they enter the laboratory ventilation system.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.2	Acid hoods and exhaust ductwork constructed of materials that are acid resistant, nonreactive, and impervious to perchloric acid, typically 316 stainless steel or unplasticized PVC.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.3	A water spray system to wash down the hood interior behind the baffle and the entire exhaust system, including the exhaust fan. The hood work surface will be watertight with a minimum depression of 13-mm (½ in.) at the front and sides. An integral trough will be provided at the rear of the hood to collect wash-down water.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.4	Spray wash-down nozzles installed in ducts no more than 5 ft apart; positive drainage slope of ductwork back into the hood. Ductwork will consist of sealed sections, and no flexible connectors will be used.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.5	The hood baffle will be removable for inspection and cleaning.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.6	Ductwork for perchloric/hot acid hoods and exhaust systems will take the shortest and straightest path to the outside of the building and will not be manifolded with other exhaust systems
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.7	Sealants, gaskets, and lubricants used with perchloric/hot acid hoods, ductwork, and exhaust systems will be acid-resistant and non-reactive with perchloric acid.
Ventilation	Fume Hood - Perchloric/Hot Acid Use	V.FHPA.8	The exhaust fan will be acid-resistant and spark-resistant. The exhaust fan motor will not be located within the ductwork. Drive belts will be conductive.
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1	Installation of variable air volume (VAV) systems to reduce energy consumption and operating costs. VAV systems will:
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.1	Monitor sash opening and control the cfm volumetric flow rate of hood to maintain a constant face velocity
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.2	Monitor room occupancy to provide 100% of operational supply air when space is occupied, regardless of hood use
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.3	If an unoccupied mode of operation is desired, it will be controlled by a room occupancy (not a hood occupancy) sensor, not less than 60% of occupied operational levels of volumetric flow rate
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.4	Monitor the fume hood exhaust airflow, the general exhaust airflow and the supply (make-up) airflow, and maintain a net negative airflow so the volume of fresh air entering the space equals to 90% of the maximum exhaust airflow
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.5	Delay throttling back room air supply for 10 (or more) minutes after the room occupancy sensor no longer detects people in the room (see above)
Ventilation	Fume Hood - Variable Air Volume	V.FHVAV.1.6	The fume hood motion sensor time delay (from attended mode to standby mode) will be 5-10 minutes to alleviate the nuisance noise and wear and tear from opening/closing the VAV venturi valve/control device too frequently
Ventilation	Local Exhaust	V.LE.1	Local exhaust ventilation (e.g., "snorkels" or "elephant trunks") provided as needed to collect potentially hazardous exhausts from gas chromatographs, vacuum pumps, excimer lasers, or other equipment which can produce potentially hazardous air pollutants
Ventilation	Radiation	V.R.1	Facilities that evolve airborne radionuclides will have ventilation systems that will limit air concentrations to levels that are ALARA (As Low As Reasonably Achievable) and are less than occupational exposure limits
Ventilation	Radiation	V.R.2	Nuclear air cleaning (filtration) systems on major installations will be designed in accordance with ASME N509 or AG-1. Recommended, however, that systems' design meet N509 and AG-1 whenever possible for all installations. Each filter stage must facilitate independent testing in accordance with ASME N510 or AG-1. Last stage HEPA filters just prior to discharge (into occupied locations or the environment) will comply with DOE-STD-3020-97 (i.e., will be "nuclear grade").
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Emergency Equipment	Basic	EE.B.1	Spill kit: Absorbent material such as diatomaceous earth and vermiculite; dikes for spill containment; sodium carbonate (acid spills) or sodium bicarbonate (acid and base spills); disinfectant for biohazardous spills; pH paper; plastic dust pan and hand sweeper; large, sealable plastic bags
Emergency Equipment	Basic	EE.B.2	First aid kit: Band-aids, gauze, and/or sterile wraps; alcohol swabs, disinfectants, anti-bacterial balms; aspirin, non-aspirin tablets, ibuprofen, naproxin; scissors, gauze tape
Emergency Equipment	Eyewash/Shower	EE.ES.1	Plumbed eyewash and safety shower combination stations will be installed in new and/or remodeled laboratories meeting the specifications of ANSI Z358.1-1998. Drench hoses, sink faucets, or bathroom-type showers are not acceptable eyewash/safety shower facilities, however they may be useful to supplement eyewashes/safety showers
Emergency Equipment	Eyewash/Shower	EE.ES.2	A combination unit installed in all acid-washing work areas and in all open tray film processing work areas using chemical developers and fixers.
Emergency Equipment	Eyewash/Shower	EE.ES.3	Combination unit in accessible location that requires no more than a 10 second brisk walk for the injured person to reach from anywhere in the lab and no more than one door (no lock and one motion to open) to pass through. No tripping or stumbling hazards in the path of travel.
Emergency Equipment	Eyewash/Shower	EE.ES.4	Locate combination unit as near as practical to fume hood and design for handicap access.
Emergency Equipment	Eyewash/Shower	EE.ES.5	If eyewash/shower combination units are installed in common areas such as building corridors, then they must be outfitted with audible/visible alarm units and dialers that connect directly to the Department of Public Safety's (DPS) switchboard.
Emergency Equipment	Eyewash/Shower	EE.ES.6	The floor area directly beneath the emergency eyewash/shower station will meet the following requirements:
Emergency Equipment	Eyewash/Shower	EE.ES.6.1	Stenciled or decal with the wording, "KEEP AREA CLEAR". The minimum letter height for stencil is three (3) inches. The paint/polymer used to spray the wording must be non-slip and impervious to most solvents and corrosive materials. The decal will be a minimum 18 inches x 24 inches or 17 inch diameter circle; constructed of materials impervious to most solvents and corrosives; non-slip; and must not obscure floor drain.
Emergency Equipment	Eyewash/Shower	EE.ES.6.2	Maintain a 30-36" radius free of obstruction and a clear path of access.
Emergency Equipment	Eyewash/Shower	EE.ES.7	All eyewash/shower units will have conspicuous signage in the immediate vicinity identifying their location.
Emergency Equipment	Fire Extinguisher	EE.FE.1	ABC dry chemical (ammonium monophosphate) permanently mounted in a conspicuous location at exit doors and accessible within 75 ft from any point in the lab. Extinguisher may be mounted outside the laboratory if it meets the 75 ft requirement
Emergency Equipment	Fire Extinguisher	EE.FE.2	Carbon dioxide or halon-replacement extinguishers may be mounted in instrument rooms.
Emergency Equipment	Fire Extinguisher	EE.FE.3	Maintain a 30-36" radius free of obstruction and a clear path of access.
Emergency Equipment	Fire Extinguisher	EE.FE.4	All fire extinguishers will have conspicuous signage in the immediate vicinity identifying their location.

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Material Storage	Basic	MS.B.1	Storage areas will be secured against unauthorized entry
Material Storage	Basic	MS.B.2	Emergency power provided for exhaust ventilation, gas-detection systems, emergency alarm systems, and temperature control systems
Material Storage	Basic	MS.B.3	Sensors on gas cabinets to notify if exhaust system failure or gas leak; route alarm system to DPS control board; Similar system employed at Photonics Lab
Material Storage	Compressed Gas Cylinder	MS.CG.1	Well-ventilated areas protected from external heat sources such as flame impingement, intense radiant heat, electric arc, or high temperature steam lines. Do not store in unventilated enclosures such as lockers and cupboards.
Material Storage	Compressed Gas Cylinder	MS.CG.2	Secured to approved storage racks (e.g. Unistrut, pipe racks, cylinder corrals) with two metal chains/straps/cables at 1/3 and 2/3 of the height of the cylinders. Chain - at least 1/4" zinc-coated grade 30 steel; cable - at least 1/4" zinc-coated steel
Material Storage	Compressed Gas Cylinder	MS.CG.3	Segregation of gases by hazard class
Material Storage	Compressed Gas Cylinder	MS.CG.3.1	Minimum 20 feet apart if not in a fire-rated gas cabinet
Material Storage	Compressed Gas Cylinder	MS.CG.3.2	Minimum 5 feet from other cylinders behind a non-combustible fire barrier (≥ 5 feet high)
Material Storage	Compressed Gas Cylinder	MS.CG.3.3	Minimum 5 feet from cylinders within a fire-rated gas cabinet
Material Storage	Compressed Gas Cylinder	MS.CG.3.4	Fire-rated cabinets may be stored side-by-side
Material Storage	Compressed Gas Cylinder	MS.CG.4	Storage/use of toxic compressed gas cylinders (NFPA health hazard rating 3 or 4) in ventilated gas storage cabinets, exhausted enclosures, or within separate ventilated gas storage rooms without other occupancy or use. Acceptable to mount lecture bottles connected to a manifold in a fume hood.
Material Storage	Compressed Gas Cylinder	MS.CG.5	Storage/use of toxic gas cylinders (NFPA health hazard rating 2; no physiological warning properties) in ventilated gas storage cabinets, exhausted enclosures, or within separate ventilated gas storage rooms without other occupancy or use. Acceptable to mount lecture bottles connected to a manifold in a fume hood.
Material Storage	Compressed Gas Cylinder	MS.CG.6	Storage of pyrophoric gas cylinders (> lecture bottle) in ventilated, sprinklered gas cabinets
Material Storage	Compressed Gas Cylinder	MS.CG.7	Compressed gas cylinders will not obstruct exits or routes of egress. Do not store near elevators, walkways, platform edges or in locations where heavy moving objects may strike or fall upon them.
Material Storage	Specialty Room	MS.SR.1	Latches that can be operated from the inside to allow for escape if designed for human occupancy (or human accessibility)
Material Storage	Specialty Room	MS.SR.2	Latches and frames will be designed to allow actuation under all design conditions, such as freezing. Magnetic latches are recommended.
Material Storage	Specialty Room	MS.SR.3	Doors of walk-in specialty rooms will have viewing windows and external light switches.
Material Storage	Flammable Liquid Storage Cabinet	MS.FC.1	Do not locate near exit doorways, stairways, or egress paths.
Material Storage	Flammable Liquid Storage Cabinet	MS.FC.2	Do not wall mount.
Material Storage	Flammable Liquid Storage Cabinet	MS.FC.3	Do not locate near open flames or other ignition sources
Material Storage	Flammable Liquid Storage Cabinet	MS.FC.4	Anchor cabinet to prevent spillage of contents during an earthquake without compromising its integrity i.e., drilling holes through it.
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Utilities	Electrical	U.E.1	Accommodate current requirements with an additional 20 to 40 % capacity.
Utilities	Electrical	U.E.2	Locate circuit breakers outside the lab, but not in rated corridors.
Utilities	Electrical	U.E.3	120-volt receptacles located on every open wall; not more than 6 feet of wall space to a given receptacle. Quad outlet boxes are preferred over duplex.
Utilities	Electrical	U.E.4	Provide GFCI protection for receptacles that feed vessel-heating equipment such as strip heaters for vacuum vessels
Utilities	Electrical	U.E.5	Maintain at least a 30-36" radius of clear space around each electrical circuit breaker panel and equipment disconnect. Mount a label on each circuit breaker panel and similar equipment: "Keep Area Clear".
Utilities	Electrical	U.E.6	Each circuit breaker panel and similar equipment will be labeled with a notification of an electrical arc flash hazard
Utilities	Electrical	U.E.7	Electrical equipment and controls within fume hoods should be provided with a disconnect switch within 15 feet
Utilities	Electrical	U.E.8	Electrical power will not be commingled in a cable tray with other utilities (e.g., electrical, gas, water, etc.)
Utilities	Electrical	U.E.9	Electrical wiring and equipment meeting the specific requirements of NFPA 70, Chapter 5, for classified locations must be provided if substances used or stored in the laboratory can create a flammable or explosive atmosphere
Utilities	Electrical	U.E.10	Laboratory convenience receptacle circuits sized as 20 amp circuits, with no more than 13 duplex devices per circuit
Utilities	Gas	U.G.1	Locate main valves for gas and vacuum lines outside the lab or in a mechanical room, if possible.
Utilities	Gas	U.G.2	Flexible connections for connecting gas and other plumbed utilities to any freestanding device, including biosafety cabinets, incubators, and liquid nitrogen freezers.
Utilities	Water	U.W.1	All equipment that produces condensate must drain to a floor sink (or other approved indirect connector) with a minimum slope to the pipe of a 1/4" drop every linear foot with no uphill rises. A 1" air gap must be provided between the bottom of the drain line and the top of the flood rim level of the floor sink.
Utilities	Water	U.W.2	Install floor drain for emergency eyewash/shower station
Utilities	Water	U.W.3	Connect drain from laboratory sink to a retention tank (clarifier) or to building plumbing
Utilities	Water	U.W.4	Activities other than handwashing (e.g. labware or glassware cleaning, filtration, aspiration, etc.) – plumbed with industrial water (non-potable)
Utilities	Water	U.W.5	Back flow prevention device installed at sinks
Utilities	Water	U.W.6	Sinks for handwashing plumbed with potable water
Utilities	Water	U.W.7	Install individually trapped sink or cup sink at fume hood when needed. See U.W.5.

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