

115300 LABORATORY EQUIPMENT

1. Fume Hoods: All new hoods shall meet testing criteria established by the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE) in ANSI/ASHRAE 110-1995, "Method of Testing Performance of Laboratory Fume Hoods". All hoods, bench, distillation, or walk-in types, shall have proper aerodynamic design to minimize eddy currents and assure against air movement from the hood into the laboratory. This shall be accomplished by airfoil sides and an aerodynamically designed sill with a one-inch air gap between it and the hood floor. An "air by-pass" shall be present on all hoods to control the range of the face velocity as the hood sash is raised and lowered. The face velocity at any sash position shall not exceed three times the "open face" velocity in order to reduce eddy currents around the edges of the hood face. Fans and/or hoods shall be final tested and certified as to face velocity at completion of the installation.
 - a. Provide ADA Fume Hoods complying with requirements of the Americans with Disabilities Act where required by governing regulations.

2. Eyewash Units: Units shall be installed at or near sinks within the hazardous operations space. Such spaces include wet laboratories, areas where dust is generated, darkrooms and other areas where liquid chemicals are used or handled. Handheld hose type units, wall mounted units, pedestal-mounted units, eye/face wash units, and combination safety shower/eyewash units shall provide a soft spray of 3-7 gpm at 30 pounds per square inch of pressure.

All eyewash units must flush both eyes simultaneously, the flow must remain on without the use of the operator's hands, the unit must remain activated until intentionally cut off, and the nozzles must be protected from airborne contaminants.

A sign must be posted to identify the location of the eyewash unit and the area behind or around the eyewash unit must be painted with a bright color. Eyewash units for non-ADA compliant units should be installed between 2'-9" and 3'-9" from the floor. For ADA compliant stations, for dimension references, CABO ANSI A117.1 standards for drinking fountains shall be followed, as applicable to eyewash units. Provide four spare nozzles for future replacement. Appropriate plumbing shall be provided for wash water.

3. Safety Showers: Safety showers shall be installed in a conspicuous location, such as a well-traveled aisle, doorway or corridor. They must be within the room or space they serve or within 25 feet of the main room door. Safety showers must be installed in locations that are accessible at all times. Provide a floor drain at each safety shower. Floor drains shall be provided where potential environmental

contamination is not a factor. Requirements for drains designed in locations where contamination of the effluent is possible shall be reviewed against local, state and federal environmental regulations.

Safety showers shall be installed so that the center of the shower head is at least 25" from the nearest wall, bench or furnishing and at a safe distance away from electrical equipment or outlets. The base of the shower must be between 6'-10" and 8' above the floor. The shower head should be a deluge-type head, and should be made of plated brass or plastic. The safety shower unit shall be capable of providing a flow of 30-50 gallons of non-tempered water per minute at 30 pounds per square inch of pressure.

Safety shower activating valves are to be operated by pulling either a chain, a cord attached to the valve lever, an 8 inch minimum diameter ring or a triangle connected by a chain or cord to the lever. The lowest point of the ring, triangle or cord should be located no more than 48" from the floor for frontal approach and no more than 54" from the floor for a side approach, and should run within 1 to 2 inches of a wall or bench. Safety shower activating valves are to be quick opening, self-closing globe valves. A shut off valve accessible via a 6 foot ladder is to be installed for each shower head.

A sign must be posted to identify the location of the safety shower, and the area behind or around the safety shower must be painted with a bright color.

Installation and operation of safety showers and eyewash units shall comply with ANSI Z358.1-1990.