

11 EQUIPMENT – V11000**11.1 GENERAL****11.1.1 Description**

This standard identifies minimum requirements that shall be met for all equipment in the design and construction of elements for Arlington County Building Design Standards.

11.1.2 Related Arlington County Standards, Specification and Policies

including, but not limited to, those listed in Table 11.1.2

Table 11.1.2 Related Arlington County Standards, Specification and Policies
Arlington County Policy for Integrated Facility Sustainability - August 19, 2008 ("Green Building" Policy)

11.1.3 Applicable Standards and Specifications

including, but not limited to, those listed in Table 11.1.3

Table 11.1.3 Applicable Standards and Specifications
American National Standards Institute (ANSI), Z358.1-2009, Emergency Eyewash and Shower equipment
Federal Occupational Safety and Health Administration Standard 29 CFR 1910.151
Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
US Green Building Council's Leadership in Energy and Environmental Design (LEED) green building rating system

11.1.4 Quality Assurance

11.1.4.1 Reserved

11.1.5 Submittals

11.1.5.1 Reserved

11.2 DESIGN**11.2.1 Isolation Valves**

11.2.1.1 Provide individual isolation valves (shut off valves) to isolate each washing machine from the piping system for maintenance, alterations and repair work.

11.2.2 Exhausts for Dryers

The Registered Design Professional shall coordinate design of exhausts for dryers with dryer manufacturer. All exhaust dryer ducts including, screws, rivets, straps and anchors shall be constructed with stainless steel, including electric dryers. All vents greater than 7.5' in lengths shall be doubled walled as approved.

11.2.3 Floor Drains

The Registered Design Professional shall provide floor drains at all public restrooms and at laundry rooms. Pitch floor drains such that the drain is at the lowest point as identified by the USBC.

11.2.4 Voltages requirements for washing machines and dryers

The Registered Design Professional shall coordinate voltages for washing machines and dryers between electrical plans, specifications, schedules, and disconnects.

11.2.5 Equipment Plans:

The Registered Design Professional shall coordinate equipment plans for any Kitchen equipment closely with electrical power drawings to ensure consistency between power requirements and power provided. Use gas appliances wherever gas service is available.

11.2.6 Appliances

- 11.2.6.1 All appliances shall be high energy efficiency type and shall carry the EPA Energy Star® label designation where applicable. Utilize gas-fired clothes dryers whenever gas service is available.
- 11.2.6.2 Commercial washing machines and fire department gear washing machines shall be bolted to a raised housekeeping slab; and be provided with vibration isolators, as required. Any washing machines which are to be located on an elevated, structural slab must be analyzed for harmonic impacts in conjunction with the structural plans, and the appropriate vibration isolation or dampening provided.

11.2.7 EMERGENCY EYEWASHES (Plumbed Units Only):

This section presents the minimum requirements for eyewash and shower equipment for the emergency treatment of the eyes or body of a person exposed to hazardous substances. It covers the following types of equipment: emergency showers and eyewash.

- 11.2.7.1 Emergency plumbed eyewash equipment shall be provided for all work areas where, during routine operations or foreseeable emergencies, the eyes of an employee may come into contact with a substance which can cause corrosion, severe irritation, or permanent tissue damage or is toxic by absorption (see table below). Where a Safety Data Sheet **SDS** for the materials used specifies the use of an eyewash in case of eye contact. All work areas where formaldehyde solutions in concentrations greater than or equal to 0.1% are handled.
- 11.2.7.2 The County considers the following to be substances which can cause corrosion, severe irritation, or permanent tissue damage, or which are toxic by absorption:
 - 11.2.7.2.1 Substances classified by the manufacturer or distributor according to the Globally Harmonized System of Classification and Labelling of Chemicals as Category 1 (serious eye damage) or Category 2A (irritant) eye hazards.
 - 11.2.7.2.2 Substances identified by the manufacturer or distributor as causing corrosion, severe irritation, or permanent tissue damage to the eyes.
 - 11.2.7.2.3 Substances identified by the manufacturer or distributor as toxic by skin absorption.

11.2.8 Emergency Showers:

- 11.2.8.1 A plumbed emergency shower shall be provided for all work areas where, during normal operations or foreseeable emergencies, areas of the body may come into contact with a substance which is corrosive or severely irritating to the skin or which is toxic by skin absorption (see table below). Where an **SDS** for the materials used specifies the use of an eyewash in case of eye contact. All work areas where formaldehyde solutions in concentrations greater than or equal to 0.1% are handled.
- 11.2.8.2 The County considers the following to be substances which are corrosive or severely irritating to the skin or which are toxic by skin absorption:
- 11.2.8.2.1 Substances classified by the manufacturer or distributor according to the Globally Harmonized System of Classification and Labelling of Chemicals (**GHS**) as Category 1 (skin corrosion) or Category 2 (skin irritation) skin hazards.
 - 11.2.8.2.2 Substances identified by the manufacturer or distributor as corrosive or severely irritating to the skin.
 - 11.2.8.2.3 Shops, laboratories and janitor closets and other spaces using and handling hazardous substances will generally require eyewash and safety showers. Janitor closets and other spaces using bleach and other chemical disinfectants will generally require eyewash and safety showers.
- 11.2.8.3 Location
- 11.2.8.3.1 Emergency eyewash and shower equipment shall be on the same level as the hazard and accessible for immediate use in locations that require no more than 10 seconds for the injured person to reach. The path of travel must be free of obstructions. If both eyewash and shower are needed, they shall be located so that both can be used at the same time by one person.
 - 11.2.8.3.2 Locate Emergency Equipment In Accessible Locations That Required No More Than 10 Seconds To Reach And Within 100 Feet Of The Hazard. When The Hazard Is Highly Corrosive, Such As A Strong Acid Or Caustic, The Equipment Should Be Within 10 Feet Of The Hazard.
 - 11.2.8.3.3 The route to get to emergency units must have no change in elevation i.e. steps or uneven ground). Passage through no more than one doorway, and no pathway objects.
 - 11.2.8.3.4 Consult with Arlington County Project Officer and end user to determine emergency equipment locations, quantities, type and combinations (shower/eyewash, shower, etc.)
 - 11.2.8.3.5 Locate centerline of emergency equipment a minimum of 7 feet from electrical or mechanical equipment (i.e. transformers, compressors and similar items), equip electrical outlets within 6 feet with a Ground Fault Circuit Interrupter (**GFCI**).
- 11.2.8.4 Locate isolated ball valves (3 required) within cabinet.
- 11.2.8.5 Where the possibility of freezing conditions exist, protect equipment from freezing or install freeze protected equipment.

- 11.2.8.6 An alarm system may have to be installed when the emergency units are installed in remote areas or in hazardous locations where there are few people. HSR-5 and the user will make this determination.
- 11.2.8.7 Corrosion resistant material if emergency equipment is installed in harsh environments.
- 11.2.8.8 **Mixing Valves:** Emergency showers with plumbing shall have temp-controlled mixing valves

11.2.9 Signage and Visibility

- 11.2.9.1 The path of travel shall be clearly identified with signage. Emergency Eyewash and shower locations must be identified with a highly visible sign positioned so the sign is visible within the area served by eyewash and shower equipment. The areas around the eyewash or shower must be well lit.
- 11.2.9.2 A large contrasting spot (32” diameter) should be painted on, embedded in, or affixed to the floor directly beneath the shower to indicate its location and the area that must be kept free from any obstruction.

11.2.10 Prohibitions around equipment

No electrical apparatus or receptacles (electrical outlets) shall be located within a zone measured 3 feet horizontally and 8 feet vertically of eyewash stations or showers. If a 120-volt outlet or receptacle is present within 6 feet of an eyewash or shower, it shall be equipped with a Ground Fault Circuit Interrupter (GFCI).

- 11.2.10.1 Shut-off valves: The water supply to showers and/or shower/eyewash combination units should be controlled by a ball-type shutoff valve which is visible and accessible to shower testing personnel in the event of leaking or failed shower head valves. If shut off valves are installed in the supply line for maintenance purposes, provisions shall be made to prevent unauthorized shut off.
- 11.2.10.2 Floor Drains: Where feasible, floor drains should be installed below or near safety showers, with the floor sloped sufficiently to direct water from the shower into the Sanitary Sewer Drain.

11.3 PRODUCTS

11.3.1 Emergency Eyewashes & Showers

Brand Name(s) for Building Element in accordance with Table 11.3.1 The Specification shall identify a minimum of three (3) Brand Names (manufactures) that comply with the Owner’s Project Requirements used for the Invitation to Bid, unless the Brand Name Category listed as No Substitutions.

Table 11.3.1 <i>Brand Name Product(s) for the Emergency Eyewashes & Showers</i>			
Building Element	Brand Name(s)	Brand Name Model	Brand Name - Category
<u>Emergency Eyewashes</u>	Bradley, Encon, Guardian, Haws, Lab Safety		Preferred Manufacturer(s)

Table 11.3.1 <i>Brand Name Product(s) for the Emergency Eyewashes & Showers</i>			
	Supply, Speakman & Watersaver		
Emergency Showers	Bradley Encon Guardian Haws Speakman Watersaver		Preferred Manufacturer(s)
Thermostatic Mixing Valves	Bradley Encon Lab Safety Supply Lawler		Preferred Manufacturer(s)