(3) Cord-and-plug-connected high-pressure spray washing machines
(4) Tire inflation machines
(5) Vending machines
(6) Sump pumps
(7) Dishwashers

Informational Note: Section 210.8 specifies requirements for GFCI protection for the branch-circuit outlet where the covered location warrants such protection.

This GFCI requirement applies to the specified appliances whether hard-wired or cord-and-plug-connected. Water coolers, such as those illustrated in Exhibit 422.1, are required to have GFCI protection. Tire inflation and automotive vacuum machines at service stations and car washes are often subject to exposure to the elements and damage from vehicles. In addition, they are used under all types of environmental conditions.

Prior to 2005, the U.S. Consumer Product Safety Commission (CPSC) investigated four separate electrocution incidents and three nonfatal shock incidents involving vending machines. Those investigations led to a requirement that vending machines be provided with GFCI protection.

(B) Type and Location. The GFCI shall be readily accessible, listed, and located in one or more of the following locations:

(1) Within the branch-circuit overcurrent device
(2) A device or outlet within the supply circuit
(3) An integral part of the attachment plug
(4) Within the supply cord not more than 300 mm (12 in.) from the attachment plug
(5) Factory installed within the appliance

Several options are available for providing GFCI protection for appliances. The requirement that GFCI protection be "readily accessible" facilitates required periodic testing as well as the resetting of a tripped device.

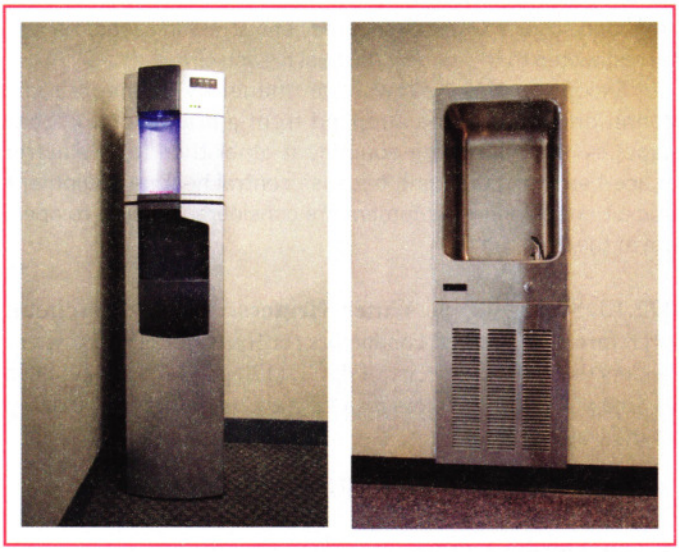

EXHIBIT 422.1 Two types of electrically powered water coolers required to have GFCI protection.

422.6 Listing Required. All appliances supplied by 50 volts or higher shall be listed.

Part II. Installation

422.10 Branch Circuits. Branch circuits supplying appliances shall comply with 422.10(A) or (B).

Δ **(A) Individual Branch Circuits.** Individual branch circuits supplying appliances shall comply with the following as applicable:

(1) The ampacities of branch-circuit conductors shall not be less than the marked rating of the appliance or the marked rating of an appliance having combined loads.
(2) The ampacities of branch-circuit conductors for motor-operated appliances not having a marked rating shall be in accordance with Part II of Article 430.
(3) The branch-circuit rating for an appliance that is a continuous load, other than a motor-operated appliance, shall not be less than 125 percent of the marked rating, or not less than 100 percent of the marked rating if the branch-circuit device and its assembly are listed for continuous loading at 100 percent of its rating.
(4) Branch circuits and branch-circuit conductors for household ranges and cooking appliances shall be permitted to be in accordance with Table 220.55 and shall be sized in accordance with 210.19(C).

(B) Branch Circuits Supplying Two or More Loads. For branch circuits supplying appliances and other loads, the rating shall be determined in accordance with 210.23.

422.11 Overcurrent Protection. Appliances shall be protected against overcurrent in accordance with 422.11(A) through (G) and 422.10.

(A) Branch-Circuit Overcurrent Protection. Branch circuits shall be protected in accordance with 240.4.

If a protective device rating is marked on an appliance, the branch-circuit overcurrent device rating shall not exceed the protective device rating marked on the appliance.

A listed appliance is provided with installation instructions from the manufacturer. The branch-circuit size must meet the minimum size stated in the installation instructions.

See also

110.3(B) and its associated commentary regarding the installation and use of listed or labeled equipment

(B) Household-Type Appliances with Surface Heating Elements. Household-type appliances with surface heating elements having a maximum demand of more than 60 amperes calculated in accordance with Table 220.55 shall have their power supply subdivided into two or more circuits, each of which shall be provided with overcurrent protection rated at not over 50 amperes.