

CHAPTER 40

APPLIANCE INSTALLATION

SECTION E4001 GENERAL

E4001.1 Scope. This section covers installation requirements for appliances and fixed heating equipment.

E4001.2 Installation. Appliances and equipment shall be installed in accordance with the manufacturer's installation instructions. Electrically heated appliances and equipment shall be installed with the required clearances to combustible materials.

E4001.3 Flexible cords. Cord- and plug-connected appliances shall use cords suitable for the environment and physical conditions likely to be encountered. Flexible cords shall only be used where the appliance is listed to be connected with a flexible cord. Specific appliances have additional requirements as specified in Table E4001.3. (See Section E3809.)

**TABLE E4001.3
FLEXIBLE CORD LENGTH**

APPLIANCE	MINIMUM CORD LENGTH (inches)	MAXIMUM CORD LENGTH (inches)
Kitchen waste disposal	18	36
Built-in dishwasher	36	48
Trash compactor	36	48

For SI: 1 inch = 25.4 mm.

E4001.4 Overcurrent protection. Each appliance shall be protected against overcurrent in accordance with the rating of the appliance and its listing.

E4001.4.1 Single nonmotor-operated appliance. The overcurrent protection for a branch circuit that supplies a single nonmotor-operated appliance shall not exceed that marked on the appliance. Where the overcurrent protection rating is not marked and the appliance is rated at over 13.3 amperes, the overcurrent protection shall not exceed 150

percent of the appliance rated current. Where 150 percent of the appliance rating does not correspond to a standard overcurrent device ampere rating, the next higher standard rating shall be permitted. Where the overcurrent protection rating is not marked and the appliance is rated at 13.3 amperes or less, the overcurrent protection shall not exceed 20 amperes.

E4001.5 Disconnecting means. Each appliance shall be provided with a means to disconnect all ungrounded supply conductors. For fixed electric space-heating equipment, means shall be provided to disconnect the heater and any motor controller(s) and supplemental overcurrent-protective devices. Switches and circuit breakers used as a disconnecting means shall be of the indicating type. Disconnecting means shall be as set forth in Table E4001.5.

E4001.6 Support of ceiling-suspended paddle fans. Ceiling-suspended paddle fans that do not exceed 35 pounds (15.88 kg) in weight, with or without accessories, shall be permitted to be supported by outlet boxes identified for such use and supported in accordance with Sections E3805 and E3806. Ceiling-suspended paddle fans exceeding 35 pounds (15.88 kg) in weight, with or without accessories, shall be supported independently of the outlet box (see Section E3806).

Exception: Listed outlet boxes or outlet box systems that are identified for the purpose shall be permitted to support ceiling-suspended paddle fans, with or without accessories, that weigh 70 pounds (31.76 kg) or less.

E4001.7 Snow-melting and deicing equipment protection. Outdoor receptacles that are not readily accessible and are supplied from a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed without ground-fault circuit-interrupter protection for personnel. However, ground-fault protection of equipment shall be provided for fixed outdoor electric deicing and snow-melting equipment.

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**TABLE E4001.5
DISCONNECTING MEANS**

DESCRIPTION	ALLOWED DISCONNECTING MEANS
Permanently connected appliance rated at not over 300 volt–amperes or 0.125 horsepower.	Branch–circuit overcurrent device.
Permanently connected appliances rated in excess of 300 volt–amperes or 0.125 horsepower.	Branch circuit breaker or switch located within sight of appliance or such devices in any location that are capable of being locked in the open position.
Appliances listed for cord–and–plug connection.	A separable connector or attachment plug and receptacle provided with access.
Permanently installed heating equipment with motors rated at not over 0.125 horsepower with supplementary overcurrent protection.	Disconnect, on the supply side of fuses, in sight from the supplementary overcurrent device, and in sight of the heating equipment or, in any location, if capable of being locked in the open position.
Heating equipment containing motors rated over 0.125 horsepower with supplementary overcurrent protection.	Disconnect permitted to serve as required disconnect for both the heating equipment and the controller where, on the supply side of fuses, and in sight from the supplementary overcurrent devices, if the disconnecting means is also in sight from the controller, or is capable of being locked off.
Heating equipment containing no motor rated over 0.125 horsepower without supplementary overcurrent protection.	Branch–circuit switch or circuit breaker where within sight from the heating equipment or capable of being locked off.
Heating equipment containing motors rated over 0.125 horsepower without supplementary overcurrent protection.	Disconnecting means in sight from motor controller or as provided for heating equipment with motor rated over 0.125 horsepower with supplementary overcurrent protection.
Air–conditioning condensing units and heat pump units.	A readily accessible disconnect within sight from unit as the only allowable means. ^a
Appliances and fixed heating equipment with unit switches having a marked OFF position.	Unit switch where an additional individual switch or circuit breaker serves as a redundant disconnecting means.
Thermostatically controlled fixed heating equipment.	Thermostats with a marked OFF position that directly open all ungrounded conductors, which when manually placed in the OFF position are designed so that the circuit cannot be energized automatically and that are located within sight of the equipment controlled.

a. The disconnecting means shall be permitted to be installed on or within the unit. It shall not be located on panels designed to allow access to the unit.