

(1) **Location.** All receptacles shall be located at least 1.83 m (6 ft) measured horizontally from the inside walls of the spa or hot tub.

(2) **Ground-Fault Circuit-Interrupter (GFCI) and Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection for Receptacles, General.** All receptacles rated 125 volts through 250 volts, 60 amperes or less, located within 3.0 m (10 ft) of the inside walls of a spa or hot tub shall have GFCI protection complying with 680.5(B) or SPGFCI protection complying with 680.5(C), as applicable.

(3) **Protection, Spa or Hot Tub Supply Receptacle.** Receptacles that provide power for a spa or hot tub shall not exceed 150 volts to ground and shall be GFCI protected.

(4) **Measurements.** In determining the dimensions in this section addressing receptacle spacings, the distance to be measured shall be the shortest path the supply cord of an appliance connected to the receptacle would follow without piercing a floor, wall, ceiling, doorway with hinged or sliding door, window opening, or other effective permanent barrier.

(B) **Installation of Luminaires, Lighting Outlets, and Ceiling-Suspended (Paddle) Fans.**

Δ (1) **Elevation.** Luminaires, except as covered in 680.43(B)(2), lighting outlets, and ceiling-suspended (paddle) fans located over the spa or hot tub or within 1.5 m (5 ft) from the inside walls of the spa or hot tub shall comply with the clearances specified in 680.43(B)(1)(a), (B)(1)(b), and (B)(1)(c) above the maximum water level.

(a) *Without GFCI.* Where no GFCI protection is provided, the mounting height shall be not less than 3.7 m (12 ft).

(b) *With GFCI.* Where GFCI protection is provided, the mounting height shall be permitted to be not less than 2.3 m (7 ft 6 in.).

(c) *Below 2.3 m (7 ft 6 in.).* Luminaires meeting the requirements of item (1) or (2) and protected by a ground-fault circuit interrupter shall be permitted to be installed less than 2.3 m (7 ft 6 in.) over a spa or hot tub:

- (1) Recessed luminaires with a glass or plastic lens, nonmetallic or electrically isolated metal trim, and suitable for use in damp locations
- (2) Surface-mounted luminaires with a glass or plastic globe, a nonmetallic body, or a metallic body isolated from contact, and suitable for use in damp locations

(2) **Underwater Applications.** Underwater luminaires shall comply with the provisions of 680.23 or 680.33.

(C) **Switches.** Switches shall be located at least 1.5 m (5 ft), measured horizontally, from the inside walls of the spa or hot tub.

(D) **Bonding.** The following parts shall be bonded together:

- (1) All metal fittings within or attached to the spa or hot tub structure

(2) Metal parts of electrical equipment associated with the spa or hot tub water circulating system, including pump motors, unless part of a listed, labeled, and identified self-contained spa or hot tub

(3) Metal raceway and metal piping that are within 1.5 m (5 ft) of the inside walls of the spa or hot tub and that are not separated from the spa or hot tub by a permanent barrier

(4) All metal surfaces that are within 1.5 m (5 ft) of the inside walls of the spa or hot tub and that are not separated from the spa or hot tub area by a permanent barrier

Exception: Small conductive surfaces not likely to become energized, such as air and water jets and drain fittings, where not connected to metallic piping, towel bars, mirror frames, and similar nonelectrical equipment, shall not be required to be bonded.

(5) Non-current-carrying metal parts of electrical devices and controls that are not associated with the spas or hot tubs and that are located within 1.5 m (5 ft) of such units

(E) **Methods of Bonding.** All metal parts associated with the spa or hot tub shall be bonded by any of the following methods:

- (1) The interconnection of threaded metal piping and fittings
- (2) Metal-to-metal mounting on a common frame or base
- (3) The provisions of a solid copper bonding jumper, insulated, covered, or bare, not smaller than 8 AWG

Bonding requirements for spas and hot tubs are similar to those in Part II of Article 680, except that equipment mounted on a common frame or base with metal-to-metal contact is an acceptable bonding method.

(F) **Grounding.** The following equipment shall be connected to the equipment grounding conductor:

- (1) All electrical equipment located within 1.5 m (5 ft) of the inside wall of the spa or hot tub
- (2) All electrical equipment associated with the circulating system of the spa or hot tub

Exception to (1) and (2): Electrical equipment listed for operation at the low-voltage contact limit or less and supplied by a transformer or power supply that complies with 680.23(A)(2) shall not be required to be connected to the equipment grounding conductor.

(G) **Underwater Audio Equipment.** Underwater audio equipment shall comply with the provisions of Part II of this article.

Δ 680.44 Ground-Fault Circuit-Interrupter (GFCI) and Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection.

N (A) **General.** Except as otherwise provided in this section, the outlet(s) that supplies a self-contained spa or hot tub, a packaged spa or hot tub equipment assembly, or a field-assembled spa or hot tub shall have GFCI protection complying with 680.5(B) or SPGFCI protection complying with 680.5(C), as applicable.