

Code changes for pools, tubs and spas

The 24th edition of the *Ontario Electrical Safety Code (OESC)*, which becomes effective May 1, 2009, introduces significant changes to Section 68, *Pools, Tubs and Spas*, including the introduction of new installation requirements for splash pads and requirements for pool bonding.

Responsibility for enforcing the *OESC*, which applies across Ontario, is the Electrical Safety Authority (ESA), which establishes safety standards for the installation of electrical equipment in the province.

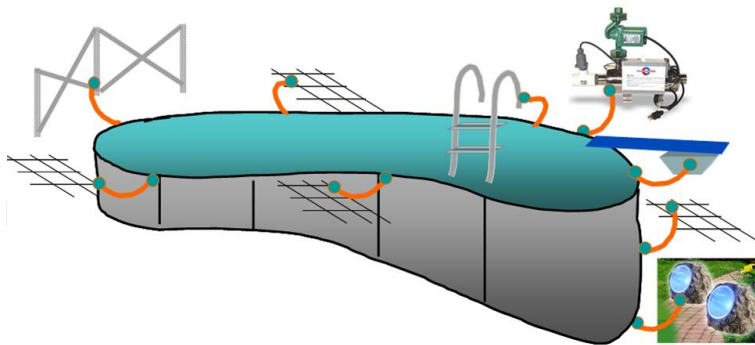
The first change is the expansion of Rule 68-000 to include splash pads. These water play areas (Figure 1) are a recent development for children and possess similar safety hazards as pools (*i.e.* water control centres and electrical installations in close proximity to the water).

Figure 1- Splash pad



Rule 68-058 has also been amended. It requires metal parts of the pool and other non-electrical equipment (metal piping, pool reinforcing steel, metal ladders, diving board supports, fences, etc.) be bonded together, and to the non-current carrying metal parts of the associated electrical equipment (Figure 2). Prior to the new code, metal pool parts were not required to be bonded to the electrical equipment if the latter was more than 3 m (9.8 ft) away from the pool. This provision has been deleted.

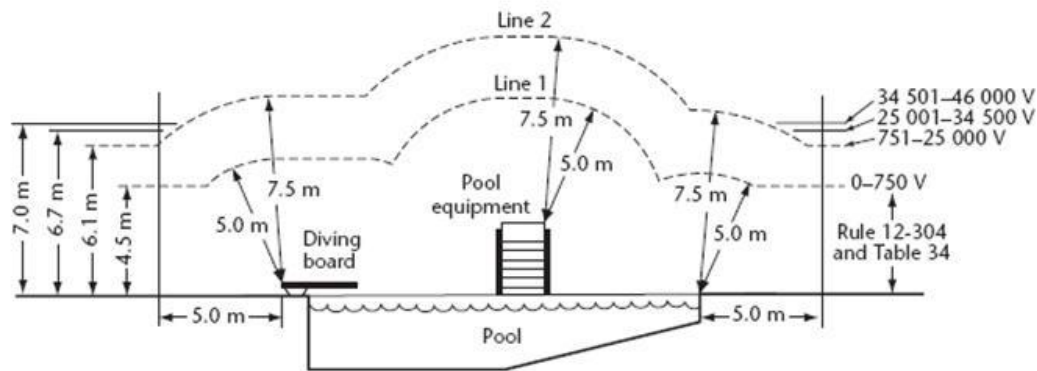
Figure 2- Requirements for pool bonding



Other changes include new Subrule 68-058 (8), which relaxes the requirements for a copper loop around a metal pool. The revision will only require a continuous metal pool shell, made up of individual panels that are securely bolted or welded together, be bonded in at least one location.

Rule 68-054 has increased the overhead wiring clearance to 5 m (16 ft) from the pool. The previous code required a clearance of only 3 m (9.8 ft). The following sketch (Figure 3) illustrates the minimum clearances for conductors over swimming pools and is located in Appendix B of Rule 68-054. No conductors would be permitted under any circumstances in the area under line 1. In the area above line 1, insulated communication conductors and neutral supported cables operating at 600 V or less might be permitted per 68-050 (2) and (3). Any other conductors, operating at not more than 50 kV, might be permitted above the area outlined by line 2 per 68-054 (2) and (4).

Figure 3 – Minimum clearances for conductors over swimming pools



New Subrule 68-070 (2) sets requirements for communication equipment installed within 3 m (9.8 ft) of the inside walls of the pool. This equipment must be permanently fixed on the wall and located so no part is within 1.5 m (5 ft) of the inside walls of the pool or separated from the pool area by a fence, wall or other permanent barrier. The equipment can be used from the pool, if it is actuated by means of a cord with an insulated link. New Subrule 68-070 (3) states communication jacks must not be installed within 3 m (9.8 ft) from the inside walls of the pool.

The location of the receptacle for a cord-connected hydromassage bathtub is covered under the new Rule 68-306. This requires one receptacle to be located at least 0.3 m (1 ft) from the floor and must be inaccessible to bathers in a bathtub (Figure 4). It also requires the appropriate warning label, supplied by the bathtub manufacturer, to be affixed to the receptacle, warning against connecting any other equipment to the receptacle. The warning label is not required where a single receptacle is used.

Figure 4 – A receptacle for a cord-connected hydromassage bathtub

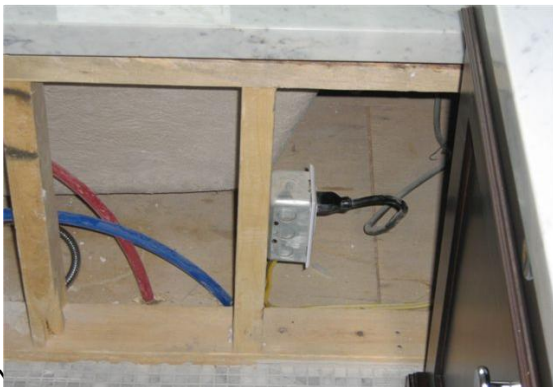
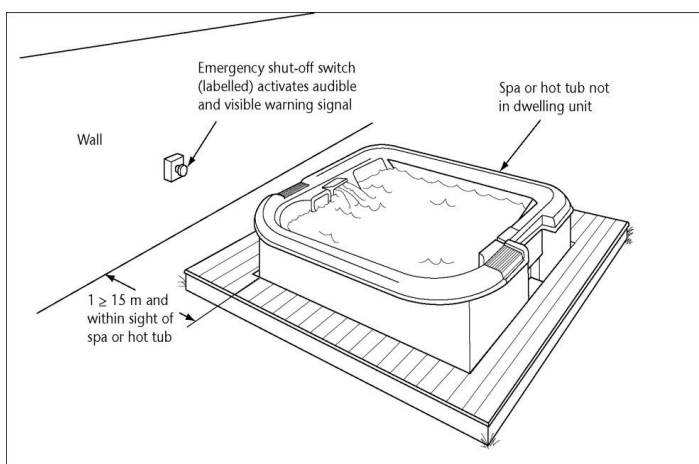


Figure 5 shows an emergency shut-off switch to be installed for each spa or hot tub, except for residential spas and hot tubs. The emergency shut-off switch, which must be independent of the spa controls, is designed to disconnect the motor's power source to the closed water circulating systems. The switch must be readily accessible to the user, be within 15 m (49.2 ft) of the spa or hot tub and be labelled in a permanent manner as the 'emergency' shut-off switch. The switch must also be equipped with audible and visual trouble-signal devices to give an immediate warning it has been activated. The emergency shut-off switch is also an Ontario Building Code requirement for public spas.

Figure 5 – Emergency shut-off switch



Frequently asked questions

Members of the pool and spa industry, including installers and electricians, have asked the ESA the following questions, with the answers based on the code.

Q. Do pool installers need an electrical contractor licence for bonding the metal parts of the pool and other non-electrical equipment to the non-current-carrying metal parts of electrical equipment associated with the pool?

A. No, an Electrical Safety Authority (ESA)/Electrical Contractor Regulation Agency (ECRA) electrical contractor licence is not required for the installation of the pool bonding, however, an ESA application for inspection is required.

Q. Does Section 68 apply to both in-ground and above-ground pools?

A. Yes, the code does not differentiate between in-ground and above-ground pools. Subrule 68-000(2) lists the types of pools included in the scope of Section 68.

Q. What is the minimum size of conductor required for bonding the metal parts of the pool and other non-electrical equipment to the non-current-carrying metal parts of electrical equipment associated with the pool?

A. Rule 68-058 requires the minimum size of bonding conductors for pools not be smaller than No. 6 American Wire Gauge (AWG) copper for permanently installed pools and for all inground pools. For all other pools, where the bonding conductor is incorporated within a cable assembly or raceway, refer to Table 16.

Q. At what point does a metal fence require bonding?

A. Rule 68-058 requires metal fences within 1.5 m (5 ft) of the inside walls of the pool to be bonded.

Tatjana Dinic

Tatjana Dinic, P. Eng.

Code Engineer

Electrical Safety Authority

phone: (905) 712-5364

website: www.esasafe.com