

Recommended Guidelines

Suction Entrapment Avoidance Provisions [G-0109]

Pool & Hot Tub Council of Canada

April 2009

These guidelines are provided by the Pool & Hot Tub Council of Canada as reference documents for use by pool and spa builders, contractors and local regulatory authorities in communities across the country. They are based on practical experiences in the field, fundamental research into cause and effect, and an extensive review of existing by-laws and legislation that specifically address this subject matter.

The Pool & Hot Tub Council of Canada is a voluntary, not-for-profit association representing the interests of the pool and hot tub industry. As such it is not considered a harmonized organization, and therefore does not qualify as an accredited national standards-writing body.

Notwithstanding the above, the thrust of these guidelines is the basic principle of making pools safer through the adoption of state-of-the-art construction and operating practices. Key elements of these recommended procedures were derived from the recently enacted U.S. Virginia Graeme Baker Pool and Safety Act. These guidelines are endorsed in principle by the Pool & Hot Tub Council of Canada, and we strongly recommend their widespread implementation.

Introduction

The impetus behind the development of these guidelines stemmed from U.S. studies of drowning incidents over the past decade that were associated directly with suction entrapment in pools and spas. It was discovered that, under certain conditions, individuals could become entangled in components of suction fittings including main pool drains or drawn by suction against them. The Pool & Hot Tub Council of Canada endorses the main provisions of the U.S. Virginia Graeme Baker Pool and Safety Act, and provides this set of guidelines in an effort to assist manufacturers and builders with the construction of pools and hot tubs that meet the requirements of the Act. Moreover, we encourage communities across Canada to approve similar measures.

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Recommendations

1) All private, semi commercial and commercial pools are to be outfitted with suction drain covers that are compliant with the current edition of the ASME/ANSI Standard A112.19.8. A qualified Member of the Pool & Hot Tub Council of Canada should be consulted to make sure that drain covers are securely fastened according to the manufacturer's instructions, and to ensure that the total flow rate for each cover will not be exceeded according to the regulations of that particular jurisdiction.

The ideal solution is the installation of drain cover(s) in excess of the minimum dimensions, 45.7cm X 58.4cm, thereby creating unblockable drain(s) and virtually eliminating any potential suction entrapment hazards. [Note: Recent design upgrades to commercially available drain covers make it possible to retrofit many established pools in such a way as to create unblockable drain(s) while still maintaining the minimum required flow rate. However, this is not the case universally. An expert should be consulted to determine any such limitations.]

2) All new pools and whirlpools are to be built with a minimum of two main drains, where each individual drain or suction fitting is sized to be capable of maintaining 100% of the entire pump (or pumps) flow rate associated with that particular suction fitting.

3) The velocity of water through the suction fitting will not exceed mandated regulations or codes within the relevant jurisdiction.

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4) Systems operating with a potentially blockable, single main-drain (or potentially blockable multiple main-drains that are less than 91.4 cm apart centre to centre) should be conformed to meet at least one of the following additional recommendations:

- Installation of an automatic pump shut-off system
- Installation of a safety vacuum release system(s)
- Installation of a suction-limiting vent system
- Installation of a gravity drainage system

Installation of additional suction outlet(s) at least 91.4 cm apart centre to centre with compliant cover(s)

- 5 a) The use of wall-mounted vacuum fittings should be discontinued.
- b) Equalizers with skimmers shall no longer be installed.

Related Standards

ANSI/APSP-7. Suction Entrapment Avoidance Standard

ASME/ANSI Standard A112.19.8. Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs and Whirlpool Bathtub Appliances

ASME/ANSI Standard A112.19.17. Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub and Wading Pool Suction Systems

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