

ROOMS CONTAINING GASEOUS CHLORINE

PURPOSE

The interpretation is developed to provide guidance as to what is meant by “mechanical proportioning device” and how to achieve a reasonable measure of “gas-tightness.”

DISCUSSION

Many swimming pools use elemental chlorine in its gaseous form to disinfect the water. The chlorine is kept compressed in cylinders until measured amounts are injected into recirculated water and then circulated to the swimming pool.

Article 7.2.3.45. of the National Building Code-2019 Alberta Edition (NBC(AE)) requires that the mechanical equipment used to regulate the chlorine delivered to the pool (i.e. the mechanical proportioning device) and the cylinders of chlorine be in a storage room separated from the remainder of the building by a one-hour fire separation. It also requires that the fire separation be reasonably gas-tight and corrosion resistant.

CODE REFERENCES

Clauses 7.2.3.45.(1)(a)(c) states:

7.2.3.45. Gaseous Chlorine Equipment

- 1) If gaseous chlorine equipment is provided,
 - a) the mechanical proportioning device and cylinders of chlorine shall be housed in a reasonably gas-tight, corrosion-resistant and mechanically vented enclosure having not less than a 1 h *fire-resistance rating*, of adequate size to house the chlorinator and as many extra tanks as are deemed necessary, ...
 - c) the chlorine room shall be at ground level with access to the outside through outwardly opening doors,...

INTERPRETATION

1. The mechanical proportioning device and cylinders referred to in Clause 7.2.3.45.(1)(a) include, but are not limited to:
 - a. chlorine regulator,
 - b. vacuum tube from the regulator to the ejector,

Unless stated otherwise, all Code references in this STANDATA are to Division B of the National Building Code-2019 Alberta Edition

Issue of this STANDATA is authorized by
the Provincial Building Administrator

[Original Signed]
Paul Chang

The logo for the province of Alberta, featuring the word "Alberta" in a stylized, cursive font with a small blue square at the end of the word.

- c. ejector, (used to mix the chlorine gas with water to form a chlorine solution) which may or may not include the chlorine solution diffuser,
- d. chlorine cylinder in use,
- e. spent chlorine cylinder(s), and
- f. chlorine cylinders stored for future use.

All of the above listed equipment are to be located in the chlorine room.

2. Measures to achieve a reasonable degree of gas-tightness mentioned in Clause 7.2.3.45.(1)(a) include, but are not limited to:
 - a. no doorways or operable windows are permitted between the chlorine room and the remainder of the building,
 - b. services which penetrate the separations around the chlorine room are to be limited to only those services necessary to the operation of the chlorine room, and
 - c. the penetrations are to be sealed with acceptable fire-stopping materials that also provide a gas-tight seal.
3. In Clause 7.2.3.45.(1)(c) the required exterior access door for the chlorine room must open outward. The door shall be provided with "door release hardware" on the inside of the door as the door is serving as an emergency exit.

This INTERPRETATION is applicable throughout the province of Alberta.