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Health

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*GENERAL POOL*  
*DESIGN/OPERATIONAL*  
*STANDARDS*

Updated 02/00

## **FOREWORD**

These standards should be read in conjunction with The Swimming Pool Regulations, 1999.

Saskatchewan Health, with the assistance of the local health districts, has developed design/operational standards to assist operator/owners of aquatic facilities in meeting the requirements of The Swimming Pool Regulations, 1999. While the design/operational standards in themselves should not be considered law, provisions of the standards become legally binding when they are attached as a condition or term of a licence to operate. Consequently, it is expected that all aquatic facilities will be constructed and operated in accordance with the design/operational standards.

The format of the standards is such that all pools covered by the regulations are expected to comply with the general pool design/operational standards and any other applicable design/operational standards (water theme facility; swimming pool facility, or whirlpool facility). Existing swimming pools, water theme facilities and whirlpools which do not meet the design/operational standards may continue to operate provided that the pool is operated in compliance with The Swimming Pool Regulations, 1999 and that a health hazard does not exist. Alterations to existing pools and equipment are to be carried out in accordance with the standards.

Judicious use of these standards should result in the provision of bacteriologically and physically safe swimming pools, water theme facilities and whirlpools in this province.

## PREAMBLE

### 1.0 DEFINITIONS

- 1.1 **“paddling pool”** means a swimming pool of which no portion is more than 610 millimetres in depth;
- 1.2 **“swimming pool”** means an artificially created basin, lined with concrete, fibreglass, vinyl or similar material, intended to contain water for the use of persons for swimming, diving, wading or other similar activity, and includes a wave pool;
- 1.3 **“water slide facility”** means a swimming pool consisting of recreational water slide flumes and associated receiving pools;
- 1.4 **“whirlpool”** means a swimming pool that is designed primarily for therapeutic or recreational use and that:
  - (i) is not drained, cleaned or refilled before being used; and
  - (ii) utilizes hydrojet circulation, hot water or air induction bubbles.

### 2.0 APPLICATION FOR LICENCE

- 2.1 An application for a licence shall include a site plan and structural, mechanical, and electrical drawings showing complete construction details and, where applicable, shall include the following:
  - (a) the street location, the name of the swimming pool and the name and address of the owner;
  - (b) the swimming pool deck elevation relative to the surrounding area;
  - (c) the location of outlets, drains, overflows, inlets, steps and ladders, diving boards, walk areas, lighting fixtures, equipment, dressing room areas and utilities service lines;
  - (d) the source of water supply and the method of waste water disposal;

- (e) a statement of:
  - i) pool volumes;
  - ii) turnover rate;
  - iii) filtration rate; and
  - iv) maximum design load;
- (f) the complete detailed specifications and drawing for the construction of the swimming pool, dressing/shower areas, recirculating system, filtration facilities, disinfection equipment and all appurtenances; and
- (g) the type of backflow prevention used on the make up water to avoid cross connection with the public water supply.

2.2 All plans and specifications for a proposed pool must be prepared by a professional engineer or architect registered to practice and each drawing is to be duly signed and sealed.

2.3 The owner is to ensure that the pool and all appurtenances are built in accordance with the plans that were submitted, reviewed by and approved by the local authority. Any deviation from the approved drawings requires the approval of the local authority.

# GENERAL POOL DESIGN STANDARDS

## 1.0 INTRODUCTION

- 1.1 In addition to The Swimming Pool Regulations, 1999, these design/operational standards apply to any swimming pool governed by the regulations, which includes a water slide facility, wave action pool, paddling pool and whirlpool.

## 2.0 CONSTRUCTION

### *Basin Design*

- 2.1 (1) The pool basin is to be a watertight structure that has a smooth and easily cleaned surface (excluding structural joints).
- (2) The sides and bottom of the pool basin shall be light in colour.
- (3) The radius of curvature between the pool wall and the pool floor should not exceed 150 millimetres where the water depth is less than 1.5 metres.
- (4) All side and end walls must be vertical.
- (5) The floor of the pool basin shall have a slope towards the main drain.
- (6) The slope of the bottom of the pool where the water is less than 1.5 metres deep shall not be greater than 1:15. This slope must be uniform.

### *Cross-Connections*

- 2.2 No piping arrangement is to exist which under any condition will permit sewage or waste water to enter the recirculation system, or permit water from the recirculation system or pool to enter a potable water supply.

### *Deck Areas*

- 2.3 (1) In pools where the pool floor forms part of the deck (e.g., zero depth or zero beach type pools), the deck should have a slope of not less than 1:40 away from the pool for a distance of at least 0.6 metre with positive drainage to the recirculation drains. In this area the width of the deck drained to the recirculation drains should not be greater than 1.8 metres.

- (2) For pools where recessed gutters or skimmers are used, the deck should be sloped 1:40 away from the pool and drained to waste.
- (3) All walks, decks and terraces surrounding pools are to be uniformly sloped to drains or points at which the water will have a free unobstructed flow to points of collection. Deck drains should be free from obstruction (e.g., benches, lockers) to permit ease of cleaning.
- (4) The number of deck drains shall be calculated at a rate of 20 square metres of deck surface per drain.
- (5) Deck surfaces shall be non-slip when wet, sufficiently smooth to facilitate disinfection and shall not create discomfort to bare feet.
- (6) Where brushed concrete finishes on deck surfaces are used, brushing must be done toward the drains.
- (7) Deck surfaces should not be painted.
- (8) The colour and finish of deck surfaces should be selected so as to minimize glare from overhead lighting.
- (9) Hose bibs of not less than 19 millimetres diameter should be located in such a manner that all parts of the pool deck area may be reached with a 30 metre hose. Hot water should be available from the hose bibs for deck cleaning and disinfection.

### ***Dressing Room Facilities***

- 2.4 (1) Dressing rooms should be well-lighted, drained, ventilated and of good construction with impervious materials, finished in light colours and so developed and planned that good sanitation can be maintained throughout the building at all times.
- (2) The size of the dressing room area should be based on maximum swimmer load with 0.5 square metres of floor space for each swimmer.
- (3) No steps are to be installed in the interior of the dressing room areas nor between the shower area and adjoining pool deck areas. Should it be necessary that the shower area be at a different elevation from the pool deck, a ramp is to be provided, constructed with a non-slip surface and a slope not exceeding 1:12.

- (4) All partitions and walls in the dressing room areas should be of durable material and should be so designed that a space of at least 150 millimetres is provided between the partitions and floor to permit thorough cleaning of the walls and floor areas with hoses and brooms.
- (5) Floors are to be of a smooth but non-slip finish, impervious to moisture with no open cracks or joints. All corners should be rounded and have coving of wall to floor for ease of cleaning.
- (6) Floors are to be so drained as to prevent pooling of water. A slope of not less than 1:40 towards the closest drain is to be provided.
- (7) If lockers are provided they should be constructed of a durable rust resistant material.
- (8) At least one 19 millimetre hose bib per dressing room is to be provided for flushing down and disinfecting the dressing room and shower interior. The hose bibs shall be supplied with hot water.
- (9) Separate dressing rooms for male and female patrons shall be provided where the pool will be used simultaneously by both sexes.
- (10) Where a pool is not used simultaneously by male and female patrons, at least one dressing room is to be provided.
- (11) In the case of an operator who has not complied with subsection (9) or (10), the requirements may be waived if a public health officer is satisfied that:
  - (a) a dressing room provided for the use of persons engaged in some recreational activity, other than swimming, is conveniently located and available for use by persons using the pool; or
  - (b) the use of the pool is restricted to the owner or occupant and the family and guests of the owner or occupant of a building that contains more than two dwelling units; or a dwelling unit that is located in an apartment block, hotel, motel, trailer court or institutional camp.
- (12) Dressing rooms shall be equipped with garbage receptacles.
- (13) The doorway to a dressing room shall be:
  - (a) separated from a doorway to any other dressing room; and (Errata 02/00)

- (b) located at the shallow end of a swimming pool, except where a barricade of a type approved by a public health officer is provided and is designed so that traffic to the pool is directed to the shallow end.

### ***Equipment Room***

- 2.5 (1) Doors to the equipment and mechanical room should be locked to prevent unauthorized entry.
- (2) The equipment and mechanical room or rooms should be adequately lighted, heated and ventilated.
- (3) The equipment and mechanical room should have a floor drain and the floor should be sloped to create positive drainage.
- (4) Chemicals should not be stored in an area that provides access to other areas or that is near heating equipment.
- (5) Chemicals should be stored on platforms raised sufficiently off the floor to prevent damage by water.

### ***Fencing/Walls***

- 2.6 The pool is to be completely surrounded by a fence or wall that:
  - (a) is at least 1.8 metres in height;
  - (b) is designed and constructed to discourage unauthorized entry; and
  - (c) has a gate or door equipped with panic hardware, for use in the event of an emergency, that is located away from both the chlorine room and the deep end of the pool.

### ***Filtration***

- 2.7 (1) Unless otherwise approved by a public health officer, a filter system shall be of a sand and gravel, anthrafil, diatomaceous earth or cartridge type.
- (2) A filter system must operate continuously at the designed rate of flow for that filter system.

### ***Food Concessions***

- 2.8 (1) Food and/or beverages shall only be consumed in an area set aside for that purpose.
- (2) No glass containers or any other materials, which may constitute a hazard to swimmers, shall be used.

### ***Gallery***

- 2.9 (1) Where a gallery for spectators is provided at a pool, the owner is to ensure that the entrance to and exit from the gallery does not require a spectator to pass through the dressing room or across the deck of the pool.
- (2) No gallery is to overhang any portion of the water area in the pool.
- (3) The vertical distance between the deck of the pool and the lowest portion of a gallery or overhead obstruction that overhangs the deck is to be at least 2.5 metres, unless otherwise approved by a public health officer.

### ***Gauges***

- 2.10 Gauges are to be inserted in the piping system to measure pressure loss across pressure type systems, or suction pressure on vacuum type systems.

### ***Handhold***

- 2.11(1) Where an overflow channel is installed in a pool, it is to be designed to serve as a handhold.
- (2) Where skimmers are installed in a pool, handholds are to be provided along the length of each wall of the pool and placed not more than 230 millimetres above the normal water line.
- (3) No handhold is to be extended above the top of the wall of the pool on which it is installed.

### ***Inlets***

- 2.12(1) Inlets shall be constructed of non-corrosive material, and sized to prevent an entrapment hazard.
- (2) Inlets shall be installed at a minimum of:

- (a) 1 wall inlet per 3 metres of wall length in water less than 1 metre deep;
  - (b) 1 wall inlet per 4.5 metres of wall length in water between 1 metre and 1.5 metres deep; and
  - (c) 1 wall inlet per 6.0 metres of wall length in water greater than 1.5 metres deep.
- (3) When placing inlets, consideration should be given to directing water flow to poor circulation areas (e.g., recessed ladders, steps, nooks, steep slopes, etc.).

### ***Lighting***

- 2.13(1) Where underwater lighting is used and night swimming is permitted, area lighting shall be provided for the deck areas and directed towards the deck areas and away from the pool surface in a total capacity of not less than 600 lamp lumens per square metre of pool area.
- (2) Where underwater lighting is not used and night swimming is permitted, area and pool lighting shall be designed to provide a minimum of 215 lux at deck level and on the surface of the pool water in such a way as to avoid problems of glare and reflection.
  - (3) Lights shall be located so that bulbs can be replaced when the pool is in use.
  - (4) All indoor and outdoor pools with lighting for night use shall have independent emergency lighting systems that automatically operate whenever the main lighting system fails. This system is to be constructed and arranged to ensure that the pool, deck, dressing rooms, washroom facilities and exit passages are safely lit to facilitate prompt evacuation.
  - (5) Lights are to be shielded or shatter-proof.
  - (6) Light shields are to be shatter-proof.

### ***Materials***

- 2.14 Components which come into contact with the water intended for use in swimming pools shall be of a material type that is non-toxic to humans, impervious and enduring.

### ***Operating Information***

- 2.15 Any person who constructs or alters a pool, or any dressing room or building used in conjunction with a pool, or who installs any equipment in a pool, dressing room or building should:
- (a) furnish the operator with complete operating instructions and drawings; and
  - (b) in the case of the pool equipment, attach a tag to every drain, valve or other fitting to indicate its function.

### ***Overflow Structures***

- 2.16 Overflow structures may be either perimeter overflow channels or skimmers or both.

### ***Perimeter Overflow Channels***

- 2.17 Where overflow channels are provided, the channel shall:
- (a) extend completely around the pool;
  - (b) be adequately sized to prevent water entering the channel from washing back into the pool;
  - (c) be designed so that the dimensions minimize the danger of swimmer entrapment;
  - (d) be adequately sized and sloped to provide rapid drainage to drains which are not less than 50 millimetres in diameter and spaced not more than 4.5 metres apart; and
  - (e) be of a capacity sufficient to carry 125% of the designed recirculation rate.

### ***Piping System***

- 2.18(1) The piping system shall be designed to:
- (a) circulate the pool water through the treatment equipment;
  - (b) allow each filter to be individually backwashed;

- (c) drain backwashed water to waste;
  - (d) empty the pool;
  - (e) drain or blow out the entire system;
  - (f) permit circulation of water in a closed system between a diatomaceous earth filter and pump during the precoat operation to avoid diatomaceous earth entering the pool;
  - (g) allow for adequate, accessible and easily serviceable valves that permit flexible operation of the filtration equipment;
  - (h) allow for the determination and isolation of leaks in buried lines; and
  - (i) provide for chemical treatment and heating of the water.
- (2) The recirculation piping and fittings are to be of a non-toxic material, resistant to corrosion, and able to withstand operating pressures.

### ***Play Equipment***

- 2.19(1) Before any play equipment is installed, constructed or used in any swimming pool, approval of design and location shall be obtained from a public health officer.
- (2) Wherever play equipment is installed, specific safety instructions should be given to all users through the means of posted instructions placed on the equipment.

### ***Pool Area***

- 2.20(1) Except where grassed areas are provided, the pool area not considered to form part of the deck, should be finished with a hard, impervious, non-slip material.
- (2) Facilities with grassed areas should be provided with deck showers and/or foot washes for proper cleansing of swimmers before returning to the pool from these areas.
- (3) Facilities should be provided for proper cleansing of swimmers before re-entering the pool from these areas.

- (4) Access to the pool deck should be located at the shallow end of the pool.
- (5) Garbage receptacles shall be provided in the pool area.

### ***Pool Heat***

- 2.21(1) Valved piping should be provided for regulating flow through the heater and for bypassing or isolating the heater.
- (2) One or more approved thermometer(s) should be in use for determining water temperature.

### ***Rate of Flow Indicators***

- 2.22(1) A rate of flow indicator is to be provided in the piping system to indicate the rate of pool water circulation.
- (2) Where a single treatment plant serves two or more separate pools, provision should be made for measuring the flow into or from each pool.

### ***Shower Facilities***

- 2.23(1) The number of showers provided in both male and female dressing rooms shall be 1 for each 40 users or part thereof calculated on the maximum swimmer load, except that the minimum number of showers in each dressing room shall be 2.
- (2) Each shower facility shall be equipped with a thermostatic mixing valve that is capable of providing a sufficient supply of hot water to each shower head at a temperature of not more than 40°C. **(Revision 02/00)**
- (3) Floor drains are to be so designed that waste water from shower heads will not pass over the floor area of another shower. One drain per shower head is recommended.
- (4) Soap dispensers with either liquid or powdered soap shall be provided between each pair of shower heads. Dispensers must be all-metal or plastic type and contain no glass.
- (5) All showers should be located in such a manner that the swimmer must pass by or through the shower area before entering the pool areas.

- (6) Except for the purpose of lighting, no person is to install or bring any glass into the portion of the dressing room which contains shower heads.

### ***Skimmers***

2.24 Skimmers shall be:

- (a) constructed of corrosion resistant materials and be fully recessed behind the face of the pool wall;
- (b) accessible through the deck;
- (c) equipped with an overflow weir that automatically adjusts to any variation in water level through a vertical distance of at least 100 millimetres;
- (d) equipped with an easily removable and cleanable basket or screen through which all the overflow water must pass and which is capable of trapping solids larger than 3 millimetres in dimension;
- (e) equipped with a valve or other device for regulating flow so that uniform skimming action can be achieved; and
- (f) designed to handle a minimum flow of 2.3 litres per second.

### ***Strainer***

- 2.25(1) The circulation system, when receiving water directly from the pool, shall include a strainer to prevent hair, lint and other materials from reaching the pump and/or filters.
- (2) Two corrosion-resistant strainer baskets should be provided.

### ***Vacuum Cleaning Equipment***

- 2.26(1) All pools should be provided with vacuum cleaning equipment which will remove sediment in the pool basin.
- (2) Fixed pipe connections from the vacuum cleaning equipment fittings to the pump should be free of air pockets and slope downwards from the pool to the pump.

- (3) Skimmer systems or portable pump vacuum cleaning equipment are permissible alternatives.

### ***Ventilation***

2.27 All indoor pool facilities shall be provided with an adequate ventilation system.

### ***Washroom Facilities***

- 2.28(1) Washroom facilities for each sex shall be provided at all pools.
  - (2) The numbers of required fixtures shall be calculated on the basis that 50% of the occupants will be male and 50% of the occupants female, or as determined from experience or proposed use.
  - (3) The minimum number of water closets for each sex shall be based on maximum swimmer load. (Note: gallery spectator area washroom requirements are governed by The Uniform Building and Accessibility Standards Act and Regulations - National Building Code).
  - (4) For each 50 males or fraction thereof, there shall be 1 water closet or 1 urinal and 1 handbasin. As a minimum there shall be 1 water closet, 1 urinal and 1 handbasin.
  - (5) Where more than 2 water closets are required, urinals may be substituted for 2/3 of the required number of water closets and may be counted as water closets.
  - (6) For each 50 females or fraction thereof there shall be 1 water closet and 1 handbasin.
  - (7) Access to the washroom for gallery spectators shall not require a spectator to pass through the dressing rooms.
  - (8) The lower 1.5 metres of the wall in the water closet and handbasin area is to be impervious.
  - (9) Toilet tissue in suitable dispensers is to be provided at each water closet.
  - (10) Soap dispensers with either liquid or powdered soap shall be provided at each handbasin. Dispensers must be all-metal or plastic type and contain no glass.

- (11) Paper or equivalent towels in suitable dispensers or hot air dryers shall be provided near the handbasins.
- (12) Each washroom shall be equipped with garbage receptacles. In addition, individual garbage receptacles shall be located in female water closets.

### 3.0 CHEMICAL FEEDING EQUIPMENT

#### *Chemical Feeders*

- 3.1 Adjustable output rate chemical feeding equipment shall conform to the Joint National Swimming Pool Institute - National Sanitation Foundation Standard relating to adjustable output rate chemical feeding equipment for pools, or as required by a public health officer.

#### *Disinfection Equipment*

- 3.2 (1) All pools are to be equipped with equipment to provide continuous disinfection when in use, at a dosage necessary to meet minimum residual requirements outlined in The Swimming Pool Regulations, 1999 and to maintain the pool water in a bacteriologically safe condition at all times.
- (2) The disinfection equipment shall be maintained in satisfactory working order, and spare parts essential to immediate safety should be on hand for immediate use.
- (3) The disinfection equipment shall include some positive feature to prevent siphoning when installed above the pool.
- (4) Adjustable output rate disinfecting equipment is to conform to the Joint National Swimming Pool Institute - National Sanitation Foundation Standard relating to adjustable output rate disinfecting equipment for pools, or as required by a public health officer.
- (5) Where gaseous chlorine equipment is used, requirements outlined in **Appendix A** of this standard shall be complied with.

## GENERAL POOL OPERATIONAL STANDARDS

### 1.0 LICENCE TO OPERATE

- 1.1 A pool is subject to inspection prior to the issuance of a licence and at any other time that a public health officer considers necessary or desirable.
- 1.2 When a licence has been issued, it is to be displayed in a prominent place near the swimming pool for which it is issued.

### 2.0 GENERAL

#### *Chemical Handler Certification*

- 2.1 No person shall handle, store or use pool chemicals without successfully completing a swimming pool operator's course that is recognized by the local authority.

#### *Lifeguard Certification*

- 2.2 Where lifeguard staff or supervisors are required, pool operators shall maintain proof of certification of all lifeguard and supervisory staff employed at the pool and make these records available to a public health officer upon request.

#### *Maintenance*

- 2.3 The pool, walkways, dressing rooms and all facilities, furnishings and equipment are to be maintained in good repair and in a sanitary condition.

### 3.0 WATER QUALITY CONTROL

#### *Bacteriological Water Quality*

- 3.1 (1) At a frequency determined by a public health officer, the operator shall ensure that bacteriological water samples, taken from the pool, are submitted to the provincial health laboratory for examination.

- (2) Where bacteriological analyses indicate the presence of coliforms or other organisms, as may be determined by a public health officer, resampling, investigation of disinfection procedures, and remedial action shall be carried out by the operator as required by a public health officer.

### ***Continuous Operation***

- 3.2 Except for stoppage for maintenance, repairs or backwashing of filters, the recirculation systems and chemical feeders shall operate continuously, regardless of the duration of actual use of the pool each day.

## **4.0 SAFETY**

### ***Emergency Procedures***

- 4.1 (1) A written plan for emergencies should be carefully devised and kept up-to-date.
  - (2) The emergency plan should contain procedures to deal with crowd control and safe evacuation, drownings, electrical shock, heat prostration, fractures, poisonings, cuts and burns, neck and back or spinal injuries, and exposure to chlorine gas.
  - (3) All employees should be trained and drilled periodically in the execution of the plan.

### ***Emergency Telephone and Sign***

- 4.2 (1) An emergency telephone shall be provided and identified as such.
  - (2) At or near an emergency telephone, a sign shall be posted that lists the names and telephone numbers of persons available to render emergency aid, including: ambulance, fire, police, chlorine/emergency maintenance and pool manager.

### ***First Aid Kit***

- 4.3 The pool facility shall be equipped with a first aid kit of a type as described in The Swimming Pool Regulations, 1999.

### ***Incident Report Forms***

- 4.4 (1) The pool operator shall have incident report forms similar to that of **Appendix B** available at all times.
- (2) Incident report forms shall be properly completed when injuries occur.
- (3) All incident report forms are subject to review by a public health officer.

### ***Safety Rules***

- 4.5 The following is a suggested list of safety rules that are to be posted at the facility entrance:
- (a) Swimmers shall take a cleansing shower before and after using this pool.
  - (b) No swimmer infected with a communicable disease or having open sores shall enter this pool.
  - (c) Do not use this pool in place of toilet facilities.
  - (d) No glass containers, food or drink is allowed near this pool.
  - (e) No running.
  - (f) No boisterous play.
  - (g) No pushing or horseplay.
  - (h) This pool is supervised/unsupervised.
  - (i) Lifeguard on duty/no lifeguard on duty.
  - (j) Maximum swimmer load is \_\_\_\_\_.
  - (k) First aid kit available at \_\_\_\_\_.
  - (l) Emergency telephone \_\_\_\_\_.

# GENERAL POOL DESIGN/OPERATIONAL STANDARDS

## APPENDIX A

### CHLORINE GAS FEED AND STORAGE ROOM CONSTRUCTION/SAFETY REQUIREMENTS

#### 1.0 CONSTRUCTION

##### *Doors and Windows*

1.1 Chlorine gas feed and storage rooms are:

- (a) to have no interior entrances from attached or integrated buildings;
- (b) to have exit doors that:
  - i) egress to the open atmosphere;
  - ii) are equipped with panic hardware and integral locks; and
  - iii) are equipped with wire reinforced shatter-proof inspection windows of an area not less than 0.2 square metres and of a sufficient size so that the chlorine feed equipment and connected cylinders can be viewed from the outside.

##### *General*

1.2 Chlorine gas feed and storage rooms are:

- (a) to be located and constructed in such a manner as to prevent leakage of chlorine gas to any other areas of the pool;
- (b) not to be located below ground level;
- (c) not to be located where escaping gas could enter a ventilating system, air conditioning unit or building;
- (d) to be constructed of a fire-resistant material having a fire resistance rating of at least two hours;

- (e) to have a minimum floor space of 4 square metres and a basic configuration of no dimension being less than two metres and no less than 1.5 square metres per cylinder;
- (f) to have a minimum room height of 2.5 metres;
- (g) to have a shelf located inside for the storage of cylinder caps, wrenches and gaskets; and
- (h) to have weigh scales of suitable capacity for measuring the weight of chlorine cylinders.

### ***Heating***

1.3 Where applicable, all chlorine gas feed and storage rooms are:

- (a) to be provided with independent heat which is capable of maintaining a room temperature of a minimum of 16°C; and
- (b) to have their own thermostat when heating devices are installed within the room.

### ***Ventilation***

1.4 Exhaust fan intakes and discharges should be located at suitable levels, taking into account the safety of workers and the general public. Factors to consider include:

- (a) intakes should be within 150 millimetres of the floor of the chlorine gas feed and storage room;
- (b) proximity of the discharge to other buildings and other areas accessible both to the general public;
- (c) prevailing winds; and
- (d) proximity to other ventilation/air intakes.

1.5 The ventilation system is to consist of:

- (a) fresh air inlets installed at the top of the door or within 150-300 millimetres of the ceiling that are capable of ventilating the entire chlorine room;

(b) chlorine exhaust fans that are totally enclosed and have fan cooled corrosion protected motors that are capable of a minimum:

i) 3 air changes per hour during normal operation; and

ii) 30 air changes per hour during emergency operation.

1.6 The chlorine room ventilation fan and lights are to be:

(a) operated by one switch that is weather proof and that is located outside the chlorine room entrance door; and

(b) have a signal light incorporated to indicate when the ventilation fan is operating.

1.7 In addition to the mechanical ventilation system, the chlorine room is to be fitted with screened openings to the outside that are:

(a) located within 150 millimetres of the floor and just below the ceiling level; and

(b) at least 300 millimetres by 300 millimetres for every four square metres of floor area.

## **2.0 SAFETY**

### ***Emergency Equipment***

2.1 (1) A self-contained air pack capable of a minimum 15-minute air supply is to be available for usage in the case of emergencies. Self-contained air packs are to be fitted with a full-face positive pressure type mask.

(2) The air pack should be stored in close proximity to the chlorine gas feed and storage room, but not located in the room.

(3) A spare air cylinder is recommended.

### ***General***

2.2 (1) The chlorinator shall be provided with an automatic device that will shut off the flow of gas, when the water pressure fails, and that will vent leakage to the outside atmosphere.

- (2) All connections must be checked for leakage of chlorine gas by the usage of an aqueous ammonia solution, a supply of which is to be available at all times. Containers of ammonia are not to be stored in the chlorine room.
- (3) It is recommended that all pools use a monitor alarm system which activates itself in the event of a chlorine gas leakage.
- (4) Full and empty chlorine cylinders are to be secured to the wall with safety chains. The safety chains are to be wall anchored and have sufficient tensile strength to prevent the cylinders from falling.
- (5) All safety chains are to be equipped with safety hooks.
- (6) No other chemicals or materials should be stored in a chlorine gas feed and storage room.

**GENERAL POOL DESIGN/OPERATIONAL STANDARDS  
APPENDIX B**

**INCIDENT REPORT FORM**

NAME: (Surname) \_\_\_\_\_ FIRST: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ AGE: \_\_\_\_\_ SEX: \_\_\_\_\_

DATE AND TIME OF INCIDENT: \_\_\_\_\_

LOCATION OF INCIDENT:

DESCRIBE WHERE AND WHAT OCCURRED

- |                         |       |
|-------------------------|-------|
| 1) Outside Pool Grounds | _____ |
| 2) Dressing Rooms       | _____ |
| 3) Pool Deck/Walkways   | _____ |
| 4) Open Lawn            | _____ |
| 5) Among Trees          | _____ |
| 6) Fence                | _____ |
| 7) Pool                 | _____ |
| 8) Shallow End          | _____ |
| 9) Deep End             | _____ |
| 10) Diving Boards       | _____ |
| 11) Paddling Pool       | _____ |
| 12) Whirlpool           | _____ |
| 13) Water Slide         | _____ |

NOTE ENVIRONMENTAL FACTORS:  
(weather, structural, etc.)

ACTION IMMEDIATELY TAKEN: (Include equipment used)

\_\_\_\_\_

SITE AND NATURE OF INJURY: (Include condition of subject and first aid used)

\_\_\_\_\_

FOLLOW-UP ACTION:

NAMES & ADDRESSES OF WITNESSES:

\_\_\_\_\_

\_\_\_\_\_

OTHER STAFF ON DUTY FOR THAT ACTIVITY OR TIME PERIOD:

\_\_\_\_\_

NAME AND POSITION OF PERSON MAKING REPORT