



GREY BRUCE HEALTH UNIT

Public Spa Operator Manual

GREY BRUCE HEALTH UNIT
Owen Sound Walkerton
(519) 376-9420 (519) 881-1920

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Introduction

On January 1, 2006, the Public Spas regulation (Ontario Regulation 428/05) came into effect. This regulation is being phased in with many items being required to have been completed before on January 1, 2006 and other items must be completed by or on July 1, 2006.

It is the responsibility of public spa owners/operators to ensure that the public spa complies with all applicable legislation and operating standards to protect the health and safety of the bathers.

This manual is designed to assist in meeting legislative and regulatory requirements and is not to be used as a replacement for specific legislative or regulatory requirements. This manual is intended to assist owners/operators of public spas with health and safety-related operational procedures applicable to public spas.

All public spa owners/operators must notify the Health Unit of their intention to open a spa (*see Appendix A*) that has been:

- a) constructed
- b) altered OR
- c) closed for more than four weeks.

Both the manual and the Regulation do not address pool problems associated with unbalanced water chemistry, equipment, and maintenance or construction requirements.

All public spa construction is regulated under the Ontario Building Code. Should any issues arise regarding spa construction, please contact your local municipal office and ask for a building inspector.

For problems associated with equipment maintenance and unbalanced water chemistry, contact a local swimming pool company or your equipment manufacturer.

The Building Code or a full copy of the Public Spas Regulation (O. Reg. 428/05) can be obtained from www.e-laws.gov.on.ca or by contacting:

Publications Ontario
880 Bay Street
Toronto, ON
M7A 1N8
1-800-668-9938

What is a public spa?

A “public spa” means:

- a hydro-massage pool containing an artificial body of water that is intended primarily for therapeutic or recreational use
- that is not drained, cleaned or refilled before use by each individual AND
- that utilizes:
 - hydrojet circulation,
 - air induction bubbles,
 - current flow OR
 - a combination of these.

Which spas does this regulation apply to?

- apartment building; mobile home park and nurses’ residence
- a facility to serve a community
- a hotel
- a campground
- as part of: i) a club or ii) a condominium, co-operative or commune property
- as part of a day nursery, a day camp or an establishment or institution for the care or treatment of persons who are ill, infirm or aged or for persons in custodial care


What type of training do I need?

The required training for operators includes:

- spa operation and maintenance,
- filtration systems
- water chemistry and
- all relevant safety and emergency procedures.

What safety equipment is required?

On January 1, 2006:

<p>Emergency stop button</p>	<ul style="list-style-type: none"> • Deactivates all spa pumps • Separate from the spa’s timing device • Located near the spa activates an audible and visual signal • Tested once a month and recorded
<p>Emergency Telephone</p>	<ul style="list-style-type: none"> • A land line • Within 30 metres of the public spa • Connects directly: <ul style="list-style-type: none"> A) to an emergency service or B) the local telephone utility • Tested each day before opening and recorded
<p>First Aid Kit (for a copy see Appendix B)</p> 	<p>Conveniently located and well marked. Must contain the following:</p> <ul style="list-style-type: none"> • A current copy of the St. John Ambulance or Red Cross First Aid Manual • 12 safety pins • 24 adhesive dressings, individually wrapped • 12 sterile gauze pads each 7.5 cm square • 4 rolls of gauze bandages 5 cm in width • 4 rolls of gauze bandages 10 cm in width • 4 sterile surgical pads, individually wrapped • 6 triangular bandages • 2 rolls of splint padding • 1 roll-up splint • 1 pair of scissors • 2 pairs of non-permeable gloves • 1 resuscitation pocket mask
<p>Ground Fault Detector</p>	<ul style="list-style-type: none"> • Tested daily before opening and recorded

On July 1, 2006:

Upper limit cut-off switch	<ul style="list-style-type: none"> • Limits the maximum temperature of the spa water to 40 C (104 F) • Independent of the spa's water temperature thermostat
Timing device	<ul style="list-style-type: none"> • Controls the operation of the jet pump • Can be set to a maximum of 15 minutes • Requires a bather to exit the spa to reset it
Vacuum relief mechanism	<p>Must have one or more of the following:</p> <ul style="list-style-type: none"> • A vacuum release system • A vacuum limit system • Another engineered system designed, constructed and installed to conform to good engineering practice appropriate to the circumstances • Tested once a month and recorded
Clock	<ul style="list-style-type: none"> • Located so that can be viewed from the public spa
Steps (if applicable)	<ul style="list-style-type: none"> • Equipped with a handrail • Non slip surface • A band of contrasting colour on side and top edges

When the spa has a diameter or width of more than 3 metres:

Reaching Pole	<ul style="list-style-type: none"> • 3.65 m long, electrically insulated • Available on deck
Buoyant Throwing Aid	<ul style="list-style-type: none"> • Rope diameter to be 6 mm in diameter • Rope length to be 3 m + half the width of the spa • Available on deck
Spine Board	<ul style="list-style-type: none"> • To be in good condition • Available on deck

What signs do I have to post?

1. General Spa Rules

*“Every owner and operator shall ensure that the following notice is posted in a conspicuous place at each entrance to the public spa with the word **CAUTION** in letters not less than 50 millimeters high, all other lettering not less than 10 millimeters high, and with a minimum five millimeter stroke in either case”:*

CAUTION

Children under the age of 12 are not allowed in the spa unless supervised by a person who is 16 years of age or older.

Pregnant women and persons with known health or medical conditions should consult with a physician before using a spa.

Do not use the spa if you have an open sore or rash, or are experiencing nausea, vomiting or diarrhea.

Overexposure may cause fainting. 10 to 15 minutes may be excessive for some individuals. Cool down periodically and leave the spa if nausea or dizziness occurs.

Enter and exit the spa slowly, to prevent slipping.

Do not play or swim near drains or suction devices. Your body, body parts, hair, jewelry and other objects may become trapped and cause injury or drowning. People with long hair should be especially careful.

Do not enter or remain in a spa if a drain cover or suction fitting is loose, broken or missing. Immediately notify the spa operator.

No food or beverage except water is permitted within the deck or spa. No glass containers of any kind are permitted within the deck or spa.

Maximum bather load of spa is _____. O.Reg. 428/05, s. 18(1)

2. Shower Sign

“A separate notice should be located in a conspicuous location near every entrance to the deck that indicates, in letters not less than 25 millimeters high with a minimum five millimeter stroke, the bather’s duty to shower”:

NOTICE

Every bather shall take a shower, using warm water and soap and thoroughly rinse off all soap before entering the deck.

O.Reg. 428/05, s. 19(1)

3. Emergency Telephone

A notice must be posted near the entrance to the public spa that states the location of the emergency phone.

The following information must be posted at the phone:

EMERGENCY TELEPHONE

DIAL 911 (fire dept., ambulance)

Name of the Spa: ABC Spa
Address of Spa: 123 Swimmer's Lane
Location of Spa: Southeast Corner of Bldg
Phone number: 123-4567

4. Emergency Stop

The following notice must be posted above the emergency stop button:

**IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY STOP
BUTTON AND USE EMERGENCY PHONE. AN AUDIBLE AND
VISUAL SIGNAL WILL ACTIVATE.**

5. Depth Markings (only applies to spas 3 meters wide or greater)

On the deck, clearly marked in figures 10 cm high, markings that set out the water depths indicating the:

- **Deep points**
- **Shallow points**
- **Breaks between gentle and steep bottom slopes**
- **DEEP AREA” and “SHALLOW AREA” at their respective locations**

6. Timing Device

A notice must be posted at the timing device:

Timing device

How to calculate maximum capacity? (Bather Load)

The maximum bather load is the lower number of:

- a) the maximum bather load as specified by the manufacturer OR
- b) one person for every square metre of water.

How do I calculate the Area of the Spa water surface?

Determine the shape of the spa

a) Square or rectangular:

Length = _____ metres

Width = _____ metres

Area of spa water surface = Length x Width

= _____ metres x _____ metres

= _____ square metres

b) Circle:

Radius = $\frac{1}{2}$ x diameter

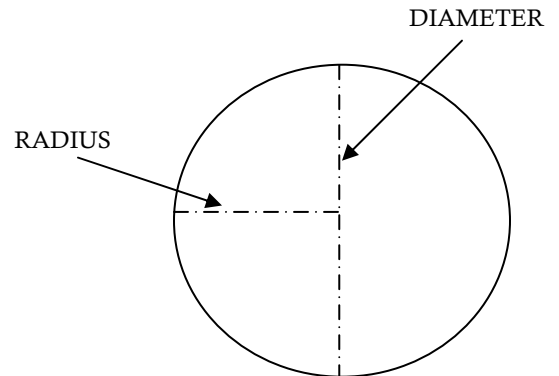
= $\frac{1}{2}$ x _____ metres

= _____ metres

Area of spa water surface = πr^2

= 3.14 x _____ metres x _____ metres

= _____ square metres



Calculating Bather Load:

In order to calculate the total number of bathers permitted in your spa, complete the following calculation:

Maximum bather load = for every square metre of water, one bather is permitted

= _____ square metres x 1 bather

= _____

For example if there are 7.4 square metres of water, only 7 bathers are permitted. Therefore the bather load would be 7.

What types of tests/inspections do I need to take?

When	Tests and Inspections	Requirement
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PUBLIC SPA OPERATORS MANUAL

Daily: ½ hour before opening and every 1 hour while open <i>OR ½ hour before opening and once more while in use (if equipped with an automatic sensing device)</i>	Free available chlorine or total bromine	5 - 10 mg/L
	Total alkalinity	80 mg/L minimum
	pH	7.2 - 7.8
	Water Temperature	Not to exceed 40 C/104 F
	Clarity	Must be able to see the lowest water outlet drain
Daily: ½ hour before opening and once more during the day	Free available chlorine or bromine when Oxidation Reduction Potential is used	700 mV minimum
Daily: ½ hour before opening	Ground Fault detector	Include time check made Must be operational
	Emergency Telephone	
Daily before closing	Make Up Water (when applicable)	Record make up water meter reading 30 litres of water for every bather to a maximum of 20% of volume of spa
Each day	Estimated daily Bather Load	
	Safety equipment including first aid box	Must contain required supplies
As they occur	1. Chemical added 2. When spa drained, inspected and refilled 3. Equipment breakdowns	Record details including the time
	Emergencies and rescues	Record details on an Incident Report Form (<i>see Appendix C</i>)
Weekly	Cyanuric Acid	Maximum 150 mg/l
Every 30 Operating Days	1. Suction Outlets (Drain covers/skimmer lids)	Must be secure and operational
	2. Emergency Stop Button	Must be operational
	3. Vacuum release mechanism	Must be operational

- Record the above inspections/tests on a daily spa log (*see Appendix D*)
- Operator to sign the records
- Records must be kept for a minimum of one year and must be available for inspection by a Public Health Inspector.

What type of test kit do I need?

There are many types of test kits commercially available from a pool and spa supply company.

Some kits will measure FAC/ bromine residual and pH and nothing else. This may be fine for a backyard spa, but for a public spa, a fully equipped test kit is recommended. It is mandatory that the kit contains the reagents to test for free available and combined chlorine or bromine levels, total alkalinity, cyanuric acid and pH. DPD is the most commonly used method for checking for FAC.

It is recommended that reagents be replaced as per manufacturer's recommendation. Reagents lose their strength over time. Storing them in direct sunlight and in filter/equipment rooms where the conditions are warm and humid will ruin the reagents. Storing them in cold temperature (i.e., outdoor shed in winter) may destroy the reagents. Mixing various reagents from other kits won't provide accurate results either.

Testing Method

Always follow the manufacturer's instructions.

- Take the water sample away from any jets.
- Submerge the comparator tub at least 18 inches from the water surface.
- Add reagent with the reagent bottle completely upside down and vertical (straight up and down).
- Count the drops as you add them to the comparator tube making sure that you add the exact amount required.

When should I close the spa?

- The clarity is poor
- Spa fouling
- No disinfecting chemicals available on the premises
- Emergency stop button not working
- Emergency phone not working
- Ground Fault Detector not working
- Insufficient quantity of free available chlorine or bromine in the water
- Circulation system not working
- Spine board, reaching pole, buoyant throwing aid missing (where applicable)
- Test kit not available or essential test chemicals missing
- Drain cover missing or not secured
- Skimmer lids missing

The Public Spa must be made inaccessible to users when the spa is closed.

What do I do in the event of a fouling?

- Evacuate swimmers and close spa
- Shut off recirculation system and chemical feed system
- Remove as much of waste as possible
- Drain the tub
- Clean and disinfect the interior of the tub
- Clean and sanitize equipment with 100 mg/l chlorine
- Refill the tub and restart recirculation system
- Adjust free available chlorine/bromine residual to 10 mg/l
- Check all parameters and adjust where necessary
- Re open spa

General maintenance

Every owner and every operator shall ensure that the spa, the deck and where provided, the dressing and locker rooms, toilets, showers and connecting corridors are:

- kept clean, free from slipperiness and disinfected
- free of hazardous obstructions
- that no food or beverage except water is supplied or consumed in the spa or on the deck
- that no glass container is brought onto the deck or into the public spa.

Turnover period

Turnover period is the period of time the public spa which the volume of water is filtered, disinfected and passed through the filter and returned to the spa each day.

The Ontario Building Code states:

A *public spa* shall be equipped with a water circulation system that is capable of filtering, disinfecting and passing the *public spa* water through the *public spa* with a turnover period of not more than

- a) 30 minutes for a public spa with a volume that exceeds 6m³
- b) 20 minutes for a public spa with a volume that is > 4 m³ and < 6m³
- c) 15 minutes for a public spa with a volume that does not exceed 4m³.

How do I determine if the public spa has the correct turnover period?

- 1) Determine **the shape** of the spa
 - a) square/rectangular OR
 - b) circular

- 2) Determine **the volume**.

- a) If **Square / rectangular:**

Length = _____ metres Width = _____ metres Depth = _____ metres

Area of spa water surface = Length x Width x Depth

= _____ metres x _____ metres x _____ metres = _____ metres³

- b) If **Circular:**

Radius = ½ x diameter

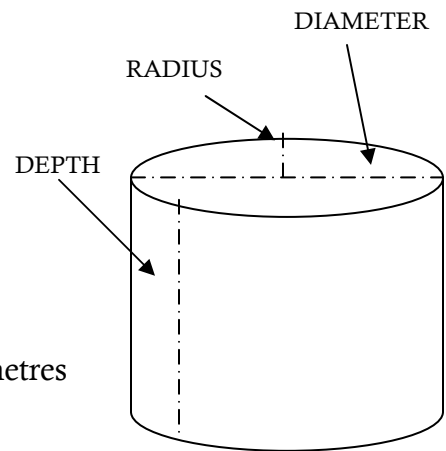
= ½ x _____ metres

= _____ metres

Volume of spa = πr^2 (3.14 x radius x radius x depth)

= 3.14 x _____ metres x _____ metres x _____ metres

= _____ metres³



- 3) Determine what the **flow meter reading** must be. (A **Flow meter** is required to determine if the correct turnover period is achieved).

When the volume *(as calculated above)*:

a) Exceeds 6m³

$$\begin{aligned} \text{Flow meter reading} &= \frac{\text{volume in m}^3 \times 1000 \text{ litres/ m}^3}{30 \text{ minutes}} \\ &= \frac{\text{litres}}{\text{minutes}} \\ &= \text{litres/minute (l/m or lpm)} \end{aligned}$$

OR

b) Between 4m³ - 6m³

$$\begin{aligned} \text{Flow meter reading} &= \frac{\text{volume in m}^3 \times 1000 \text{ litres/ m}^3}{20 \text{ minutes}} \\ &= \frac{\text{litres}}{\text{minutes}} \\ &= \text{litres/minute (l/m or lpm)} \end{aligned}$$

OR

c) Does not exceed 4m³

$$\begin{aligned} \text{Flow meter reading} &= \frac{\text{volume in m}^3 \times 1000 \text{ litres/ m}^3}{15 \text{ minutes}} \\ &= \frac{\text{litres}}{\text{minutes}} \\ &= \text{litres/minute (l/m or lpm)} \end{aligned}$$

The flow meter reading is measured by a flow meter. The number calculated ensures that the turnover period is achieved.

How do I determine when to add make-up water?

Starting on July 1, 2006

Determine the volume of the spa water.

If the volume of the public spa is **4,000 litres of water or more** each day you must:

- add 30 litres of make up water for each bather
- add no more than 20% of the total spa volume
- have a makeup water meter to determined the amount of water added
- no scheduled draining of spa

OR

If the volume of the public spa is **4,000 litres of water or less** you must:

1. drain all the water to waste periodically (see calculation below)
2. inspect the spa including:
 - a. Drain covers
 - b. Suction fittings
 - c. All emergency equipment
3. ensure all parts are properly secured and in working condition
4. refill the spa

How do I calculate when to drain the spa?

Volume of spa = _____ litres

Estimated Number of Users each day = the total number of users each day = _____

When to drain spa = $\frac{\text{Volume}}{10 \times \text{Number of Users}}$

= $\frac{\text{litres}}{10 \times \text{_____}}$

= _____ number of days between draining

This is the number of days before the tub needs to be drained

For example:

If the spa volume = 1000 litres

The number of users each day = 30

Then $\frac{1000 \text{ litres}}{10 \times 30} = \frac{1000}{300} = 3 \text{ days}$

Therefore, the tub needs to be drained every 3 days.

How do I store and handle chemicals safely?

- Follow manufacturer's recommendations
- Store spa chemicals in a cool, dry and well-ventilated space.
- Keep corrosive materials such as metals and combustibles such as paper and rags away from other chemicals.
- Keep all chemicals away from hot surfaces and flame.
- Have personal protective equipment available (gloves, respirators, apron etc.)
- Material safety data sheets to be made available to employees for every chemical in use.
- Do not eat, drink or smoke in the chemical storage area.
- Ensure the chemical storage room is inaccessible to unauthorized persons.
- Handle chemicals with clean and dry scoops only. Each chemical should have its own scoop. Use scoops provided by the manufacturer.
- Keep containers closed when chemicals are not in use.
- Never re-use empty chlorine containers for storage of other chemicals and never mix contaminated chemicals with your fresh supply.
- When mixing chemicals, add them slowly. **NEVER ADD WATER TO THE CHEMICALS, ALWAYS ADD THE CHEMICAL TO THE WATER.**

This checklist does not preclude the owner/operator from any other requirements as set out by any other Act and/or Regulation.

Spa Parts

Filter	<ul style="list-style-type: none"> removes dirt, debris and undissolved solids from the spa water two types of filters: sand and diatomite some water is wasted to make room for fresh water filter is cleaned by backwashing
Flow Meter	<ul style="list-style-type: none"> the rate of water flow is used to calculate turnover period of the water
Pressure Gauges	<ul style="list-style-type: none"> Two gauges are located on top of the filter tank One measures the amount of water flowing into the tank The other measures how much flows out of the tank. When too much dirt collects in the filter medium, the water flow rate drops. The difference is indicated on the gauges. When the difference is quite noticeable, backwashing is required. Follow manufacturers' directions as filters vary in cleaning and pressure requirements.
Make-up Water Meter	<ul style="list-style-type: none"> measures the amount of fresh water added to spa everyday fresh water prevents cyanuric acid build-up & dilutes swimmer pollutants
Recirculation system	<ul style="list-style-type: none"> a system that maintains circulation of water through a <i>public spa</i> by pumps, and that provides continuous treatment that includes filtration and chlorination or bromination and any other process that may be necessary for the treatment of the water.
Vacuum release system	<ul style="list-style-type: none"> prevents high vacuum occurrences that cause human body or body part suction entrapment.

Appendix A

Notification of Opening Public Pool or Spa

Name of Pool: _____

Municipality: _____

Location Address: _____

Mailing Address _____
if it is different _____
from Location _____

Phone # at Pool/Spa: _____

Pool is:	Indoor	[]	Spa is:	Indoor	[]
	Outdoor	[]		Outdoor	[]
	Class A	[]			
	Class B	[]			
	Modified	[]			
	Wave Action	[]			

Operator Name: _____ Operator Phone: _____

Planned "Ready for Inspection" Date: _____

Planned Opening Date: _____

*Please fill in all the information above and
return this form 14 days **prior** to the planned opening date*

Please note that if our inspection reveals significant deficiencies, then the Pool and/or Spa may be closed until our re-inspection confirms the deficiencies have been corrected.

Return this form to the Grey Bruce Health Unit
by fax to (519) 376-0980
or by mail to:

920 First Ave West, Owen Sound ON N4K 4K5

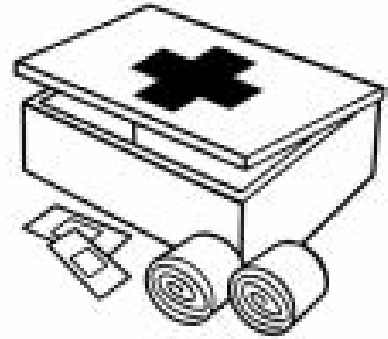
If you have questions call and ask for the Public Health Inspector Monday to Friday 8:30am to 4:30pm at (519) 376-9420 (1-800-263-3456).

Visit us at: <http://www.publichealthgreybruce.on.ca>

Appendix B

Spa First Aid Check List

- A current copy of the St. John Ambulance or Red Cross First Aid Manual
- 12 safety pins
- 24 adhesive dressings, individually wrapped
- 12 sterile gauze pads each 7.5 cm square
- 4 rolls of gauze bandages 5 cm in width
- 4 rolls of gauze bandages 10 cm in width
- 4 sterile surgical pads, individually wrapped
- 6 triangular bandages
- 2 rolls of splint padding
- 1 roll-up splint
- 1 pair of scissors
- 2 pairs of non-permeable gloves
- 1 resuscitation pocket mask



Date kit was checked: _____

Public Pool and Spa Incident Report

Facility name: _____

Date and time of incident: _____

Location of incident: (circle all that apply)

- a) Outside pool grounds
- b) Dressing Rooms
- c) Pool/Spa Deck
- d) Open Lawn
- e) Fence
- f) Pool
- g) Shallow End
- h) Deep End
- i) Diving Board
- j) Wading Pool
- k) Spa
- l) Water Slide
- m) Other _____

Name of person involved: _____

Address: _____

Phone number: _____ Age: _____ Sex: _____

Details of incident (include activity at time of incident): _____

Description of injuries (including exact location of body): _____

Treatment or action taken by staff (include if treatment refused): _____

Treatment given by emergency services (ambulance, police, fire etc): _____

Parents contacted: Yes No

Environmental conditions: Water (temperature, visibility, etc.) _____

Air (temperature, wind, etc.) _____

Deck (condition etc.) _____

Victim followed all rules and safety procedures: Yes No

Witness Name: _____

Address: _____

Phone: _____ Age: _____ Sex: _____

Name of staff involved: _____

Name of person completing report: _____

Public Spas: Record Keeping Checklist

Daily

What to check:	When to check:	Written record, signed by operator
<input type="checkbox"/> Ground fault circuit (if one)	Before opening same day	Time of test
<input type="checkbox"/> Emergency phone test		
<input type="checkbox"/> Total Alkalinity	½ hour before opening then hourly while in use OR ½ hour before opening and once more while in use (if equipped with automatic sensing device (ORP))	Time and result of tests
<input type="checkbox"/> Free available chlorine/total bromine		Time and result of tests
<input type="checkbox"/> pH		
<input type="checkbox"/> Clarity		
<input type="checkbox"/> Temperature		
<input type="checkbox"/> ORP	½ hour before opening and once more while in use (if equipped with automatic sensing device)	
<input type="checkbox"/> Water meter	At end of daily use period	Reading
<input type="checkbox"/> Type and amount of chemicals added manually		Type and amount
<input type="checkbox"/> Estimated bather load		Number of bather uses
<input type="checkbox"/> Emergencies, rescues or breakdowns of equipment that have occurred		✓
<input type="checkbox"/> Draining of Spa and inspection (if carried out that day)		✓

Weekly

What to check:	When to check:	Written record, signed by operator
Cyanuric acid stabilizer if allowed and used	At least once per week	Concentration

Every 30 Days

What to check:	When to check:	Written record, signed by operator
Outlet cover inspection	Every 30 operating days	✓
Emergency stop and vacuum release tested		✓

Signage Requirements

Every owner and operator shall ensure that the following notice is posted in a conspicuous place at each entrance to the public spa with the word CAUTION in letters not less than 50 millimetres high, all other lettering not less than 10 millimetres high, and with a minimum five millimetre stroke in either case:

CAUTION

Children under the age of 12 are not allowed in the spa unless supervised by a person who is 16 years of age or older.

Pregnant women and persons with known health or medical conditions should consult with a physician before using a spa.

Do not use the spa if you have an open sore or rash, or are experiencing nausea, vomiting or diarrhea.

Overexposure may cause fainting. 10 to 15 minutes may be excessive for some individuals. Cool down periodically and leave the spa if nausea or dizziness occurs.

Enter and exit the spa slowly, to prevent slipping.

Do not play or swim near drains or suction devices. Your body, body parts, hair, jewelry and other objects may become trapped and cause injury or drowning. People with long hair should be especially careful.

Do not enter or remain in a spa if a drain cover or suction fitting is loose, broken or missing. Immediately notify the spa operator.

No food or beverage except water is permitted within the deck or spa. No glass containers of any kind are permitted within the deck or spa.

The maximum bather capacity of this spa is _____.

O. Reg. 428/05, s. 18 (1).

A separate notice should be located in a conspicuous location near every entrance to the deck that indicates, in letters not less than 25 millimetres high with a minimum five millimetre stroke, the bather's duty to shower.

Every bather shall take a cleansing shower using soap and warm water before entering the deck.

O. Reg. 428/05, s. 19 (1).