



Licensing Requirements for Aquatic Facility (AF)

The design criteria for aquatic facilities address only public health concerns. The AF shall be designed such that the water quality will always remain safe for users. Whilst landscaping to enhance the appearance of the AF is encouraged, it shall not be done in such a way or to such an extent that it can contaminate the water in the AF or create a problem for maintenance.

Steps for Applying New Licence

1. Submit Temporary Occupation Permit (TOP) from Building Construction Authority (BCA) or approval note for change of use from Urban Redevelopment Authority (URA).
2. Submit relevant plan of each AF
 - a) Overview layout plan
 - i. Orientation of each AF;
 - ii. Details of the toilet facilities (if applicable); and
 - iii. Location of rinse showers.
 - b) Overall schematic diagram consisting of
 - i. Water circulation (includes overflow perimeter drain/open channels or skimmers, flow meters);
 - ii. Filtration (sampling taps at the inlet and outlet pipes of the filter); and
 - iii. Disinfection systems.
3. Depending on the type of AF licence to be applied for, fill up the relevant sections of Aquatic Facility Format and submit for each AF endorsed by professional engineer.
4. Submit pump and filter catalogues (indicate pump model/filter used).
5. Arrange for a pre-licensing inspection.
6. Submit latest water quality report before pre-licensing inspection.

References:

Minimum Design Criteria for AF

For the minimum design criteria for AF, please refer to the section on Aquatic Facility in the Code of Practice on Environmental Health (COPEH).

Minimum Design Criteria for Toilet

For the minimum design criteria for toilet, please refer to the section on Public Toilet in the COPEH.

Other requirements to be complied with BEFORE the issuance of licences:

- ☐ Notices/signboards to direct every user to use a rinse shower or take shower before entering the AF.

Other requirements to be complied with AFTER the issuance of licences:

1. Samples of the water in the AF shall be submitted to a testing laboratory accredited by the Singapore Accreditation Council (SAC) for the chemical, physical and bacteriological analysis at least once a month for the test parameters in **Table 2** and, where applicable, at least once every three months for the test parameters in **Table 3**. The licensee shall ensure the test results on the chemical, physical and bacteriological quality of the water in the AF are displayed at all times in any conspicuous and accessible location within the licensed premises.
2. The AF water should be maintained at all times in an alkaline condition as indicated by pH value of 7.2 to 7.8 when chlorine is used as disinfectant; or pH value of 7.2 to 8.0 when bromine is used as disinfectant.
3. The licensee shall keep a daily record of information regarding the operations, including readings of disinfectant, pH value and maintenance procedures such as cleaning of filters, and quantity of chemicals used, and such other data as may be required by the Director-General of Public Health.
4. Testing kits for measuring the concentration of the disinfectant and the pH value of the AF water shall be provided and maintained in good working condition.
5. All records of daily on-site tests conducted for pH value and disinfectant level of the AF water shall be made available for inspection by NEA.
6. The bottom and side walls of the AF shall be cleansed as often as necessary to keep it in a clean condition.
7. Walls, ceiling and equipment shall be painted as often as necessary to keep them in good condition.
8. All parts of the AF and AF complex including all auxiliary equipment shall be maintained in good condition.
9. The water in AF shall be maintained and able to meet the stipulated regulatory standards at all times. The testing frequencies and parameter limits for the different AF types are indicated below in **Tables 1, 2 and 3**. The aquatic facility laboratory results for samples collected and tested in a particular month shall be submitted no later than 14th day of the subsequent month.
10. When the AF is closed for repair or renovation works, please notify NEA by filling up Form - Notifying the Closure of Licensed Aquatic Facility (AF) for Repair or Renovation Works and send it via <https://www.nea.gov.sg/corporate-functions/feedback> (Category: Other Enquiry on Environmental Issue; Description: Submission of AF Closure Form).
11. You are not required to submit your laboratory result during the AF closure period. Please ensure your AF is thoroughly cleaned, disinfected, and passed all the test parameters in Table 2 and, where applicable in Table 3 before reopening the AF for use. Thereafter, please submit the results to NEA via the GoBusiness Portal (<https://dashboard.gobusiness.gov.sg/login>).

Table 1: Water quality parameters to be tested daily on-site

Parameter	Swimming Pool	Water Playground	Spa Pool
pH value (for chlorine)	7.2 – 7.8	7.2 – 7.8	7.2 – 7.8
Free chlorine (ppm)	1 – 3	1 – 3	3 – 5
pH value (for bromine)	7.2 – 8.0	7.2 – 8.0	7.2 – 8.0
Total bromine (ppm)	2 – 4	2 – 4	4 – 6

Table 2: Water quality parameters to be tested monthly

Parameter	Swimming Pool	Water Playground	Spa Pool
pH value (for chlorine)	7.2 – 7.8	7.2 – 7.8	7.2 – 7.8
Free chlorine (ppm)	1 – 3	1 – 3	3 – 5
pH value (for bromine)	7.2 – 8.0	7.2 – 8.0	7.2 – 8.0
Total bromine (ppm)	2 – 4	2 – 4	4 – 6
Turbidity (NTU)	≤ 0.5	≤ 0.5	Not required
Heterotrophic Plate Count (HPC) (cfu/ml) at 35°C, 48 h	≤ 200	≤ 200	≤ 200
<i>E. Coli</i> Count (cfu/100ml)	< 1	< 1	< 1

Table 3: Water quality parameters to be tested quarterly

Parameter	Limit	Swimming Pool	Water Playground	Spa Pool
<i>Legionella</i> Bacteria Count (cfu/100ml)	< 1	Quarterly (if aerosol generating features are present)	Quarterly (if aerosol generating features are present)	Quarterly
<i>Pseudomonas aeruginosa</i> Count (cfu/100ml)	< 10	Not required	Quarterly	Quarterly

Aquatic Facility (AF) Format (per filtration system)



Please fill in the required information and mark a tick or indicate Yes/No below.

Section A-1. Details of Aquatic Facility (AF) to be Licensed

1. Select the type of AF to be licensed	<i>An Aerosol-generating (AG) feature is a fitting/fixture located within the AF that sprays out water.</i> ☐ Swimming pool without AG features ☐ Swimming pool with AG features ☐ Multi-use spa pool ☐ Water playground/ Interactive water fountain
2. AF address	
3. Building plan (BP) number / Submission number (i.e., ESYYYMMDD-****-CG**R**)	
4. Owner / Company Name / MCST No.	
5. Location (Please tick if applicable)	a. Level: ☐ Roof-top ☐ Others (Specify level: _____) b. ☐ Outdoor ☐ Indoor (Select 1 below) ☐ with air-condition ☐ without air-conditioned c. Premises Type: ☐ Association ☐ Condo ☐ Club ☐ Commercial ☐ Industrial Building ☐ Hotel ☐ Office Building ☐ Park ☐ School (Select 1 below)

	☐ Government ☐ Government-aided ☐ Private ☐ Shopping Mall ☐ SportSG ☐ Others (Specify: _____)					
6. Number of rinse showers	<table border="1"> <tr> <th>Number of AF</th><th>Number of rinse shower</th></tr> <tr> <td></td><td></td></tr> </table>	Number of AF	Number of rinse shower			
Number of AF	Number of rinse shower					
7. Are there measures incorporated such that rinse shower water does not drain into the AF, perimeter overflow system or splash zone of AF?	☐ Yes ☐ No					

Section A-2. Details of Aquatic Facility (AF) to be Licensed

1. Approved water source	☐ PUB potable water
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Section B. AF System, AF Equipment and Accessories

a. For All AF Types	
1. Location of equipment room:	Level: ☐ Roof-top ☐ Others (Specify level: _____)
2. Filter type used:	☐ Rapid Sand, please select media type used: ☐ Sand ☐ Glass ☐ Others (Specify: _____) ☐ Diatomaceous Earth (D.E.) ☐ Cartridge ☐ Perlite ☐ Zeolite ☐ Regenerative Media Filter (RMF) with approved media used: ☐ Perlite ☐ Zeolite ☐ Other filter types (Specify: _____)
3. Sampling taps are provided at the inlet and outlet pipes of the filter.	☐ Yes ☐ No
4. Number of standby pumps in the AF system	
5. Flow meters are installed on all recirculation systems and shall be capable of measuring water flow of 1.5 times the designed flow rate.	☐ Yes ☐ No
6. All openings (e.g. overflow pipes, air vents) on backwash / balancing / surge tanks are properly screened with corrosion-resistant stainless-steel mosquito-proof netting of aperture size not exceeding 0.65mm.	☐ Yes ☐ No
7. Provide easy access to the balancing tanks and surge tanks for maintenance and inspection.	☐ Yes ☐ No

8. Type of recirculation system used	☐ Perimeter overflow system i. Surface area: _____ m² ii. Perimeter overflow: _____ % (At least 50% of the pool perimeter. Total perimeter overflow(m)/total perimeter of AF(m), measured from inner pool edge) ☐ Surface skimmers (for water surface area <450 m²); i. Surface area: _____ m² ii. Number of skimmers (13.5m²/skimmer): _____ ☐ If skimmer systems are used, provide devices that top up water automatically. ☐ Others (Please specify: _____)
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9. Calculation of flow rate(s):

Name and type of AF sharing the same filtration system	Total volume of water (m ³)	Flow rate of pump (m ³ /hour)	Turnover rate of AF (hr)	Shallowest depth (m)	Deepest depth (m)	Average depth (m)

Turnover rate of AF (hrs) = (Total volume, m³) / (flow rate, m³/hour)

Please provide the turnover rate calculations for all AF sharing the same filtration system.

b. Water Playground/ Interactive Water Fountain

9. All foggers or misters are supplied directly from a potable water source and not recycled from the balancing/surge tank.	☐ Yes ☐ No
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10. Aeration or jet systems are completely separated from the recirculation system.	☐ Yes ☐ No
11. Aeration or jet systems are not inter-connected with any other AF.	☐ Yes ☐ No
12. Water features pumps and water recirculation system pump shall be interconnected so that when recirculation pumps are off, the water features pumps are also off.	☐ Yes ☐ No
c. Multi-use Spa Pool	
13. The air intake source of air induction system shall be positioned or designed to minimise contamination of the multi-use spa pool.	☐ Yes ☐ No

Section C. Water Treatment (for all AF types)

1. Primary disinfectants used:	<u>Approved disinfectants</u> ☐ Sodium hypochlorite ☐ Calcium hypochlorite ☐ Chlorinated isocyanurate ☐ Salt chlorinator ☐ Bromo-chloro-dimethylhydantoin (BCDMH) (for indoor use only) ☐ Sodium bromide with an oxidiser (hypochlorite) (for indoor use only) ☐ Other bromine/chlorine-based disinfectants (Please specify: _____) ☐ Others: _____ (If used, please contact NEA to obtain and complete 'Application for Approval of Alternative Disinfectant Systems to Be Used in Aquatic Facilities')
2. Chemical containers are labelled to indicate the identity of the chemicals, the hazards involved and the precautions to be taken to prevent incompatible mixing.	☐ Yes ☐ Not applicable, please select reason: ☐ Salt chlorinator used ☐ Inline chlorinator used ☐ Others (_____) ☐ No (please specify reason: _____)
3. Automated chemical feeders are capable of supplying sufficient disinfectant to disinfect 100% of AF's daily water capacity.	☐ Yes ☐ No
4. Is a device to determine rate of flow provided for each disinfectant feeder?	☐ Yes ☐ No ☐ Solid disinfectant used ☐ Others (Please specify: _____)

Section D. Shower & Toilet Facilities at AF (if applicable)

	Number of sanitary facilities				
	Water closet (WC)	Wash hand basin (WHB)	Bathroom with bench (BR)	Bench with hanger (BH)	Urinal (UR)
Male					
Female					

E. Declaration

Relevant Sections	Declaration
Page 2 – Notices/signboards Section A1 Section D	Name of Architect / AF Owner / MCST Chairman* with endorsement: _____ Tel No: _____ Date: _____
Section A-2	Name of Professional Engineer (Project / AF Specialist)* with endorsement: _____ Tel No: _____ Date: _____
Section B Section C	Name of Professional Engineer (AF Specialist) with endorsement: _____ Tel No: _____ Date: _____

* Delete where appropriate