

SINGAPORE STANDARD Code of practice for the design and management of aquatic facilities





(ICS 97.220.10)

SINGAPORE STANDARD

Code of practice for the design and management of aquatic facilities

Published by Enterprise Singapore

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from Enterprise Singapore. Request for permission can be sent to: standards@enterprisesg.gov.sg.

© Enterprise Singapore 2021

ISBN 978-981-5042-36-8

Contents

Foreword		4
1	Scope	5
2	Normative references	
3	Terms and definitions	
4	Classification of aquatic facilities	8
5	Design and construction requirements	9
6	Water treatment	24
7	Circulation – suction and return points	
8	Filtration	28
9	Chemical treatment	31
10	Water quality	33
11	Operation and maintenance	
12	Chemical safety	41
13	Aquatic facility operators, staff and safety audits	43
14	Facility specific requirements	44

Annexes

А	Recommended safety signage	48
В	First aid box	50
С	Safety audit checklist and recommendation	51
D	Requirements for diving facilities – Stairways and ladders	53

Tables

1	Classification of aquatic facilities	9
2	First aid facilities	20
3	First aid equipment	21
4	Outdoor air supply requirements for air-conditioned aquatic facilities	21
5	Water body loading category chart	26
6	Maximum bather numbers	26
7	Physico-chemical parameter guidelines	34
8	Microbiological parameter guidelines	34

Figures

1	Radius of curvature	7
2	Example of protrusion ≤ 10 mm	10
3	Example of protrusion ≥ 10 mm	10

Page

4	Wall slope for prefabricated pool	11
5	Wall slope for non-prefabricated pool	12
6	Dimension for ladders	14
7	Dimension for grab rails above recessed (niche) steps	15
8	Dimension for stairs/steps	16
9	Typical balancing tank level	31
D.1	Risers in any staircase flight	53
Bibliography		55

Foreword

This Singapore Standard was prepared by the Working Group on Design and Management of Aquatic Facilities set up by the Technical Committee on Architectural Works under the purview of the Building and Construction Standards Committee.

This standard is a revision of SS 556:2010 'Code of practice for the design and management of aquatic facilities'. The key changes are as follows:

- (a) Updating the terms and definitions to align with industry practices.
- (b) Updating the annexes, figures and tables to align with industry practices.
- (c) Updating access and egress requirements.
- (d) Updating aquatic play facilities and water slides requirements and references.
- (e) Updating water turnover for all aquatic facilities.
- (f) Updating water treatment sections.
- (g) Categorising various aquatic facilities for ease of reference.
- (h) Incorporating recommendations and requirements from the latest relevant local and overseas standards.

It is presupposed that in the course of their work, users will comply with all relevant regulatory and statutory requirements. Some examples of relevant regulations and acts are listed in the Bibliography. The Singapore Standards Council and Enterprise Singapore shall not be responsible for identifying all of such legal obligations.

In preparing this standard, reference was made to the Western Australia Code of practice for the design, construction, operation, management and maintenance of aquatic facilities (Department of Health 2007).

Acknowledgement is made to the Department of Health, Western Australia for their permission to reproduce materials from their publications into this standard.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all such patent rights.

NOTE

- 1. Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "mature standards". Mature standards will not be subject to further review unless there are requests to review such standards.
- 2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.
- 3. Compliance with a SS or TR does not exempt users from any legal obligations.

Code of practice for the design and management of aquatic facilities

1 Scope

This standard specifies the general requirements for the design, construction, installation of equipment, operation, management and maintenance of aquatic facilities in Singapore. It is intended to ensure the safety, well-being and recreational benefits of facility users, as well as personnel who may become involved in the aforementioned aspects of design, construction, installation of equipment, operation, management and maintenance of the aquatic facilities.

Special care is required in applying this standard alone to equipment for which no product specific standard has yet to be published.

For aquatic facilities in landed homes, the owner may decide on appropriate requirements to adopt.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ASTM F2376	Standard practice for classification, design, manufacture, construction and operation of water slide systems
EN 1069-1	Water slides. Safety requirements and test methods
SS 531	Code of practice for lighting of work places
SS 555 (all parts)	Protection against lightning
SS 636	Code of practice for water services
SS 638	Code of practice for electrical installations