

**SINGAPORE STANDARD**

**Water efficiency management systems –  
Requirements with guidance for use**

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## Foreword

This Singapore Standard was prepared by the Water Efficiency Management Technical Committee under the direction of the Management Systems Standards Committee.

In preparing this standard, materials were reproduced/adapted from ISO/IEC Directives, Part 1 : Consolidated ISO Supplement – Procedure Specific to ISO (*Third Edition*) and SS ISO 50001: 2011 Energy management systems – Requirements with guidance for use.

Acknowledgement is made for the use of information from the ISO publications.

At the time of publication, this standard is expected to be used by certification/registration and/or self declaration of an organisation's water efficiency management system.

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 of 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.*
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 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.*
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## Introduction

Water is essential to life and forms part of the environment. As concern grows for continually improving the quality of the environment, organisations of all types and sizes are increasingly turning their attention to the environmental impacts of their activities, products and services, and this includes striving towards a more efficient use of water within an organisation. Achieving sound water efficiency performance requires organisational commitment to a systematic approach and to continual improvement of a water efficiency management system (WEMS).

The purpose of this Singapore Standard is to enable organisations to assess and account for their water usage, and to identify, plan and implement measures to achieve water savings through systematic management of water. Successful implementation depends on commitment from all levels and functions of the organisation, especially commitment from top management.

This Singapore Standard specifies WEMS requirements, upon which an organisation may develop and implement a water efficiency management policy, and establish objectives, targets, and action plans which take into account legal requirements and information related to significant water usage. A WEMS enables an organisation to achieve its policy commitments, and take action as needed to improve its water management to the requirements of this Singapore Standard. This Singapore Standard applies to the activities under the control of the organisation, and application of this Singapore Standard may be tailored to fit the specific requirements of the organisation, including the complexity of the system, degree of documentation, and resources.

In any organisation, water may be used for staff usage and operational applications. In operational applications, water is used in a number of ways including the following:

- a) General cleaning of equipment
- b) As a process transport agent
- c) As a heat transfer fluid
- d) In contact with process material in mass transfer
- e) As a by-product or constituent of a reaction

The adoption and proper implementation of the WEMS is intended to result in improved water efficiency and can help to achieve the following outcomes:

- Identifying water as a resource that should be considered as part of organisational and budgetary planning
- Assisting an organisation to reduce water demand and better manage water usage
- Recognizing the impact and savings that can occur with reducing water usage
- Ensuring a greater level of accountability in water usage
- Providing a process for regular review and adoption of opportunities arising in water efficiency.

The Standard is based on the premise that the organisation will periodically review and evaluate its WEMS in order to identify opportunities for improvement and their implementation. The organisation is given flexibility in how it implements the WEMS, e.g. the rate, extent and timescale of the continual improvement process are determined by the organisation. The Plan - Do - Check - Act (PDCA) continual improvement framework to deliver results that will improve water efficiency in accordance to the organisation's water efficiency management policy as shown in Figure 1.



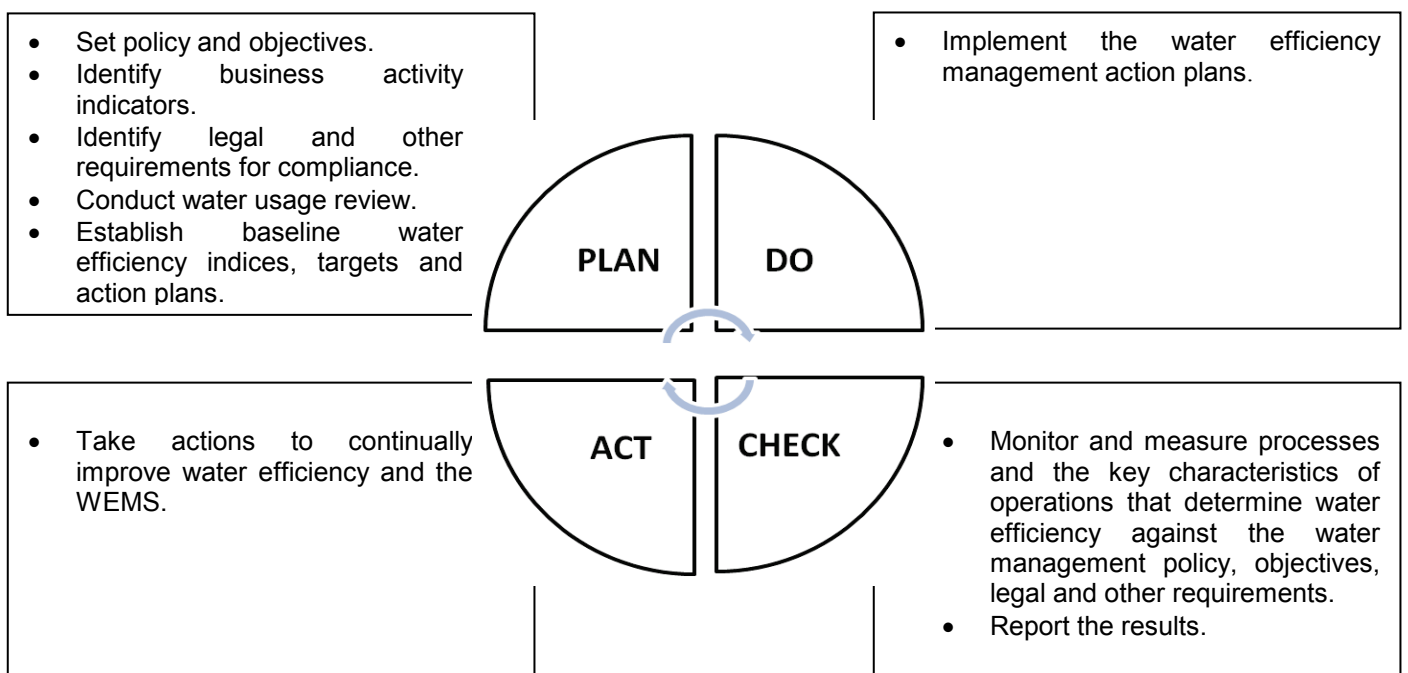


Figure 1 – Water efficiency management systems model

## Water efficiency management systems – Requirements with guidance for use

### 1 Scope

This Singapore Standard specifies requirements for a WEMS which will enable an organisation to take a systematic approach in order to achieve continual improvement of water efficiency and to develop and implement water saving measures. Guidance in the annexes provides additional practical information to support implementation. This standard is applicable to any organisation that wishes to:

- a) achieve efficient use of water through Reduce-Replace-Reuse approach;
- b) establish, implement and maintain water efficiency;
- c) continually improve water efficiency.

This Singapore Standard specifies requirements applicable to water usage, including monitoring, measurement, documentation and reporting, design and procurement practices for equipment, systems, processes and personnel that contribute to water efficiency.

Annex A provides guidance on the use of this standard and Annex B gives examples of scenarios in water usage efficiency.

NOTE 1 – Reduce may include putting in place a proper monitoring system, use of water efficient fittings and equipment, leak detection, etc.

NOTE 2 – Replace may include substitution of potable water with NEWater, sea water and rainwater wherever feasible for non-potable usage.

NOTE 3 – Reuse may include recycling of process water, greywater, etc for non-potable usage.

### 2 Normative references

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

SS CP 48 Code of practice for water services