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Reconfirmed 2017

Australian Standard®

Waters

Part 7: The construction and use of the Secchi disc

This Australian Standard was prepared by Committee CH/22, Methods for Examination of Waters. It was approved on behalf of the Council of Standards Australia on 10 February 1993 and published on 17 May 1993.

The following interests are represented on Committee CH/22:

Australian Chamber of Commerce and Industry

Australian Government Analytical Laboratories

Australian Institute of Marine Science

Australian Mining Industry Council

Board of Works, Melbourne

Department of Administrative Services—Australian Construction Services

Department of Conservation and Environment

Department of Health, N.S.W.

Engineering and Water Supply Department, S.A.

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Government Chemical Laboratories, Qld

Griffith University

National Association of Testing Authorities, Australia

Royal Australian Chemical Institute

Rural Water Commission, Vic.

University of Melbourne

University of Sydney

Water Board, Sydney—Illawarra—Blue Mountains

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 3550.7—1993
Waters
Part 7: The construction and use of the Secchi disc

RECONFIRMATION NOTICE

Technical Committee EV-008 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

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The following are represented on Technical Committee EV-008:

Australasian Land and Groundwater Association
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Australian Nuclear Science & Technology Organisation
Australian Water Association
Chem Centre
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National Measurement Institute
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NOTES

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PREFACE

This Standard was prepared by the Standards Australia Committee on Methods for Examination of Waters.

Although there have been a number of scientific papers written on the design and use of the Secchi disc, there is no single paper which is regarded as definitive. Thus, workers in the field may refer to various scientific papers which have varying requirements for the design and use of the Secchi disc. Consequently results from different studies may be inconsistent.

These guidelines standardize the design and use of the Secchi disc, and therefore improve the consistency of results between various studies.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard

Waters

Part 7: The construction and use of the Secchi disc

1 SCOPE This Standard sets out general requirements and guidelines for the construction and use of the Secchi disc and a procedure for determining Secchi disc depth. The main advantages of the Secchi disc are its low cost, ease of construction, ruggedness and simplicity of use.

2 CONSTRUCTION OF SECCHI DISC The disc shall be made of any non-corrosive rigid material and be of 300 ±10 mm diameter. To reduce the effect of currents on the angle of view, a mass of 3.0 ±0.5 kg shall be suspended below the centre of the disc on a rigid rod 150 mm long.

The disc shall be painted with quadrants alternating in flat black and flat white waterproof paints.

The disc shall be attached to a non-stretch rope (such as a polyester cord from which the stretch, if any, has been removed) which has been marked at appropriate intervals with waterproof markings. As the waters to be measured will be of variable clarity, judgment should be made as to the scale of measurement to be used. In turbid waters, markings at 100 mm intervals would be appropriate, whereas in clear waters, markings at 500 mm intervals would be adequate. Figure 1 shows a typical Secchi disc with attached rope.

3 USE OF THE SECCHI DISC The Secchi depth value can be used as an informal visual index of depth of light penetration into a body of water, which can be used for monitoring changes in the clarity of that water body.

Owing to the clarity of the open ocean and the consequent difficulty in obtaining accurate Secchi disc measurements in this environment, the use of Secchi discs should be restricted to coastal and inland waters. It is important to realize the limitations of the Secchi disc and not attempt to gain more information from its use than is reasonable. Nevertheless, with care, it is possible to obtain useful information about various aspects of a particular water body, especially if the study is carried out over a period of at least twelve months.

Some correlation can be obtained between Secchi depth values and other parameters related to light penetration. The nature of this correlation may vary with seasonal and interannual change. This procedure is subject to a wide range of environmental influences which have a significant effect on the visibility of the disc in the water.

A number of factors will affect results and should be recorded, including the following:

(a) The angle of the sun (readings should be taken between 2 hours after sunrise and 2 hours before sunset).

(b) Water currents.

(c) Weather conditions (cloud cover, wind etc).

NOTE: The visual acuity of the observer will affect the perception of the disc, thus observation of the disc should be made with corrected vision. Tinted lenses or sunglasses should not be worn, as they may affect the depth at which the disc is recognized.