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DESIGN AND APPLICATION OF WATER SAFETY SIGNS



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter



THE FOLLOWING, SCIENTIFIC, INDUSTRIAL, CONSUMER AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Federation of Consumer Organizations
Council of Australasian Swimming Pool Associations
Department of Sport and Recreation, N.S.W.
Institute of Professional Lifeguards and Beach Management
Local Government Association of New South Wales
Maritime Services Board of New South Wales
Ministry of Immigration and Ethnic Affairs, Victoria
National Safety Council of South Australia
Pool Superintendents Association of Australia
Royal Life Saving Society of Australia
Surf Life Saving Association of Australia
Water Safety Council, N.S.W.

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DESIGN AND APPLICATION OF WATER SAFETY SIGNS

AS 2416—1980

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PREFACE

This standard was prepared by the Association's Committee on Water Safety Signs and Symbols, at the request of the Water Safety Council of New South Wales. Statistics kept by the Council of fatal and serious accidents in creeks, rivers, dams, swimming pools and the surf indicated that warnings of hazardous conditions in these areas were needed in an effort to reduce the number of accidents.

Because of the large number of non-English-speaking citizens in the population who are unfamiliar with the local conditions encountered in some water sports, it was agreed that symbols rather than words should be used wherever possible.

This standard requires reference to the following standards:

- AS 2342 Design and Use of Graphic Symbols and Public Information Symbol Signs
- Part 1—General Principles
 - Part 2—Method for Determining the Need for a Symbol and for Establishing the Design Criteria
 - Part 3—Test Procedures for Evaluating Graphic Symbols and Symbol Signs
 - *Part 4—Principles for the Design of Graphic Symbols
 - Part 5—Design of Signs Incorporating Symbols
 - *Part 6—Implementation of Symbol Signs
- AS K185 Colours for Specific Purposes

*In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

DESIGN AND APPLICATION OF WATER SAFETY SIGNS

FOREWORD

In considering standardization of signs and symbols for surfing beaches, the committee responsible for the standard took into account the widespread adoption throughout Australia, by council by-laws, of the flags used by the Surf Life Saving Association of Australia and these have been included in this standard.

A questionnaire was circulated to local government authorities and water sporting associations asking them to nominate the areas in which they believed a symbol sign would help to reduce the risk of accidents. From the replies received and from consideration of the drowning and accident statistics available it was decided that the following symbol signs were most urgently needed:

- Swimming permitted
- Swimming prohibited
- Surfboard riding permitted
- Surfboard riding prohibited
- Scuba diving permitted
- Scuba diving prohibited
- Fishing prohibited
- Water skiing prohibited
- *Boats prohibited
- *Shallow water—no diving
- *Deep water
- *Underwater hazards
- *Speed boats prohibited
- *Sharks
- *Stingers
- *Spear fishing permitted
- *Spear fishing prohibited

The fishing prohibited symbol was requested for use particularly on bridges over waterways used extensively for water skiing, boating, etc.

The symbols were chosen after a program of testing had been carried out in accordance with AS 2342, Part 3.

Three variations of each symbol were tested. These were chosen by the committee from those currently being used by the national parks and wildlife services in the U.S.A., Sweden and Australia and from those proposed by the World Surf Life Saving Association. Tests could not be undertaken for those referents above that are marked with an asterisk as there were very few symbols available and new designs will have to be developed.

A minimum of 30 people, including people whose language was not English, participated in the recognition test carried out on each of the three versions of each symbol. More than 100 people were involved in the three tests on which the final choice was based. In general, at least 70 percent of those participating

recognized each symbol on its first presentation. The participants were then told the meaning of the symbols and on successive presentations in a matrix of other symbols the correct results rose to between 92 percent and 100 percent.

It was later decided to undertake a second test of the symbols in their negative form. This was carried out on a beach by members of the Surf Life Saving Association of Australia under the direction of the chairman of SAA Committee 1/3/1. The results of these tests, in which 86 people participated, were as follows:

<i>Symbol sign</i>	<i>Correct interpretation on first presentation</i>
Swimming prohibited	over 90 percent
Surfboard riding prohibited	over 90 percent
Scuba diving prohibited	over 80 percent
Fishing prohibited	over 80 percent
Water skiing prohibited	78 percent

The poorer performance of the last symbol sign was due to confusion with the surfboard riding symbol. However, as the water skiing symbol is for use on sheltered waterways not surfing beaches, it was considered that the symbol would perform satisfactorily when used in its proper context.

While the test results indicated that a high proportion of the 'user population' is likely to correctly interpret these water safety signs on first sight, an education program should be undertaken to ensure that the symbol signs achieve the function for which they have been designed, i.e. to communicate without the use of words.

Although a test for legibility has not yet been developed for inclusion in AS 2342, the testing program did include a simple legibility test. On the results of both the recognition and legibility tests it was decided to adopt the water safety symbols used by the U.S. National Park Service. Permission to use these symbols has been granted by the United States Department of Interior. They are the first of the set of water safety symbols. Other symbols will be added from time to time as testing of the required symbols is satisfactorily completed.

Signs incorporating these symbols are to be designed in accordance with AS 2342, Part 5. Examples of the signs which comply with these design requirements are given on the single sheets on which the standard symbols are illustrated.

Reference should also be made to AS 2342, Part 6, by those responsible for erecting and siting signs.

*Symbols to be developed and tested at a later date.