AS 1428.4—1992

Australian Standard®

Design for access and mobility

Part 4: Tactile ground surface indicators for the orientation of people with vision impairment

This Australian Standard was prepared by Committee ME/64, Access for People with Disabilities. It was approved on behalf of the Council of Standards Australia on 20 December 1991 and published on 16 April 1992.

The following interests are represented on Committee ME/64:

Access Australia

ACROD

Australian Chamber of Manufactures

Australian Council on the Ageing

Australian National Council of and for the Blind

Australian Uniform Building Regulations Coordinating Council

Building Owners and Managers Association of Australia

Department of Administrative Services—Australian Construction Services

Department of Housing, New South Wales

Department of Local Government, Queensland

Master Builders Construction and Housing Association, Australia

National Committee of Independent Living Centres

Royal Australian Institute of Architects

Royal Melbourne Institute of Technology

South Australian Department of Housing and Construction

Telecom Australia

Additional interests participating in preparation of Standard:

Association for the Blind, Victoria

Royal Blind Society, New South Wales

Royal Society for the Blind, South Australia

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PREFACE

This Standard was prepared by the Standards Australia Committee on Access for People with Disabilities.

The ground surface indicators proposed in this Standard are designed to give warning of hazards, and directional information to pedestrians who are blind or who have impaired vision, through contact by foot or cane with the ground surface.

The design and installation requirements have been based on research on the ability of people who are blind or who have vision impairments to locate indicators and identify patterns on them, to be published in a report titled *A performance evaluation of selected tactile tiles under consideration for use by the vision impaired in Australia* (see Foreword).

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FOREWORD*

Blind pedestrians are subject to a wide range of possible dangers and inconveniences when travelling alone. Fortunately, many of these can be avoided through the use of communication systems which do not depend on vision.

Auditory information allows for communication at a distance, and can readily replace visual clues in some situations (e.g. audible traffic signals can substitute for visual 'Walk' and 'Don't Walk' signals). Still, there are many situations in which auditory information is either impractical or inadequate.

Tactile information is another satisfactory alternative for communication in selected cases. Blind people who use long canes can profit from tactile information which is detectable either by their canes or underfoot, and blind people who do not use canes can still profit from underfoot information.

In Japan, several types of tactile tiles have been installed in thousands of locations, and these tiles are used to communicate a variety of messages. As a group, these tiles are usually called 'braille tiles' (although they have nothing to do with the symbol system commonly called 'braille'). Some other Oriental and European countries have also installed braille tiles in selected locations.

However, despite the fact that braille tiles have been installed in many locations over the past 15 years, there are at least three reasons why evaluation of their usefulness is important before recommendations concerning installation of new locations are made:

(a) Study of the value of the tiles in communicating with blind pedestrians in any locale has been quite limited.

(b) 'Braille tile' is a generic term which represents several different specific styles of tile, some of which may be more valuable than others in some applications.

(c) The orientation and mobility training and habits of blind pedestrians in different parts of the world may contribute to different levels of performance by blind pedestrians who contact braille tiles.

A performance evaluation of selected tactile tiles under consideration for use by the vision impaired in Australia presents the results of several studies of the performance of a group of blind volunteers who attempted to detect selected tactile tiles, and their opinions relative to these tiles. The purpose of the study was to provide objective information on the probable value of specific tiles in particular installations. The three types of tiles evaluated were dome tiles, pathway tiles and braille road rivets.

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* From the introduction to *A performance evaluation of selected tactile tiles under consideration for use by the vision impaired in Australia*, A.F. Peck, Boston College; M. Tauchi, Japan National Rehabilitation Centre; T. Murakami, Tokyo Metropolitan Rehabilitation Centre and M. Okhura, Seikei University.

STANDARDS AUSTRALIA

Australian Standard

Design for access and mobility

Part 4: Tactile ground surface indicators for the orientation of people with vision impairment

1 SCOPE This Standard specifies requirements for the design and installation of tactile indicators for use on ground or floor surfaces to assist the mobility of people with vision impairment.

NOTE: Guidance on the type and installation of raised pavement markers to delineate pedestrian crossing areas are included in Appendix A and on the general installation layout of tactile ground surface indicators in Appendix B.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1428 Design for access and mobility
1428.1 Part 1: General requirements—Buildings
1428.2 Part 2: Enhanced and additional requirements—Buildings and facilities

1683 Methods of test for elastomers
1683.4 Method 4: Density of vulcanized rubber
1683.11 Method 11: Tension testing of vulcanized rubber
1683.12 Method 12: Tear resistance of vulcanized rubber
1683.15.2 Method 15.2: Durometer hardness
1683.21 Method 21: Rubber – Vulcanized – Determination of abrasion resistance using a rotating cylindrical device
1683.23 Method 23: Rubber – Vulcanized – Determination of resistance to liquids
1683.24 Method 24: Rubber – Vulcanized – Determination of resistance to ozone cracking – Static strain test

1742 Manual of uniform traffic control devices
1742.10 Part 10: Pedestrian control and protection

ASTM
D 573 Test method for rubber – Deterioration in an air oven

D 575 Test methods for rubber properties in compression

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 1428.1 and those below apply.

3.1 Tactile indicators – patterned modules which may be individual tiles, or strips of modules.

3.2 Directional pattern (elongated pattern) – a pattern that indicates the direction of travel to be taken.

3.3 Warning pattern (dot pattern) – a pattern that indicates a potential hazard or a change of direction.

4 MATERIALS

4.1 Tactile indicators for outdoor applications Tactile indicators for outdoor applications shall have a low rate of degradability, shall not be susceptible to fading by UV light, or to chipping, and shall be slip-resistant when wet or dry.

4.2 Tactile indicators made from natural or synthetic rubbers Tactile indicators made from natural or synthetic rubbers shall comply with the test criteria shown in Table 1.

5 DESIGN REQUIREMENTS

5.1 Tactile indicators warning of hazards Tactile indicators warning of hazards shall be Type A as shown in Figure 1 or Type B as shown in Figure 2.

NOTE: Type B is preferable for use in wet areas.

5.2 Tactile indicators for directional guidance Tactile indicators for directional guidance shall be Type C as shown in Figure 3.