
**Assistive products for blind and
vision-impaired persons — Tactile
walking surface indicators**

*Produits d'assistance pour personnes aveugles ou visuellement
affaiblies — Indicateurs tactiles de surfaces de marche*

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 23599:2019](https://standards.iteh.ai/catalog/standards/iso/f7955b65-3c3b-4a77-b671-5f1d3bf13979/iso-23599-2019)

<https://standards.iteh.ai/catalog/standards/iso/f7955b65-3c3b-4a77-b671-5f1d3bf13979/iso-23599-2019>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 23599:2019

<https://standards.iteh.ai/catalog/standards/iso/f7955b65-3c3b-4a77-b671-5f1d3bf13979/iso-23599-2019>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General provisions	3
4.1 General principles.....	3
4.2 Detecting and distinguishing TWSIs.....	4
4.2.1 General.....	4
4.2.2 Tactile contrast.....	4
4.2.3 Visual contrast.....	4
4.2.4 Design for prevention of tripping.....	4
5 Requirements and recommendations	4
5.1 Specifications for shape and dimensions of TWSIs.....	4
5.1.1 General.....	4
5.1.2 Attention patterns.....	5
5.1.3 Guiding patterns.....	6
5.2 Surrounding or adjacent surfaces.....	10
5.3 Visual contrast.....	10
5.3.1 General.....	10
5.3.2 Luminance contrast.....	10
5.3.3 Calculation of the luminance contrast value.....	11
5.3.4 Maintenance of minimum luminance contrast.....	11
5.3.5 Measurement condition.....	11
5.3.6 Difference in colour or tone.....	11
5.3.7 Illumination.....	11
5.4 Materials.....	11
5.5 Installation.....	12
5.5.1 General.....	12
5.5.2 Principles for installation of TWSIs.....	12
5.5.3 Principles for installation of attention patterns.....	12
5.5.4 Principles for installation of guiding patterns.....	13
Annex A (informative) Luminance contrast	14
Annex B (informative) Examples of installations of TWSIs in specific situations	17
Bibliography	38

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 173 *Assistive products*.

This second edition cancels and replaces the first edition (ISO 23599:2012), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- Correction of Weber's formula in Table A.1;
- Correction of Reference [18] in the Bibliography.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of this document is to create requirements for Tactile Walking Surface Indicators (TWSIs) for blind or vision-impaired persons.

When blind or vision-impaired persons travel alone, they might encounter problems and hazards in various situations. In order to obtain information for wayfinding, these pedestrians use information available from the natural and built environment, including tactual, acoustic and visual information. However, environmental information is not always reliable and it is for this reason that TWSIs perceived through use of a long white cane, through the soles of shoes and through the use of residual vision have been developed.

TWSIs were invented in Japan in 1965. They are now used around the world to help blind or vision-impaired persons travel independently. At present, TWSI patterns and installation methods vary from country to country. This document aims to provide a basis for a common approach for TWSIs at the international level, while acknowledging that some differences might be necessary at the local level to accommodate climatic, geographical, cultural or other issues that might exist.

TWSIs should be designed and installed based on a simple, logical and consistent layout. This will enable tactile indicators to facilitate not only the independent travel of blind or vision-impaired persons in places they frequently travel, but also to support their independent travel in places they visit for the first time.

Currently, there are several forms of TWSIs, but the ability to detect differences in tactile patterns through the soles of the shoes or the long white cane varies depending on individual differences. Therefore, the consolidated findings of science, technology and experience were employed to define the characteristics of TWSIs that can be detected and recognized by potential users. Additionally, in order to ensure that TWSIs achieve maximum effect in conveying information, it is important that they be installed in or on a smooth surface where blind or vision-impaired persons can identify them without interference from an irregular walking surface.

It is also necessary to ensure that TWSIs can be effectively used by vision-impaired persons as well as people who are blind. For this purpose, TWSIs should be easily detectable through use of residual vision. This is achieved through visual contrast between TWSIs and the surrounding or adjacent surface. Visual contrast is influenced primarily by luminance contrast, and secondarily by difference in colour or tone. In order to have good visibility, it is necessary to have sufficient illumination without glare and it is important to maintain the visual contrast between TWSIs and the surrounding or adjacent surface.

While TWSIs should be effective for blind or vision-impaired persons, attention should also be paid to their surface structure and materials in order to ensure that all pedestrians, including those with impaired mobility, can safely and effectively negotiate them.

TWSIs are installed in public facilities, buildings used by many people, railway stations and on sidewalks and other walking surfaces. Attention patterns may be installed in the vicinity of pedestrian crossings, at-grade kerbs, railway platforms, stairs, ramps, escalators, travelators, elevators, etc. Guiding patterns may be used alone or in combination with attention patterns in order to indicate the walking route from one place to another.

