



SLOVENSKI STANDARD
SIST-TP CWA 45546-1:2007
01-januar-2007

Smernice za standardiziranje javnih prevoznih sistemov - Potrebe starejših in invalidnih oseb - 1. del: Osnovne smernice

Guidelines to standardisers of Collective Transport Systems - Needs of older people and persons with disabilities -- Part 1: Basic Guidelines

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: CWA 45546-1:2004

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c02d0c70b/sist-tp-cwa-45546-1-2007>

ICS:

01.120

03.220.01

SIST-TP CWA 45546-1:2007

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST-TP CWA 45546-1:2007

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007>

ICS 01.120; 03.220.01

English version

Guidelines to standardisers of Collective Transport Systems - Needs of older people and persons with disabilities - Part 1: Basic Guidelines

This CEN/CENELEC Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN and CENELEC but neither the National Members of CEN or CENELEC nor the CEN Management Centre or the CENELEC Central Secretariat can be held accountable for the technical content of this CEN/CENELEC Workshop Agreement or possible conflicts with standards or legislation.

This CEN/CENELEC Workshop Agreement can in no way be held as being an official standard developed by CEN or CENELEC and their Members.

This CEN/CENELEC Workshop Agreement is publicly available as a reference document from the CEN members national standard bodies or the CENELEC members national electrotechnical committees.

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-85a310cwa45546-1/2004>

CEN and CENELEC members are the national standards bodies and national electrotechnical committees, respectively, of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



Management Centre:
rue de Stassart, 36 B-1050 Brussels

CENELEC Central Secretariat:
rue de Stassart, 35 B-1050 Brussels

Contents	Page
Foreword.....	3
Introduction	4
1 Scope.....	6
2 Normative references.....	7
3 Terms and definitions.....	7
4 Collective Transport Systems.....	9
4.1 General.....	9
4.2 Good practice examples of collective transport systems.....	10
4.3 Elements in a Collective Transport System.....	11
4.4 Type of passengers/users.....	12
4.5 Information.....	13
5 Using this CEN/CENELEC Workshop Agreement document.....	15
5.1 Purpose of the tables.....	17
5.2 Using the tables.....	17
5.3 Tables of factors to consider under each sub-system.....	18
5.3.a ACCESS AREA – Tables 2.A, 2.B, 2.C and 2.D.....	19
5.3.b TERMINAL/ STOP – Tables 3.A, 3.B, 3.C and 3.D.....	21
5.3.c BOARDING AREA AND PROCESS – Tables 4.A, 4.B, 4.C and 4.D.....	25
5.3.d VEHICLES – Tables 5.A, 5.B, 5.C and 5.D.....	28
5.4 Interpretation of the tables.....	32
6 Development of Technical Standards for Collective Transport.....	33
Annex A (informative) Illustrations for information.....	34
Annex B (informative) List of members of the CEN/CENELEC Workshop ACTS...48	48
Bibliography.....	50

Foreword

The production of this CWA (CEN/CENELEC Workshop Agreement) “Guidelines to standardisers of Collective Transport Systems – Needs of older people and persons with disabilities – Part 1: Basic guidelines” was agreed by the CEN/CENELEC Workshop on Accessibility in Collective Transport Systems as part of its work plan in its meeting on 2003-07-07.

The final review/endorsement round for this CWA Part 1 was started on 2004-01-28 and was closed on 2004-02-27. The comments received were all included in the final text of the CWA which was submitted to CEN for publication on 2004-04-21.

The present CWA Part 1 has been developed through the collaboration of transport designers and providers, manufacturers, users and people experienced in dealing with older and disabled people using collective transport systems.

The present CWA have received the support of representatives of these sectors. A list of experts who have supported the document's contents may be obtained from the CEN Management Centre or the CENELEC Central Secretariat.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TP CWA 45546-1:2007](https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007)

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007>

Introduction

People with functional limitations, whether the result of disability or old age, are confronted with a broad range of important difficulties and obstacles that impact their independence, full social mainstreaming and equal opportunities. This loss of opportunities is expressed, among others, in the impediments such persons face to access collective transport.

One of the most important goals pursued in our society and therefore by its representatives is universal access to collective transport, including older persons and people with disabilities.

After over half a century of overt concern for improving collective transport, as illustrated by the fifty years of history of the European Conference of Ministers of Transport, there has been significant progress made in some countries. However, there is still a need for further development and improvement of passenger transport - from design to implementation – along the lines of standards that ensure accessibility for everyone.

Disabilities may be permanent or temporary and may be the result of any number of causes. The most common are the limitations deriving from disabilities and old age; but they may also be occasioned by specific circumstances and situations, such as people who are overweight or extremely tall or short, children, pregnant women, people travelling with prams/strollers, carrying bulky packages, etc.

In this regard, attention should be drawn to the fact that while minor limitations should not, initially, cause difficulties in the use of conventional collective transport systems, the combination of a number of minor limitations (as is often the case in the ageing process) may in fact lead to accessibility problems.

While not all older people need special systems to access public passenger transport, the number of older citizens is rising and will continue to increase in the medium term, dramatically raising the number of users demanding solutions to make transport accessible to them and to everyone.

CEN/CENELEC Guide 6 reminded us that 'it is an important goal for the whole of society that all people have access to products, services, workplaces and environments. The issue of accessibility to and usability of products and services has become more critical with the increasing percentage of older persons in the world's population. While not all older persons have disabilities, the prevalence of disability or limitations is highest among this demographic group'.

It is also important to understand the effects, both statistically and economic, of the growing number of people in the population who are older. Reference is made to this in the Scope section of this document.

It is important, then, in drafting technical standards geared to improving the quality of collective transport, to cater for people whose reduced mobility either temporarily or permanently prevents them from making use of such systems.

It is important to underline that the public transport chain and passenger transport systems also include accessible information for passengers with disabilities, and access to related infrastructure, i.e. stations, bus stops, etc.

This CEN/CENELEC Workshop Agreement document Part 1 has been prepared by CEN/CENELEC Workshop 16, entitled "Accessibility in Collective Transport Systems" (ACTS). This is a Sector Guide of CEN/CENELEC Guide 6:2002 which is part of the development of EU Mandate 283 to the European Standards Bodies for a guidance document in the field of safety and usability of products by people with special needs (e.g. elderly and disabled). The Secretariat was held by AENOR.

We are grateful to all those who have contributed to the production of this publication, especially those who have loaned illustrations to emphasise points made by the text.

Workshop 16 has identified areas, which would benefit from further development and anticipate further work.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TP CWA 45546-1:2007](https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007)

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007>

1 Scope

The present text provides guidance to writers of relevant standards relating to collective transport on how to take account of the needs of all passengers with reduced mobility, especially older persons and persons with disabilities.

This document pursues the furtherance of globally accessible collective transport, that is to say, transport that can be used by everyone.

Specifically, this document aims to:

- Provide information and raise awareness on how passenger transport systems should be designed and the circumstances that should be taken into account so each of their elements is fully accessible.
- Draw attention to the importance of taking account of the needs of people with disabilities when developing standards.
- Raise awareness of the social importance of accessible collective transport (transport services for all).
- To demonstrate that the benefits of accessible transport improve the quality of service (comfort, safety, convenience, etc.) for all users.
- Make more apparent the potential increase in economic trading benefits through extending accessible transport to a wider population.
- Emphasise the growing market potential. By the year 2010 about 25% of the EU population will be over 60 years and over 30 % by the year 2020. Many of the people who are in the older age groups have money and use this to travel. The percentage of disabled people in the EU will have risen from 11% today to 18% by 2020. Furthermore as the EU itself gets larger these percentages are likely to rise also.
- Remind governments and planners that effective and accessible collective transport systems also save money because less social services funding is required to provide special transport services.
- Currently many relatively small personal accidents and injuries occur whilst travelling. There is evidence to show that millions of Euros are spent each year on the personal and social cost of these. Many of these accidents could be prevented by more accessible and well designed walkways etc., as we recommend in this document. Again, governments and planners should take note of this fact.

This document is applicable to all means of collective transport used at any time, in any place or for any reason.

The document includes:

- Terms and definitions, general considerations and some advice on using the document.
- A series of tables intended to facilitate a review of the elements involved in transport systems to take account of the consequences of possible functional limitations affecting passengers.

The structure of this document follows the outline of CEN/CENELEC Guide 6 "Guidelines for standards developers to address the needs of older persons and persons with disabilities", which may be regarded as the overall or general framework.

2 Normative references

CEN/CENELEC Guide 6:2002, *Guidelines for standards developers to address the needs of older persons and persons with disabilities. (ISO/IEC Guide 71:2001)*

Other relevant documents are referenced at the very end of this document

3 Terms and definitions

For the purpose of this document, the relevant definitions of CEN/CENELEC Guide 6 apply, as well as the following:

3.1

accessible collective transport service

collective transport service, including infrastructure, as a sequence designed both to allow the access to the vehicle, and be practical in all aspects of use, by all passengers.

3.2

collective transport service

transport service designed to move passengers and, as appropriate, their personal belongings.

NOTE For the purpose of this document, taxis are considered collective transport.

3.3

collective transport infrastructure

series of elements, other than the vehicle, associated with passenger transport and including information, ticket sales, waiting, boarding and alighting.

3.4

communication, C

exchange of intelligible information required to perform an activity.

NOTE In the tables in this document, abbreviations are used so "C" means communication.

3.5

grasp and manipulation, G

manual dexterity to include the ability to grasp, turn, push, pull or pick up.

NOTE In the tables in this document, abbreviations are used so "G" means grasp and manipulation.

3.6

leading line

a constructed line, which maybe tactile in finish, in colour or different material, or glass markers, which guide the user in a particular direction to a site or service.

3.7

location, L

ascertaining the exact place that something or someone is located.

NOTE In the tables in this document, abbreviations are used so "L" means location.

3.8

MGLC requirements

Motion, Grasp, Location, Communication requirements

usability

series of requirements relating to motion, grasp and manipulation, location and communication, which must be met to ensure accessibility.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST-TP CWA 45546-1:2007

http://standards.iteh.ai/catalog/standards/sist/cwa-45546-1-2007/

3.9

mode of transport

type of transport system used for transport by road, rail, water or air.

3.10

motion, M

Moving from one place to another.

NOTE 1 In the tables in this document, abbreviations are used so "M" means motion.

NOTE 2 Motion may be horizontal, i.e., along streets, corridors, hallways, in rooms, etc., or vertical, such as up and down stairs, ramps, lifts, etc, and/or a combination of these.

3.11

passenger/user

person other than the driver or member of the crew using any mode of collective transport.

NOTE This definition of passenger differs from that in EN 13816:2002.

3.12

person/passenger with reduced mobility, PRM

person whose mobility is reduced due to any physical, sensory or cognitive disability, or any other cause when using transport and whose situation needs specific attention.

NOTE 1 This definition includes temporary as well as permanent disabilities and also people who are encumbered, for example with luggage or young children.

NOTE 2 When a passenger has to be assisted by an assistance/working animal, the transport should meet the needs of the combination formed by the passenger and the animal.

3.13

stop

Place where vehicles used in collective transport pause in their route and where passengers wait to board or can alight.

3.14

terminal

Infrastructure at the start or end of route(s) for a collective passenger transport vehicle.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.15

vehicle

Component of the transport system in which passenger travel takes place.

<https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007>

3.16

boarding aid

Stationary or on board device, the purpose of which is to facilitate boarding/alighting by bridging the gap between infrastructure and vehicle.

4 Collective Transport Systems

4.1 General

Addressing the needs of PRM early in the design or re-design of various elements of transport, is more effective and cost efficient than later adaptation of poorly conceived systems.

For a mode of transport to be considered accessible, all the elements thereof – information, infrastructure and vehicles – should be usable by everyone.

The design of collective transport systems should fully meet the specific needs of PRM, in order to enable the greatest possible independence.

Safety and accessibility should be made as compatible as possible.

4.2 Good Practice Examples of Collective Transport Systems

CEN/CENELEC Workshop 16 has started to collect examples of good practice in Collective Transport Systems, which demonstrate real benefits to users, service providers, economists, and planners.

Example 1

In Norway, users of adapted transport services would consider making more use of the collective (mainstream) transport if this were to be made more accessible for people with disabilities. This would result in less use of the more specialized, adapted services, with a consequential reduction in total costs.

Example 2

In Sweden there is evidence to show that the introduction of well planned and executed transport systems have enabled a wider range of less able (older and disabled people), users and their families to travel more freely both together and separately. As a result, there has been a reduction in need for specialised transport being organised for many of this group as they are able to travel with greater independence on the more accessible transport which is now available. This means that people can follow a more ordinary routine using services and facilities, which anybody might use. In turn, the costs of providing specialized services have been reduced and the total expenditure for the country is lower.

[SIST-TP CWA 45546-1:2007](https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007)

Example 3 <https://standards.iteh.ai/catalog/standards/sist/6a7297a8-1de2-4262-a050-16c0f2d0e70b/sist-tp-cwa-45546-1-2007>

In the UK, where new buses brought into service since late 2000 in mainstream services have to be fully accessible low-floor vehicles, the purchase costs were initially thought to be much higher than the previous less accessible buses. In practice, however, the cost differential was not as large as originally thought, and operators are now finding that the resulting revenue from the greater throughput of passengers in general (able bodied, as well as older and disabled people and their families), is producing a much higher income and thereby offsetting the original outlay for the new vehicles. As a result, both the users and the service providers are happy.

In general, it is much more cost-effective to design in accessibility from the very beginning, rather than to achieve it by making later modifications.

In the illustrations in Annex A, we have tried to show that improvements can be made both in basic design before facilities are being planned or later as retro-fitted aspects of more usable options. As you will see good design is not just for the benefit of people who are disabled but also for a wide range of users including people carrying heavy luggage, mothers with buggies, etc.

4.3 Elements in a collective transport system

A journey is composed of several elements which link together to form a transport chain. For the journey to be accessible, each element must be accessible, and so must the links between them. This means e.g:

- getting to, and using collective transport, including infrastructure, any combination of the different transport services and interchange possibilities between these;
- information among others to ensure that every passenger is given real time information of stations, bus stops, etc, before and during the travel;
- possibility to make a reservation, buy tickets and pay for them before or during the trip.

The collective transport system elements considered here have been classified, based on the basis of the sub-systems defined by the European Conference of Ministers of Transport, namely "infrastructure" and "vehicle". "Infrastructure", in turn, is subdivided into "access area", "terminal" and "boarding area".

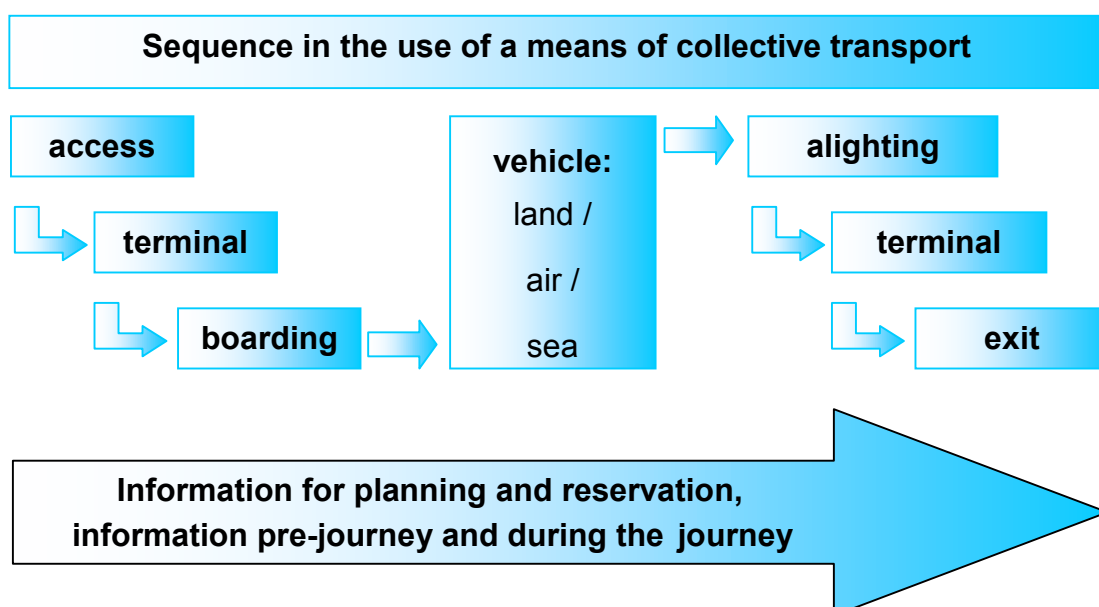
NOTE A number of different types of vehicles may be used for passenger travel in some terminals. This would be the case, for instance, of electric buses and vehicles as well as conveyors, escalators and lifts in airports and other terminals. Care must be taken in such cases to ensure that these vehicles are accessible or there are other travel alternatives.

The standard sequence in the use of a mode of collective transport in terms of the various sub-systems involved is the following:

Planning access → terminal → boarding → vehicle → alighting → terminal → exit

This sequence can be also represented in the flowchart on Figure 1.

Fig. 1 – Standard sequence in the use of a mean of transport



4.4 Type of passengers/users

Collective transport is as the name implies for the general public. The general public includes people with a wide range of abilities and limitations. These include people with sensorial, physical and cognitive impairments. A basis for standard requirements can be created by referring to the types of limitation.

BOX 1 – Matching the needs of passengers and their limitations

Types of users/passengers	To be taken into account
<p>Reduced Vision Vision impaired</p>	<p>Poor sight – limited sharpness in vision/area of vision/orientation Blind Lighting conditions, contrasts, glare, standardisation location, logical architectural solution, design, obstacles in the road/hazards. Leading line, tactile surface, signs, staircase leading line, glass markers, sounds.</p>
<p>Reduced Hearing Hard of hearing</p>	<p>Reduced hearing, hard of hearing Deaf Background noise, acoustics, hearing aid, lip reading-good lightning condition, visual signs, information, minimum of noise, "inductive coupling", sound insulation, loudspeaker quality, "induction coil in handset", optical warning system</p>
<p>Reduced Movement (Mobility impaired)</p>	<p>Walking problems Reduced sensitivity in hands and arms Wheelchair users (Reduced sensitivity) (Heart and lung disease) Functionality, space, broad passage, remove obstacles, user friendly access-controls (turnstiles, etc), stairs+ramp /elevator, short walking distance, easy to open doors, carrousel doors, flat areas of movement avoid steps, slide safe, toilet, non slip floor, heavy fire doors</p>

Continue

Environmentally challenged Allergic	Allergic asthmatic, eczema, Asthmatic Epileptic Right building materials, regulation of inner climate, cleaning, plants with low pollen, ventilation, smoke free, avoid humidity, , food options, sound level and flashing light frequency
Cognitively challenged	Lower comprehension, lower concentration, language difficulties, orientation Written, symbol and picture, easy to grasp, separate different messages, leading line, recognisable areas, logical placing and functions and orientation

iTeh STANDARD PREVIEW (standards.iteh.ai)

4.5 Information

To develop accessible travel information, all elements that the passenger is likely to encounter in the travel chain must be taken into account, including:

- timetables, conditions for travel, fares, tickets (platform tickets), changes during travel (delays, change of platform);
- minimum content (e.g. where to get more help, route covered by timetable, etc), layout, use of colour coding of information, abbreviations and definitions, legibility requirements , signs and symbols; and
- information to be accessible for PRM by audio/tactile means and to different technologies.

BOX 2 – Passenger Information

ELEMENTS TO BE TAKEN INTO ACCOUNT
<p>Travel map, (Travel journey assistance)</p> <p>Develop and maintain a passenger oriented road map. The roadmap to start with users (e.g. access with wheelchair) and be structured round the travel chain, not technological solutions. The road map to be used to help coordinate and prioritise the many different standardisation stakeholders and activities, and links to non-standardisation activities. (for example, access to hotels, shops,etc)</p>

Continue