



Informal document: GRSG-126-29

(126 GRSG, 10-13 October 2023

Agenda item 2)

“ACCESSIBILITY OF BUSES” **Draft Amendment of** **Regulation No. 107 for UN** proposition d’amendement du règlement 107

PROPOSED AMENDMENT TO ANNEX 8 OF
REGULATION NO. 107, WITH IMPROVEMENTS TO
THE UNIVERSAL ACCESSIBILITY OF BUSES.



10/10/2023

➤ 1 – Introduction



Mr. ir. Arno Kerkhof (The Netherlands) – UITP (Brussels)

Head of UITP Bus Division



OUR VISION



We are working to **enhance quality of life** and economic well-being by supporting and promoting **sustainable transport** in **urban** areas worldwide

➤ STAKEHOLDER VICE PRESIDENT UITP



Maria ALBUQUERQUE

Vice President

COMPANHIA CARRIS DE FERRO
DE LISBOA

Bus Division



carris 

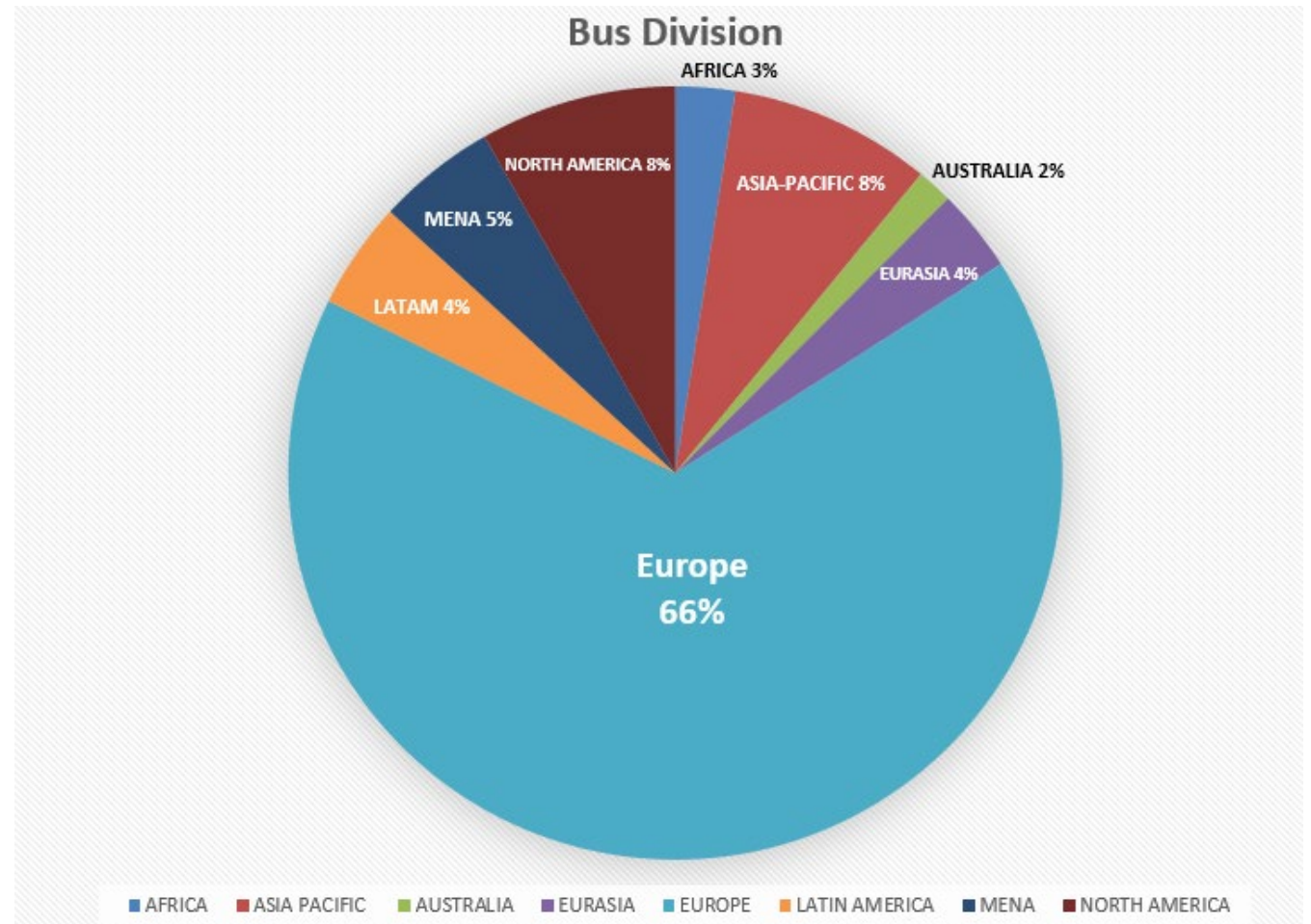


UITP BUS DIVISION

September 2023

AFRICA	10
ASIA PACIFIC	34
AUSTRALIA	6
EURASIA	14
EUROPE	267
LATIN AMERICA	18
MENA	20
NORTH AMERICA	33

The **UITP Bus Division** brings together 400 bus operating companies and organisations from all regions of the world interested in matters related to **bus operations**. The **Bus Division meeting** is the meeting that gathers, the main contacts (CEO, General Directors, board members) of UITP Bus Division members. It is a closed meeting – non UITP Bus Division members can attend only by personal invitation of the Bus Division Chair.



➤ BUS COMMITTEE 2023-2025

BUS COMMITTEE CHAIRMANSHIP



Antonio GARCÍA PASTOR

Corporate Operations
Director

Mobility ADO

Bus



- ✓ Chair Antonio García Pastor (Spain-Mexico)
- ✓ VC Zeynep Pinar Mutlu (Istanbul - IETT)
- ✓ VC Jan Barchánek (Prague - DPP)
- ✓ VC François Vauxion (Paris - RATP)

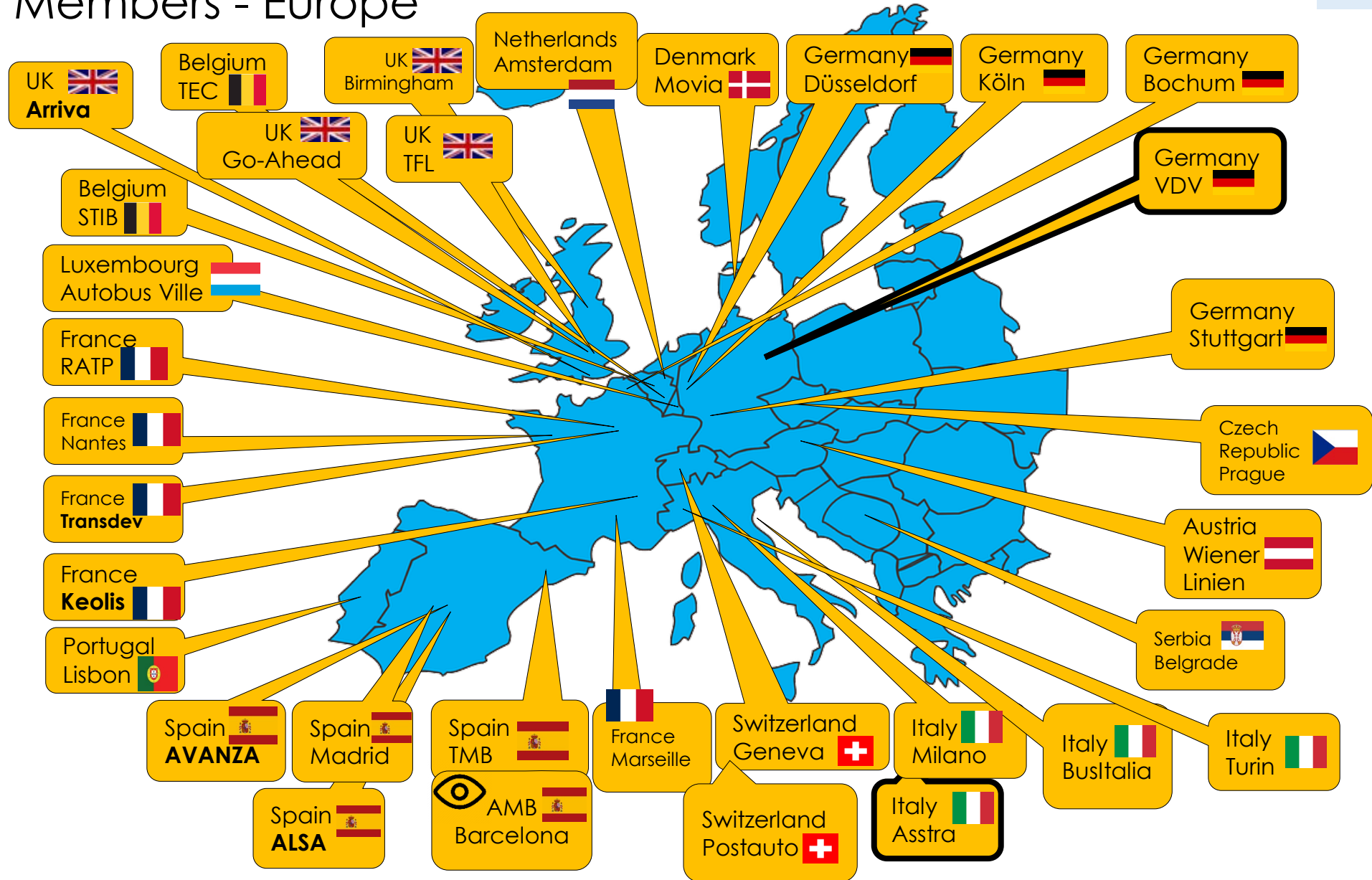




UITP Bus Committee

Members - Europe

Big count
34+2



VDL Bus & Coach



Scania





UITP Bus Committee Members – Outside Europe

Big count 16



2 – The request



Mr. Christophe Martin (Belgium) – TEC (Wallonia)

Rolling Stock Purchasing Manager (TEC)

2 – The request

1. The context
2. The concerns: *"a passenger's journey"*
3. How UITP can help
4. Technical provisions

THE CONTEXT

Since 2001, thanks to evolving regulations (2001/85, R107), an increasing number of buses have become more accessible (low floor, ramp, kneeling...).

Nevertheless, a significant number of passengers with restricted mobility still complain about "accessibility" ...

Some Public Transport Operators ("PTO") have initiated a closer cooperation with associations specialized in accessibility assessment.

Specific tests in real life situations showed that, even in bus complying with the latest regulation, the journey of passengers with restricted mobility could remain challenging, due to different interpretations between bus manufacturers.

This topic was shared with UITP Bus Committee Members in October 2022, and a specific Working Group prepared a list of amendments to the last revision of UN Regulation No. 107.

THE CONCERNS

Bus identification from the bus stop:



TABLEAU DES INDICES DES CONTRASTES VISUELS ENTRE DEUX COULEURS

	Blanc	Gris	Noir	Brun	Rose	Pourpre	Vert	Orange	Bleu	Jaune	Rouge
Rouge	84									82	
Jaune		73	89	80		75	76		79		
Bleu	82										
Orange				76							
Vert	80										
Pourpre	79										
Rose				73							
Brun	84										
Noir	91										
Gris	78										
Blanc											

ne pas utiliser (inférieure à 70 %)

 conforme (supérieure ou égale à 70 %)

Recommandation : choisir les combinaisons des couleurs où le contraste visuel est $\geq 70\%$

THE CONCERNS

Bus entry : Contrast between doors and body, ramp safety for a wheelchair user:



TABLEAU DES INDICES DES CONTRASTES VISUELS ENTRE DEUX COULEURS

	Blanc	Gris	Noir	Brun	Rose	Pourpre	Vert	Orange	Bleu	Jaune	Rouge
Rouge	84									82	
Jaune		73	89	80			75	76			
Bleu									79		
Orange				76							
Vert											
Pourpre											
Rose					73						
Brun											
Noir											
Gris											
Blanc											

ne pas utiliser (inférieure à 70 %)
 conforme (supérieure ou égale à 70 %)

Recommandation : choisir les combinaisons des couleurs où le contraste visuel est $\geq 70\%$



➤ THE CONCERNS

Space identification in the bus:



THE CONCERNS

Information and safety during the journey:



THE CONCERNS

Bus exit.



HOW UITP BUS COMMITTEE CAN HELP

- Coordination with UITP Bus Committee (50 members Worldwide) on technical and functional aspects
- Contacts with the Bus Industry (2 permanent observers in UITP Bus Committee)
- Tests and simulations on existing buses
- Contacts with association representing customers' needs
- Possible contacts with administrations in charge of vehicle type approval
- Experience in standardization and redaction (standardized energy consumption measurement process, standardized bus requirements...)
- Contacts with VDV (Verband Deutscher Verkehrsunternehmen)
- Communication and advocacy within the Bus Division (400+ Members worldwide)



3. Technical provisions



Ms. Ana Maria Vieitez Vivas (Spain) – TMB (Barcelona – Catalugna)

Head of Universal Accessibility in Transports Metropolitans de Barcelona (TMB)

2. DEFINITIONS

2.21 “Passenger with reduced mobility”

The modification broadens the definition of "Passenger with reduced mobility" to include all individuals facing difficulties in public transport, whether or not they use assistive products. This change enhances inclusivity, clarity, and adaptability to diverse passenger needs.

2.22 “Wheelchair user” “Mobility support device user”

This change broadens inclusivity to encompass not only people who use wheelchairs but also scooters for sitting support and mobility due to various conditions or difficulties.

➤ ANNEX 4

Figure 21

WHERE IT SAYS:

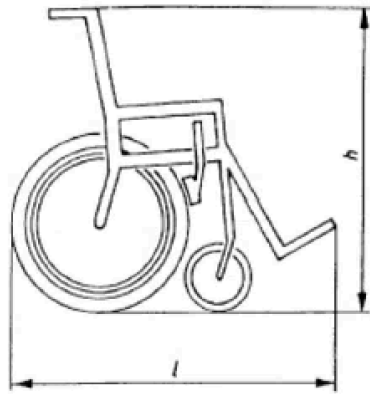
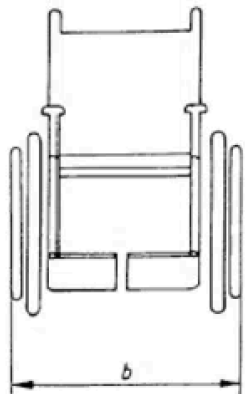
Reference wheelchair

IT SHOULD SAY:

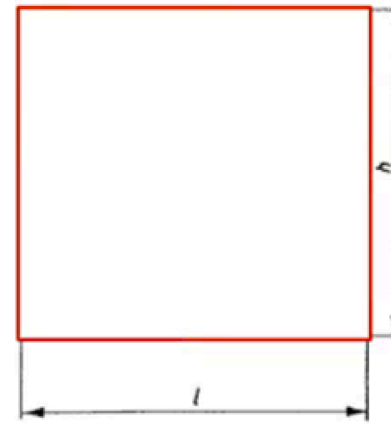
Mobility support device reference volume

(see Annex 8, paragraph 3.6.4)

WHERE IT SAYS:



IT SHOULD SAY:



Overall length, l: 1 200 mm

Overall width, b: 700 mm

Overall height, h: 1 090 mm



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.1 Steps

Extended and detailed description of the requirements described in relation to:

- **Tilt kneeling systems:** Tilt systems for ramps work with open or closed doors, aligning with curbs
- **Enhanced lighting:** Bright, continuous white lights at every door improve visibility.
- **Step clarity:** Steps are wider, with anti-slip and contrasting textures for easy recognition.
- **Visual cues:** Gangway steps marked with contrasting bands for clarity.
- **Reserved seats exception:** In Class I vehicles, sunken gangways to seating areas are not considered steps to reduce tripping hazards.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.2

Priority seats and space for passengers with reduced mobility

Extended and detailed description of the requirements described in relation to:

- **Minimum priority seats:** The proposal requires a minimum of four priority seats between the first two doors.
- **Guide dog space:** Adequate space for guide dogs is now specified under priority seats, with options for two seats pushed together or a single seat of minimum width [700 mm]. This space must be at least 350 mm high.
- **Armrest criteria:** New criteria for folding armrests on aisle-side seats are introduced, including height, length, flat top area, contrast, and non-slip properties.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.2

Priority seats and space for passengers with reduced mobility

Extended and detailed description of the requirements described in relation to:

- **Cushion width:** While the minimum width for priority seat cushions remains at 220 mm on each side, there's now an optional recommendation for wider seats (minimum width of 350 mm) for enhanced comfort and accessibility.
- **Seat cushion details:** Additional details about seat cushion height, horizontal distance, upper backrest height, angle, and minimum installation space are provided, ensuring passenger comfort and accessibility.
- **Foot Space:** Foot space at priority seating positions is defined, with specific requirements for slope and vertical distance for different vehicle classes.





ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.3 Communication devices

Extended and detailed description of the requirements described in relation to:

- **Placement and height:** Devices located near priority seats and in wheelchair areas. Height between 700 mm to 1,200 mm for accessibility.
- **Low-floor area devices:** Devices positioned at heights between 800 mm to 1,500 mm without seats.
- **Enhanced confirmation signals:** Devices provide both acoustic and visual signals upon activation.
- **Separate dashboard indication:** Distinct indication for priority seat devices in Class I vehicles for safety.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.3 Communication devices

Extended and detailed description of the requirements described in relation to:

- **Improved external communication button:** Button positioned outside doors, with specific dimensions and features for better usability.
- **Addition of loudspeakers:** Loudspeakers above key doors for effective communication.
- **Handrails for priority seating:** Add horizontal handrails under windows for forward and transverse seats, ensuring easy grasp.

3.4 Handrails to priority seating



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.6

Wheelchair accommodation provisions

Extended and detailed description of the requirements described in relation to:

- **Wheelchair space dimensions:** Increase the width of the special area for each wheelchair user to a minimum of 850 mm for Class I buses and 1,300 mm for Class II buses.
- **Door dimensions:** In Class I vehicles, increase the minimum width of doors providing wheelchair access to 1,000 mm (from 900 mm).
- **Enhanced accessibility criteria:** Specify a minimum width of 900 mm for the available circulation space.
 - Require a turning clearance of 1,200 mm in diameter.
 - Add a requirement for a gangway ceiling with a minimum head clearance of 2,200 mm.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.6

Wheelchair accommodation provisions

Extended and detailed description of the requirements described in relation to:

- **Pictograms for wheelchair spaces:** Specify a minimum diameter of 130 mm for internal pictograms adjacent to each wheelchair space.
 - Mandate a contrasted pictogram on the bus floor, measuring a minimum of 50 cm, indicating whether the wheelchair should face the front or rear of the vehicle.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.8

Stability of wheelchairs

Extended and detailed description of the requirements described in relation to:

- **User restraints:** Enhancing user safety with lap belts featuring double automatic retracting reels. Ensuring comfort and security during travel for forward-facing users. Accommodating reference wheelchairs effectively.
- **Retractable handrail:** Enhanced stability through the introduction of a retractable handrail, preventing lateral movements of wheelchairs. Folds neatly into the backrest, avoiding obstructions.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.8 Stability of wheelchairs

Extended and detailed description of the requirements described in relation to:

- **Clear signage:** Ensuring clarity with visible signs for reserved spaces, aligned with seat orientation for easy understanding. Visual floor signs within reserved spaces for added clarity.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.11

Provisions for boarding devices

Extended and detailed description of the requirements described in relation to:

- **Emergency manual operation:** In case of safety device failure, lifts, ramps, and kneeling systems must allow easy manual operation. Ramp manual procedure should take less than 1 minute for the driver.
- **Safety measures:** Lifts can only operate when the vehicle is stationary and must include a mechanism to prevent wheelchairs from rolling off. Handrails are added for user stability.
- **Acoustic signalling:** Lift usage, which requires open doors, will trigger an acoustic signal for visually impaired passengers, indicating the door's inaccessibility until lift operation completes.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.11

Provisions for boarding devices

Extended and detailed description of the requirements described in relation to:

- **Driver operation:** Drivers can operate lifts at a service door within their direct field of vision. If not, mandatory camera devices for indirect vision inside and outside the vehicle are required.
- **Edge and corner safety:** Edges on the outside of ramps are rounded to a radius of at least 2.5 mm, and corners to a radius of at least 5 mm to reduce ground gaps to less than 10 mm.
- **Ramp length limitation:** Ramp length shall not exceed 1,100 mm to allow a minimum 1,500 mm rotating space on the curb. High visibility or yellow LED markings are added to edges.



ANNEX 8

ACCOMMODATION AND ACCESSIBILITY FOR PASSENGERS WITH REDUCED MOBILITY

3. REQUIREMENTS

3.11

Provisions for boarding devices

Extended and detailed description of the requirements described in relation to:

- **Increased load capacity:** Ramps must safely support a load of 350 kg.
- **Horizontal gap limitation:** The horizontal gap between the ramp and the vehicle floor shall not exceed 20 mm.
- **Side gap adjustment:** For Class I vehicles, the side gaps between the open door and the deployed ramp should not exceed 100 mm.
- **Enhanced signalling:** Ramp deployment and stowage shall be indicated by at least four flashing yellow lights around the door and an automatic audible signal, ensuring passenger awareness.

➤ 4 – Wrap up & Conclusions



Mr. ir. Arno Kerkhof (The Netherlands) – UITP (Brussels)

Head of UITP Bus Division



ADVOCACY & OUTREACH



We are the voice of the entire public transport sector.

We advocate with and for our members, engaging with decision makers & key international organisations to promote sustainable mobility solutions.



THANK YOU!





ADVANCING
PUBLIC
TRANSPORT