

# CORE BRIEF

## Wheelchair access in metro systems

*In March 2001, the UITP Policy Board adopted an official position on access to public transport services.*

*This move was aimed at fundamentally revising the Association's attitude in order to make it reflect the demographic, social and cultural changes within our society more closely.*



*Area reserved for wheelchairs on board metros (London)*

### Introduction

This new UITP position was heralded within the Association itself and by third-party organisations as a major step forward in promoting equal opportunities and a less discriminatory society since public transport is an essential prerequisite of access to jobs, services, leisure activities and culture.

This position stipulates that UITP's members will strive to:

- “[...] design accessible infrastructure, when refurbishing older facilities or planning new ones, including interchanges (level boarding, signalling, lifts, ramps, passenger information etc.)”

and, in particular, recommends allowing that:

- “[...] access for wheelchairs to underground infrastructure [...] be provided, as long as the overall safety of wheelchair users and other passengers can be ensured, even in emergency cases.”

Nevertheless, owing to the scale and difficulty of these recommendations, the issue of wheelchair users in underground infrastructures warrants a more detailed examination. This is the purpose of the present briefing paper, which is based on the report (“Study of wheelchair accessibility in metro systems”) produced and approved by the UITP Metro Committee (“Operations” Subcommittee).

There is recognition that the methods implemented in response to the needs of other types of disability in other modes of transport may equally be applied to metros. As a result, we refer to the above-mentioned official position.

## ***State of the art***

The specific characteristics of metro networks within the range of transport systems (high capacity, high operating speed, predominance of underground sections) invariably mark out the framework of methods for allowing wheelchairs within the system: speed and safety.

Despite reservations, it must be said that 20% of metros today already carry wheelchair users and that 65% are planning to be able to offer this in the future. It is worth noting that only 32% of networks that allow wheelchairs, offer integral access. This means that user autonomy is limited in the remaining cases.

The variety of wheelchair models creates a difficulty once the issue develops into one of infrastructure and rolling stock design. As recommended already in the official position, it is necessary to standardise the wheelchair size allowed in networks (e.g. existing ISO standard). It is also worth noting that government representation bodies (e.g. ECMT) agree with this principle.

## ***Design of installations***

There is no denying the fact that facilities designed to enhance access make life easier for all customers, or that the specific customer segment targeted offers fertile ground for new users. Nevertheless, there is also no doubt that the investment needed in order to make existing networks accessible is disproportionate in relation to the gains in operational revenue that might be envisaged. Public authority intervention is therefore vital.

The issue of providing access differs totally depending on whether it involves designing and building a new network or new line, or making existing lines accessible as some of them were designed at the beginning of the 20th century.

In the case of the former scenario, the recommendations contained in UITP's official position apply: from the very outset, a same-level system shall be designed with rectilinear platforms, ramps and lifts, corridors that are wide enough for two wheelchairs to pass one another, as well as sales and information outlets that take account of the needs of less able users. Lighting, signs, colour contrasts, etc. will correspond to sets of specifications drawn up in consultation with associations for the disabled or to existing recommendations produced at national (75% of cases) or international level.

As far as providing access to existing lines is concerned, also the "Fixed installations" Subcommittee has carried out a study on the same topic and the study confirmed the UITP official position.

Each network must find a solution which is technically and economically the most appropriate according to its financial means, its physical and



*Platform partially raised in the area corresponding to the access door indicated for wheelchairs. (Hamburg)*

architectural constraints, and in close consultation with the authorities and associations representing the disabled. Among existing solutions, networks usually choose :

- the lift, to be preferred if there is enough space for the structure, especially for the external access to the station ;
- the stairlift, a good alternative as it is less exacting in terms of space and expenditure.

In any case, particular attention must be paid to the information provided to the users of these facilities, be it through oral or written messages, etc. Small gaps can be overcome by ramps of suitable and gradual slope. Turnstiles' lines too need to be adapted with at least one opening of sufficient width to allow the passage of a wheelchair.

Be it for a new line or an existing line, the vertical gap between the platform and the train carriage shall be no more than 80mm in height. If it is not the case, the platform will be adapted accordingly. The horizontal gap shall be between 60 and 100mm. A curved station will not permit any optimal reduction in the gap. In cases where these values are exceeded, station staff should have the possibility of deploying a manual ramp on the platform in response to demand.

Rolling stock, irrespective of whether it has been newly acquired or refurbished, should have at least one accessible door (at least 800mm wide) per train that is clearly identified as such and located preferably towards the front of the train (close to the train driver). In any event, train accessibility can be facilitated by raising partially the station platform in the area corresponding to the access door indicated for wheelchairs.

## ***Safety and evacuation***

This has always been one of the main concerns for public transport companies because of the “aversion” factor of collective accidents (public transport accidents leave a bigger imprint on the collective unconsciousness than road accidents although they happen less frequently). The tunnel tragedies that have regularly made the news over the past years have reinforced safety constraints and demands from customers and supervisory authorities.

Once lines have become accessible, the most tricky operational aspect of carrying wheelchair users in underground infrastructures is their evacuation, be it technical (breakdown of rolling stock or fixed installations causing services to be suspended, yet without putting other users in danger and with no need to call in the emergency services) or urgent (involving exceptional circumstances that may pose a danger to the user and necessitate calling in the emergency services).

Over half the networks have their own evacuation procedures and acceptable stopping times that, once past, makes a technical evacuation compulsory.

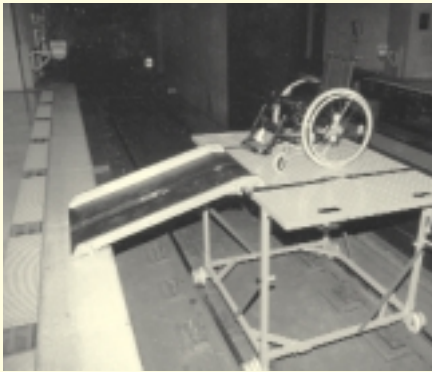


*In accordance with the space and financial resources available, access to the stations is possible through a lift (Barcelona) or a stairlift (Milan)*

In 65% of cases, the departments managing the evacuation (as well as the duly informed outside agencies) are aware of the presence of wheelchairs at the evacuation scene, be it inside a station or on board a train. Evacuation methods are identical to those for other passengers.

Information and training efforts regarding safety and evacuation rules and mechanisms must be provided by operators for wheelchair customers and the associations representing them. Evacuation exercises held in situ can help to make this audience more aware of operational difficulties and, subsequently, enhance their awareness of their responsibilities.

It is necessary to study and limit as much as possible the risks that the evacuation of disabled persons may cause other passengers as well as disabled persons themselves during the evacuation. Thus, if the situation does not call for emergency action, there should be no immediate evacuation of users travelling in wheelchairs, who may remain on board the train – accompanied, if possible, by a member of company staff - until services restart (if this is expected within a reasonable time limit).



*Equipment facilitating transportation of disabled people in the tunnel in emergencies (Milan)*

In emergencies, in order to facilitate evacuation of trains stranded in tunnels, it is necessary to have equipment available on board trains and along platforms that will facilitate the transportation of disabled people in the tunnel (service trolleys, mobile platforms, etc.) and to train staff and rescue workers in how to use them. In any event, emergency situations can be managed best by defining the role of the emergency services (police, fire, ambulance) ahead of the event.

## ***Conclusions***

Integration of disabled people in the underground railways networks should be progressively considered a reality, thanks to the adoption of appropriate facilities for infrastructures and rolling stock and the consequent updating to operation rules.

Moreover, the permanent coordination among operators, emergency organisations and associations of disabled people, allows the achievement of the aim as a whole and the reduction of the residual risk to the minimum possible.

Core brief prepared by the “Operations” Subcommittee of the Metro Division.