

5th edition, September 2007

*Translation*

# OR

## **Passenger stations - Height of platforms - Regulations governing the positioning of platform edges in relation to the track**

*Quais des gares à voyageurs - Règles pour l'implantation des bordures des quais par rapport à la voie  
Bahnsteige der Personenbahnhöfe - Regeln für die Höhe und den Abstand der Bahnsteigkanten vom  
Gleis*



UNION INTERNATIONALE DES CHEMINS DE FER  
INTERNATIONALER EISENBAHNVERBAND  
INTERNATIONAL UNION OF RAILWAYS

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## Leaflet to be classified in Volumes:

IV - Operating

V - Rolling Stock

VII - Way and Works

## Application:

With effect from 1 September 2007

All members of the International Union of Railways

## Record of updates

<b>1st edition, January 1947</b>	First issue under code number 177, entitled: "Passenger stations: height of platforms - RIC vehicles: height of side doors".
<b>2nd edition, January 1953</b>	Re-numbered 741 and entitled: "Passenger stations - Height of platforms"
<b>4th edition, December 2005</b>	Retyped in FrameMaker: new print of the leaflet
<b>5th edition, September 2007</b>	New height reference of platforms of 550 mm or 760 mm. Revision of point 2.1. New Appendix A following work of SG3, approved by PTR of May 2007

*The person responsible for this leaflet is named in the UIC Code*

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## Summary

Application of the regulations in this leaflet will ensure that platforms are better adapted to the heights of the steps on passenger trailing stock. Furthermore, a standard reference point is thereby created for future designs of new rolling stock. Its application will be of benefit to the majority of passengers, particularly the disabled, the elderly and children.

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## 1 - Scope of application

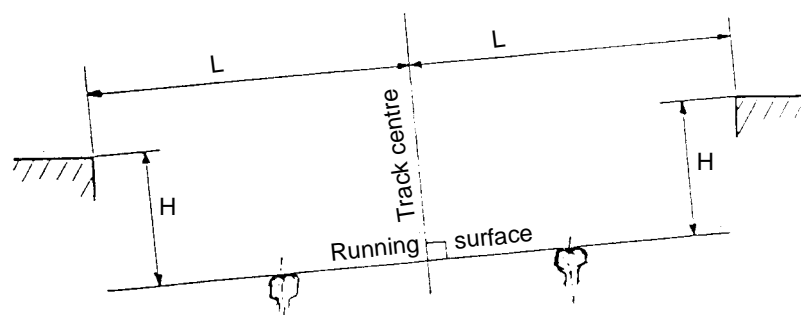
o 1.1 - The provisions of this leaflet shall apply for:

- the construction of new platforms,
- the major refurbishment of existing platforms,

at which trains used in international traffic and composed of RIC-standard coaches stop.

1.2 - Application of these provisions is recommended for other platforms.

## 2 - Provisions for platform positioning



H = height above the running surface, perpendicular to it

L = distance from the track centre, parallel to the running surface

### 2.1 - Height above the running surface

**O** 2.1.1 - The nominal height of platform edges shall be 550 mm or 760 mm above the running surface depending on the type of rolling stock that may be stopped at the given platform.

**R** 2.1.2 - Under certain conditions different height may be used e.g.

- greater than 760 mm - so called *high platforms* - dedicated exclusively for commuter trains specially designed for the given platform height (typically 960 mm) in order to ensure one level access and possibility of increasing number of doorways on each side of every coach,
- smaller than 550 mm - so called *low platforms* - for different but not all types of trains - in order to fulfill particular architectural or operational requirements (some old fashioned stations, border stations, small local stations with passages located along the usefull length of the platform edges); in such cases however the minimal height of upgraded platform edge shall be 380 mm.

**R** 2.1.3 - A height of 550 mm is recommended when majority of trains stopped at the given platform have a doorway floor on the level lower than 760 mm and commuter trains may never stop at its edge (see Appendix A - page 7, example g). Such platform height may also be recommended in case of rolling stock with higher level of floor on condition, that the lowest step fixed beneath the level of 760 mm is exposed horizontally behind the upper one by no less than 190 mm (see Appendix A, example d and UIC Leaflet n° 560, point 4.2.7 - see Bibliography - page 8).

A height of 550 mm is also compatible with coaches with three-step access.

For three-step coaching stock, a platform height of 760 mm would constitute an excellent choice.

**R 2.1.4** - A platform height of 760mm is recommended when majority of trains stopped at the given platform have a doorway floor on the level equal or higher than 760 mm (see Appendix A - page 7, examples: b, c, e, f, h, i, j). Such platform height is particularly required when it is or may be also used (regularly, temporarily or in future) by commuter trains (Appendix A, examples: k and l). Using of 760 mm height as standard does not exclude possibility of operating trains with lower level (usually 600 mm) of doorway floor on the condition, that such rolling stock is never stopped at platforms higher than 760 mm.

**R 2.1.5** - Both heights i.e. 550 mm and 760 mm ensure compatibility with coaches of X, Y and Z standard having a floor height at 1 255 mm level and four-step access defined in *UIC Leaflets n° 567-1* and *n° 567-2* (see Bibliography - page 8) giving the smallest possible:

1. horizontal gap at 550 mm height platform (in relation to un-normative step)
2. vertical distance to cover from 760 mm platform (through normative step).

**R 2.1.6** - The choice of standard platform height on the given network and the choice of newly ordered rolling stock should take into account the currently used platforms and rolling stock as well as the strategic aim to minimize both:

- the horizontal gap between platform edge and first usable step and
- the number of levels covered by passengers between platform and doorway floor to following values:
  - a. in commuter trains:  
one level access conditions at platforms dedicated for this kind of traffic and maximum two level access conditions at others,
  - b. in regional trains:  
preferably one and maximum two level access conditions,
  - c. in intercity, interregional and high speed trains:  
maximum 3 level access conditions.

In Appendix A, examples of rolling stock doorways compatibility with platforms of different heights are presented.

## o 2.2 - Distance from the centre of the track

For platform edges positioned at the nominal height of 550 mm and 760 mm, the nominal distance L from the centre of the track shall be 1 650 mm + S, where S is obtained from the formula:

$$S(\text{mm}) = \frac{3\,750}{R} + \frac{l - 1\,435}{2}$$

where R is the radius of the track, in metres,

and l the track gauge, in millimetres.

(This formula corresponds to that given in *UIC Leaflet 505-4* (see [Bibliography - page 8](#)) for Si or Sa projections of radius  $R \geq 250$  m).

This distance shall be respected from a height upwards of 400 mm above the running surface.

For platform edges positioned at more than 550 mm above the running surface, the distance L must be increased in accordance with the new height.

**NB :** the elements needed to calculate this increase are given in *UIC Leaflet 505-4*.

## o 2.3 - Tolerances

Tolerances for the positioning of platform edges or their maintenance shall be adopted such that distance L is not reduced under any circumstances.



## 3 - Special provisions

### 3.1 - Platforms along sections of track with small radius curves

In so far as is possible, platforms should not be positioned along sections of curved track with a radius of less than 500 m; in exceptional cases, for the end sections of platforms in existing stations, the permissible limit shall be a 300 m radius.

When the platforms are positioned along sections of track with small radius curves, the geometrical offset of the vehicles may result in considerable gaps between the platform edge and the steps on the passenger rolling stock, thereby causing passengers difficulties in either boarding coaches or alighting on the platform.

### 3.2 - Platform along sections of track with a high degree of cant

Sections of track with a high degree of cant also cause difficulties for boarding or alighting passengers, especially if a section with high cant is combined with a small radius.

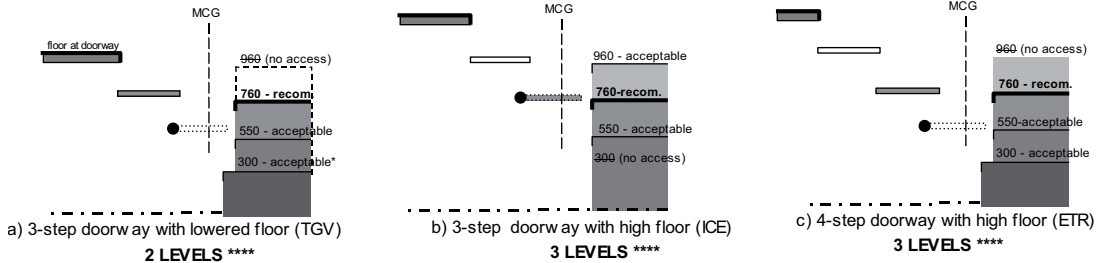
Cant of up to 60 mm provides good conditions for boarding or alighting; cant exceeding 100 mm should be avoided.

### 3.3 - Safety measures

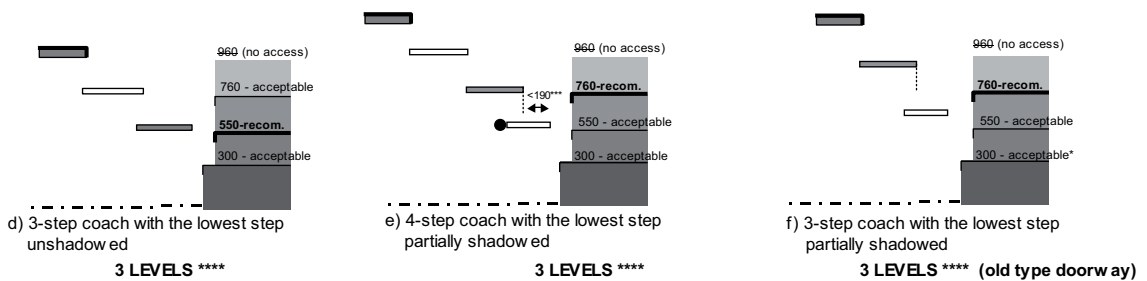
In the scenarios given under points 3.1 and 3.2, it may be appropriate to take measures to improve passenger safety, for example by making the platform edge more easily visible, or by fitting a continuous step along the vertical edge of the platform at a point between rail level and the platform edge (this step must of course comply with the limits for the lower part of the clearance gauge as defined in *UIC Leaflet 505-4*).

# Appendix A - Examples of rolling stock doorways compatibility with platforms of different height

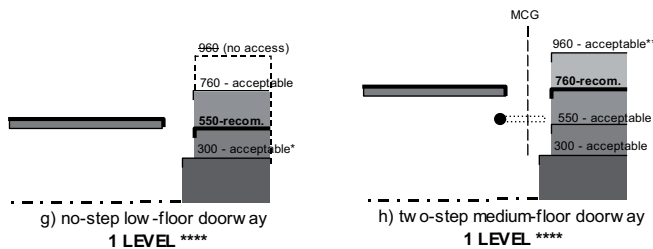
## HIGH SPEED TRAINS



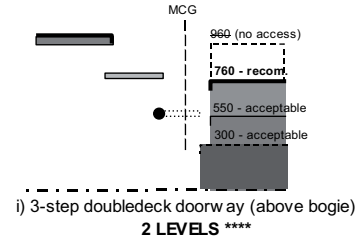
## IC / INTER-REGIO / SLEEPING COACHES



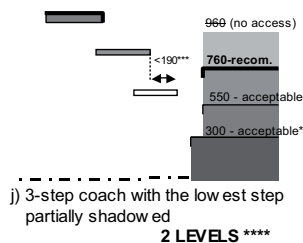
## REGIONAL TRAINS (low- and medium-floor doorways)



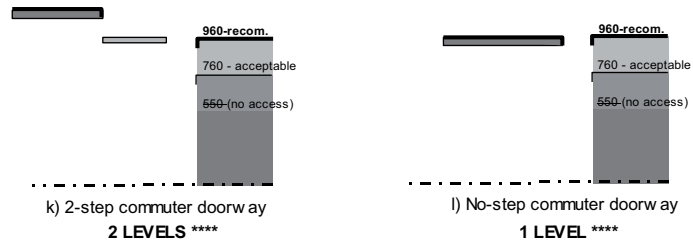
## REGIONAL TRAINS (double-decker)



## REGIONAL TRAINS (old constructions)



## COMMUTER TRAINS (high-floor doorways)



\* acceptable exceptionally due to old standards;  
 \*\* for regular stops by 960 mm platforms the preferable floor height should be raised to no more than 800 mm  
 \*\*\* see UIC Leaflet 560 series  
 \*\*\*\* from the recommended platform height  
 MCG maximal construction gauge acc. to UIC Leaflet 505 series

# Bibliography

## 1. UIC leaflets

### **International Union of Railways (UIC)**

*UIC Leaflet 505-4: Effects of the application of the kinematic gauges defined in the 505 series of leaflets on the positioning of structures in relation to the tracks and of the tracks in relation to each other, 3rd edition of 1.1.77 and 2 Amendments (4th edition under preparation)*

*UIC Leaflet 560: Doors, footboards, windows, steps, handles and handrails of coaches and luggage vans, 2th edition, March 2002*

*UIC Leaflet 567-1: Standard X and Y coaches accepted for running on international services, 4th edition of 1.1.78 and 7 Amendments*

*UIC Leaflet 567-2: Standard Z-type coaches accepted for running in international traffic - Characteristics, 4th edition of 1.7.91 and 2 Amendments*

## 2. Minutes of meetings

### **International Union of Railways (UIC)**

*Way and Works Committee (Item 6.1.4 - Approval of revised Leaflet 741), June 1992*

*Study Group 3 (Approval of revised Leaflet 741 by PTR), May 2007*

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