

Tail lifts, mobile lifts and ramps associated with vehicles —

Part 2: Code of practice for passenger lifts and ramps

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Committees responsible for this British Standard

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- Associated Offices Technical Committee
- Association of Loading and Elevating Equipment Manufacturers
- British Ports Federation and the National Association of Ports Employers
- British Railways Board
- British Telecommunications plc
- Construction Plant-hire Association
- Department of Health and Social Security
- Department of Trade and Industry [Mechanical Engineering and Manufacturing Technology Division (MMT)]
- Electricity Supply Industry in England and Wales
- Federation of Wire Rope Manufacturers of Great Britain
- Garage Equipment Association
- Health and Safety Executive
- International Powered Access Federation
- London Regional Transport

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Foreword

This Part of BS 6109 has been prepared under the direction of the Mechanical Handling Standards Committee and has been based on a proposal provided by the Association of Loading and Elevating Equipment Manufacturers. This Part complements BS 6109 which will be amended to become BS 6109-1.

This Part of BS 6109 covers passenger lifts and ramps. BS 6109-1 covers commercial tail lifts.

Recommended test procedures and test certificates are given in Appendix A and Appendix B.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Section 1. General

1 Scope

This Part of BS 6109 details design and safety recommendations, operating procedures, installation and inspection recommendations for lifts and ramps for assisting entry or exit of passengers with or without wheelchairs into and out of vehicles through a height of not more than 1.7 m. Lifts and ramps are categorized as A, B or C, or A or B respectively (see clause 6).

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 6109, the following definitions apply.

2.1 tail lift

a lift, fitted to a vehicle, that enables a passenger-carrying platform to be raised and lowered

NOTE The tail lift need not necessarily be mounted at the rear of the vehicle.

2.2 mobile lift

a lift, which is portable and may be sited adjacent to a vehicle, that enables a passenger-carrying platform to be raised and lowered

2.3 ramp

a system that is used to form an inclined track for wheelchairs between the vehicle floor and the ground

NOTE Ramps may be used singly or in pairs.

2.4 appliance

a term used to describe a lift and/or a ramp

2.5 platform width

the minimum clear horizontal dimension of the lift platform measured parallel to the adjacent edge of the vehicle when facing the door aperture

2.6 platform depth

the minimum clear horizontal dimension of the lift platform measured at right angles to the adjacent edge of the vehicle when facing the door aperture

2.7 ramp width

the minimum clear horizontal dimension of the ramp measured parallel to the adjacent edge of the vehicle

2.8 ramp length

the minimum clear dimension of the ramp measured at right angles to the adjacent edge of the vehicle

2.9 platform vertical travel

the distance between ground level and the maximum height of the platform or ramp

2.10 safe working load

the rated load applied as a uniformly distributed load over the whole platform area, or anywhere along the ramp, or as otherwise specified (expressed in kilograms)

2.11 power source

an independent source of power other than the vehicle prime mover

NOTE An example of a power source is an electro-hydraulic power pack.

2.12 auxiliary operation

an alternative method of operation that can be used in case of failure of the power source

2.13 suspension

a flexible means of support (rope, chain, etc.) including its end attachments

3 Statutory requirements and code of practice

The principal statutory requirements and code of practice relating to passenger lifts and ramps associated with vehicles are as follows.

- a) The Health and Safety at Work etc., Act 1974.
- b) The Road Vehicles (Construction and Use) Regulations 1986.
- c) The Road Vehicles Lighting Regulations 1984.
- d) Code of Practice¹⁾. The Safety of Passengers in Wheelchairs on Buses. VSE 87/1.
- e) The Public Services Vehicles (Conditions of Fitness, Equipment, Use and Certification) Regulations, 1981.

¹⁾ Draft available from Department of Transport, Vehicle Standards Engineering Division, 2 Marsham Street, London SW1P 3EB.

Section 2. Safety

4 Hazards

4.1 Hazards to persons during normal use of lift

Hazards to persons include the following:

- a) falling of persons or wheelchairs off the platform;
- b) trapping of fingers or other parts of the body by moving mechanisms;
- c) trapping of feet between the moving platform and stationary parts of the vehicle or lift;
- d) instability of mobile lift;
- e) persons being struck during deployment of a platform;
- f) loss of control of a rotating platform during rotation.

4.2 Hazards associated with a fault condition of a lift

A fault in the lifting mechanism can result in an uncontrolled descent. These fault conditions include the following:

- a) rope or chain failure;
- b) hydraulic failure;
- c) drive mechanism failure;
- d) linkage or pivot failure;
- e) electrical failure.

4.3 Hazards to persons during normal use of ramp

Hazards to persons include the following:

- a) falling of persons or wheelchairs off the edge of a ramp;
- b) persons in a wheelchair rolling down the ramp at an uncontrolled rate;
- c) persons in a wheelchair tipping over when going up a steep ramp;
- d) ramp becoming detached from the vehicle;
- e) persons being struck during deployment of a ramp.

5 Safety recommendations

NOTE Attention is drawn to BS 5304 which gives sound advice on guarding of machinery.

5.1 Prevention of falling

The following safety features should be incorporated into the appliances to prevent persons or wheelchairs falling off the platform or ramp.

- a) A hand rail on the platform:
 - 1) on at least one side, and where practicable both sides, of the platform;
 - 2) adequately secured;

- 3) at least 800 mm high;
- 4) of 30 mm to 35 mm diameter;
- 5) at least half the platform depth;
- 6) of a bright colour to contrast with the surroundings.

- b) Side guards on the platform or ramp:
 - 1) at least 25 mm high;
 - 2) on both sides of the platform or on each ramp;
 - 3) extending the full length of the platform or ramp.

- c) Lift platforms should have a guard at the end furthest from the vehicle which is erected by automatic operation. The guard should be such as to prevent an occupied wheelchair from rolling off the end of the platform (typically 100 mm high).

NOTE The requirement for automatic operation does not apply to lifts which are stowed to form a step (or steps) for ambulant persons.

- d) If it is otherwise possible for a wheelchair to fall off the edge of the platform nearest to the vehicle then a device should be fitted to prevent this.

- e) Gaps or holes within the working perimeter of the platform should not accept a probe greater than 15 mm diameter.

- f) A surface that is slip-resistant when either wet or dry should be used on the lift platform or ramp.

- g) Rotating platforms should be provided with a device to prevent sudden stopping at each extreme of the rotation arc. The device should be such that there will not be any likelihood of the passenger becoming unbalanced or being thrown during or at each end of any rotation movement, even on the steepest camber.

5.2 Prevention of trapping or injury within the lift mechanism

The following criteria should be observed to help prevent trapping of or injury to persons within the lift mechanism.

- a) Particular attention should be paid to the elimination of trapping of fingers and other parts of the body within the mechanisms.
- b) All sharp edges should be removed to help prevent injury.