

Code of practice for the planning, design, installation and use of permanently installed access equipment —

Part 2: Travelling ladders and gantries

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- National Access and Scaffolding Confederation
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Foreword

Technical Committee B/514/39 has prepared this part of BS 6037.

This part of BS 6037 covers the planning, design, installation and use of travelling ladders and gantries.

As a code of practice this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

It has been assumed in the preparation of this standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people for whose use it has been produced.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its 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 21 and a back cover

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Introduction

It is increasingly common for modern commercial office buildings to incorporate an atrium and/or a glazed corridor, glazed entrance or roof that requires special provision for continuing maintenance access.

Modern shopping malls also often incorporate extensive, high-level glazed roofs which are difficult to access using mobile equipment.

The Construction (Design and Management) Regulations 1994 (CDM Regulations) [1] require that all façades and other items that require periodic access are designed and positioned so that they can be accessed safely.

To keep these often large and inaccessible areas of glass clean and also to provide safe access for the routine maintenance of items such as lights and smoke detectors, these buildings should be provided with some form of permanently installed appliance, which could be in the form of a travelling ladder or gantry, sometimes used in conjunction with a suspended platform.

It is essential that the requirements for permanently installed access equipment be considered at an early stage in the building design process. The dimensions and capability of any travelling ladder or gantry need to be appropriate for the nature of the task(s) to be performed.

The installation can be manually or power operated or a combination of both.

It should be noted that working at height can expose workers and other persons in the vicinity to particularly severe risks to their health and safety, in particular the risk of falling from height, falling objects and other serious occupational accidents.

1 Scope

This part of BS 6037 gives recommendations for the planning, design, installation, use, examination, maintenance and testing of permanently installed travelling ladders and gantries (TLGs) including equipment installed on a building to facilitate routine maintenance of the building fabric and its services. It is intended for those involved in specifying, designing, managing the use of, maintaining and examining such equipment.

This standard does not cover TLG systems designed for heavy duty and industrial applications such as underbridge gantries or gantries for industrial processes.

Where TLGs are intended to be used in conjunction with suspended access equipment (SAE), this code of practice is supplemented by BS EN 1808:1999 and BS 6037-1:2003.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 449-2, *Specification for the use of structural steel in building — Part 2: Metric units.*

BS 4211, *Specification for ladders for access to chimneys, other high structures, silos and bins.*

BS 5268-2, *Structural use of timber — Part 2: Code of practice for permissible stress design, materials and workmanship.*

BS 5395-3:1985, *Stairs, ladders and walkways — Part 3: Code of practice for the design of industrial type stairs, permanent ladders and walkways.*

BS 5950 (all parts), *Structural use of steelwork in building.*

BS 6037-1:2003, *Code of practice for the planning, design, installation and use of permanently installed access equipment — Part 1: Suspended access equipment.*

BS 7671, *Requirements for electrical installations — IEE Wiring Regulations.*

BS 7883, *Code of practice for application and use of anchor devices conforming to BS EN 795.*

BS 8110 (all parts), *Structural use of concrete.*

BS 8118 (all parts), *Structural use of aluminium.*

BS EN 795, *Protection against falls from height — Anchor devices — Requirements and testing.*

BS EN 1808:1999, *Safety requirements on suspended access equipment — Design calculations, stability criteria, construction — Tests*.

BS EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*.

BS EN 60947-3, *Specification for low-voltage switchgear and control gear — Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*.

3 Terms and definitions

For the purposes of this part of BS 6037, the terms and definitions given in BS 6037-1:2003, BS EN 1808:1999 and the following apply.

3.1

gantry

workplace with a continuous footway or treads and inclined to the horizontal at an angle of 65° or less

3.2

ladder

workplace with rungs or treads and inclined to the horizontal at an angle of more than 65°

3.3

travelling ladder and/or gantry

TLG

purpose designed mobile workplace supported by or running on rails, beams or prepared tracks, designed specifically to provide access for operatives to carry out cleaning and maintenance tasks on a building or similar structure and for no other purpose

4 Identifying hazards and taking preventative action

4.1 Design stage

Travelling ladders and gantries are required to conform to the Machinery Directive (98/37/EC) [2], which sets machinery design requirements to protect the health and safety of users.

At an early stage in the design of the building, a risk assessment should be carried out in order to identify the access requirements and minimize the potential hazards for the user of a TLG.

NOTE It is a legal requirement under the CDM Regulations 1994 [1] that a risk assessment is carried out at this stage.

4.2 Installation, use and maintenance

The Management of Health and Safety at Work Regulations 1999 [3] require that a risk assessment is carried out before a TLG is put into use. Site-specific hazards and hazardous situations should be identified and the actions required to eliminate or reduce the associated risks should be incorporated in the risk assessment.

A permit-to-work system should be put in place to cover all planned operation, maintenance, testing and thorough examination of the TLG.

NOTE Guidance on producing permit-to-work systems is given in the HSE publication Permit-to-work systems 1998 [4].

A list of the more common hazards encountered when using permanently installed TLGs and the actions which should be taken to eliminate or reduce them, is given in Table 1. Under no circumstances should this list be considered exhaustive.

A method statement should be prepared covering the operation of the TLG. The method statement should include the findings of the risk assessment and the measures required to control or eliminate risk. All operators should be made aware of the findings of the risk assessment and given adequate training and instruction prior to operating or maintaining the TLG (see Clause 19).

Table 1 — Hazards encountered when installing, maintaining and using TLGs, and recommended actions

Hazard	Action
Exposure	Suitable protective clothing should be worn (see 6.4). During severe weather conditions, for example if the work area is icy or during very strong winds, work should not be undertaken and operators should report to the duty holder.
Hazardous situation arising from unauthorized use of the equipment	Operators should obtain a permit to work (see 4.2).
Hazardous situation arising from other work being carried out in the vicinity	Operators should obtain a permit to work and authorization from the duty holder prior to commencing work (see 4.2).
Falling or tripping	Operators should follow prescribed safe route(s) of access and egress (see 6.2). Where there is inadequate roof edge protection, safety anchors and/or safety lines and safety harnesses should be used. Suitable, marked anchorage points should be provided on the working platform to permit the attachment of harnesses.
Slipping	Algae and other hazardous materials should be removed from all access and egress routes and working areas.
Injury to passers by from falling objects	Loose objects and tools should be secured with lanyards. Warning notices or barriers should be erected below the workplace (see Clause 20).
Persons stranded on the TLG	Operators should receive training in the safe use of the TLG and should follow the correct procedures as given in the operating instructions. Operators should be supplied with a means of communication between the TLG and a competent person. Rescue/recovery procedures should be planned in advance.
Damage to power cables	Power cables should be of adequate length to allow for movement of the TLG and should be routed such that they cannot become severed or damaged by movement of the TLG.
Electric shock	Only competent persons should have access to the electrical circuitry of the TLG. The TLG should be switched off or isolated before any maintenance work is carried out on it (see Clause 12 and Clause 22). The mains power supply should be provided with a residual current device (RCD).
Injury resulting from maloperation or malfunction of the TLG	Operators should receive training/instruction in the safe use of the TLG and should follow the correct procedures as given in the operating instructions. All limit switches and safety devices should be operational at all times and checked at appropriate intervals to ensure they are fit for use (see Clause 12 and Clause 22).
Collision of TLGs with scenic lifts or mobile devices installed on the same building or neighbouring buildings	Suitable interlocks or controls should be provided and the work planned to remove any danger of the TLG colliding with the scenic lifts or mobile devices.

5 Planning and exchange of information

5.1 Planning

The CDM Regulations 1994 [1] require building designers to provide a safe means of access for activities such as ongoing inspection, cleaning and maintenance of a building. A permanent installation can affect the structure, layout and fenestration of a building and the access requirements should therefore be considered during the preliminary design stage.

NOTE 1 Significant financial savings and design advantages can result from an early consideration of access requirements. Once the design of a building has been finalized it can be very difficult to make changes to enable installation of TLGs to be carried out (see 7.4).

The preliminary design for any travelling ladders and gantries should be based on advice and guidance concerning the various types of system available and should, therefore, be prepared by a competent person. The dimensions and characteristics of the TLG should be appropriate for the nature of the task(s) to be performed.

The general planning details should be settled at the earliest possible stage by detailed investigation by and agreement between, the building designer and the manufacturer or supplier of the TLG and the results incorporated in the technical file for the building.

NOTE 2 This agreement will be necessary to enable the TLG to be CE marked (see BS 6307-1:2003, Annex A).

The prime responsibility to ensure that access for building maintenance is safe lies with the duty holder.

Persons involved in the planning and exchange of information should include:

- a) duty holder;
- b) equipment manufacturer or supplier;
- c) architect or designer;
- d) structural engineer;
- e) planning supervisor;
- f) principal contractor;
- g) local authority;
- h) client.

Persons involved in the planning and exchange of information can vary from one installation to another and can include persons not mentioned in the above list which should therefore not be assumed to be exhaustive.

5.2 Exchange of information

5.2.1 Information for the manufacturer or supplier

The architect or designer of the building should provide information to the manufacturer or supplier of the TLG on such matters as:

- a) the purpose(s) for which the TLG is to be used and the specific tasks that are to be performed from it;
- b) the extent of the building which is to be accessed by the equipment;
- c) any special requirements as set out by the local authority in the planning permit for installing the equipment and the requirements of any local bylaws that apply;
- d) the wind loading for which the building is designed and any other relevant environmental factors;
- e) any items identified in the health and safety file as being necessary to fulfil the requirements of the CDM Regulations 1994 [1];
- f) any special hazards (e.g. working over water, roads or public areas);
- g) any special building features (e.g. flagpoles, CCTV cameras, mobile phone and communication aerials and dishes, boiler flues, adjacent buildings, illuminated signs, chiller units, cooling towers, scenic lifts and lighting, fire detectors/fire protection systems such as sprinklers, smoke vents);
- h) any special requirements (e.g. a facility and/or equipment for glazing replacement);
- i) the safe means of access/egress to the TLG;
- j) emergency egress routes from the building should be planned so as not to be obstructed by the operation or parking/storage of the equipment.