

BS 6037-1:2017



BSI Standards Publication

**Planning, design, installation and use of
permanently installed access equipment
— Code of practice — Part 1: Suspended
access equipment**

bsi.

AVA Documents
Document Sharing Hub

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© The British Standards Institution 2017

Published by BSI Standards Limited 2017

ISBN 978 0 580 94373 7

ICS 53.020.99

The following BSI references relate to the work on this document:

Committee reference MHE/12/7

Draft for comment 17/30342093 DC

Amendments/corrigenda issued since publication

Date	Text affected

Contents

	Page
Foreword	ii
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Identifying hazards and taking preventative action	3
<i>Table 1 — Hazards encountered when installing, maintaining and using suspended access equipment with recommended actions</i>	4
5 Planning and exchange of information	5
6 Health and safety	8
<i>Table 2 — Safe use of suspended access equipment</i>	9
7 Attachment of the suspended access equipment to the building	9
8 Track system	10
9 Suspension and safety wire ropes	11
10 Protection against lightning	11
11 Restraint systems	11
12 Electrical systems	12
13 Marking	13
14 Commissioning, verification and handover	14
<i>Table 3 — Safety requirements for all suspended access equipment</i>	14
15 Responsibilities of the duty holder	15
16 Operating instructions	16
17 Instructions for use	18
18 Provision of notices	21
19 Training and instruction	21
20 Inspection, maintenance, testing and thorough examinations	22
21 Record keeping	26
22 Changes to the suspended access equipment	27
Annex A (informative) CE marking and declaration of conformity	28
Annex B (normative) Control of hazards from electromagnetic fields (EMFs)	28
Annex C (informative) Suspended access equipment breakdown/rescue	29
<i>Figure C.1 — Suspended access equipment breakdown/rescue flowchart</i>	30
Annex D (normative) Training and retraining recommendations	31
Annex E (informative) Useful addresses and contact information	31
<i>Table E.1 — Useful addresses and contact information</i>	31
Bibliography	33

Summary of pages

This document comprises a front cover, and inside front cover, pages i to ii, pages 1 to 33, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 6037 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2017. It was prepared by Subcommittee MHE/12/7, *Suspended Access Equipment*, under the authority of Technical Committee MHE/12, *Lifting Platforms*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This part of BS 6037 supersedes BS 6037-1:2003, which is withdrawn.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- a) recommendations for manual rigging (maximum weights and heights);
- b) ongoing testing of auxiliary hoists;
- c) recommendations for refresher training/instruction;
- d) reference to early/beneficial use; and
- e) updates to bring in line with BS EN 1808:2015 and CDM Regulations 2015 [\[1\]](#).

Use of this document

As a code of practice, this part of BS 6037 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.

Any user claiming compliance with this part of BS 6037 is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Introduction

Permanently installed suspended access equipment (SAE) is designed and installed to provide a suspended platform that gives safe access to areas of a building or other permanent structure and to serve only that structure. Such installations are customarily used for window cleaning and light building maintenance. The Construction (Design and Management) Regulations (CDM Regulations) [1] require that all façades including windows and skylights are designed and positioned so that they can be accessed safely. It is essential that the requirements for permanently installed SAE be considered at an early stage in the building design process. The dimensions and capability of SAE need to be appropriate for the nature of the task/s to be performed.

Permanently installed SAE generally comprises a platform suspended by steel wire ropes from a securely mounted overhead structure (suspension rig). It is normally capable of being raised and lowered and can also be capable of being moved laterally across the building façade.

The suspension rig can be fixed or mounted on a rail track or other suitable load-bearing surface (e.g. reinforced concrete) at high level or can be fixed to the façade or underside of a cantilevered portion of the building.

Parts of the installation can be demountable for storage purposes.

The installation can be manually or power operated or a combination of both. The hoist can be mounted either on the suspension rig or the suspended platform.

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.

NOTE See *Work at Height Regulations* [2].

1 Scope

This part of BS 6037 gives recommendations for the planning, design, installation, use, examination, maintenance and testing of permanently installed suspended access equipment, including equipment installed on a building to facilitate continuing routine maintenance of the building. It is intended for use by those involved in specifying, designing, managing the use of, maintaining and examining permanently installed suspended access equipment.

This British Standard does not cover industrial rope access and work positioning techniques, recommendations for which are given in BS 7985.

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 7671, *Requirements for Electrical Installations — IET Wiring Regulations*

BS 7883, *Code of practice for the design, selection, installation, use and maintenance of anchor devices conforming to BS EN 795*

BS EN 795, *Personal fall protection equipment — Anchor devices*

BS EN 1808:2015, *Safety requirements for suspended access equipment — Design calculations, stability criteria, construction — Examinations and tests*

BS EN 1992-1-1, *Eurocode 2: Design of concrete structures — Part 1-1: General rules and rules for buildings*

BS EN 1993-1-1, *Eurocode 3: Design of steel structures — Part 1-1: General rules and rules for buildings*

BS EN 1993-1-3, *Eurocode 3: Design of steel structures — Part 1-3: General rules — Supplementary rules for cold-formed members and sheeting*

BS EN 1993-1-5, *Eurocode 3: Design of steel structures — Part 1-5: Plated structural elements*

BS EN 1993-1-8, *Eurocode 3: Design of steel structures — Part 1-8: Design of joints*

BS EN 1993-6, *Eurocode 3: Design of steel structures — Part 6: Crane supporting structures*

BS EN 1995-1-1, *Eurocode 5: Design of timber structures — Part 1-1: General — Common rules and rules for buildings*

BS EN 1999-1-1, *Eurocode 9: Design of aluminium structures — Part 1-1: General structural rules*

BS EN 1999-1-3, *Eurocode 9: Design of aluminium structures — Part 1-3: Structures susceptible to fatigue*

BS EN 1999-1-4, *Eurocode 9: Design of aluminium structures — Part 1-4: Cold-formed structural sheeting*

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

BS EN 60947-3, *Low-voltage switchgear and controlgear — 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 EN 1808 and the following apply.

3.1 anchor unit

connection supporting and/or holding the components of the suspended access equipment to the building

3.2 building manual

file for the building containing design and other information related to the suspended access equipment

3.3 duty holder(s)

designated person(s) with management responsibility for the safe use, maintenance and thorough examination of suspended access equipment

NOTE 1 The duty holder might be the owner, manager or person otherwise responsible for a particular building. Other parties also have duties under the regulations.

NOTE 2 The duty holder's responsibility for ensuring the safe use, maintenance and thorough examination of the SAE is a legal requirement under the Provision and Use of Work Equipment Regulations 1998 (PUWER) [3] and the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) [4] (see also [Clause 15](#)).

3.4 mechanical stop

device physically connected to the track system to prevent further travel of the suspension rig

NOTE Some mechanical stops can be over-ridden to allow the suspension rig to continue travel on to lift-tables.

3.5 rigging

routine process of assembling the suspended access equipment for use

3.6 shunt track

section of the rail track which is moved to enable a suspension rig to be transferred to another track system or parking position

3.7 spur track

section of the rail track, incorporating points or similar device, that enables a suspension rig to be transferred to another section of the track system

3.8 technical file

document comprising drawings, calculations, test results, inspections, risk assessments, instruction manuals and any other documents that are required to confirm compliance with the Machinery Directive [5]

3.9 turntable

section of a rail track which can be rotated to change the direction of travel of a suspension rig

4 Identifying hazards and taking preventative action

4.1 Design stage

SAE is required to conform to the Machinery Directive [5], which sets machinery design requirements to protect the health and safety of users.

NOTE 1 BS EN 1808 specifies design and construction requirements relating to the safety of SAE and is a harmonized standard supporting the provisions of the Machinery Directive [5].

NOTE 2 It is a legal requirement under the CDM Regulations [1] that a risk assessment is carried out at this stage.

NOTE 3 A list of potential hazards and hazardous situations identified (by risk assessments) as being significant for SAE is given in BS EN 1808:2015, Table 1.

4.2 Installation, use and maintenance

NOTE 1 The Management of Health and Safety at Work Regulations [6] require that risk assessments are carried out before the SAE 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 suspended access system.

NOTE 2 Guidance on producing permit-to-work systems is given in the HSE publication Permit-to-work systems [7].

A non-exhaustive list of the more common hazards encountered when using permanently installed SAE, and the actions to be taken to eliminate or reduce them, is given in [Table 1](#) and this should be reviewed periodically.

A method statement should be prepared covering the operation of the SAE. 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 prior to operating or maintaining the SAE (see [Clause 19](#)).

Table 1 — *Hazards encountered when installing, maintaining and using suspended access equipment with 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 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 a safety line and safety harness should be used. Suitable, marked anchorage points should be provided on the working platform to permit attachment of harnesses.
Slipping	Algae and other hazardous materials should be removed from all access and egress routes and working areas.
Injury to passersby from falling objects	Loose objects and tools should be secured with lanyards. Warning notices or barriers should be erected below the workplace (see Clause 18).
Persons stranded on the suspended platform	Operators should receive training in the safe use of the SAE and should follow the correct procedures as given in the operating instructions. Operators should be supplied with a means of communication between the suspended platform and a competent person. Rescue/recovery procedures should be planned in advance having regard for all landing positions of the platform.
Damage to power cables	Power cables should be of adequate length to allow for movement of suspension rigs or suspended platforms and should be routed such that they cannot become severed or damaged by movement of the suspension rig or suspended platform.
Damage to building fabric	Impact loads should be limited by appropriate restraints and/or by soft rollers or buffers on a suspended platform.

Table 1 (continued)

Hazard	Action
Electric shock	Only competent persons should have access to the electrical circuitry of the SAE. The SAE should be switched off or isolated before any maintenance work is carried out on it (see Clause 12 and Clause 20). The mains power supply should be provided with a residual current device (RCD).
Deterioration of equipment	A garage area should be provided.
Falls from height and crushing injuries	The equipment manufacturer should provide safe access to all parts of the system for maintenance.
Inadequate maintenance	The equipment manufacturer should supply any specialist equipment/tools required.
Introduction of supplementary items (e.g. flagpoles, CCTV, aerials) post installation which impact on the building maintenance unit (BMU) installation	The equipment should be taken out of service and a request should be made to have the item(s) relocated/redesigned.
Injury resulting from a maloperation or malfunction of the SAE	Operators should receive training in the safe use of the SAE 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 20).
Collision of SAE 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 SAE colliding with the scenic lifts or mobile devices.

5 Planning and exchange of information

5.1 Planning

NOTE 1 The CDM Regulations [1] require building designers to provide a safe means of access to a building façade for activities such as ongoing inspection, cleaning and maintenance.

NOTE 2 See BS 8560 for guidance on selection of SAE for buildings.

A permanent installation can affect the structure, roof layout and fenestration of a building and the access requirements should therefore be considered during the preliminary design stage.

NOTE 3 Significant financial savings and design advantages can result from an early consideration of façade access requirements. Once the design of a building has been finalized, it can be very difficult to make changes to it in order to enable installation of SAE to be carried out (see [7.3](#)).

The preliminary design for the SAE 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 SAE 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 SAE, and the results incorporated in the technical file for the building.

NOTE 4 This agreement is necessary to enable the SAE to be CE marked (see [Annex A](#)).

NOTE 5 The health and safety file is a legal requirement under the CDM Regulations [1].

The prime responsibility to ensure that access for building maintenance is safe should lie with the client and principal designer.

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

- a) client;
- b) principal designer;
- c) principal contractor;
- d) equipment manufacturer or supplier;
- e) structural engineer; and
- f) local authority.

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 advise the manufacturer or supplier of the SAE on such matters as:

- a) the purpose(s) for which the SAE is to be used;
- 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 [\[1\]](#);
- 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, and fire detectors/fire protection systems such as sprinklers, smoke vents);
- h) any special requirements (e.g. an independent hoist for glazing replacement);
- i) the safe means of access/egress to/from the SAE; and
- j) emergency egress routes from the building, which should be planned so as not to be obstructed by the operation or parking/storage of the equipment.

The architect or designer of the building should also provide building plans and other relevant information to enable the manufacturer or supplier to select the most appropriate equipment.

This information should form part of the pre-tender construction phase plan.

5.2.2 Information for the architect or designer

The manufacturer or supplier of the SAE should provide the principal designer or principal contractor with the following information, which will form part of the construction phase health and safety plan:

- a) the type and rated load (RL) of the SAE and the number of systems;
NOTE The use of manual hoisting equipment is not recommended where the operating height exceeds 15 m.
- b) dimensions and clearances necessary for the operation of the equipment;
- c) the maximum and minimum distances between the building façade and the suspended platform;
- d) the space requirements or garage facilities necessary for parking and storage of the equipment;
- e) the space requirements or garage facilities necessary to facilitate future examinations, maintenance and testing of the equipment;
- f) the maximum static and dynamic loads that the equipment imposes on the building (see 7.1);
- g) the requirements for anchoring the SAE to the building including any structural and/or builder's work;
- h) the requirements for providing and fixing suitable guides or other fixtures to the building façade where necessary for a restraint system;
- i) electrical power supply requirements and the preferred location of power supply points;
- j) period of time required for design calculations, the preparation and approval of relevant drawings and the manufacture of the equipment; and
- k) the procedure for the delivery, installation and commissioning of the equipment.

The information needed can vary from one installation to another and can include items not mentioned in the above list, which should therefore not be assumed to be exhaustive.

5.3 Use of equipment during construction phase

Equipment used in this British Standard and designed in BS EN 1808 is intended for the maintenance life cycle of the building and should not be used for construction of the building unless specified.

NOTE 1 BS EN 1808 does not cover construction phase plant/construction equipment.

The frequency and specific purpose of BMU use should be commensurate with the intended design life of the system as applicable to the building it serves.

Using TSAE (temporary suspended access equipment) should be considered before entering into an early use agreement.

Where it is intended that SAE is to be used prior to building completion, a separate sub-contract agreement (early use agreement) should be reached between all parties (employer, principal contractor and duty holder) so the SAE can be handed over for use. When considering this option all costs associated with using the permanently installed access equipment together with the effect of wear and tear on the design life should be taken into account.

The building owner/employer or his agent should be made aware that wear and tear occurs during early use and that the SAE will not be in pristine condition even after refurbishment following completion of the early use. The principal contractor should obtain the consent of the building owner/employer prior to early use commencing.

An early use agreement should include:

- a) building owner/employer consent;

- b) insurance;
- c) instruction of operatives;
- d) maintenance;
- e) first thorough examination;
- f) subsequent thorough examinations;
- g) associated works;
- h) supervision;
- i) skilled attendance;
- j) re-commission;
- k) defects liability period;
- l) extension of time;
- m) disruption;
- n) period of use;
- o) warranty period;
- p) refurbishment/advice on wear and tear; and
- q) delapidation report.

NOTE 2 Rental agreements might be included in an early use agreement.

6 Health and safety

6.1 General

The design and manufacturing requirements, together with associated safety features for all new SAE, should conform to BS EN 1808. Safety harness anchor point(s) should be fitted to the platform and, where necessary, to the suspension rig.

NOTE 1 SAE is required to conform to the Supply of Machinery (Safety) Regulations 2008 [8].

NOTE 2 Attention is also drawn to the requirements of the Manual Handling Operations Regulations 1992 [9], the Work at Height Regulations 2005 [2] and the Workplace (Health, Safety and Welfare) Regulations 1992 [10].

6.2 Safe access and egress

NOTE 1 It is a legal requirement under the CDM Regulations [1] and the Management of Health and Safety at Work Regulations 1999 [6] that all operators are provided with and made aware of a safe means of access and egress to and from all areas of a building where maintenance or other work is to be carried out.

The duty holder should ensure that a designated safe route to and from all parts of the SAE, and the areas of the building it is designed to access, is provided for the following persons:

- a) façade maintenance/cleaning operators;
- b) SAE maintenance engineers; and
- c) persons carrying out inspections and thorough examinations.

NOTE 2 It is likely that the SAE maintenance engineers and persons carrying out inspections/thorough examinations need to gain access to, and egress from, more areas of the building than the façade maintenance/cleaning operators.