Incorporating Corrigendum No. 1

Low level work platform with one working platform with side protection for use by one person with a maximum working platform height no greater than 2.5 m – Specification

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Summary of pages
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Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2016. It was prepared by Subcommittee B/514/24, *Access Towers*, under the authority of Technical Committee B/514, *Access and Support Equipment*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This British Standard is based on PAS 250:2012.

Information about this document

This British Standard is based on PAS 250, and introduces the following principal changes.

- A new more consistently available surface has been introduced for the test for resistance to sliding given in Annex D.
- New dimensional requirements for side protection following the identification of potential safety issues have been included.

Use of this document

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

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

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

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause **J.1.1**, which states, "Requirements should be expressed using wording such as: 'When tested as described in Annex A, the product shall ...'". This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

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.

Low-level work platforms (LLWPs), commonly referred to as podiums or pulpits, became extensively used following the implementation of The Work at Height Regulations 2005 [1]. In particular this led to demand for an LLWP with one working platform with side protection for use by one person.

These LLWPs fall outside the scope of standards for similar products. For instance, they differ from:

a) mobile access and working towers specified by BS EN 1004 because LLWPs have working platform heights of less than 2.5 m;

b) mobile elevating work platforms specified in BS EN 280 because they are not powered;

c) prefabricated tower scaffolds specified in BS 1139-6 because LLWPs have smaller working platforms and are only designed for use by one person; and

d) standing ladders with platforms specified in BS EN 131 (all parts), BS 2037 and BS 1129 because LLWPs have side protection to the working platform.

Designs that emerged for LLWPs have been developed in the absence of a formal standard. Whilst the majority of LLWPs provide a safe solution to low level access, there are aspects of some products that could be improved by adherence to relevant and specific design criteria.

1 Scope

This British Standard specifies requirements for an LLWP with one working platform with side protection, for use by one person, with a maximum working platform height not greater than 2.5 m. The maximum working load of the LLWP is 150 kg.

In particular, this British Standard specifies requirements for materials, design loads, dimensions, strength and stability tests, marking and instruction manuals.

This British Standard does not cover:

a) mobile access and working towers with a height from 2.5 m to 12.0 m (indoors) and from 2.5 m to 8.0 m (outdoors), in accordance with BS EN 1004;

b) prefabricated tower scaffolds, in accordance with BS EN 1139-6;

c) mobile elevating work platforms, in accordance with BS EN 280;

d) standing step ladders with platforms and mobile ladders with platforms, conforming to BS EN 131 (all parts);

e) aluminium standing step ladders with platforms, folding trestles and lightweight stagings, in accordance with BS 2037; and

f) timber trestles and lightweight stagings, in accordance with BS 1129.

2 Normative references

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

BS 7371 (all parts), *Coatings on metal fasteners*

BS EN 572-2, *Glass in building – Basic soda lime silicate glass products – Part 2: Float glass*

profiles – Part 3: Specific requirements

BS EN ISO 3834 (all parts), *Quality requirements for fusion welding of metallic materials*

BS EN ISO 6892-1, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature*

BS EN ISO 14713-1, *Zinc coatings – Guidelines and recommendations for the protection against corrosion of iron and steel in structures – Part 1: General principles of design and corrosion resistance (ISO 14713-1:2009)*

BS EN ISO 14731, *Welding coordination – Tasks and responsibilities*

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 access
series of climbing surfaces designed to provide a means of ascending to and descending from a working platform

3.2 adjustable leg
component of an LLWP that can be adjusted to level the low- level work platform on uneven or sloping ground

NOTE 1 Adjustable legs can be fitted with either a mobility device or a foot.

NOTE 2 Adjustable legs are not intended for use to gain additional working height.

3.3 castor wheel
wheel that swivels permitting it to turn towards its plane of rotation

NOTE Castor wheels are fitted to LLWPs to provide mobility.

3.4 climbing surface
component that provides a foothold or a handhold

3.5 deployed position
position of use with all components assembled and positioned in accordance with the instruction manual

NOTE Components include, for example, access, mobility devices, toe-boards and stability devices.

3.6 foot
component of a LLWP that rests on the ground, supports the LLWP and is not designed to enable the movement of the LLWP

NOTE 1 For example, a base plate.

*NOTE 2 See also mobility device (**3.8**).*

3.7 low-level work platform (LLWP)
mobile, freestanding structure incorporating one working platform

NOTE 1 An LLWP is mobile in the sense that it can be moved manually through physical effort alone or with the aid of mobility devices.

NOTE 2 Examples of LLWPs and their components are given in Figure 1.

component of an LLWP that rests on the ground, supports the LLWP and is designed to enable the movement of the LLWP

NOTE 1 For example, a wheel or ski.

*NOTE 2 See also foot (**3.6**).*

3.9 rotational mobility device
mobility device with rotating parts

NOTE For example, a ball wheel, castor wheel or fixed wheel.

3.10 side protection
barrier designed to prevent a person accidentally falling

NOTE 1 For example, guard-rails, railings or mesh panels.

NOTE 2 Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 2, paragraph 3(a), which refers to side protection as a guard-rail or similar means of protection above the edge from which any person is liable to fall.

3.11 side protection gate
section of the side protection that can be opened to permit entry to and exit from the area enclosed by the side protection

NOTE 1 This is sometimes referred to as a guard-rail gate.

NOTE 2 A side protection gate can be made up of several components. These can include, for example, vertical supports, railings or mesh panels.

3.12 stability device
component that assists in preventing the LLWP from overturning

NOTE For example, an outrigger or counterweight.

3.13 toe-board
barrier along the edge of a working platform to prevent the fall of tools or materials and also to prevent a person overstepping the edges of the working platform

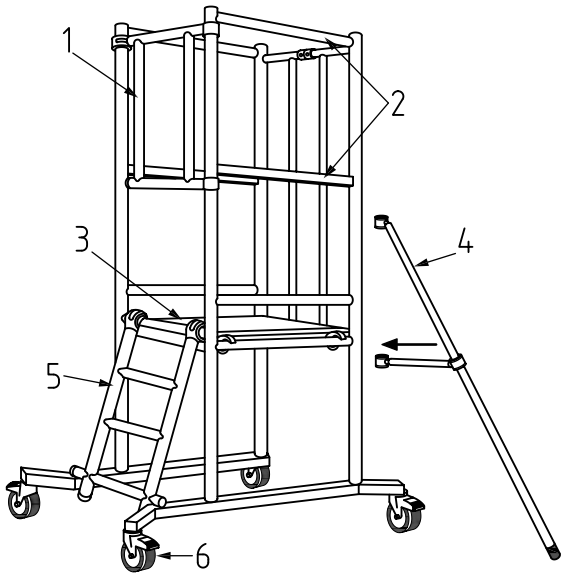
NOTE This is sometimes referred to as a toe-rail or kick plate.

3.14 working height
height a user can reach when standing on a working platform without overreaching

3.15 working load
combined mass of a user, their clothing, materials and tools

3.16 working platform
raised surface on which a person stands to work

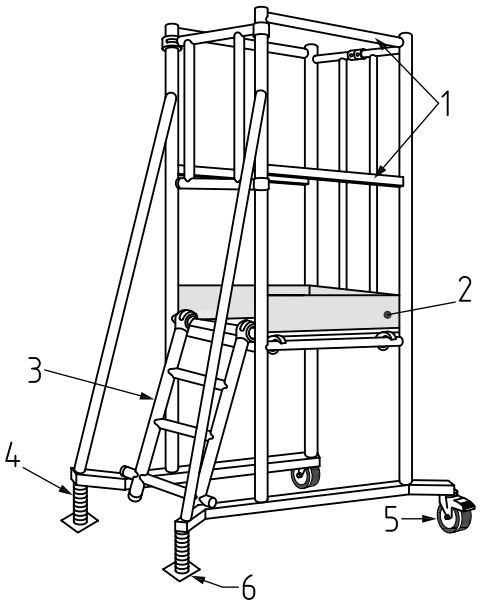
3.17 working platform height
height from the ground to the top surface of the working platform with any adjustable legs set at their minimum extension



Key

1	Side protection gate	4	Stability device
2	Side protection	5	Access
3	Working platform	6	Castor wheel

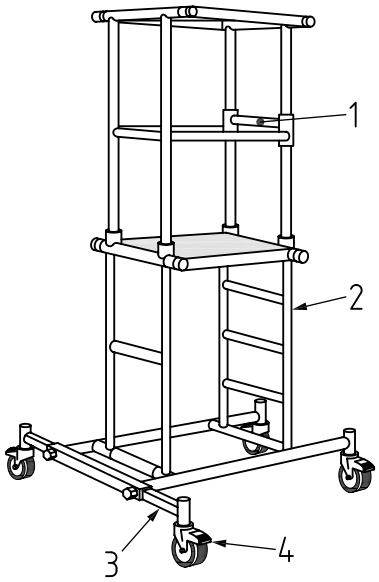
a) Low-level work platform with castor wheels, a stability device, side protection and an inclined ladder as an access (toe-boards not shown)



Key

1	Side protection	4	Adjustable leg
2	Toe-board	5	Castor wheel
3	Access	6	Foot

b) Low-level work platform with feet, adjustable legs, castor wheels, toe-boards, side protection and an inclined ladder as an access



Key

1	Side protection gate	3	Stability device
2	Access	4	Castor wheel

c) Low-level work platform with castor wheels, a stability device, a vertical sliding side protection gate and an integral vertical ladder as an access (toe-boards not shown)

4 Materials

*COMMENTARY ON CLAUSE **4***
Guidance on where to find information on materials often used in an LLWP is given in BS EN 12811-2. It draws attention to a number of points for designers. The information given is limited to commonly used steel, aluminium alloys, cast iron, timber and timber-based materials. Requirements are also given for welding, for limiting corrosion and other deterioration. It is limited to the selection of types and grades of material from standards, which are either international or European standards.

The minimum values for yield stress or proof stress and for the tensile strength specified in the material standards referenced in BS EN 12811-2 should be used as characteristic values in design calculations for an LLWP.

The effects of forming or other fabrication techniques such as welding that can affect material properties should be taken into account in the design of an LLWP.

The materials and protective coatings used in an LLWP should be chosen to suit the expected operational constraints and requirements of its intended use, e.g. in terms of durability and resistance to the elements.

Plastic materials and rubber should be selected having regard to the stresses to which they might be subjected and their resistance to environmental deterioration, especially that due to ultraviolet light.

4.1 All components, with the exception of metal fastenings, shall be protected from corrosion by one of the methods given in BS EN ISO 14713-1. Metal fastenings shall be protected against corrosion by one of the methods given in BS 7371.

percentage elongation after fracture (A) of 5% when measured in accordance with BS EN ISO 6892-1.

4.3 If cold rolled steel or a special alloy steel is used, the ratio between 0.2% yield stress and ultimate strength ($R_p0.2/R_m$) shall be not greater than 0.92.

4.4 Load bearing components made from reinforced plastic composites shall conform to BS EN 13706-3:2002, grade E23.

5 Design

5.1 General

5.1.1 Components forming part of the LLWP shall be secured such that they are incapable of movement or disconnection except by direct intentional action.

NOTE It should be easy to assemble, reposition and dismantle components that are normally assembled, repositioned and dismantled by the user when using the LLWP in accordance with the instruction manual although those components should be designed such they cannot move or detach without a direct intentional action by the user.

5.1.2 Threaded fastenings shall be secured against accidental loosening.

5.1.3 Joints shall be welded in accordance with BS EN ISO 3834 and BS EN ISO 14731.

5.1.4 Accessible edges shall be free of burrs or sharp points and chamfered, rounded or otherwise formed in order to avoid injuries.

NOTE The design should avoid wherever possible the existence of shear and squeeze points which can create potential finger traps when the LLWP is used in accordance with the instruction manual.

5.1.5 When tested for strength in accordance with Annex A, the LLWP shall not collapse, deform or fracture.

5.1.6 When tested for resistance to overturning in accordance with Annex B, the LLWP shall not overturn.

5.1.7 When tested for rigidity in accordance with Annex C, the maximum deflection D measured under load shall be $\leq$ (10 mm + 0.01 h), where h is the height of the top surface of the working platform above the ground.

5.1.8 When tested for resistance to sliding in accordance with Annex D, the LLWP's contact points with the ground when in the deployed position shall not move horizontally by more than 5 mm.

5.1.9 When tested for stability to ascending or descending in accordance with Annex E, the datum pointers on the opposite side of the LLWP to the side subjected to the test loads shall remain in contact with the ground.

5.2 Working platform

NOTE Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 3, Part 1, which specifies requirements for working platforms.

5.2.1 The LLWP shall only incorporate one working platform.

5.2.2 The maximum working platform height shall be not greater than 2.5 m.

5.2.3 The working platform shall have a minimum useable surface, with any toe-boards in place, of 500 mm wide and 500 mm long and a maximum useable surface of 600 mm wide and 950 mm long.

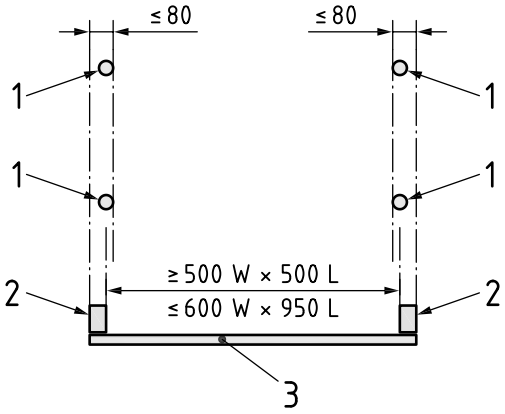
NOTE 1 These dimensions are illustrated in Figure 2.

(a)(i), which specifies requirements for selecting work equipment for work at height.

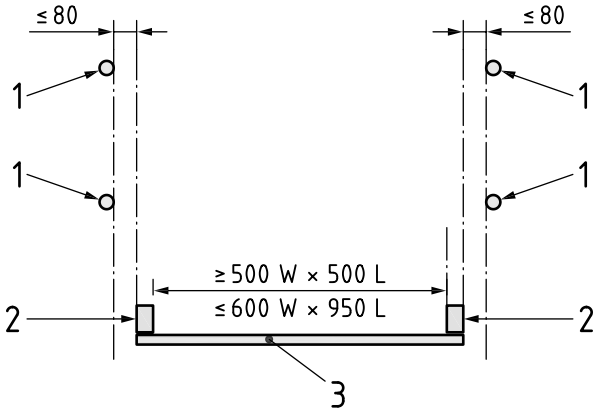
NOTE 3 Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 3, Part 1, paragraph 5(b), which requires a working platform be so constructed that the surface of the working platform has no gap through which a person could fall, through which any material or object could fall and injure a person, and giving rise to other risk of injury to any person, unless measures have been taken to protect persons against such risk.

Figure 2 **Dimensions for the clearance between the outside edge of the working platform and the inside edge of the side protection and the useable surface area of the working platform**

Dimensions in mm



a) Side protection within the perimeter of the work platform



b) Side protection outside the perimeter of the working platform

Key

1 Side protection
2 Toe-board
3 Working platform

5.2.4 The working platform shall have a slip resistant surface and shall not have obstructions or surface variations that might cause the user to slip or trip.

NOTE Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 3, Part 1, paragraph 5(c), which requires a working platform be so erected and used, and maintained in such condition, as to prevent so far as is reasonably practicable the risk of slipping or tripping or any person being caught between the working platform and any adjacent structure.

5.2.5 The working platform shall incorporate a means to prevent its unintentional disconnection.

NOTE It should be easy to assemble, reposition and dismantle working platforms that are normally assembled, repositioned and dismantled by the user when using the LLWP in accordance with the instruction manual, although working platforms should be designed such that they cannot move or detach without a direct intentional action by the user.

5.2.6 The working platform shall incorporate a means by which it can be fitted with toe-boards.

NOTE In every design, it should be possible to fit toe-boards at the working platform where they are shown as necessary by a risk assessment.

means of gaining entry to and exit from the working platform, the aperture shall have a minimum clear opening of 400 mm wide and 600 mm long. The aperture shall be provided with a means of being closed to prevent the user falling through.

5.2.8 When tested for strength in accordance with **F.2** and **F.3**, the maximum permanent deformation of the top surface of the working platform after removal of the test load shall be not greater than 0.5% of the working platform width or length, whichever is the greater.

5.2.9 When tested for displacement in accordance with Annex G, the working platform shall not incline by more than 6° to the horizontal.

5.3 Side protection

NOTE Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 2, which specifies requirements for guard-rails, toe-boards, barriers and similar collective means of protection.

5.3.1 The working platform shall have side protection along its entire perimeter.

5.3.2 The top surface of the side protection shall be a minimum of 950 mm above the top surface of the working platform when the LLWP is in the deployed position.

NOTE Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 2, paragraph 3(a), which requires that the principle (top) guard-rail or other similar means of protection be at least 950 mm above the edge from which any person is liable to fall.

5.3.3 In each case of side protection, between the top surface of the side protection and the top surface of the working platform, and with the LLWP in its deployed position, there shall be no opening in the plane of the side protection greater than:

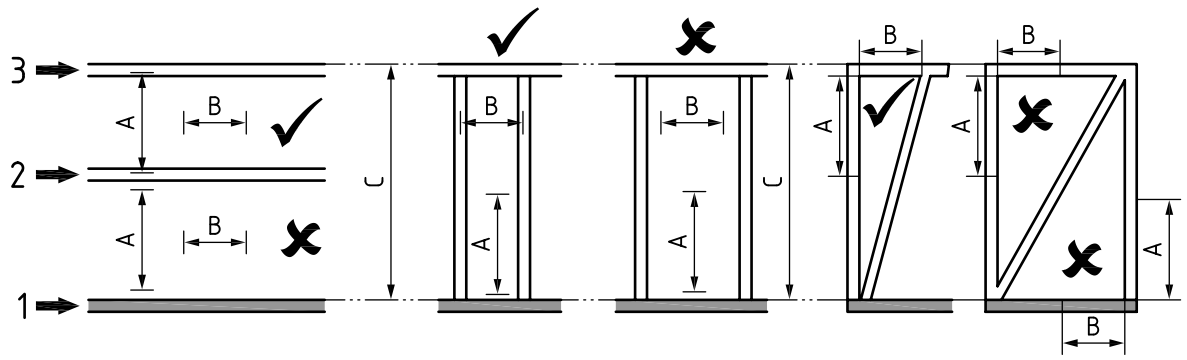
a) 470 mm when measured vertically at any point except where the opening is less than 180 mm when measured horizontally at any point;

b) 180 mm when measured horizontally at any point except where the opening is less than 470 mm when measured vertically at any point.

NOTE 1 Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 2, paragraph 3(c), which requires that any intermediate guard-rail or similar means of protection be positioned so that any gap between it and other means of protection does not exceed 470 mm.

NOTE 2 Dimensions for openings in side protection are shown in Figure 3.

Figure 3 **Dimensions for openings in side protection**



Key

1	Platform	A	Maximum 470 mm vertical gap
2	Intermediate guard-rail	B	Maximum 180 mm horizontal gap
3	Principle (top) guard-rail	C	Minimum 950 mm

edge of the working platform and the inside edge of the side protection shall be not greater than 80 mm.

NOTE *This clearance is illustrated in Figure 2.*

5.3.5 When tested for strength with a downward load in accordance with **H.2**:

a) all components of the side protection including any side protection gates that provide a foothold width of 50 mm or more shall not detach or fracture;

b) all components of the side protection shall not exhibit permanent deformation at any point greater than 50 mm from their position prior to the test; and

c) side protection gates shall not open during the test and shall continue to open, close and function in accordance with the instruction manual after the test.

5.3.6 When tested for strength with a horizontal load in accordance with **H.3**:

a) all components of the side protection including any side protection gates shall not detach or fracture; and

b) side protection gates shall not open during the test and shall continue to open, close and function in accordance with the instruction manual after the test.

5.3.7 When tested for deflection in accordance with **H.3**:

a) all components of the side protection including any side protection gates shall not deflect permanently or elastically by more than 35 mm measured with reference to their supports at the points of connection; and

b) side protection gates shall not open during the test and shall continue to open, close and function in accordance with the instruction manual after the test.

5.4 Toe-board

NOTE *Attention is drawn to The Work at Height Regulations 2005 [1], Schedule 2, which specifies requirements for guard-rails, toe-boards, barriers and similar collective means of protection.*

5.4.1 The top surface of any toe-boards shall be not less than 150 mm above the top surface of the working platform.

5.4.2 When tested for strength with a horizontal load in accordance with **H.4**:

a) each toe-board shall not detach or fracture; and

b) side protection gates shall not open during the test and shall continue to open, close and function in accordance with the instruction manual after the test.

5.4.3 When tested for deflection in accordance with **H.4**:

a) each toe-board shall not deflect permanently or elastically by more than 35 mm measured with reference to their supports at the points of connection; and

a) side protection gates shall not open during the test and shall continue to open, close and function in accordance with the instruction manual after the test.

5.5 Access

5.5.1 Access shall be incorporated into an LLWP when the working platform height is greater than 400 mm, with any adjustable legs set at their nominal maximum height adjustment.

NOTE *An LLWP can incorporate more than one access to the working platform.*

5.5.2 The type of access and its dimensions shall be in accordance with Table 1.

NOTE *Access dimensions are shown for each access type in Figure 4.*

Dimensions in mm

Dimension	Symbol	Stairway		Stair ladder		Inclined ladder		Vertical ladder	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Climbing surface depth	d	125	–	80	–	20	80	20	51
Climbing surface spacing	t	190	250	150	250	230	300	230	300
Climbing surface width	w	300	–	300	–	300	–	300	–
Inclination	α	35°	55°	35°	55°	60°	75°	0°	0°
Unobstructed horizontal gap between climbing surfaces	g_1	0	50	0	160	–	–	–	–
Unobstructed horizontal gap behind climbing surface	g_2	150	–	150	–	150	–	150	–
Distance from ground to top of lowest climbing surface	L	0.5t	t + 15	0.5t	t + 15	0.5t	t + 15	0.5t	t + 15

