

CONFIRMED
DECEMBER 2007

Specification for temporary access platforms — Performance and design requirements, and test methods

ICS 53.020

Committees responsible for this Draft for Development

The preparation of this Draft for Development was entrusted by Technical Committee B/514, Access and support equipment, to B/514/42, Access and working platforms, upon which the following bodies were represented:

Forestry Commission

Institution of Civil Engineers

National Access and Scaffolding Contractors Association

Timber Trades Federation

Health and Safety Executive

British Ladder Manufacturers Association

Building Research Establishment

This Draft for Development was published under the authority of the Standards Committee and comes into effect on 3 December 2003

Amendments issued since publication

Amd. No.	Date	Comments

The following BSI references relate to the work on this Draft for Development
Committee reference B/514/42
Draft for comment 01/104223 DC

Contents

Committees responsible	Inside front cover
Foreword	ii
Introduction	5
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Materials	2
5 General performance requirements	2
6 Structural performance requirements	4
7 Design requirements for assessment of platforms or platform units	6
8 Test methods	7
9 Marking	15
10 Information to be supplied	15
Annex A (normative) Classification of non-standardized materials	16
Annex B (normative) Loads and partial factors for design	17
Annex C (normative) Adjustment coefficients for test results	18
Figure 1 — Test for verifying slip resistance	8
Figure 2a) — Layout for platform robustness test	12
Figure 2bi) — End-on impact	13
Figure 2bii) — Oblique impact	13
Figure 3 — Test rig for resistance to unintentional displacement	14
Table 1 — Percentage of each load to be used in combinations of loads	5
Table 2 — Test details for flammability test	11
Table B.1 — Partial safety factors for materials (γ_M) not covered by British Standards	17
Table B.2 — Partial factors, γ_F , to be applied to characteristic loads	18

Foreword

This Draft for Development has been prepared by a Task Group from Technical sub-committee B/514/42. It specifies requirements for the construction, performance and testing of temporary access platforms intended for use as part of a temporary access system.

The requirements contained in this Draft for Development result from the best technical information available to the committee at the time of writing.

This Draft for Development is intended for use by designers, engineers, scaffolding contractors and authorities having jurisdiction.

Product certification/inspection/testing. Users of this Draft for Development are advised to consider the desirability of third-party certification/inspection/testing of product conformity with this Draft for Development. Appropriate conformity attestation arrangements are described in BS EN ISO 9001. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

This publication is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature because UK experience needs to be gained. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

A review of this Draft for Development will be carried out no later than 2 years after its publication. Notification of the start of the review period, with a request for the submission of comments from users of this Draft for Development, will be made in an announcement in the appropriate issue of *Update Standards*.

According to the replies received, the responsible BSI committee will judge whether the Draft for Development can be converted into a British Standard or what other action should be taken.

Observations which it is felt should receive attention before the official call for comments will be welcomed.

These should be sent to the Secretary of BSI Technical sub-committee B/514/42 at British Standards House, 389 Chiswick High Road, London W4 4AL.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 19 and a back cover.

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

Introduction

With most structures, an ability to support the loads that will be applied during its working life is the governing criterion. For temporary access platforms, this is not always the case because, in addition:

- they are used in harsh environments;
- they are often not maintained; and
- they regularly receive rough treatment.

Their design should recognize the implications of these adverse conditions.

Consequently, access platforms require a robustness that ensures that, in the event of accidents or rough treatment, the damage will not be disproportionate to its cause. This robustness requires the careful design of each component to ensure that it is not too sensitive to the effects of such incidental loads.

In addition, the design of temporary access platforms should facilitate their fabrication, erection, use, dismantling and future maintenance.

This Draft for Development is intended to cover all types of platform. It extends the relevant requirements of EN 12811-1 by providing additional requirements, and tests that are a means of verifying some of these requirements.

1 Scope

This Draft for Development specifies requirements for performance and the basis for the design of temporary access platforms for general use. It forms an extension to EN 12811-1, which specifies the basic requirements for six different load classes of access platform. This Draft for Development also specifies test methods.

For materials not covered by an appropriate design standard, this Draft for Development contains information for their use.

While the draft is principally about platforms and platform units, it also gives information on preventing their dislodgement. It considers both individual components and the assembled access area. Components conforming to this Draft for Development may be said to be a product in conformity with it.

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 476-12:1991, *Fire tests on building materials and structures — Part 12: Method of test for ignitability of products by direct flame impingement*.

BS 3212, *Specification for flexible rubber tubing, rubber hose and rubber hose assemblies for use in LPG vapour phase and LPG/air installations*.

EN 12811-1, *Temporary works equipment — Scaffolds — Part 1: Performance requirements and general design*.

ISO 7892, *Vertical building elements — Impact resistance tests — Impact bodies and general test procedures*.

3 Terms and definitions

For the purposes of this Draft for Development, the following terms and definitions apply.

NOTE These definitions are not identical to those in EN 12811-1.

3.1

platform

nominally horizontal surface on which a person can work and/or store materials necessary for the work, comprising a full width section of decking made up of a single component, or two or more platform units

3.2

platform unit

single component which can form a platform, or part of a platform but is generally not wide enough to constitute a platform when used on its own

3.3

impact load

load applied almost instantaneously

3.4

normal load

load which can be expected to occur frequently during the service life of the platform

NOTE This includes the permanent and variable loads as defined in BS EN 1990.

3.5

accidental load

impact load which can occur during the service life of a platform but which is infrequent

3.6

protruding connecting lug

projecting piece forming part of a platform or platform unit which provides a connection with its supporting structure

4 Materials

Where materials are covered by existing design standards, this draft requires the design of the platform to satisfy those requirements.

NOTE Annex A gives information on classifying and establishing design values for materials that may be used where no published data is available. When EN 12811-2 is approved, it will also give some information on materials.

5 General performance requirements

5.1 General

Platforms and their individual components shall be capable of supporting the imposed loads in all the combinations specified in 6.4.

5.2 Ergonomics

5.2.1 *Weight*

The platform or the platform units shall be such that, during assembly, no operative is required to handle more than 25 kg.

NOTE Further advice on manual handling is given in “Manual handling” [1].

5.2.2 *Centre of gravity*

Where the centre of gravity of any platform or platform unit is not within 5 % of the longer dimension of the geometrical centre of the platform, the centre of gravity shall be marked.

NOTE This is because it is sometimes assumed that the visual centre is the centre of gravity, which is not necessarily the case.

5.2.3 Trips and falls

It shall be possible for persons to walk on a platform without having to make conscious efforts to place their feet to avoid tripping, falling or knocking hazards.

NOTE If the requirements of 5.4.1, 5.4.2, 5.4.3, 5.6 and 6.5 are met, this subclause will be deemed to be satisfied.

5.3 Safety in handling and erection

5.3.1 Surfacing

The surface and edges of platforms and individual components shall be free from edges and other imperfections that can cause injury to persons during handling.

5.3.2 Width

Where a platform is made up of a number of individual platform units, the width of the individual platform units shall not be less than 200 mm.

NOTE The 200 mm limit is to provide an adequate space on which to stand.

5.4 The completed platform

5.4.1 Gaps

The gaps between adjacent platforms or platform units shall not exceed 25 mm.

NOTE Clearances between components should as far as possible follow the requirements given in BS EN 349.

5.4.2 Slots

The width of slots in platform surfaces shall not exceed 25 mm, and the area shall not exceed 150 mm².

5.4.3 Flatness

Unloaded platforms or platform units shall be flat within 20 mm over any 3.0 m length. In addition, between adjacent units, there shall be no steps greater than 25 mm in any direction.

5.5 Resistance to environmental degradation

Platforms and their support components shall be fabricated out of materials that have a calculatable resistance to environmental degradation during their intended design life. The calculated resistance shall be based on recognized published data.

NOTE This resistance can be natural or can be provided by other recognized means.

5.6 Slip resistance

Platforms shall have a slip resistant surface. The surface of the platform shall have a minimum coefficient of friction μ of 0.35 when in contact with rubber with an IRHD of 70, determined in accordance with the test method given in 8.3.

5.7 Security against unintentional displacement

Platforms shall be secured against unintentional displacement so that they cannot be dislodged.

NOTE 1 It should not be possible to displace the platform, or its individual decking units, more than 25 mm horizontally.

This requirement will be satisfied when, on completion of the test specified in 8.8, the load carrying capacity of the platform is not affected.

Security against uplift by wind shall be verified by calculation, using a characteristic pressure of 770 N/m².

NOTE 2 770 N/m² will be sufficient for most situations. However, special consideration should be given in any location liable to greater pressure, for example, exposed north-westerly sites.

5.8 Flammability

Platforms shall be fire-resistant. This requirement will be satisfied if it is shown that when tested in accordance with 8.5 that the following are met:

- a) there is no transient ignition as defined in BS 476-12:1991, 2.2;
- b) there are no flaming droplets after flame removal;
- c) the flames do not reach any edge of the test specimen during application of the ignition source; and
- d) the spread of flame does not reach the edge of the test specimen at any point within the first 30 s after removal of the flame.

6 Structural performance requirements

6.1 General

Vertical and horizontal loading requirements shall be as specified in EN 12811-1.

NOTE These include a small allowance for dynamic effects normally experienced and which treat it as an equivalent static load. In addition, this clause specifies tests for accidental loads, which represent more severe conditions than those specified in columns 3 and 4 of Table 4 in EN 12811-1. Annex B of this Draft for Development gives the associated limit state partial factors associated with these cases. All loads are summarized in the following subclauses.

6.2 Vertical loads/actions

6.2.1 Normal loads

Platforms shall be capable of supporting the loads for the appropriate class of load specified in column 2 of Table 4 in EN 12811-1. Tests to verify conformity with static load requirements shall be in accordance with those prescribed in 8.4.

NOTE EN 12811-1 specifies several different classes of load.

The load tests specified in 8.4.5.1a) and b) shall be carried out. To satisfy the requirements of 6.2.1, the platform or any individual platform unit:

- a) shall not, at the completion of the test in 8.4.5.1a), have a residual deflection, d_1 , which exceeds 10 % of the deflection under the maximum test load $F_{\max}$ defined in 8.4.5.1;
- b) shall show no identifiable yielding, fracture (e.g. a crack beginning to spread), or separation of any part of the assembly at the maximum test load; and
- c) shall have an adjusted ultimate mean resistance, R^* , as determined from the test in 8.4.5.1b) and adjusted by the calculation in 8.4.5.3, of at least $1.1F_{\max}$.

6.2.2 Other loads

6.2.2.1 Stumbling and falling

To represent everyday impact loads, the platform shall be capable of supporting a load by dropping a 50 kg object onto the platform when it is supported at its maximum span. A platform or platform unit shall resist without reduction of properties the impact of the object when it is dropped through 1 200 mm.

Platforms shall undergo the tests specified in 8.6. The platform shall arrest the fall of the impactor, retain it for five minutes and retain its mechanical properties.

NOTE This test represents a requirement that the platform be capable of supporting an extreme accidental vertical load of 6.0 kN applied over a plan area of 500 mm × 500 mm anywhere along its length in the most unfavourable position, representing a 100 kg person falling from standing to seated.

It also covers a requirement of supporting an accidental impact load of 2.5 kN applied over a plan area of 200 mm × 200 mm anywhere along its length in the most unfavourable position, representing a 100 kg person stumbling.

These loads shall be considered as accidental loads.