

BRITISH STANDARD

BS 7377 : 1991

Specification for Step stools

Escabeaux — Spécifications

Leitertritte

Committees responsible for this British Standard

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 British Ladder Manufacturers' Association
 British Plastics Federation
 British Telecommunications plc
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 Department of the Environment (Building Research Establishment)
 Department of Trade and Industry
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 Health Education Council
 Institute of Trading Standards Administration
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 Conductor Engineers
 Refractory Contractors' Association

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Foreword

This British Standard has been prepared under the direction of the Civil Engineering and Building Structures Standards Policy Committee.

It is a performance standard for non-mobile step stools of a maximum height of 1 m. There are no tests included for the life of materials as affected by corrosion or degradation by exposure to atmospheric conditions. The conditions of use are based on research carried out on existing step stools which are considered to be satisfactory.

Because accidents associated with step stools may occur from misuse, the standard specifies marking which includes the recommended loading and warnings against common misuse. Appendix P gives recommendations for the care and use of step stools which should be included by manufacturers in their literature.

Appendix A gives general information relating to the tests described in subsequent appendices which have been developed from the furniture standard BS 4875 and details the apparatus required.

The UK is participating in the preparation of a European standard for ladders which excludes step stools from its scope but other national standards have been considered in the preparation of this standard with a view to eventual preparation of a European standard for step stools.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to Schedule 1, Part 1, Schedule 4, Part 1, and Schedule 5, Part 1, of the Furniture and Furnishings (Fire) (Safety) Regulations 1988.

Specification

1 Scope

This British Standard specifies dimensional, fitness for purpose and performance requirements for portable step stools of two grades which have a maximum seat height of 1000 mm. The standard covers step stools with padded and rigid top platforms suitable for standing on. The step stools are classified into two grades:

- (a) *grade G*, for general domestic and light commercial use;
- (b) *grade H*, for more severe domestic and commercial use.

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 British Standard the following definitions apply.

2.1 step stool

A folding or rigid set of non-mobile steps with a top platform which serves as a step and a seat. The steps may be fixed or retractable, and a back, handrail or support pole may be included.

2.2 mobile steps

Steps which are fitted with wheels or rollers to facilitate relocation.

2.3 positive locking

Locking by a device which does not depend on friction or tension.

NOTE. Chains are not suitable.

2.4 duty rating

Maximum combined weight of user and load.

2.5 handrail

Any member which extends above the seat or top platform including rails, poles or backs.

NOTE. See dimension (h) in figures 1 to 4.

3 Classification of duty rating

The step stools covered by this standard shall be classified by their suitability for use under a maximum loading as follows:

- (a) *grade G*, suitable for use under a loading of 100 kg duty rating;
- (b) *grade H*, suitable for use under a loading of 120 kg duty rating.

NOTE. The classification above is derived from research and the description of performance used for furniture in BS 4875. Because step stools are uniquely intended for joint use as furniture and as steps neither BS 4875 or BS 2037 was considered totally applicable.

4 Materials

The materials used shall be such as to enable the step stool to satisfactorily undergo the tests given in the appendices.

NOTE. The tests do not check on the durability of materials which should be selected having regard to the stresses to which they may be subjected and their resistance to deterioration due to environmental conditions.

5 Manufacturing tolerances

5.1 Height

The height of the step stool seat or platform when measured as described in appendix B shall not exceed 1 m and shall be within 10 mm of the height stated by the manufacturer.

5.2 Tread spacing

The treads shall be uniformly spaced within a tolerance of ± 5 mm.

This tolerance shall apply to the height of the first tread above the floor and the free surface of the top platform above the nearest tread.

5.3 Horizontal surfaces

When in use, the treads and top platform shall be horizontal to within $\pm 2^\circ$.

6 Marking

NOTE. Attention is drawn to the Furniture and Furnishings (Fire) (Safety) Regulations 1988.

6.1 Step stools shall be clearly and durably marked with the information specified in 6.2 and 6.3. Compliance shall be checked by inspection and by rubbing the marking lightly, first for 15 s with a cloth soaked in water and then for 15 s with a cloth soaked in petroleum spirit. There shall be no reduction in legibility at the conclusion of the test. Adhesive labels where used shall not have worked loose or become curled at the edges.

Tie-on labels shall not be used to provide the information specified in 6.2 and 6.3.

6.2 Step stools shall be marked with the following particulars:

- (a) the name, trade mark or other means of identification of the manufacturer or supplier;
- (b) the number and date of this British Standard, i.e. BS 7377 : 1991¹⁾;
- (c) the grade and duty rating, e.g. grade G 100 kg.

¹⁾ Marking BS 7377 : 1991 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

6.3 Step stools shall be provided with a separate firmly attached label displaying at least the following wording on a red background.

- (a) According to the grade of step stool, either:
 - (1) maximum loading 100 kg (15.7 stones); or
 - (2) maximum loading 120 kg (18.8 stones).
- (b) Inspect for damage before use.
- (c) Ensure that there is a firm, level base.
- (d) Avoid over-reaching.

In addition, the following wording shall be included when relevant.

- (i) Check that locking devices have operated.
- (ii) Do not climb steps in the folded position.
- (iii) Check self-assembly fittings.

7 Dimensions

The dimensions of step stools shall be as shown in figures 1 to 4. The design of step stools is permitted to vary from those illustrated but the dimensional requirements shall be satisfied.

8 Construction

8.1 Sharp edges

There shall be no burrs or sharp edges. All edges shall be folded or have a minimum radius of 0.7 mm.

NOTE. Folding mechanisms and frames should avoid finger traps. Whenever possible this should be achieved by having a clearance sufficient to admit a 15 mm diameter rod or if the clearance is less than 15 mm the adjacent members should have dimensions of not less than 20 mm × 20 mm.

8.2 Locking devices

Step stools with folding frames shall be fitted with locking devices on both sides of the frame. The locking devices shall provide positive locking.

8.3 Treads

Treads shall be uniformly spaced and horizontal when in use and shall have a slip resistant surface. (See 5.2 and 5.3.)

8.4 Self-assembly

Step stools for self-assembly shall be supplied with instructions for correct assembly which shall include a warning that fittings should be tightened regularly.

8.5 Handrails

No part of the inside facing surface of the top of any rail, pole or back shall project beyond the rear edge of the seat or platform.

8.6 Foam

Foam for contract use shall be subjected to a control exercise by the Fire Officer (Public Buildings).

NOTE. For domestic use, attention is drawn to Schedule 1, Part 1, of the Furniture and Furnishings (Fire) (Safety) Regulations 1988 for foam, to Schedule 4, Part 1 (cigarette test), for covering fabric and filling composite and to Schedule 5, Part 1 (match test), for fabric.

8.7 Feet

Feet shall be soled with a slip-resistant material. The feet shall provide a wearing surface and shall be securely held but removable for renewal.

9 Performance

9.1 When tested in accordance with appendix C the stool shall return to the upright position.

When tested in accordance with appendix D all feet shall maintain contact with the supporting surface.

After the tests in appendices B to M have been performed as a complete set, there shall be no variations of more than 5 % of any dimension measured in accordance with appendix B. There shall be no variations of more than 2 ° of inclinations and no changes in straightness of the legs by more than 2 % of the gauge lengths.

In addition there shall be:

- (a) no fractures, cracks or buckling; and
- (b) the step stool shall remain functional.

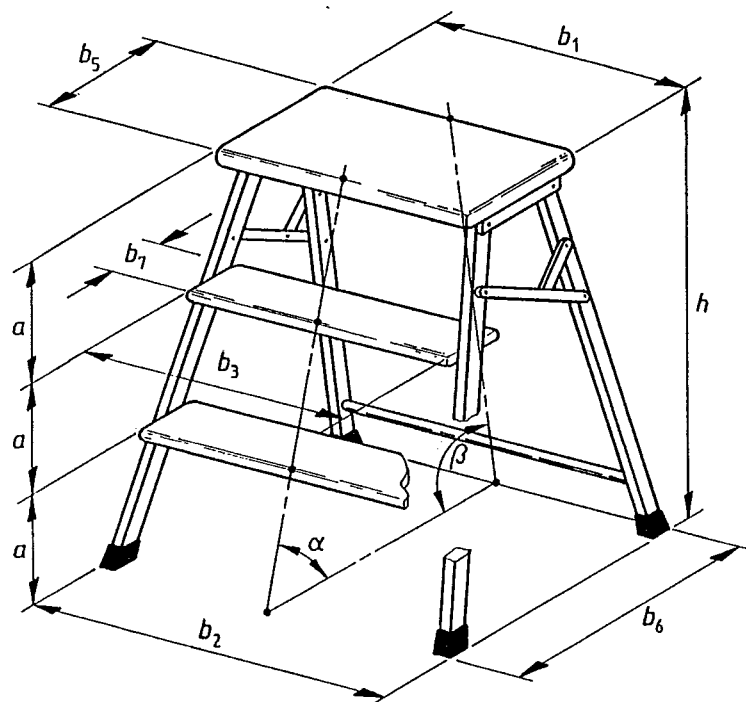
The load required for restraint in appendix M shall not exceed 10 kg.

When tested in accordance with appendix N the settlement shall not exceed 10 mm.

9.2 Articles subjected to the tests in appendices B to M shall not be subsequently used.

9.3 A test report shall be prepared in accordance with A.3.

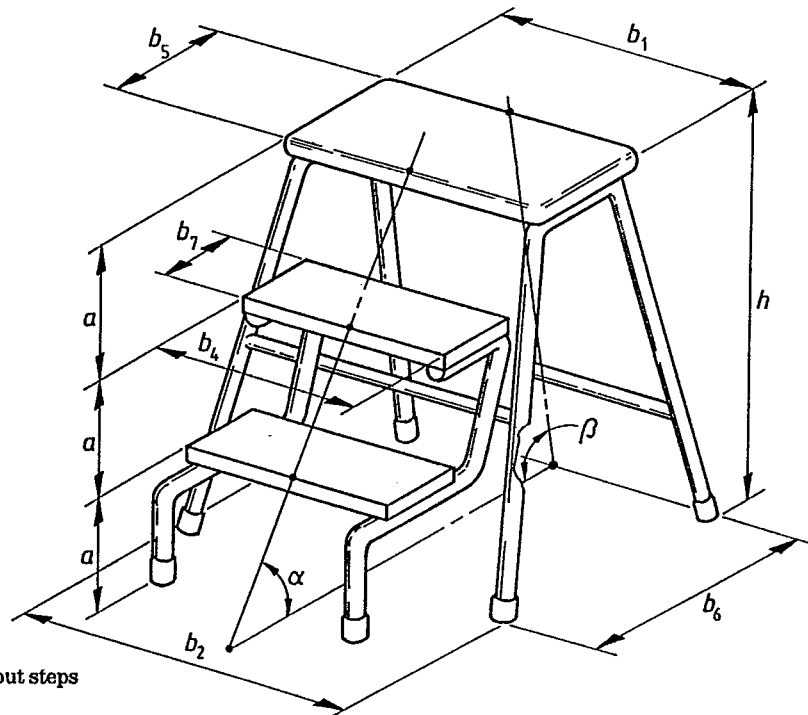




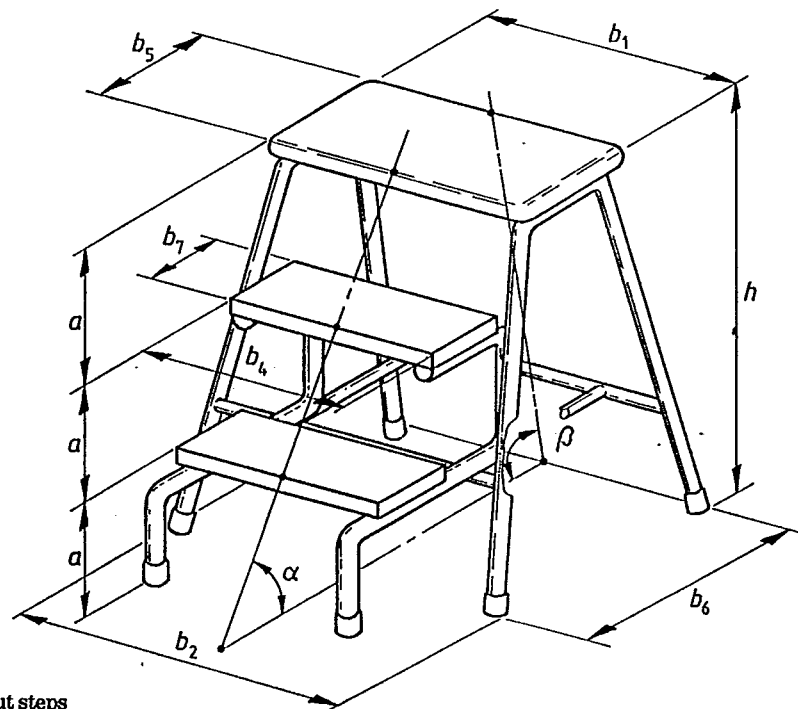
	h	a	b_1	b_2	b_3	b_5	b_6	b_7	α	β
Min.	—	—	300	$b_1 + 0.1h$	250	250	$b_5 + 0.1h$	80	65°	65°
Max.	1000	250	—	—	—	—	—	—	70°	75°

NOTE. All linear dimensions are in millimetres.

Figure 1. Step stool with fixed or braced legs



a) Step stool with fold-out steps



b) Step stool with pull-out steps

	h	a	b_1	b_2	b_3	b_4	b_5	b_6	b_7	α	β
Min.	—	—	300	$b_1 + 0.3h$	250	250	$b_5 + 0.3h$	80	45°	—	—
Max.	1000	250	—	—	—	—	—	—	—	70°	80°

NOTE. All linear dimensions are in millimetres.

Figure 2. Step stools with fold-out and pull-out steps