

Industrial type metal flooring, walkways and stair treads —

**Part 5: Specification for solid plates in
steel, aluminium and glass reinforced
plastics**

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee B/208, Stairs and walkways, upon which the following bodies were represented:

- British Precast Concrete Federation Ltd.
- British Woodworking Federation
- Consumer Policy Committee of BSI
- Department of the Environment for Northern Ireland
- District Surveyors' Association
- Engineering Equipment and Materials Users' Association
- Galvanizers' Association
- Health and Safety Executive
- Institution of Structural Engineers
- London Fire and Emergency Planning Authority
- Office of the Deputy Prime Minister (Building Regulations Division)
- Office of the Deputy Prime Minister (Building Research Establishment)
- Royal Institute of British Architects
- Royal Society for the Prevention of Accidents
- Scottish Office (Construction and Building)
- Spiral Stair Manufacturers' Association
- Storage Equipment Manufacturers' Association

This British Standard, having been prepared under the direction of the Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 July 1995

© BSI 26 March 2003

Amendments issued since publication

Amd. No.	Date	Comments
14252	26 March 2003	See national foreword

The following BSI references relate to the work on this standard:
Committee reference B/208
Draft for comment 94/104618 DC

ISBN 0 580 24239 0

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definitions	1
4 Information to be supplied	5
5 Materials	6
6 Sizes	6
7 Permissible tolerances	6
8 Construction	6
9 Performance	7
10 Marking	8
Annex A (normative) Method of test for strength and deflection	9
Annex B (informative) Recommendations for installation of plates	10
Figure 1 — Plating terms	4
Figure 2 — Imposed loads on treads	8
Figure B.1 — Fixing dimensions of bolted end supports	11
Table 1 — Thickness and widths of plate	5
Table 2 — Loads	5
Table 3 — Load factors and combinations	7
List of references	13

Foreword

This Part of BS 4592 has been prepared by Technical Committee B/208. BS 4592 is published in five Parts as follows. Part 5 is a new Part.

- *Part 1: Specification for open bar gratings;*
- *Part 2: Specification for expanded metal grating panels;*
- *Part 3: Specification for cold formed planks;*
- *Part 4: Specification for glass reinforced plastics open bar gratings;*
- *Part 5: Specification for solid plates in steel, aluminium and glass reinforced plastics.*

The start and finish of text introduced or altered by Amendment No. 1 is indicated in the text by tags **[A1]** **[A1]**.

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 does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 13 and a back cover.

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

1 Scope

This Part of BS 4592 specifies requirements for solid plates intended for use in flooring, walkways and stair treads **[A]** that are not addressed by BS EN ISO 14122 Part 1, Part 2 and Part 3, which cover the following:

BS EN ISO 14122, *Safety of machinery — Permanent means of access to machinery*:

- *Part 1: Choice of a fixed means of access between two levels*;
- *Part 2: Working platforms and walkways*;
- *Part 3: Stairs, stepladders and guard-rails.* **[A₁]**

NOTE 1 This standard does not cover agricultural uses (see BS 5502).

NOTE 2 The method of test for strength and deflection is given in Annex A, information to be supplied at the time of enquiry or order is given in clause 4 and recommendations for the installation of plates are given in Annex B.

2 References

2.1 Normative references

This Part of BS 4592 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 4592 only when incorporated in it by updating or revision.

2.2 Informative references

This Part of BS 4592 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 4592 the definitions given in BS 5395-1, BS 5395-3 and BS 6100-1 apply, together with the following.

NOTE Definitions of some common terms are illustrated in Figure 1.

3.1 types of plate

3.1.1

plain

flat solid plate with a plain surface having no perforations or raised portions on the top surface other than a quartz grit (or similar) bonded on with a resin adhesive

3.1.2

chequer

flat solid plate with raised pattern “teardrop” studs or “5-bar treadplate” studs (metal) or diamond studs [glass reinforced plastics (GRP)] on top surface only to provide additional grip or an increased level of anti-slip

NOTE Raised stud patterns are distributed to give maximum slip resistance from any angle and ensure a freely draining surface.

3.2 sizes of plate

3.2.1

span

overall size of plate measured from one end to the other where the plate is supported by primary supports

3.2.2

width

overall size of plate measured from one side to the other where the plate is supported by secondary supports, independent stiffeners or butt straps

3.2.3

length

the longest side of the plate regardless of whether it is the span or the width

3.2.4

breadth

the shortest side of the plate regardless of whether it is the span or the width

3.2.5

effective span

clear span between primary supports

3.2.6

depth

overall distance from the top of a floor to the underside of a floor avoiding any raised pattern

3.2.7

thickness

overall distance from the top surface of a plate to the underside of a plate avoiding any raised pattern

3.3 supports

3.3.1

simply supported

supported but not fixed on all four edges even though two edges may only be supported by stiffeners or joint covers

3.3.2

encastré

securely bolted, welded or bonded to the supporting system on all four sides, which will increase the load-carrying capacity slightly but reduce the deflection considerably

3.3.3

butt strap

strip of solid plate welded, bonded, or bonded and bolted to one side of plate panel to support, stiffen and cover one side of adjacent panel

3.3.4

primary support

main member supporting ends of plates

3.3.5

secondary support

tie between main member supporting sides of plates not supported by an independent stiffening angle or butt strap

3.3.6

curb angle

support fixed to concrete or steelwork (vertical leg up) around perimeter of plate to provide a toe plate

3.3.7

shelf angle

support fixed to concrete or steelwork (vertical leg down) around perimeter of plating

3.3.8

tread support

either a shelf angle section with the tread securely clipped, bolted or welded to it or a flat plate welded to each end of the tread. Each support has holes provided for fixing the tread between stair stringers