

BS 6366:2011+A1:2017



BSI Standards Publication

Specification for studs for rugby football boots



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 96291 2

ICS 97.220.40

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

Committee reference PH/3/11

Drafts for comment 11/30219794 DC; 16/30351028 DC

Publication history

First published October 1983

Second (present) edition September 2011

Amendments issued since publication

Date	Text affected
January 2017	A1. See Foreword.

Contents

Foreword *ii*

1	Scope	1
2	Normative references	1
3	Materials	1
4	Construction and design	1
5	Performance	3
6	Test report	3
7	Marking	4

Annexes

Annex A (normative)	Method of test for risk of causing injury by glancing or raking (abrasion and cutting)	5
Annex B (normative)	Method of test for risk of causing injury by stamping	7
Annex C (normative)	Method of test for impact resistance	10
Annex D (normative)	Method for preparation of replaceable studs for assessment of damage caused by tightening and loosening	13
Annex E (normative)	Methods for preparation of studs for assessment of wear damage	14
Annex F (normative)	Test materials	17

Bibliography **19**

List of figures

Figure 1	– The comparator stud	2
Figure A.1	– Example of skin glancing or raking test	6
Figure B.1	– Example of skin stamping test	8
Figure C.1	– Single pendulum ballistic tester	11
Figure C.2	– Striker/stud contact	12
Figure E.1	– Impact/abrasion test apparatus	15
Figure E.2	– Method B test cycle	17

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 20, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 1 April 2012. It was prepared by Subcommittee PH/3/11, *Protective clothing and equipment for sports*, under the authority of Technical Committee PH/3, *Protective equipment for sports players*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

BS 6366:2011 superseded BS 6366:1983+A2:2001, which has been withdrawn.

BS 6366:2011+A1:2017 supersedes BS 6366:2011, which is withdrawn.

Information about this document

The initial drafting of this British Standard was produced in association with BIS as part of their on-going programme of support for standardization.

BS 6366:2011 was a full revision of the standard, and introduced the following principal changes:

- the scope was widened to encompass a wider range of stud design;
- the skin simulant was discontinued so the test material used for this was updated;
- test procedures were clarified;
- new tests for stamping have been included.

Text introduced or altered by Amendment No. 1 is indicated in the text by tags **A1** **A1**. Minor editorial changes are not tagged. The principal change introduced by Amendment No. 1 is the removal of the second sentence of subclause 4.1.

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.

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.

1 Scope

This British Standard specifies design, dimensions, construction, performance and marking requirements for studs for use in rugby football boots.

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 3643-1:2007, *ISO metric screw threads – Part 1: Principles and basic data*

BS 3643-2:2007, *ISO metric screw threads – Part 2: Specification for selected limits of size*

ISO 6344 (all parts), *Coated abrasives – Grain size analysis*

3 Materials

Materials used in the studs shall be such that they do not give rise to hazards as a result of actions such as abrasion or impacts through wear or through any other form of damage or deterioration (see Clause 5).

NOTE Nylon should not be used; it has been found previously not to be a suitable material due to its propensity for burring.

Materials used in the studs shall be such that the studs conform to the performance requirements in Clause 5.

4 Construction and design

4.1 General

The shape and dimensions of any stud design shall be such that they present no greater risk of injury to another player than the comparator stud (see Figure 1).

 Text deleted. 

The edge profile of the sole unit itself shall be rounded with no sharp edges.

When fitted to the shoe, the stud shall have no external projections on its surface except where the stud has been marked in accordance with Clause 7. In such cases, the embossment details shall be no more than 0.3 mm proud of the surrounding material of the stud.

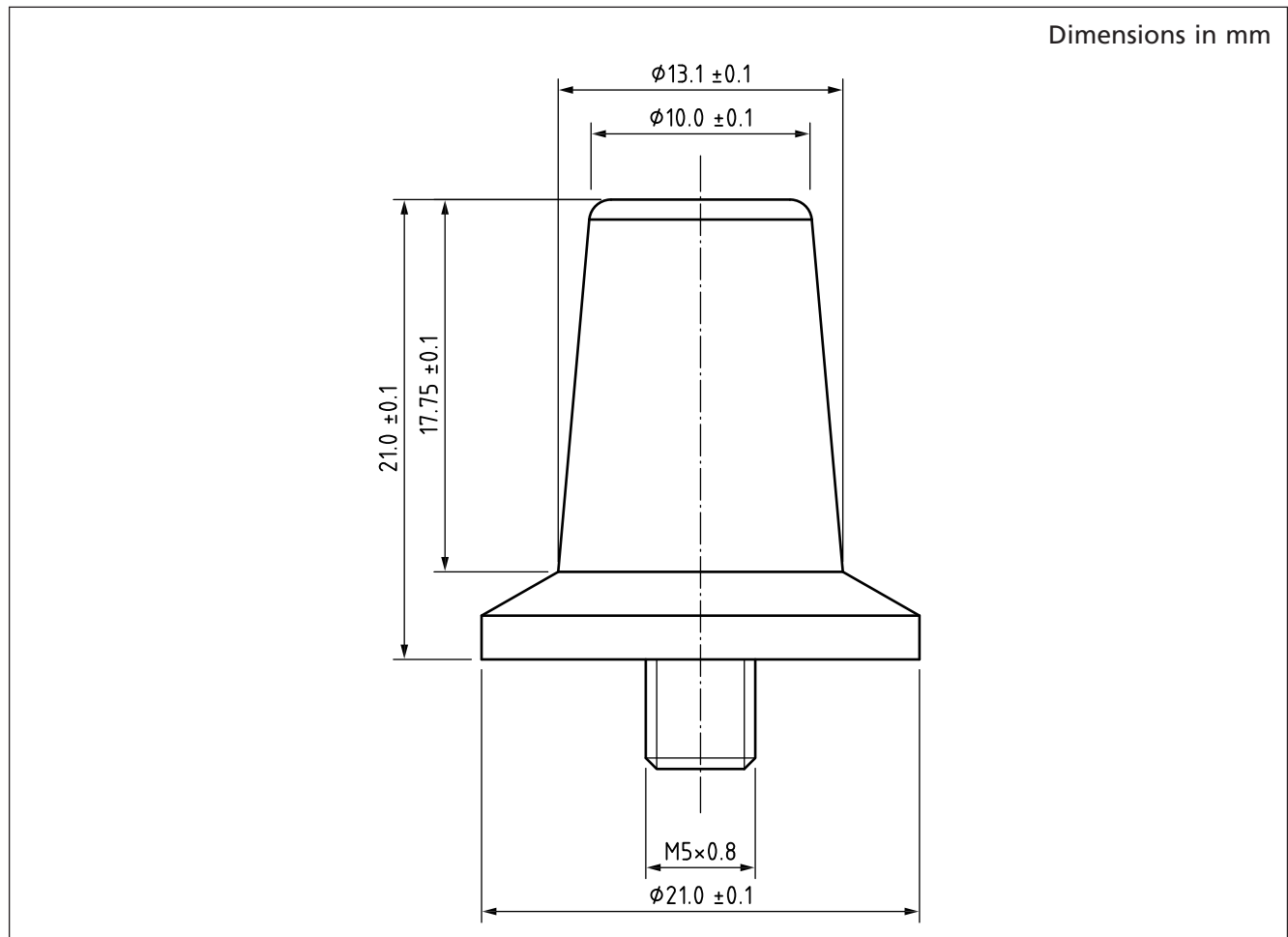
The studs and any attachment shall be capable of withstanding the mechanical demands of service in accordance with Clause 5, including impact and abrasive wear.

No stud shall be greater than 21 mm in length, measured from the base of the stud to its tip.

NOTE Studs might be different lengths on the forepart (shorter) and heel (longer) of a boot.

All edges of studs or cleats shall be filleted with a radius of not less than 1.5 mm with a smooth finish.

Figure 1 The comparator stud



4.2 Replaceable studs

Replaceable studs shall be designed in such a way that they can be fitted by a method that does not damage the stud and thereby introduce a cutting hazard or any other hazard. In the case of studs incorporating a spigot or similar, the following shall apply.

- When the attachment spigot is of a different material from the stud, a clearly visible warning mark shall become evident when the stud has worn down to a length that gives a minimum of 2 mm cover to the end of the spigot.
- Studs shall be designed so that the fixing tool, supplied by the manufacturer, acts only through recesses or flutes on the flanks of the studs or on flats on the integral washer at the base.

If the attachment spigot is made of metal, the thread shall be either M5 or M7 in accordance with BS 3643-1:2007 and BS 3643-2:2007.

NOTE If the attachment spigot is not made of metal, a method of fitting other than by an M5 or M7 thread may be used.

If the method of attachment is other than by the use of an attachment spigot with an M5 or M7 thread, marking shall include the information specified in Clause 7.

- Any flutes or other recesses for the fixing tool, shall not extend nearer to the tip of the stud than the clearly visible warning mark.

4.3 Comparator stud

A stud manufactured from Aluminium 6082 in accordance with the dimensions given in Figure 1 shall be used as a comparator stud that performs acceptably in the tests referred to in 5.1.1, 5.1.2 and 5.2.3.

5 Performance

5.1 Skin damage assessment

5.1.1 Skin damage assessment caused by glancing or raking (abrasion and cutting)

When tested in accordance with Annex A, each stud shall cause no more damage than that caused by the comparator stud (see 4.3).

5.1.2 Skin damage assessment caused through stamping actions

When tested in accordance with Annex B, each stud shall cause no more damage than that caused by the comparator stud (see 4.3).

5.2 Stud damage assessment

5.2.1 Stud damage assessment caused by impact loads

When tested in accordance with Annex C, with impact energy up to and including 8 J, each of the three studs tested shall:

- a) remain secured to the attachment spigot;
- b) not disintegrate or completely split;
- c) not show a fracture in the attachment spigot.

If the impact of 8 J causes fine hairline splits or cracks, the test shall be continued in increasing energy steps of 0.5 J. The stud shall remain secured to the attachment spigot and not disintegrate or completely split at impacts of up to 12 J.

5.2.2 Stud damage assessment caused by tightening and loosening

After testing in accordance with Annex D, studs shall be assessed visibly for any signs of damage or wear, which might cause an increased risk of injury to other players, caused by repeated tightening and loosening. Where any such damage occurs, studs shall be tested in accordance with Annex A and Annex B to meet the performance requirements in 5.1.1 and 5.1.2.

5.2.3 Stud damage assessment caused by wear simulation

After testing in accordance with Annex E, studs shall be assessed visibly for any signs of damage or wear, which might cause an increased risk of injury to other players, caused by the replication of roughening processes expected to be experienced in normal usage. Where any such damage occurs, studs shall be tested in accordance with Annex A and Annex B to meet the performance requirements in 5.1.1 and 5.1.2.

6 Test report

A report containing the following information shall be recorded:

- a) identification of the studs, including source, date of receipt and general description;
- b) the method used by reference to this standard;

- c) a statement indicating conformity or nonconformity to this standard;
- d) a breakdown of the mechanical testing results as follows;
 - 1) the result of glancing or raking testing as described in **A.5**;
 - 2) the result of stamping testing as described in **B.5**;
 - 3) the result of impact testing as described in **C.5**;
 - 4) a description of any damage to studs caused by tightening and loosening as described in **D.6** and any affect it had on the resulting test;
 - 5) a description of any damage to studs caused by wear generation as described in **E.2.3**, **E.3.1.5** or **E.3.2.5** and any affect it had on the resulting test;
- e) if relevant, any deviations from the method specified in this standard;
- f) any unusual features observed during these tests;
- g) date of testing;
- h) identification of the laboratory or test house carrying out these tests.

7 Marking

The immediate packaging for the studs shall be marked with the following information:

- a) the name, trademark or other means of identification of the manufacturer;
- b) the number and date of this standard (i.e. BS 6366:2011)¹⁾;
- c) the words "Use only the tool supplied to fit or remove studs";
- d) an explanation of the method used to operate the visible warning mark if applicable;
- e) if the method of attachment is other than by the use of an attachment spigot with an M5 or M7 thread (as specified in BS 3643-1 and BS 3643-2), a description of the type and method of attachment.

If a stud is to be marked with an indication of conformity to BS 6366:2011, then it shall be in accordance with **4.1**.

¹⁾ Marking BS 6366:2011 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 solely the claimant's responsibility. Such a declaration is not to be confused with third-party certification of conformity.