

Metric rivets for the attachment of friction linings —

Part 1: Specification for semi-tubular rivets

ICS 21.060.40

Confirmed January 2010

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee FME/6, Rivets, upon which the following bodies were represented:

- British Friction Materials Council
- British Industrial Fasteners' Federation
- British Steel Industry (Wire Section)
- Institution of Structural Engineers
- Ministry of Defence
- National Association of Fastener Stockholders
- Society of Motor Manufacturers and Traders Ltd.

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 May 1996

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The following BSI references relate to the work on this standard:
Committee reference FME/6
Draft for comment 95/707477 DC

ISBN 0 580 25593 X

Amendments issued since publication

Amd. No.	Date	Comments

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Foreword

This Part of BS 7855 has been prepared by Technical Committee FME/6. It specifies requirements to be met by semi-tubular rivets for use in the assembly of friction linings and support components for automotive and industrial use.

Recommendations are included for associated components (both new and reconditioned) as well as for the assembled rivet condition and dimensions. The component sizes and tolerances recommended take into account both the need for adequate friction material clearance to avoid assembly damage and the effect of geometric positional tolerances in multi-hole components.

The recommendations made for the form and condition of the rivet clench are to ensure that the friction lining and support component are held firmly in contact after assembly with an adequate grip on each item.

Problems encountered in the past have, in many instances, been caused by either an incorrect relationship of the rivet/friction lining/support component clearances or an inadequate rivet clench, the most dangerous aspect being the uncontrolled enlargement of support component rivet holes when friction linings are replaced. A combination of these deficiencies is likely to lead to early assembly failure and break-up of the friction lining, with serious consequences for operational safety.

The recommendations contained in Annex A–Annex C should help to minimize the potential problems associated with the inadequate control of either the dimensions of friction linings and support components being used, or the assembly technique employed when manufacturing or reconditioning friction lining assemblies.

BS 3575:1963 which specifies rivets for the attachment of friction linings (inch sizes) has been declared obsolescent and its use for new designs is not recommended.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their 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 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 7855 specifies the dimensions and materials for semi-tubular rivets with nominal diameters from 3 mm up to and including 10 mm for the attachment of friction linings to support components for use in automotive or industrial applications. Rivets conforming to this standard are suitable for automatic or hand fed riveting systems.

Annex A gives recommendations for the dimensional tolerances that are applicable to the rivet holes in friction linings and support components assembled together with rivets conforming to this standard.

Annex B gives recommendations for the rivet clench conditions and dimensions that are applicable to installed rivets.

Annex C gives recommendations that should be applied when riveted friction lining assemblies are reconditioned for further service use.

2 Normative references

This Part of BS 7855 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

3 Definitions and symbols

3.1 Definitions

For the purpose of this Part of BS 7855, the following definitions apply.

3.1.1

head

upset portion of the rivet

3.1.2

radius

part of the rivet that joins the shank to the head smoothly

3.1.3

shank

part of the rivet that extends from the underside of the head to the end of the rivet; its cross-section is essentially round

3.1.4

tube

hollow section of the rivet shank at the opposite end to the head. The internal end of the tube is either flat or countersunk in form

3.1.5

length

dimension measured from the top of the head to the end of the rivet

3.1.6

plain condition

condition of the rivet after the removal of any lubricants used in the forming process

3.1.7

support components

component onto which the friction lining is assembled in order to apply operational forces between the friction lining and opposing component

3.2 Symbols

c	head thickness
d_i	clench diameter
d_k	head diameter
d_s	shank diameter
d_y	inside diameter of tube
l	length
l_x	maximum allowable depth of the point in countersunk tubes
l_y	depth of parallel part of tube
r	radius

4 Dimensions

The dimensions of semi-tubular friction lining rivets shall be as given in Table 1 and Figure 1.

5 Characteristics

The specifications for materials of semi-tubular friction lining rivets shall be as given in Table 2.

Rivets shall be supplied in the plain condition.

NOTE A variety of finishes are available for special applications by agreement between the purchaser and manufacturer. These are outside the scope of this standard.

Acceptance criteria shall be as given in BS 6587:1985 and ISO 3269:1988.