

# Blind rivets with break mandrel —

## Part 1: Specification for closed end blind rivets

# Committees responsible for this British Standard

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

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## Foreword

This Part of BS 7349 has been prepared under the direction of the General Mechanical Engineering Standards Policy Committee, to provide a series of metric break mandrel closed end blind rivets for general engineering purposes.

BS 7349 is published in two Parts:

- *Part 1: Specification for closed end blind rivets;*
- *Part 2: Specification for open end blind rivets.*

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 10, 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 7349 specifies the dimensions, materials and performance requirements for break mandrel closed end blind rivets with nominal diameters from 2.4 mm up to and including 6.4 mm and with protruding and countersunk head styles.

Annex A describes the methods of test to determine the shear and tensile loads.

Annex B and Annex C contain recommendations for the selection and application of blind rivets.

## 2 Normative references

This Part of BS 7349 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 7349 only when incorporated in it by updating or revision.

## 3 Definitions

For the purposes of this Part of BS 7349 the following definitions apply.

### 3.1

#### **blind rivet with break mandrel**

a mechanical fastener capable of joining workpieces together from one side of the assembly only

**NOTE** The break mandrel which is pre-assembled to the rivet body, when gripped and pulled by a setting tool, causes an expansion of the body on the blind side of the workpieces to be joined. It incorporates a predetermined break point.

### 3.2

#### **closed end blind rivet**

a blind rivet having an end which is solid and remains closed on the blind side after setting

### 3.3

#### **break stem mandrel**

a mandrel which on setting a rivet, breaks in such a way that the head of the mandrel and a small portion of the length remains within the set rivet body

### 3.4

#### **long break mandrel**

a mandrel which on setting a rivet, breaks in such a way that the portion retained in the rivet protrudes from the top of the rivet head

### 3.5

#### **rivet length**

the distance, measured parallel to the axis of the rivet, from the largest diameter of the bearing surface of the head to the extreme end of the rivet body

### 3.6

#### **blind side clearance**

the minimum distance measured normal to the surface of the workpiece material most remote from the head of the rivet to the extreme end of the rivet (see  $l_a$  in Annex B)

### 3.7

#### **grip range**

the maximum and minimum total thickness of workpieces to be joined by a particular type and length of blind rivet

### 3.8

#### **tensile load**

the load which the rivet is capable of withstanding prior to failure under test conditions

### 3.9

#### **shear load**

the load which the rivet is capable of withstanding prior to failure under test conditions

### 3.10

#### **hole size**

the diameter of the hole in the workpieces to be joined (see Annex C)

### 3.11

#### **hole filling**

the ability of a blind rivet body to be expanded radially to fill the workpiece holes during setting

### 3.12

#### **setting**

the operation of inserting the rivet into the workpiece and causing its actuation so that an assembly is made

### 3.13

#### **setting tool**

a specialized piece of equipment used to set blind rivets which may be powered manually, pneumatically, hydraulically, electrically, or by a combination of power sources and may be portable or in fixed positions

## 4 Materials

Rivet bodies and mandrels shall be manufactured from materials listed in Table 1. The materials shall be identified by the designation of the appropriate combination of rivet body/mandrel material required (see clause 9).