

Specification for

Steel dowel pins —

**Part 3: Parallel and taper types having
screw threads for extraction purposes.
Metric series**

UDC 621.882.219.4

Co-operating organizations

The Mechanical Engineering Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Associated Offices Technical Committee	Engineering Equipment Users' Association
Association of Consulting Engineers	Gas Council
Association of Hydraulic Equipment Manufacturers Ltd	Institution of Civil Engineers
Association of Mining Electrical and Mechanical Engineers	Institution of Gas Engineers
British Compressed Air Society	Institution of Heating and Ventilating Engineers
British Electrical and Allied Manufacturers' Association	Institution of Mechanical Engineers
British Gear Manufacturers' Association	Institution of Mechanical Engineers (Automobile Division)
British Internal Combustion Engine Manufacturers' Association*	Institution of Plant Engineers
British Mechanical Engineering Confederation	Institution of Production Engineers
British Pump Manufacturers' Association	London Transport Executive
British Steel Corporation	Machine Tool Trades Association
British Steel Industry	Ministry of Defence
Crown Agents for Oversea Governments and Administrations	Ministry of Defence, Army Department
Department of Employment	National Coal Board
Department of the Environment	National Physical Laboratory (Department of Trade and Industry)
Department of Trade and Industry	Process Plant Association
Department of Trade and Industry — National Engineering Laboratory	Railway Industry Association of Great Britain
Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales	Royal Institute of British Architects
	Telecommunications Engineering Manufacturing Association

The industrial organization marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard.

Cotter Pin Association	Society of Motor Manufacturers and Traders
Institute of Iron and Steel Wire Manufacturers	

This British Standard, having been approved by the Mechanical Engineering Industry Standards Committee, was published under the authority of the Executive Board on 15 May 1973

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Foreword

Obsolescent (by Amendment No. 2)

The need for the pins covered by this British Standard has been reviewed and it has been decided that, in the interests of rationalization, they should be regarded as obsolescent. Their use for new designs is not therefore recommended. The standard will be withdrawn in due course.

This part of this British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee and is intended to form a companion volume to Parts 1 and 2 of BS 1804, both of which have already been published.

In order to avoid confusion about the meaning of the word dowel pin, the term “precision ground dowel pin” has been defined. Dowel pins are normally used to locate two or more components to a required degree of accuracy, and only one grade has been standardized.

Attention is called specially to the danger which may arise when fitting parallel dowel pins into blind holes. A suggestion for preventing this danger is made in the appendix.

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 British Standard specifies requirements for cylindrical parallel and taper steel dowel pins, having either external or internal threads for extraction purposes. The dowel pins are generally intended for use where accurate location of components relative to each other is required.

Only one grade of accuracy is provided as follows:

Grade 1. Precision ground parallel and taper dowel pins.

The following types of dowel pin are included.

Type A. Parallel dowel pin with external thread

Type B. Parallel dowel pin with internal thread

Type C. Taper dowel pin with external thread

Type D. Taper dowel pin with internal thread

NOTE The titles of the British Standards 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

dowel pin

the generic term which refers to the types of locating pins as defined in 2.2 and 2.3 below

2.2

precision ground parallel dowel pin

a grade 1 steel dowel pin having a ground finish and conforming to the total diametrical tolerance given in Table 1 and Table 2

2.3

precision ground taper dowel pin

a grade 1 steel dowel pin having a ground finish, and conforming to the tolerances given in Table 3 and Table 4

3 Materials

Dowel pins shall be manufactured from steels as follows.

Types A and B steel dowel pins shall be manufactured from 080M15 steel in accordance with BS 970-1 or from steels having equivalent mechanical properties.

Types C and D steel dowel pins shall be manufactured from 220M07 steel in accordance with BS 970 or from steels having equivalent mechanical properties.

Alternatively dowel pins of all types may be manufactured from steel in accordance with BS 1407, at the option of the purchaser, the choice being indicated at the time of ordering.

4 Hardness

The dowel pins shall be supplied in accordance with the following requirements.

Types A and B steel dowel pins manufactured from 080M15 steel in accordance with BS 970-1 shall be case hardened and heat treated to a minimum surface hardness of 750 HV 30 when tested in accordance with BS 427.

Dowel pins of these types manufactured from steels in accordance with BS 1407 shall have a hardness value within the range 600 HV to 700 HV30 BS 427 or equivalent.

The values on other hardness scales may be used in accordance with BS 860.

The threaded portions shall not be case hardened, so that after heat treatment they remain soft.

Types C and D steel dowel pins shall not be heat treated and shall therefore be left soft.

5 Dowel pins in blind holes

Dowel pins of Types A and B may be supplied with provision for the release of air in accordance with Appendix A.

6 Dimensions

Dowel pins shall, according to the types required, be manufactured to conform to the dimensions and tolerances given in Figure 1 and Figure 2, and Table 1 to Table 4.

Screw threads of the dowel pins shall be in accordance with BS 3643-1 and BS 3643-2, coarse pitch series, and shall be for Types A and C to Class 6g, and for Types B and D to Class 6H.

7 Surface texture

When assessed in accordance with BS 1134, the surface texture of the fitting cylindrical surfaces for Types A and B shall not be greater than 0.4 μm R_a and for Types C and D not greater than 0.8 μm R_a . Other surfaces shall have a surface texture not greater than 1.6 μm R_a .

8 Anti-corrosion treatment

Dowel pins shall be given suitable anti-corrosion treatment in accordance with BS 1133, Section 6.

9 Designation

Dowel pins complying with the requirements of this standard shall be designated by reference to the type, nominal diameter, length and number of this standard e.g., dowel pins of Type A, nominal diameter 10, length 50 shall be designated:

Dowel pin A10 × 50 BS 1804.