

Fences —

Part 5: Specification for close boarded fences

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- British Precast Concrete Federation Ltd.
- British Steel Industry (Wire Section)
- British Timber Merchants' Association
- British Wire Netting Association
- British Wood Preserving Association
- Cement and Concrete Association
- Concrete Society
- Country Landowners' Association
- Department of Agriculture and Fisheries for Scotland
- Department of the Environment (Property Services Agency)
- Department of the Environment (Building Research Establishment, Princes Risborough Laboratory)
- Department of Transport (Highways)
- Fencing Contractors' Association
- Forestry Commission
- Home Timber Merchants' Association of Scotland
- Institute of Clerks of Works of Great Britain Inc.
- Institute of Leisure and Amenity Management
- Institution of Civil Engineers
- Landscape Institute
- Ministry of Agriculture, Fisheries and Food
- National Council of Building Materials' Producers
- National Farmers' Union
- Royal Institution of Chartered Surveyors
- Society of Chain Link Fencing Manufacturers
- Society of Chestnut Fencing Manufacturers
- Timber Growers United Kingdom
- Timber Research and Development Association
- Timber Trade Federation
- Wire Products Association

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Consumer Standards Advisory Committee of BSI
- County Surveyors' Society
- Fencing Industry Association

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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
Section 1. General	
1.1 Scope	1
1.2 Definitions	1
1.3 Dimensions and general characteristics	1
Section 2. Materials	
2.1 Wire	3
2.2 Concrete components	3
2.3 Timber components	3
2.4 Fittings	7
2.5 Concrete surrounding bases of posts and struts	8
Section 3. Erection	
3.1 Level	9
3.2 Posts	9
3.3 Infill	9
3.4 Renovation of damaged areas of hot dip galvanized zinc coating	10
Appendix A Concrete components	11
Appendix B Timber components	12
Appendix C Suggested sampling method for limiting characteristics of timber	20
Appendix D Specifying a close boarded fence	20
Figure 1 — Elevations of morticed concrete posts	5
Figure 2 — Elevations of recessed concrete posts	6
Figure 3 — Details of housings for arris rails in recessed concrete posts	7
Figure 4 — Knot projection and face knots	16
Figure 5 — Measurement of wane	17
Figure 6 — Measurement of checks and end splits	18
Figure 7 — Measurement of bow, spring, twist and cup	19
Figure 8 — Measurement of slope of grain	19
Table 1 — General characteristics of close boarded fences	2
Table 2 — Characteristics and defects of softwoods and hardwoods	15
Table 3 — Single sampling plan	20
Publications referred to	Inside back cover

Foreword

This British Standard has been prepared under the direction of the Road Engineering Standards Committee. It is a revision of BS 1722-5:1972, which is withdrawn.

BS 1722 is published in separate Parts as follows:

- *Part 1: Specification for chain link fences;*
- *Part 2: Specification for rectangular wire mesh and hexagonal wire netting fences;*
- *Part 3: Specification for strained wire fences;*
- *Part 4: Specification for cleft chestnut pale fences;*
- *Part 5: Specification for close boarded fences;*
- *Part 6: Specification for wooden palisade fences;*
- *Part 7: Specification for wooden post and rail fences;*
- *Part 8: Specification for mild steel (low carbon steel) continuous bar fences;*
- *Part 9: Specification for mild steel (low carbon steel) fences with round or square verticals and flat posts and horizontals;*
- *Part 10: Specification for anti-intruder fences in chain link and welded mesh;*
- *Part 11: Specification for woven wood and lap boarded panel fences;*
- *Part 12: Specification for steel palisade fences;*
- *Part 13: Specification for wire mesh fencing for tennis court surrounds.*

The various Parts specify requirements for the types of fence that are considered suitable for standardization. It should be noted that no attempt has been made to standardize fences or gates of a purely decorative nature, or to suit special requirements, or to specify requirements for “patent” proprietary fencing systems. It is recommended that the structure of such fences should comply with those parts of this Part of BS 1722 that are applicable.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

The purpose of this standard is to establish minimum requirements for materials and workmanship for the more common types of fence in order to ensure satisfactory service for the purchaser, and to assist manufacturers and erecting contractors by eliminating unnecessary minor variations in the demands of purchasers. It specifies requirements for the components that make up a fence and the way in which the fence needs to be constructed. Throughout this standard there are requirements for sizes of components, together with the permissible tolerances on size. These are minimum requirements and it will normally be acceptable to use larger sizes, except where it would otherwise adversely affect the fit of components or where replacement parts need to match up with those already present.

The choice of a fence is affected by factors such as the intended purpose of the fence, the desired service life, aesthetic considerations and the availability of components. The specifier of the fence will know its intended purpose and by reference to Table 1 a suitable choice can be made. This then gives those erecting the fence the basic characteristics that need to be provided. This standard includes requirements for protective treatments. However, an important aspect of providing an extended service life is the maintenance of the fence after its erection; this is outside the scope of this standard. Premature failure can be avoided by taking care not to overstrain coated wire or to damage protective treatments during installation.

Ground conditions may indicate that a variation in the length of a post or strut, or of the depth to which it should be set, is desirable. The posts and struts and setting depths specified in this standard are intended for use in normal ground but if special conditions exist that warrant a change in the specification, e.g. ground that is softer or firmer than usual, such a change needs to be agreed with the specifier, as for other variations.

To assist those specifying and/or providing a fence, appendix D provides guidance on the more important details, which often take the form of selected options, that need to be specified at the time of ordering a fence.

Appendix C contains a suggested sampling procedure. These are new features of the standard.

This revision has retained the method of allocating a reference code to each type of fence indicating its height, the type of infill used, and the size of and material used for the posts. These type references are given in full in Table 1. The first letter indicates the infill, the second letter indicates the material of the post, the third letter shows how the main rails are attached to the posts and the numbers give an indication of the height of the fence. For the sake of uniformity the quoted heights are those of the main infill material (including any gravel board) and exclude any ground clearance at the base and any cappings fitted to the infill.

Designations of bolt size are in accordance with BS 4190.

The proof test for concrete posts has been deleted as experience has shown that there were technical problems associated with the application and interpretation of the test. Cube tests of concrete strength are now required and the frequency of testing is specified to ensure that regular quality checks are made.

Since the publication of the previous edition of this standard BS 5589 has been published, and the timber appendix in this standard has been revised to include the recommendations of BS 5589.

In appendix B details have been included of methods for measuring defects in timber, and in particular the measurement of knots. In the case of the structural members of a fence, including posts and main rails, the principle of knot area ratio (K.A.R.) has been introduced as a means of determining, by visual assessment of the proportion of the cross section occupied by knots, the maximum permissible knots for fencing grade timber. Although the application of the method of knot measurement is new, in so far as timber fencing components are concerned, it has been applied to the grading of structural timber for more than a decade. K.A.R. is a firmly established and widely accepted method of knot assessment which in itself is a critical part of all timber grading. The adoption of K.A.R. as part of grading timber for fencing is a logical move in unifying timber grading rules where the question of strength is involved.

Where a fence comprises timber components that are not structural members, their assessment can be by a simple measurement system, i.e. surface measurement, and this is also described in appendix B.

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 to iv, pages 1 to 22, 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.

Section 1. General

1.1 Scope

This Part of BS 1722 specifies requirements for close boarded fences, including requirements for the erection of the fencing at the specified location.

This standard is divided into sections that specify separate requirements for the material components for fences (see section 2) and the erection of the fences (see section 3).

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

1.2 Definitions

For the purposes of this Part of BS 1722, the timber definitions given in BS 6100-4.1 shall apply.

NOTE For convenience, the relevant definitions have been repeated in **B.2**.

1.3 Dimensions and general characteristics

The dimensions of close boarded fences shall be as given in Table 1.

Table 1 — General characteristics of close boarded fences

Fence types						Height of fence	Applicability	No. of main rails	Concrete posts ^b				Timber posts	
Oak pale fences ^a			Fences in other timbers						Recessed		Morticed		Length	Section
With concrete posts		With oak posts ^d	With concrete posts		With timber posts ^d				Length	Section	Length	Section		
Recessed ^c	Morticed ^d		Recessed ^c	Morticed ^d										
PCR 105	PCM 105	PW 105	BCR 105	BCM 105	BW 105	m 1.05	Housing, parks, (inner fences)	2					m 1.60	mm All 140 × 115
PCR 120	PCM 120	PW 120	BCR 120	BCM 120	BW 120	1.20	General purposes	2	1.75	at base tapering to 100 × 115	1.90	1.80 ^f	100 × 125	
PCR 150	PCM 150	PW 150	BCR 150	BCM 150	BW 150	1.50	General purposes	3	2.20		2.35	2.25 ^f	100 × 125	
PCR 165	PCM 165	PW 165	BCR 165	BCM 165	BE 165	1.65	Housing	3	2.35		2.50	2.40 ^f	100 × 125	
PCR 180A	PCM 180A	PW 180A	BCR 180A	BCM 180A	BW 180A	1.80	Housing	3	2.50		2.65	2.55 ^f	100 × 125	
PCR 180B ^f	PCM 180B ^{fi}	PW 180B ^{fgi}	BCR 180B ^f	BCM 180B ^{fi}	BW 180B ^{fgi}	1.80	Parks, railways, commercial and public buildings	3	2.50		2.65		2.65 ^h	100 × 125

^a All timber components shall be of oak.

^b See Figure 1 and Figure 2 for further details.

^c Recessed posts are used without cappings or gravel boards.

^d Morticed posts may be used with or without gravel boards or cappings.

^e Excluding the projection, if any, of the heads of the posts above the tops of the pales when fixed.

^f Separate extension arms and barbed wire may be attached.

^g A single line of barbed wire may be directly attached to extended timber posts (see 3.3.5.1).

^h If a single line of barbed wire is specified for direct attachment to the posts (see 3.3.5.1) the post length shall be at least 2.70 m.

ⁱ A capping is to be provided.

Section 2. Materials

2.1 Wire

2.1.1 General

All wire shall comply with BS 4102.

2.1.2 Tying wire

Tying wire shall be zinc coated low carbon steel (mild steel) wire and shall have a nominal wire diameter of 2 mm.

2.1.3 Barbed wire

Barbed wire shall be zinc coated and shall be made from either low carbon steel (mild steel) wire or high tensile steel wire.

2.2 Concrete components

2.2.1 General

2.2.1.1 Material. Concrete components shall be of steel reinforced concrete complying with appendix A.

2.2.1.2 Tolerances on size. The following permissible deviations shall apply to the specified size of concrete components when determining the actual sizes.

- a) A demoulding draw allowance of up to 4 mm on each of two opposing sides.
- b) An allowance on the base dimensions of tapered posts resulting from the use of a mould having the base dimensions given in Table 1 that has been shortened by means of a stopping-off plate located not more than 300 mm from the base of the mould.
- c) Additional allowances on size of:
 - 1) length of posts: $^{+50}_{-25}$ mm;
 - 2) length of gravel boards: ± 6 mm;
 - 3) cross section of posts and gravel boards: $^{+6}_{-4}$ mm.

NOTE The cross section is measured about the centre lines.

2.2.1.3 General constructional details. The long arrises formed in the mould shall either be rounded or have all sharp edges removed. The heads of recessed posts shall be back weathered. The heads of morticed posts shall be either weathered or half rounded in order to prevent lodgement of water.

NOTE Figure 1 shows the preferred form for the head of morticed posts.

Holes for bolts shall allow the bolt to be freely inserted. All holes shall be free from obstruction and accurately positioned.

Posts for use with barbed wire extension arms shall be twice holed for M8 bolts for the attachment of the arms.

2.2.2 Posts

The dimensions of morticed concrete posts shall be as shown in Figure 1 and the dimensions of recessed concrete posts shall be as shown in Figure 2 and Figure 3. Posts shall be reinforced with four 8 mm diameter steel reinforcing bars, except that if steel having a characteristic strength greater than 250 N/mm^2 is used it shall be permissible for the cross section of the bars to be proportionately reduced.

2.2.3 Gravel boards

Concrete gravel boards shall have a section of $150 \text{ mm} \times 50 \text{ mm}$. They shall be provided with a slot at each end for one M8 bolt. They shall be reinforced as necessary to give strength in handling.

2.3 Timber components

2.3.1 General

2.3.1.1 Material. Timber components shall be of sawn timber complying with appendix B. All timber components of oak pale fencing shall be of oak.

NOTE Appendix C gives a suggested method of sampling for fence timber, for use when specified.

2.3.1.2 Tolerances on size. The following permissible deviations shall apply to the specified size of timber components when determining the actual size.

- a) The sizes specified in this standard all relate to timber with a moisture content of 28 %, determined in accordance with BS 5589. When timber has a lower moisture content than this an additional allowance (reduction) on size of 1 % for every 5 % of moisture content below 28 % shall be permitted.
- b) Additional deviations on size of:
 - 1) length of posts: ± 50 mm;
 - 2) length of pales: $^{+2}_{-5}$ mm;
 - 3) thickness of feather edged boards: ± 2 mm;
 - 4) other dimensions:
 - i) specified size, under 75 mm: ± 3 mm;
 - ii) specified size, 75 mm and over: ± 6 mm.

2.3.2 Posts

The dimensions of timber fence posts shall be as given in Table 1. Fence posts shall have the same cross section throughout their length and shall be cut square across at their base. The tops of the posts shall be weathered to prevent the lodgement of water.