
British Standard

Fences

Part 6. Specification for wooden palisade fences

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Foreword

This British Standard has been prepared under the direction of the Road Engineering Standards Committee. It is a revision of BS 1722 : Part 6 : 1972, which is withdrawn.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 fences 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 fences 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.

This Part of BS 1722 describes fences incorporating main rails and palisades of triangular or rectangular cross section.

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 damage protective treatments during installation. Occasionally aesthetics are important, and where this is so the specifier needs to provide suitable guidance to those providing the fence.

Ground condition may indicate that a variation in the length of a post, or of the depth to which it should be set, is desirable. The posts 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 gives guidance on the more important details, which often take the form of selected options, which 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 two letters indicate the infill, the third letter indicates the material of the post 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 and exclude any ground clearance at the base.

Designations of bolt size are in accordance with BS 4190.

The proof test for concrete posts has been deleted as experience had shown that there were technical problems associated with the application and interpretation of the tests. Cube tests of concrete strength are now required and the frequency testing is specified to ensure 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, knot assessment can be by a simple measurement system, surface measurement, and this is also described in appendix B.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Section one. General

1.1 Scope

This Part of BS 1722 specifies requirements for the dimensions, materials, and erection of wooden palisade fences with main rails and palisades of rectangular or triangular cross section.

This Part of BS 1722 is divided into sections that specify separate requirements for the material components for fences (see section two) and the erection of fences (see section three).

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 : Section 4.1 apply.

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

1.3 Dimensions and general characteristics

The dimensions of wooden palisade fences shall be as given in table 1.

Table 1. General characteristics of wooden palisade fences								
Fence type		Height of fence	Suitable uses	No. of rails	Concrete posts*		Timber posts	
With concrete posts	With timber posts				Length	Cross section	Length	Cross section
WPC 105	WPW 105	m 1.05	Housing, parks, (inner fences)	2	m 1.60	All 140 × 115 at base tapering to 100 × 115	m 1.65	mm 100 × 100
WPC 120	WPW 120	1.20	General purposes	2	1.75		1.80	100 × 125
WPC 150	WPW 150	1.50	General purposes	3	2.20		2.25	
WPC 165	WPW 165	1.65	Housing	3	2.35		2.40	
WPC 180A	WPW 180A	1.80	Housing	3	2.50		2.55	
WPC 180B†	WPW 180B†‡	1.80	Parks, railways, commercial and public buildings	3	2.50		2.55 §	100 × 150

*See figures 1 and 2 for further details.

†Separate extension arms and barbed wire may be attached.

‡A single line of barbed wire may be directly attached to extended timber posts (see 3.3.3.1).

§ If a single line of barbed wire is specified for direct attachment to the post (see 3.3.3.1) the post length shall be at least 2.70 m.

Section two. 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 2.0 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 $\begin{smallmatrix} +50 \\ -25 \end{smallmatrix}$ mm;
 - (2) cross section of posts $\begin{smallmatrix} +6 \\ -4 \end{smallmatrix}$ 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 shall have all sharp edges removed. The heads of posts shall be back weathered.

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 holed twice for M8 bolts for the attachment of extension arms (see also 2.4.2).

2.2.2 Posts

The dimensions of concrete posts shall be as shown in figures 1 and 2. Posts shall be reinforced with four 8 mm diameter steel reinforcing bars, except that if steel having a characteristic strength greater than 250 N/mm² is used it shall be permissible for the cross section of the bars to be proportionately reduced.

2.3 Timber components

2.3.1 General

2.3.1.1 Material. Timber components shall be of sawn timber complying with appendix B.

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 palisades: $\begin{smallmatrix} +2 \\ -5 \end{smallmatrix}$ mm;
 - (3) other dimensions,
 - specified size, under 75 mm: ± 3 mm.
 - 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.

Timber posts shall have 65 mm $\times$ 25 mm mortices with their front edges either 25 mm from the face of the post (when rectangular section palisades are used) or 40 mm from the face of the post (when triangular section palisades are used), and positioned so that, when fixed, the centre of the bottom arris rail is approximately 225 mm from the bottom of the palisades, the centre of the top rail is approximately 225 mm from the top of the longest palisades, and the middle rail, if any, is central between the top and bottom rails.

Posts for use with barbed wire extension arms shall be holed twice for the attachment of the arms, the tops of posts for use with a single line of barbed wire shall be extended for direct attachment of wire as specified in 3.3.3.1.

2.3.3 Rails

2.3.3.1 Arris rails. Timber triangular arris rails shall be cut from timber of 75 mm $\times$ 75 mm cross section, except that for fences of types having a suffix B in the designation, arris rails shall be cut from timber of 87 mm $\times$ 87 mm cross section.