

Fences —

Part 1: Specification for chain link fences

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- Association of Security Consultants
- British Precast Concrete Federation Ltd.
- County Surveyors' Society
- European Fencing Industry Association
- Fencing Contractors' Association
- Forestry Commission
- National Council of Building Material Producers
- National Fencing Training Authority
- Security Facilities Executive
- Society of Chain Link Fencing Manufacturers
- UK Steel Association
- United Kingdom Forest Products Association

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Foreword

This part of BS 1722 has been prepared by Technical Committee B/201/3, Fences — Wire. It is a revision of BS 1722-1:1986, which is withdrawn.

BS 1722 is published in parts as follows:

- *Part 1: Specification for chain link fences;*
- *Part 2: Specifications for rectangular wire mesh and hexagonal wire netting fences (in course of revision);*
- *Part 3: Specification for strained wire fences (in course of revision);*
- *Part 4: Specification for cleft chestnut pale fences;*
- *Part 5: Specification for close-boarded fences;*
- *Part 6: Specification for wooden palisade fences (in course of revision and combination with Part 5);*
- *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 (in course of revision);*
- *Part 13: Specification for wire mesh fencing for tennis court surrounds;*
- *Part 14: Specification for open mesh steel panel fences;*
- *Part 16: Specification for organic powder coatings to be used as a plastics finish to components and mesh.*

The various parts specify requirements for the types of fence 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 those suited to special requirements; nor to specify requirements for “patent” proprietary fencing systems. It is recommended, however, that the structure of these fences or gates should conform to the clauses of this part of BS 1722 applicable.

The purpose of this standard is to establish minimum requirements for materials and workmanship of 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 should 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 should normally be acceptable to use larger sizes, except if this could adversely affect the fitting of components, or if replacement parts are required to match with those already present. Choosing a fence is affected by factors such as intended purpose, service life desired, aesthetic considerations, and availability of components. The specifier can match a suitable choice of fence to its intended purpose by reference to Tables 1 and 2, and also inform those erecting the fence of the basic characteristics required.

This standard includes requirements for protective treatments. However, maintenance requirements for the fence after erection are outside the scope of this standard. Premature failure of the fence can be avoided by taking care not to overstrain coated wire nor to damage protective treatments during installation.

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

To assist suppliers and purchasers of chain link fences, annex A lists items that should be specified at the time of ordering.

As with BS 1722-1:1986, this revision specifies a method of allocating a reference code to each type of fence, indicating its height, the type and weight of infill, and the materials of the posts and the type of wire coating. These type references are given in Tables 1 and 2. For uniformity the heights given in Tables 1 and 2 are of the main infill material, and exclude any ground clearance at the base, or additional height provided by extension arms for barbed wire. Wire and chain link sizes are selected from BS EN 10223-6. This revision includes a specification for 2.15 m fence, and other minor changes from BS 1722-1:1986, including some changes to requirements for concrete and timber post and strut sizes.

The type of gate specified in this standard is a steel frame gate with chain link infill. For gates for domestic purposes, timber or “wrought iron” gates may be preferred. These types of gate are specified in BS 4092.

This part of this standard specifies requirements for fence materials and their combination and erection. Because a fence is made up of a number of separate components of which the particular features vary, there are a number of combinations available to the user. Annex A provides details of the fence requirements and erection site that should be agreed between the fence supplier and purchaser. However, as conditions vary from site to site, annex A should not be assumed to be exhaustive.

It has been assumed in the drafting of this part of BS 1722 that execution of its provision is entrusted to appropriately qualified and experienced people. Before erection commences, the lead erector should either:

- a) have achieved the appropriate National Vocational Qualification (NVQ) or Scottish Vocational Qualification (SVQ) in fence erection (Level 2) relevant to this part of BS 1722; or
- b) be currently registered for the appropriate NVQ or SVQ in Fence Erection (Level 2) relevant to this part of BS 1722, provided registration has not been in place for more than 5 years from the date of registration without successful assessment having taken place.

A British Standard does not purport to include all necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 17, and a back cover.

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1 Scope

This part of this standard specifies requirements for chain link fences and gates and gateposts for use with chain link fences. The gates specified are steel with a provision for chain link infill or other infill if required by the purchaser.

This part of this standard specifies requirements for fences up to 2.5 m in height with a chain link mesh infill. For other security fences, reference should be made to BS 1722-10, BS 1722-12 and BS 1722-14, and for chain link fences for tennis court surrounds BS 1722-13.

This part of BS 1722 is divided into requirements for the material components for fences and for erection of the fences.

Annex A lists items that should be agreed between the fence supplier and purchaser.

2 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

- BS 4-1:1993, *Structural steel sections — Part 1: Specification for hot-rolled sections*.
- BS 12:1996, *Specification for Portland cement*.
- BS 443:1982, *Specification for testing zinc coatings on steel wire and for quality requirements*.
- BS 729:1971, *Specification for hot dip galvanized coatings on iron and steel articles*.
- BS 882:1992, *Specification for aggregates from natural sources for concrete*.
- BS 1014:1975, *Specification for pigments for Portland cement and Portland cement products*.
- BS 1210:1963, *Specification for wood screws*.
- BS 1722-7:1999, *Fences — Part 7: Specification for wooden post and rail fences*.
- BS 1722-16:1992, *Fences — Part 16: Specification for organic powder coatings to be used as a plastics finish to components and mesh*.
- BS 1881-116:1983, *Testing concrete — Part 116: Method for determination of compressive strength of concrete cubes*.
- BS 3892 (all parts), *Pulverized fuel ash*.
- BS 4027:1996, *Specification for sulfate-resisting Portland cement*.
- BS 4102:1998, *Specification for steel wire for general fencing purposes*.
- BS 4320:1968, *Specification for metal washers for general engineering purposes — Metric series*.
- BS 4449:1997, *Specification for carbon steel bars for the reinforcement of concrete*.
- BS 4482:1985, *Specification for cold reduced steel wire for the reinforcement of concrete*.

BS 4483:1998, *Steel fabric for the reinforcement of concrete*.

BS 4652:1995, *Specification for zinc-rich priming paint (organic media)*.

BS 5075 (all parts), *Concrete admixtures*.

BS 5135:1984, *Specification for arc welding of carbon and carbon manganese steels*.

BS 5193:1991, *Specification for zinc phosphate pigments for paints*.

BS 5589:1989, *Code of practice for preservation of timber*.

BS 6497:1984, *Specification for powder organic coatings for application and stoving to hot-dip galvanized hot-rolled steel sections and preformed steel sheet for windows and associated external architectural purposes, and for the finish on galvanized steel sections and preformed sheet coated with powder organic coatings*.

BS EN 844-9:1997, *Round and sawn timber — Terminology — Part 9: Terms relating to features of sawn timber*.

BS EN 10024:1995, *Hot rolled taper flange I sections — Tolerances on shape and dimensions*.

BS EN 10056-1 (in course of preparation), *Specification for structural steel equal and unequal angles — Part 1: Tolerances* (in course of preparation: supersedes BS 4848-4).

BS EN 10210-1:1994, *Hot finished structural hollow section of non-alloy and fine grain structural steels — Part 1: Technical delivery requirements*.

BS EN 10210-2:1997, *Hot finished structural hollow section of non-alloy and fine grain structural steels — Part 2: Tolerances, dimensions and sectional properties*.

BS EN 10223 (all parts), *Steel wire and wire products for fences*.

BS EN 22063:1994, *Metallic and other inorganic coatings — Thermal spraying — Zinc, aluminium and their alloys*.

3 Definitions

For the purposes of this part of BS 1722, the timber definitions in BS EN 844-9 apply.

4 Dimensions and general characteristics

4.1 Fences

The overall dimensions of chain link fence types shall conform to Tables 1 and 2.

NOTE The general characteristics of a chain link fence with concrete posts, showing a typical layout and illustrating the terminology associated with chain link fences, are shown in Figure 1. Fences with steel or timber posts are similar but without cleats.

4.2 Gates

Single or double gates shall be used to fill openings up to and including 5 m in width. Double gates with leaves of equal width shall be used to fill openings between 5 m and 10 m in width.

Table 1 — General characteristics of chain link fences with zinc (Z) or zinc alloy (ZA) coated mesh

Type of fence			Height at posts ^a	Pattern	Chain link fencing			Line wires					Suitable uses
Concrete post (ZC or ZAC) ^b	Steel post (ZS or ZAS) ^b	Wooden post (ZW or ZAW) ^b			Width of roll	Length of side of mesh	Wire nominal diameter	Number of rows	Spacing (approx.)		Nominal diameter		
									Top to middle	Middle to bottom	Low carbon (mild) steel	High tensile steel	
			m		m	mm	mm		mm	mm	mm	mm	
90	90	90	0.90	Medium	0.90	50	2.50	2 or 3	430 ^c	430 ^c	3.00	3.15	House garden fronts and divisions
90A	90A	90A	0.90	Heavy	0.90	50	3.00	2 or 3	430 ^c	430 ^c	3.55	3.15	
120	120	120	1.20	Heavy	1.20	50	3.00	3	580	580	3.55	3.15	Playgrounds, general purposes
120A	120A	120A	1.20	Extra heavy	1.20	50	3.55	3	580	580	4.00	3.15	
140	140	140	1.40	Medium	1.40	50	2.50	3	680	680	3.00	3.15	General purposes, railways, house garden flanks, highways
140A	140A	140A	1.40	Heavy	1.40	50	3.00	3	680	680	3.55	3.15	
140B	140B	140B	1.40	Extra heavy	1.40	50	3.55	3	680	680	4.00	3.15	Playing fields, recreation grounds
140C	140C	140C	1.40	Medium	1.40	40	2.50	3	680	680	3.00	3.15	Railways, general purposes
140D	140D	140D	1.40	Heavy	1.40	40	3.00	3	680	680	3.55	3.15	
180	180	180	1.80 ^d	Heavy	1.80	50	3.00	3	880	880	4.00	3.15	Commercial property
180A	180A	180A	1.80 ^d	Extra heavy	1.80	50	3.55	3	880	880	3.00	3.15	
180B	180B	180B	1.80 ^d	Heavy	1.80	40	3.00	3	880	880	3.55	3.15	Railways, general safety
180C	180C	—	1.80 ^{de}	Heavy	1.80	50	3.00	3	880	880	3.55	3.15	Industrial security
180D	180D	—	1.80 ^{de}	Extra heavy	1.80	50	3.55	3	880	880	4.00	3.15	
180E	180E	—	1.80 ^{de}	Heavy	1.80	40	3.00	3	880	880	3.55	3.15	Railways, general safety
215	215	215	2.15 ^d	Heavy	2.15	50	3.00	3	1 055	1 055	3.55	3.15	Commercial property
215A	215A	215A	2.15 ^d	Extra heavy	2.15	50	3.55	3	1 055	1 055	4.00	3.15	
215B	215B	215B	2.15 ^d	Heavy	2.15	40	3.00	3	1 055	1 055	3.55	3.15	Railways, general safety
215C	215C	—	2.15 ^{de}	Heavy	2.15	50	3.00	3	1 055	1 055	3.55	3.15	Industrial security
215D	215D	—	2.15 ^{de}	Extra heavy	2.15	50	3.55	3	1 055	1 055	4.00	3.15	
215E	215E	—	2.15 ^{de}	Heavy	2.15	40	3.00	3	1 055	1 055	3.55	3.15	Railways, general safety

^a Heights are of the main infill material, and exclude any ground clearance at the base, or additional height provided by extension arms for barbed wire.

^b C, S, W = concrete, steel, wooden posts, respectively.

^c Two rows of line wires are more usual. A spacing of approx. 860 mm should be used, for both two and three line wire fences.

^d The top of the fence may be barbed.

^e The fence shall have cranked extension arms with barbed wire, increasing the height by approx. 340 mm.