

Specification for

Connectors for timber

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

- British Door Association
- British Furniture Trade Confederation
- British Wood Chipboard Manufacturers' Association
- D.S.I.R. — Forest Products Research Laboratory*
- English Joinery Manufacturers' Association (Incorporated)*
- Fibre Building Board Development Organization Ltd.
- Hardwood Flooring Manufacturers Association
- Institution of Civil Engineers*
- Institution of Municipal Engineers
- Institution of Structural Engineers*
- Ministry of Housing and Local Government
- Ministry of Works
- National Federation of Building Trades Employers
- National Sawmilling Association
- Royal Institute of British Architects
- Royal Institution of Chartered Surveyors
- Timber Development Association*
- Timber Trade Federation of the United Kingdom*

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of the standard.

- London County Council
- Timber Building Manufacturers' Association of Great Britain Ltd.

This British Standard, having been approved by the Timber Industry Standards Committee, and endorsed by the Chairman of the Building Divisional Council, was published under the authority of the General Council on 15 November 1960

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The following BSI references relate to the work on this standard:
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Foreword

This standard makes reference to the following British Standards:

BS 309, *Whiteheart malleable iron castings*.

BS 310, *Blackheart malleable iron castings*.

BS 916, *Black bolts, screws and nuts*.

BS 1449, *Steel plate, sheet and strip*.

This British Standard was first issued in 1949 and a revised edition was published in 1953. The present revision has been prepared under the authority of the Timber Industry Standards Committee to take account of the types and sizes of connectors now generally available in this country.

The principal changes in the specification are the reinstatement of the malleable cast iron shear-plate connectors, the elimination of corrugated toothed-ring connectors and a modification to the shape of the teeth in the round toothed-plate connectors.

Furthermore, in order to reduce the possibility of confusion due to reference to connectors by table numbers, which differ in different editions of the standard, each type of connector has been allotted a number and the size and sub-type are indicated by a suffix. A list of connector numbers is given in Appendix A for identification purposes.

Other designs for connectors will be considered from time to time with a view to their possible inclusion in revisions of this standard.

The specifications define the dimensions and materials of the connectors but do not include data on the strength properties of joints made with the connectors. A British Standard Code of Practice CP. 112, "*The structural use of timber in buildings*", contains such data relating to those connectors which are in accordance with this standard and on which authenticated tests have been carried out.

NOTE The figures in British units are to be regarded as the standard. Approximate metric conversions are given in Appendix B. More accurate conversions should be based on the tables in BS 350, "*Conversion factors and tables*".

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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 17 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

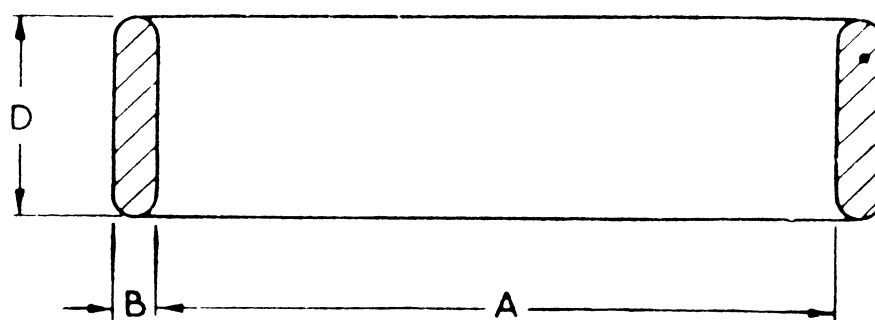
This British Standard specifies types of connector units for timber as follows:

- a) One split-ring, with bolt, washers and nut (see Figure 2).
- b) Two shear-plates, with bolt, washers and nut, to be used back-to-back (see Figure 5).
- c) One shear-plate, with bolt, washer and nut, for use in conjunction with a steel strap or plate in a timber-to-metal joint (see Figure 6).
- d) One double-sided round toothed-plate with bolt, washers and nut (see Figure 9).
- e) Two single-sided round toothed-plates with bolt, washers and nut, to be used back-to-back (see Figure 10).
- f) One single-sided round toothed-plate with bolt washer and nut, for use in conjunction with a steel strap or plate in a timber-to-metal joint (see Figure 11).
- g) One double-sided square toothed-plate with bolt, washers and nut (see Figure 14).
- h) Two single-sided square toothed-plates, with bolt, washers and nut, to be used back-to-back (see Figure 15).
- j) One single-sided square toothed-plate with bolt, washer and nut, for use in conjunction with a steel strap or plate in a timber-to-metal joint (see Figure 16).

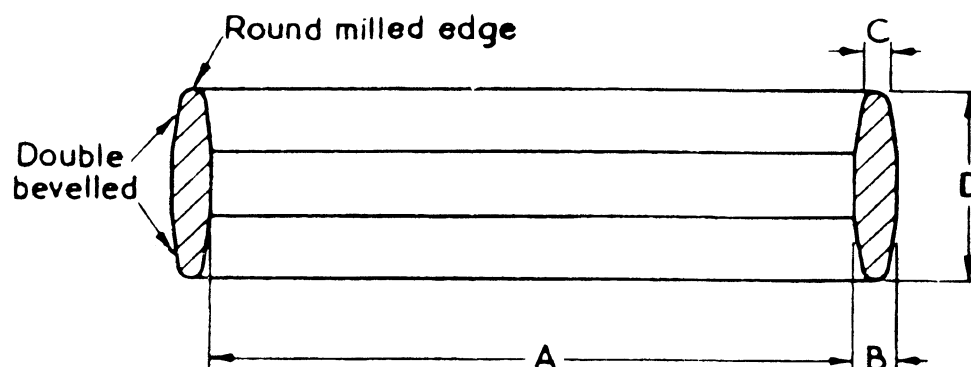
2 Split-ring connectors units

Split-rings shall be manufactured from steel strip complying with Specification En 2B in BS 1449, "*Steel plate, sheet and strip*". Each ring shall form a closed true circle with the principal axis of the cross section of the ring metal parallel to the geometrical axis of the ring. It shall be cut at one place in its circumference to form a tongue and slot (see Figure 1). The dimensions of the ring, bolt and washers shall comply with Table 1.

Key to Table 1



a. Split-ring with parallel sides (Connector No. 1.a.)

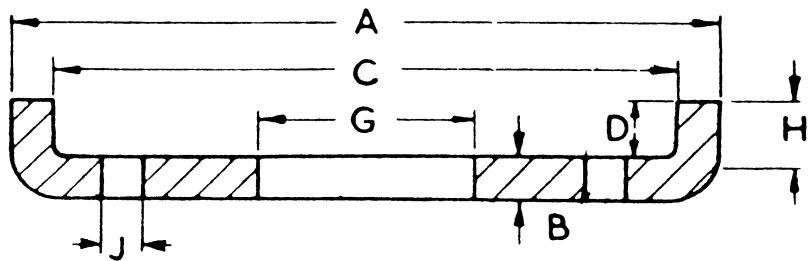


b. Split-ring with double bevelled sides and round milled edges (Connector No. 1.b and c.)

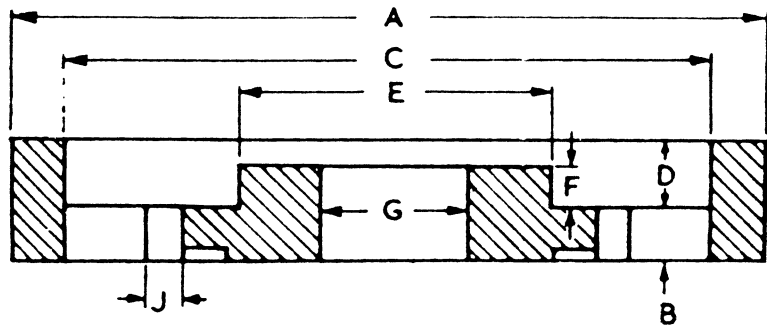
Table 1 — Split-ring connector units

Nominal size			2½ in	4 in
Connector No.			1.a	
Split-ring (parallel sides)	Internal diameter when closed Thickness Depth	A	in 2.5	in —
		B	0.163	—
		D	0.750	—
Connector No.			1.b	1.c
Split-ring (bevelled sides)	Internal diameter when closed Thickness Depth	A	in 2.5	in 4.00
		B	0.163	0.193
		C	0.123	0.133
		D	0.750	1.00
Bolt	Diameter (minimum)	—	½	¾
Square washers	Length of side Thickness	—	2	3
		—	⅛	⅜
Tolerance on internal diameter ± 0.03 in				

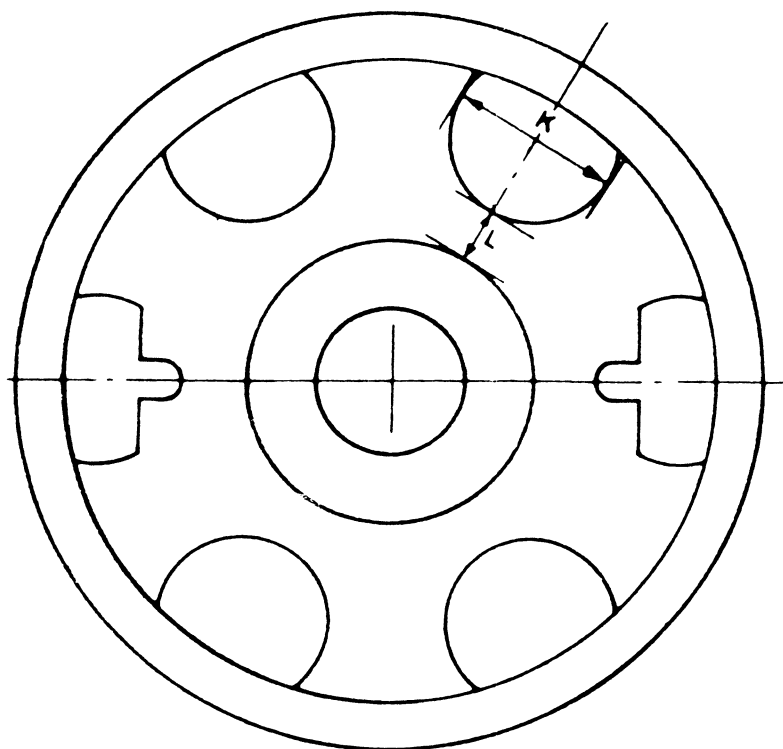
Key to Table 2



a. Pressed steel shear-plate (Connector No. 2.a.)



b. Malleable cast-iron shear-plate (section: Connector No. 2.b.)



c. Malleable cast-iron shear-plate (plan: Connector No. 2.b.)

3 Shear-plate connector units

Shear-plates shall be made of pressed steel or of malleable cast iron.

- a) Pressed steel shear-plates shall be made from material complying with Specification En 2B in BS 1449, "*Steel plate, sheet and strip*". Each shear-plate shall consist of a circular flanged plate with a bolt-hole through the centre of the plate. Each plate may have two nail holes through the plate, midway between the centre of the plate and the circumference and on opposite sides of the bolt hole (see Figure 3). The dimensions of the shear-plates, bolt and washers shall comply with Table 2.