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## **Introduction**

Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international and European standards, comments will be reviewed by the relevant UK national committee before submitting the consensus UK vote and comments. If the draft standard is approved, it is usual for the resulting published standard to be adopted as a British Standard.

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BS 8597:2025

# **Steels for the reinforcement of concrete – Reinforcement couplers – Requirements and test methods**

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## Foreword

### Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 September 2025. It was prepared by Technical Committee ISE/104, *Concrete reinforcing and pre-stressing steels*. A list of organizations represented on this committee can be obtained on request to the committee manager.

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This British Standard supersedes BS 8597:2015, which is withdrawn.

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The provisions of this document are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

Requirements in this document are drafted in accordance with the *Rules for the structure and drafting of UK standards:2022*, subclause **G.1.1**, which states, “Requirements should be expressed using wording such as: ‘When tested as described in Annex A, the product shall ...’”. This means that only those products that are capable of passing the specified test will be deemed to conform to this document.

Where words have alternative spellings, the preferred spelling of the *Shorter Oxford English Dictionary* is used (e.g. “organization” rather than “organisation”).

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DRAFT

## 1 Scope

This British Standard specifies requirements and test methods for reinforcement couplers (hereafter called couplers) to be used for the mechanical splicing of steel reinforcing bars. It specifies requirements for couplers to be used for mechanical splices in reinforced concrete structures under predominantly static loads and additional requirements for couplers to be used in elements of structures subject to high cycle elastic fatigue loading. It also specifies requirements for the evaluation of conformity of couplers.

This British Standard does not cover couplers which are to be used for mechanical splices in reinforced concrete structures subject to low cycle loading in the elastic-plastic range, or in nuclear safety-related or seismic structures.

This British Standard specifies performance requirements for couplers. The couplers are tested as part of a mechanical splice between two lengths of reinforcing steel, manufactured in accordance with BS 4449 or BS 6744. The performance tests specified are therefore for mechanical splices incorporating the coupler being assessed. This British Standard applies to the mechanical splice as supplied by the manufacturer, as well as the mechanical splice, as supplied by the fabricator.

*NOTE Instructions for assembly or installation of couplers can be obtained from the manufacturer.*

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions, or limits the application, of this document<sup>1)</sup>. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 1990, *Eurocode – Basis of structural and geotechnical design*

BS EN 1992-1-1:2023, *Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings, bridges and civil engineering structures*

BS EN ISO 7500-1, *Metallic materials – Calibration and verification of static uniaxial testing machines – Part 1: Tension/compression testing machines – Calibration and verification of the force-measuring system*

BS EN ISO 9513:2012, *Metallic materials – Calibration of extensometer systems used in uniaxial testing*

BS EN ISO 15630-1, *Steel for the reinforcement and prestressing of concrete – Test methods – Part 1: Reinforcing bars, rods and wire*

BS ISO 12107, *Metallic materials – Fatigue testing – Statistical planning and analysis of data*

BS ISO 16020, *Steel for the reinforcement and prestressing of concrete – Vocabulary*

<sup>1)</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.

### **3 Terms, definitions and symbols**

#### **3.1 Terms and definitions**

For the purposes of this document, the terms and definitions given in BS ISO 16020 and the following apply.

##### **3.1.1 coupler**

device for the mechanical connection of two lengths of reinforcing bar providing a transfer of tension and/or compression loads from one bar to the other

*NOTE* Also known as a reinforcement coupler.

##### **3.1.2 coupler length ( $L_1$ )**

actual length of the coupler, including all load-transferring parts, and including lock nuts, if any

##### **3.1.3 extension measurement device**

assembly consisting of a device or devices for the measurement of extension and any system used to fix it/them to a mechanical splice

##### **3.1.4 fabricator**

organization that processes the ends of the rebar or attached components to the ends of the rebar, to form part of the splice

##### **3.1.5 length of mechanical splice ( $L$ )**

coupler length plus two times the nominal bar diameter at each end of the coupler

*NOTE* This is a conventionally agreed definition taking into account the affected zone in an approximate way.

##### **3.1.6 manufacturer**

organization that designs and supplies the coupler system components along with any and all of the processing equipment required to produce a splice

##### **3.1.7 mechanical splice**

complete assembly of a coupler including any additional intervening material or other components providing a connection between two reinforcing bars (and including the length of reinforcing steel,  $L_2$ , affected by the connection at either end)

##### **3.1.8 process route**

arrangement of machinery, manufacturing technologies and methods used to produce reinforcing steel, in particular those manufacturing characteristics that impart the strength and ductility properties

*NOTE* Examples of process routes are quenched and self-tempered, micro-alloyed, cold-rolled, cold stretching, etc.

##### **3.1.9 qualification test**

initial type tests performed on a mechanical splice system

##### **3.1.10 reference bar**

length of reinforcing bar from the same bar as used for the mechanical splice, tested for comparison with the performance of the splice

##### **3.1.11 slip**

permanent change in the length of a mechanical splice after being loaded to a defined load level and unloaded to zero

##### **3.1.12 stress ratio**

ratio of the minimum stress to the maximum stress in one cycle of loading in a fatigue test

##### **3.1.13 sub-assembly**

pair of load-transmitting components where a coupler consists of more than two load-transmitting components