BRITISH STANDARD

BS 4449:2005
+A3:2016

Steel for the reinforcement of concrete — Weldable reinforcing steel — Bar, coil and decoiled product — Specification

ICS 77.140.15; 91.080.40

BSI
British Standards

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee ISE/9, Steel for concrete reinforcement, to Subcommittee ISE/9/1, Bars, wire and fabric for concrete reinforcement, upon which the following bodies were represented:

British Coatings Federation

British Precast Concrete Federation

Concrete Society

Department of Transport — Highways Agency

Galvanizers Association

Institution of Structural Engineers

UK Certification Authority for Reinforcing Steels

UK Steel Association

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2005

First published:
BS 4449: April 1969
BS 4461: March 1969
First revision:
BS 4449: May 1978
BS 4461: May 1978
Second combined version as:
BS 4449: May 1988
Third combined version as:
BS 4449: May 1997

The following BSI references relate to the work on this British Standard:
Committee reference ISE/9/1
Drafts for comment
04/30109891 DC
15/30334782 DC

ISBN 978 0 580 92715 7

Amendments issued since publication

Amd. No.	Date	Comments
17103	30 April 2007	
A2	31 March 2009	
A3	31 March 2016	See foreword

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Foreword

This British Standard is published by BSI Standards Limited, under licence from the British Standards Institution. It has been prepared by Subcommittee ISE/9/1. It supersedes BS 4449:2005+A2:2009, which is withdrawn. This edition incorporates a full revision of the standard. The characteristic yield strength has been increased to 500 MPa, and a third ductility class has been added, compared to BS 4449:1997.

The start and finish of text introduced by Amendment No. 3 is indicated in the text by tags [A3] 〈A3〉. Minor editorial changes are not tagged. Previous amendments are not indicated.

This standard no longer covers plain round bar. For sizes up to and including 12 mm in coil, plain round wire of grade 250 MPa has been incorporated into BS 4482. For larger sizes, for dowel bar applications, reference should be made to BS EN 10025-1. For dowel bars for use in concrete pavements, reference should be made to BS EN 13877-3.

This standard has been written so that it can be used in conjunction with BS EN 10080:2005. Definitions, symbols, steelmaking and manufacturing processes, routine inspection and testing, test methods, identification of the manufacturer and technical class and verification of mechanical properties in the case of dispute are all taken from BS EN 10080:2005.

BS EN 10080:2005 does not define steel grades or technical classes, and requires that technical classes should be defined in accordance with BS EN 10080:2005, by specified values of R_e, R_m/R_e, A_{gt}, $R_{e,act}/R_{e,nom}$ (where appropriate), fatigue strength, bend performance, weldability, bond strength, tolerances and dimensions. The three steel grades in this standard conform to all of the requirements of BS EN 10080:2005.

The three grades in this standard also conform to the three recommended ductility classes of BS EN 1992-1-1:2004, although the fatigue requirements and the fatigue test conditions are retained from the previous version of this standard. The only exception to this is for grade B500A in sizes below 8 mm, where the ductility requirements specified are below those of BS EN 1992-1-1:2004.

[A1] In the previous revision of this standard, bond was specified by means of a projected rib area, with a pull-out test specified as an alternative means of demonstrating compliance with the bond requirements of BS 8110-1. In this revision, bond is specified by means of a relative rib area. As an alternative, a beam test is provided in Annex A, which may be used to demonstrate compliance with Eurocode 2. Where an alternative bond test is required to demonstrate compliance with BS 8110-1, then the pull-out test may be used. This pull-out test alternative may only be applied to steels of grade B500A. 〈A1〉

BS EN 10080:2005 contains an informative Annex ZA, which describes how that standard can be used for the purposes of CE marking of reinforcing steels. Annex ZA and **8.2**, **8.3** and **8.4** of BS EN 10080:2005 relate to the role of the notified body in assessing products for an EC certificate of conformity, and as such are not included in this standard. It is not a requirement of this British Standard that materials produced to it should meet the requirements for CE marking.

Where CE marking is required for the purposes of complying with the EU Construction Products Directive, BS EN 10080:2005 applies.

It is recommended that purchasers specify reinforcing steel that has been manufactured and supplied to a recognized third party product certification scheme. **8.2** specifies the determination of the long term quality level under such a scheme. As an alternative, Annex B provides a batch testing method for material which has not been produced under such a scheme.

In BS EN 10080, the terms “rod” and “wire” are used to describe reinforcing steel in coil. In this standard, these terms have not been included to avoid the potential for confusion, particularly with wire produced to BS 4482.

This standard comes into effect on 1 January 2006.