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Code of practice for the selection and installation of post-installed anchors in concrete and masonry

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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 31 October 2012. It was prepared by Technical Committee B/514, *Access and support equipment*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

BS 8539:2012+A1:2021 supersedes BS 8539:2012, which is withdrawn.

Information about this document

This British Standard is intended to be used by a wide range of people involved in the selection and installation of anchors, and some clauses are of particular interest to specific parties, as follows:

- all parties: Clause **3** and Clause **4**;
- designers: Clause **5**, **6.3** and Clause **10**;
- specifiers: Clause **5**, **6.4**, **6.6**, Clause **9**, Clause **10**, Annex A, Annex B, Annex C and Annex D;
- manufacturers/suppliers: Clause **5**, **6.2**, **6.5** and Clause **10**;
- contractors: Clause **7**, Clause **8** and **10**;
- installers: Clause **7** and Clause **10**;
- testers: Clause **9** and Annex B.

It is recommended that all parties read the whole document.

Text introduced or altered by Amendment No.1 is indicated in the text by the tags 〉A1〈 〈A1〉. Minor editorial changes are not tagged.

Amendment A1 introduces the following principal changes:

- the change in the anchor design method from ETAG001 in BS EN 1992-4:2018, Annex C;
- changes to ensure consistency with the Construction Product Regulations [3];
- replacing references to European Technical Approval Guidelines (ETAGs) with the relevant European Assessment Documents (EADs) references;
- updating other references, including associated terminology.

Product certification/inspection/testing. Users of this British Standard are advised to consider the desirability of selecting anchors with a relevant European Technical 〉A1〈 Assessment 〈A1〉(ETA)[1)]. ETAs are awarded by Approval Bodies after a comprehensive test and assessment regime carried out to the relevant 〉A1〈 European Assessment Document (EAD) 〈A1〉or Common Understanding of Assessment Procedure (CUAP), which also contain appropriate conformity attestation arrangements. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

NOTE Anchors with ETAs, depending on the particular 〉A1〈 *EAD* 〈A1〉 *and options within it, can be designed to suit a wide range of application conditions (see Clause **5** and Annex A). Guidance on ETAs is given in ETAs and design methods for anchors used in construction [1] and the EOTA website (www.eota.be).*

1) 〉A1〈 Text deleted. 〈A1〉

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at bsigroup.com/standards, or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

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

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

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

In particular, attention is drawn to the Construction Products Regulations 1991 [3] and Construction Products (Amendment) Regulations 1994 [4].

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Introduction

Anchors play an important role in construction, in particular:

a) they allow for the secure attachment of a fixture, which can be a structural element, to the base material;

b) there is a wide variety of anchors available for different applications.

Every anchorage has three elements:

- anchor: the device that fastens the fixture to the base material;
- base material: the material into which the anchor is installed;
- fixture: the item to be fixed to the base material.

The performance of anchors is influenced by many application parameters, which need to be taken into account in their selection. Performance is also affected by the quality of installation.

If anchors are not selected and installed correctly, they might not have the capability to resist loads as intended. The security of the fixture and, in some cases, the structure might then be compromised, leading to failure with consequential economic loss, injury, or even death. This British Standard is intended to facilitate all stakeholders involved in the use of anchors to achieve the security required by the design.

Figure 1 shows a simple outline of the overall approach to be taken to ensure that connections are safe and that they meet the overall design requirements.

