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BSI Standards Publication

Structural adhesives — Characterisation of anaerobic adhesives for co-axial metallic assembly in building and civil engineering structures

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National foreword

This British Standard is the UK implementation of EN 15275:2015. It supersedes BS EN 15275:2007 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/52, Adhesives.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

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

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English Version

Structural adhesives - Characterisation of anaerobic adhesives for co-axial metallic assembly in building and civil engineering structures

Adhésifs structuraux - Caractérisation des adhésifs anaérobies pour assemblages métalliques coaxiaux dans les bâtiments et ouvrages de génie civil

Strukturklebstoffe - Charakterisierung anaerober Klebstoffe für koaxiale Metallverbindungen im Bauwesen

This European Standard was approved by CEN on 25 January 2015.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15275:2015) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by January 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15275:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

For relationship with EU Regulation see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Anaerobic adhesives are single component adhesives that cure in absence of oxygen, curing being inhibited by the presence of oxygen and catalysed by metal ions. Polymerisation takes normally place at room temperature. Due to their curing properties these adhesives are well suited for easy assembling threaded and otherwise, pipes and tubes in building and civil engineering structures. By the curing reaction a polymeric material is formed, which fills narrow gaps or micro-imperfections of threads thus sealing and bonding the joint. In addition, anaerobic adhesives may be used to joint load-bearing parts of the structures when used in tubular lap joints or pin-into-bore type joints.

The primary aim of the test methods presented herein is for ranking and quality control of anaerobic adhesives and reliance should not be placed on any test results for design purposes. Design data should preferably be obtained from tests using the construction materials and configurations used in the actual design. The requirements to the assemblies are strongly depending on the intended use. Apart from the sealing ability, strength requirements may conflict with the intention to regular or occasional dismantling the joint for maintenance purposes. The values defined in this standard are considered to indicate a general or typical suitability for use of an anaerobic adhesive in a particular application in building and civil engineering structures.

1 Scope

This European Standard specifies requirements and test methods for the characterisation of anaerobic adhesives intended for the general assembly of co-axial metallic elements in building and civil engineering structures including fasteners- threaded and otherwise, pipes and tubes. It is applicable to single adhesives and systems (kits) comprising adhesives, activators and/or primers for both internal and external construction elements.

This European Standard only applies to metallic substrates.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 751-1, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 1: Anaerobic jointing compounds*

EN 923:2005+A1:2008, *Adhesives —Terms and definitions*

EN 13999-1, *Adhesives — Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application — Part 1: General procedure*

EN 13999-2, *Adhesives — Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application — Part 2: Determination of volatile organic compounds*

EN 15337, *Adhesives — Determination of shear strength of anaerobic adhesives using pin-and-collar specimens (ISO 10123)*

EN 15865, *Adhesives — Determination of torque strength of anaerobic adhesives on threaded fasteners (ISO 10964)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 923:2005+A1:2008 and the following applies.

3.1
anaerobic adhesive
adhesive that cures in absence of oxygen, curing being inhibited by the presence of oxygen and catalysed by metal ions

Note 1 to entry: Deviating from this definition, anaerobic adhesives may be defined also as anaerobic polymerisable compounds, or anaerobic jointing compounds including liquid, gel like or pasty sealants.

4 Performance characteristics for intended uses

The manufacturer shall undertake initial performance tests on the product in accordance with Table 1 and corresponding to the type of the defined application [e.g. retaining co-axial assemblies (see 5.1), threaded fasteners (see 5.2) and threaded joints in contact with 1st, 2nd and 3rd family gases and hot water (see 5.3)].