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Execution of special geotechnical works – Micropiles; English version EN 14199:2015, English translation of DIN EN 14199:2015-07

Ausführung von Arbeiten im Spezialtiefbau – Mikropfähle; Englische Fassung EN 14199:2015, Englische Übersetzung von DIN EN 14199:2015-07

Exécution des travaux géotechniques spéciaux – Micropieux; Version anglaise EN 14199:2015, Traduction anglaise de DIN EN 14199:2015-07

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In case of doubt, the German-language original shall be considered authoritative.

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A comma is used as the decimal marker.

National foreword

This document (EN 14199:2015) has been prepared by Technical Committee CEN/TC 288 “Execution of special geotechnical works” (Secretariat: AFNOR, France).

The responsible German body involved in its preparation was the *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-05-07 AA *Baugrund; Pfähle (SpA zu CEN/TC 288/WG 16 sowie CEN/TC 341/WG 4 und 7)*.

Amendments

This standard differs from DIN EN 14199:2012-01 as follows:

a) driven piles independent of dimensions have been included;

b) clauses concerning concrete and testing have been shortened;

c) EN 14199:2015 has been harmonized with EN 1536.

Previous editions

DIN 4128: 1983-04
DIN EN 14199: 2005-05, 2012-01

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14199

May 2015

ICS 93.020

Supersedes EN 14199:2005

English Version

Execution of special geotechnical works - Micropiles

Exécution des travaux géotechniques spéciaux - Micropieux

Ausführung von Arbeiten im Spezialtiefbau - Mikropfähle

This European Standard was approved by CEN on 12 March 2015.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 14199:2015) has been prepared by Technical Committee CEN/TC 288 “Execution of special geotechnical works”, the secretariat of which is held by AFNOR.

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 November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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 14199:2005.

The technical changes in comparison to EN 14199:2005 are:

— Driven piles are excluded from EN 14199 and transferred to EN 12699;

— sections describing concrete and testing have been minimised;

— EN 14199:2015 has been harmonized with EN 1536.

The general scope of CEN/TC 288 is the standardization of the execution procedures for geotechnical works, including testing and control methods, and the required material properties. WG 16 has been charged with the subject area of micropiles.

This document has been prepared to stand alongside EN 1997-1. Clause 7 of this Standard covers design aspects of micropiles.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

1 Scope

1.1 This European Standard establishes general principles for the execution of micropiles.

They are for drilled piles constructed using a drilling tool with a diameter less than 300 mm.

NOTE 1 This European Standard is not applicable to driven piles, the execution of which is governed by EN 12699.

NOTE 2 For a definition of shaft diameter see 3.3.

1.2 Micropiles are structural members to transfer actions to the ground and can contain bearing elements to transfer directly or indirectly loads and or to limit deformations. For examples of micropiles see Figure 1, Figure 2 and Figure 3. Their shaft and base resistance can be improved (mostly by grouting) and they can be constructed with (see Figure 4):

— uniform cross section (straight shaft); or

— telescopically changing shaft dimensions;

— shaft enlargements; and/or

— base enlargement.

1.3 Other than practical considerations, there are no limitations regarding, length, inclination (definition of inclination, see Figure 5), slenderness ratio or shaft and base enlargements.

1.4 The provisions of this European Standard apply to (see Figure 6):

— single micropiles;

— micropile groups;

— reticulated micropiles;

— micropile walls.

1.5 The material of micropiles covered by this European Standard can be:

— steel or other reinforcement materials;

— grout, mortar or concrete;

— a combination of above.

1.6 Micropiles can be used for:

— working under restricted access and/or headroom conditions;

— foundations of new structures (particularly in very heterogeneous soil or rock formations);

— reinforcing or strengthening of existing structures to increase the capacity to transfer load to depth with acceptable load settlement characteristics, e.g. underpinning works;

— reducing settlements and/or displacements;

— forming a retaining wall;