

**Execution of special geotechnical work -
Displacement piles**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12699:2001 sisaldab Euroopa standardi EN 12699:2000 ingliskeelset teksti.

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English version

Execution of special geotechnical work
Displacement piles

Exécution des travaux géotechniques
spéciaux – Pieux avec refoulement de
sol

Ausführung spezieller geotechnischer
Arbeiten (Spezialtiefbau) –
Verdrängungspfähle

This European Standard was approved by CEN on 2000-11-24.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by June 2001, and conflicting national standards shall be withdrawn at the latest by June 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This Standard has been prepared by the Working Group (WG 5) of the Technical committee of the Execution of Special Geotechnical Works (TC 288) of the European Committee for Standardisation (CEN). The general remit of TC 288 is the standardisation of the execution procedures for geotechnical works (including testing and control methods) and of the required material properties. WG 5 has been working with the subject area of displacement piles.

The document has been prepared to stand alongside ENV 1997 *Eurocode 7 Part 1: Geotechnical Design, General Rules*. Clause 7 of this Standard covers design aspects of piles.

This document has been drafted by a working group comprised of experts from 14 countries and is based on review of 12 national and international codes of practice.

The annexes A und B are informative.

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1 Scope

1.1 This standard establishes general principles for the execution of displacement piles, that means piles which are installed in the ground without excavation or removal of material from the ground except for limiting heave, vibration, removal of obstructions or to assist penetration.

Piles are driven into the ground using impact, vibration, pressing, screwing or a combination of these methods.

1.2 The material of displacement piles covered by this standard can be :

- steel ;
- cast iron ;
- concrete, mortar ;
- timber ;
- grout ;
- combination of above.

1.3 This standard covers prefabricated, cast in place, or a combination of these methods to form displacement piles of regular shape.

Examples are given in Figures A.2 and A.3 in annex A.

1.4 This standard is limited to piles with a diameter or maximum cross sectional dimension greater than 150 mm.

1.5 Other than practical considerations there are for the purpose of this Standard no limitations regarding shaft or base enlargements, length or rake.

1.6 The provisions of the standard apply to :

- single piles ;
- pile groups ;
- walls formed by concrete sheet piles.

1.7 Columns constructed by ground improvement techniques (such as mixed in place columns, jet grouting, compaction grouting, vibro flotation, stone columns) are not covered by this standard. Bored piles are covered in EN 1536. Steel and timber sheet piles walls are covered in EN 12063. Micropiles are covered in (WI 00288010)¹⁾.

¹⁾ A standard on micropiles is under preparation.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 288-2, *Specifications and approval of welding procedures for metallic materials - Part 2 : Welding procedures specifications for arc welding*.

EN 499, *Welding consumables - Covered electrodes for manual metal arc welding of non alloy and fine grain steels - Classification*.

EN 791, *Drill rigs - Safety*.

EN 996, *Piling Equipment - Safety Requirements*.

EN 1536, *Execution of special geotechnical works - Bored piles*.

EN 10248, *Hot rolled sheet piling of non alloy steels*.

EN 25817, *Arc welded joints in steel - Guidance on quality levels for imperfections (ISO 5817:1992)*.

EN 29692, *Metal-arc welding with covered electrode, gas-shielded metal-arc welding and gas welding - Joint preparations for steel*.

ENV 206, *Concrete - Performance, production, placing and compliance criteria*.

ENV 1991-1, *Eurocode 1 - Basis of design and actions on structures - Part 1 : Basis of design*.

ENV 1992-3, *Eurocode 2 : Design of concrete structures - Part 3 : Concrete foundations*.

ENV 1993-5, *Eurocode 3 : Design of steel structures - Part 5 : Piling*.

ENV 1994-1-1, *Eurocode 4 : Design of composite steel and concrete structures - Part 1-1 : General rules and rules for buildings*.

ENV 1995-1-1, *Eurocode 5 - Design of timber structures - Part 1-1 : General rules and rules for buildings*.

ENV 1997-1: 1994, *Eurocode 7 : Geotechnical design - Part 1 : General rules*.

EN ISO 4063, *Welding and allied processes - Nomenclature of processes and reference numbers (ISO 4063:1998)*.

prEN 12063, *Execution of special geotechnical work - Sheet pile walls*.

prEN 12794:1997, *Precast concrete foundation piles*.

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

3.1

displacement pile

pile which is installed in the ground without excavation or removal of material from the ground except for limiting heave, vibration, removal of obstructions or to assist penetration