

- TC 288 Execution of special geotechnical work
EN 1537 Ground anchors
WG 14
- TC 341 Geotechnical investigation and testing
ISO 22477 Testing of geotechnical structures
Part 5 (prEN ISO 22477-5) Testing of anchorages
WG 4
- Afstemningsprocedure hos CEN ... og DS
- Anchor task group

Execution of special geotechnical work: status

PNE rules

Review by S-415

WG 14: Review of EN 1537 Ground anchors

Status pr. feb 2007

	No.	Subject	Start	Enquiry	Formal Vote	EN Ratific.	Status	Next Review
1	EN 1538	Diaphragm Walls	1992	1996	1997	2000	Confirmed 2002	2007
2	EN 1537	Ground Anchors	1992	1996	1997	1999	Confirmed 2005	2007
3	EN 1536	Bored Piles	1992	1995	1997	1999	Confirmed 2002	2007
4	EN 12063	Sheet-Pile Walls	1993	1996	1998	1999	Confirmed 2005	2010
5	EN 12699	Displacement Piles	1994	1997	2000	2000	Confirmed 2005	2010
6	EN 12715	Grouting	1994	1998	2000	2000	Confirmed 2005	2010
7	EN 12716	Jet Grouting	1994	1998	2001	2001	Confirmed 2006	2011
8	EN 14199	Micropiles	1996	2002	2004	2005	Published 2006	2011
9a	prEN 14490	Soil Nailing	1997	2002 2007	2009 ?	2010 ?	Disbanded 2005 Revived 2006	
9b	EN 14475	Reinforced Fill	1997	2002	2005	2006	Published 2006	2011
10	EN 14679	Deep Mixing	1999	2003	2005	2005	Published 2005	2010
11	EN 15237	Vertical Drains	1999	2005	2006	2007	Published 2007	2012
12	EN 14731	Deep Vibration	1999	2003	2005	2005	Published 2005	2010

PNE rules

Degree of obligation, rangorden, hierarki

RQ: Requirement, shall, skal, analogt til normtekst, **p**incipal rules P()

RC: Recommendation, should, bør

PE: Permission, may, må, tilladelse (under visse betingelser)

PO: Possibility, can, kan, mulighed, option

TC 288 ønsker PNE rules indført i alle udførelsesstandarder (of Eurocodes)

DGF, Dansk og europæisk standardiseringsarbejde

TC 288 Execution standards, S-4 I 5 review

Secrétariat CEN/TC 288 "Execution of special geotechnical works

Responsable : Catherine Pineau
ligne directe : +33 (0)1 41 62 84 67
catherine.pineau@afnor.org

Secrétaire : Mireille Mathieu
ligne directe : +33 (0)1 41 62 81 26
mireille.mathieu@afnor.org

CEN/TC 288 N 353

Supersedes document CEN/TC 288 N 350

Le comité membre français :



le : 2007-06-08

**REPORT ON THE SYSTEMATIC REVIEW OF
CEN/TC 288 STANDARD :
EN 1537: 1999 – Ground anchors**

Association

Française de

Normalisation

11 rue Francis de Pressensé

93571 La Plaine Saint-Denis Cedex

France

Tél. : +33 (0)1 41 62 80 00

Fax : +33 (0)1 49 17 90 00

<http://www.afnor.fr>

Please find enclosed the results of the systematic review on EN 1537 : 1999 Ground anchors with the reply of Denmark (which was lacking in document CEN/TC 288 N 350). The Danish comments are in document CEN/TC 288 N 354.

The relevant resolution will be taken at the CEN/TC 288 meeting, on 15 June 2007, in Frankfort.

DGF, Dansk og europæisk standardiseringsarbejde

TC 288 Execution standards, S-4 I 5 review

Secrétariat CEN/TC 288 "Execution of special geotechnical works

Responsable : Catherine Pineau
ligne directe : +33 (0)1 41 62 84 67
catherine.pineau@afnor.org

Secrétaire : Mireille Mathieu
ligne directe : +33 (0)1 41 62 81 28
mireille.mathieu@afnor.org

CEN/TC 288 N 354

Le comité membre français :



le : 2007-06-08

**Discussion paper from Denmark on
EN 1537: 1999 – Ground anchors**

Association

Française de

Normalisation

11 rue Francis de Pressensé

93571 La Plaine Saint-Denis Cedex

France

Tel. : +33 (0)1 41 62 80 00

Fax : +33 (0)1 49 17 80 00

<http://www.afnor.fr>

See document CEN/TC 288 N 353 for the result of the systematic review of EN 1537.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITE EUROPEEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

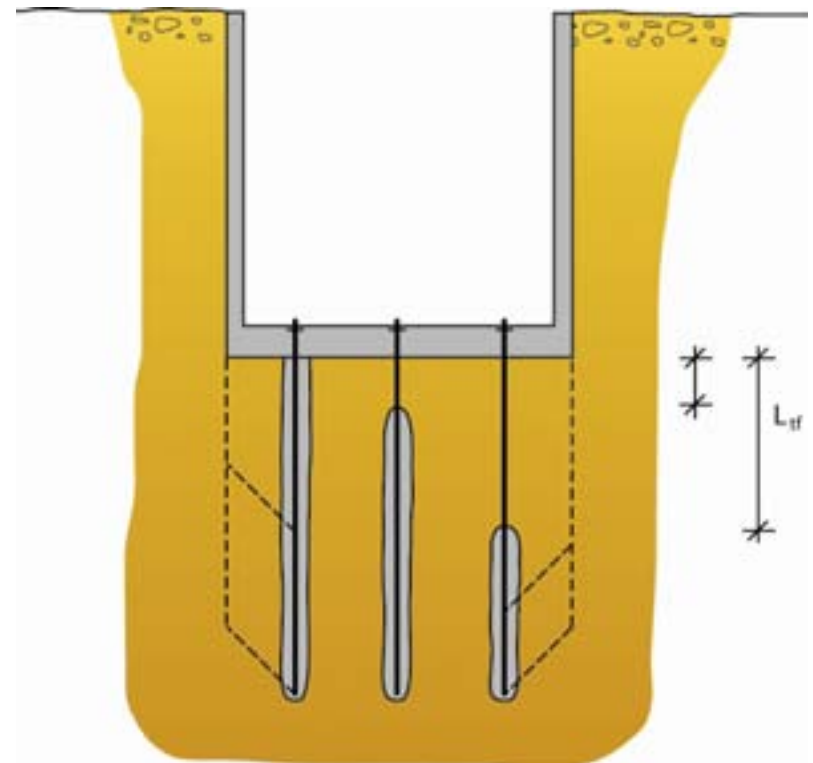
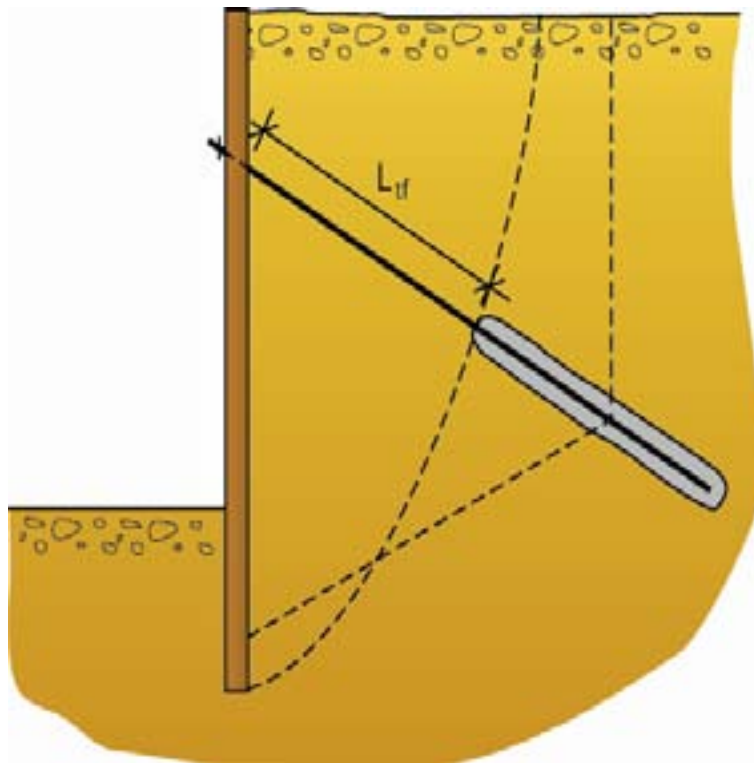


Secretariat:	Nederlands Normalisatie-instituut	
	Vinderweg 6	P.O. Box 5050
	2623 AX DELFT	2600 GB DELFT
	The Netherlands	The Netherlands
Telephone:	+31 15 2 690 151	
Telefax:	+31 15 2 690 501	
E-mail:	Leender.buhs@nen.nl	

doc.nr.	CEN/TC 250/SC 7		N 419	
date	2008-09-29	total pages	: 10	
item nr.		supersedes document		
Committee	CEN/TC 250/SC 7 Geotechnical design			

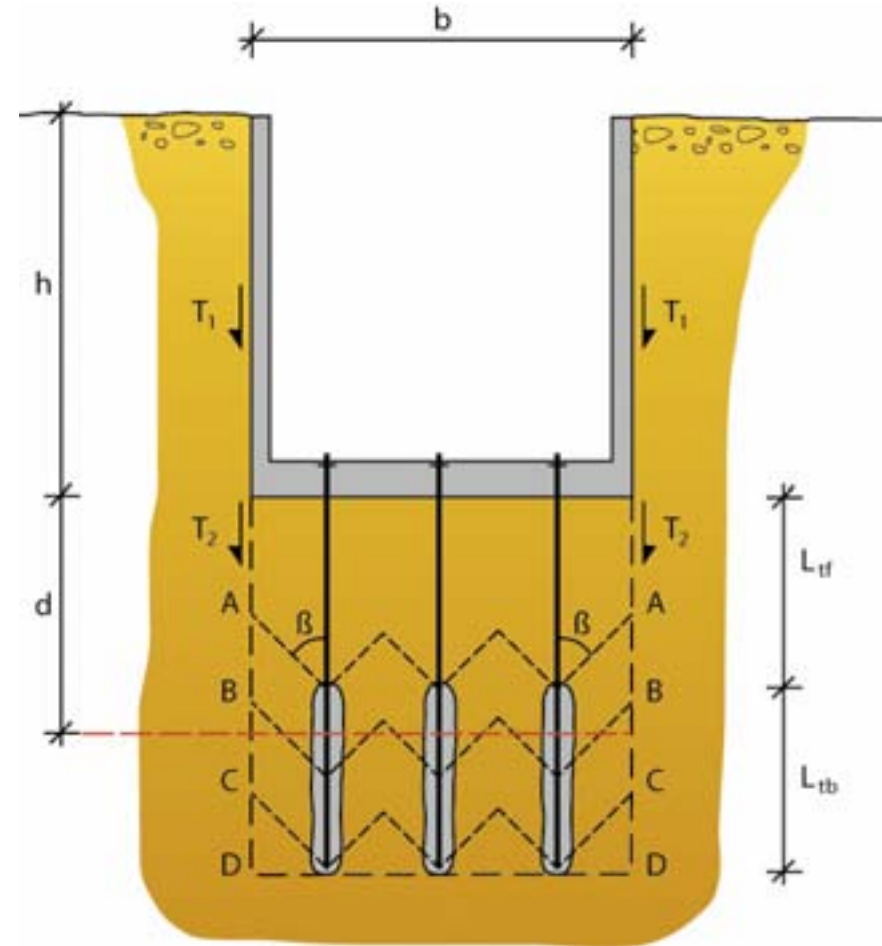
Uplift, Tension Piles vs Anchors, short presentation of the chairman of the Danish mirror committee, mr. Ole Møller on the implementation of EC 7 in Denmark.

TC 250 / SC 7 Meeting in Copenhagen, 2006



TC 250 / SC 7 Meeting in Copenhagen, 2006

1. What is the lower boundary of the soil body to be included in the verification of the uplift resistance?
2. What is the requirement to / relevance of a free length of an uplift anchor?
3. What is the difference between an anchor and a tension pile?
...and a soil nail, and a rock bolt



EN 1537 is not yet much used in continental Europe, several NAD's exist or are in preparation

- Harmonise with EN 1997-1 "Geotechnical Design": terminology, definitions, Annex D, failure criteria
- Harmonise with EN ISO 22477-5 "Testing of Anchorages": terminology, delete stress testing procedures (Annex E) *(other tests to remain!)*
- The testing procedures 1, 2 & 3 are not always reflecting experience and practice of countries where respective methods are used, leading to NAD's
- Improve presentation and structure of document , check definitions, include explaining figures
- Harmonise with other TC 288 Standards and EC 7, e.g. Clauses 4 & 5: ground investigation and needs for the project
- Improve distinguishment of temporary, permanent and med. time anchors
- Requirements for corrosion protection to be more precise, add figures

Re-structure clauses and subclauses and improve understanding

- Short and numbered subclauses of one degree of obligation only (see EN 1536 for example),
- Indicate obligations: RQ, RC, PE, PO, NOTE (and ST (=statement) if necessary)
- Correct obligations as necessary
- Add illustrative figures

Harmonize with EN 1997-1 Cl. 8 and prEN 22477-5

- Keep only general requirements for stress testing, delete procedures
- Harmonize definitions
- Keep other testing requirements (e.g. corrosion protection)

Harmonize with other TC 288 standards

- Check headings of main clauses (M Fross to provide proposal)
- Check suggestions for common Clauses 4.1, 5.1 and 11 (W Linder and H Siebke to provide proposal)
- Check definitions (Cl. 3)
- Harmonize materials (e.g. corrosion protection and grout, EN 14990)

Technical issues

- Check and harmonize supervision subclauses and tables with techn. Requirements
- Check and improve grout issues Check and improve reinforcement details

DGF, Dansk og europæisk standardiseringsarbejde

TC 341 Investigation and testing

Stages of development in CEN/TC 341 and ISO/TC 182/SC 1 *Geotechnical investigation and testing*

Date: 2006-10-23

Page 1 of 3

ISO work item number	CEN work item number	WG of CEN/TC 341	Short title	Resolutions CEN/TC 341	Accepted by CEN	Stage 20.60 CD	Stage 40.10 draft DIS	Stage 50.10 final draft FDIS	Publication ISO Ratification CEN	Remarks
14688-1 14688-2 14688-3	00341012 00341001 00341055		Identification of soil Classification principles of soil Electronic data exchange – soil	29, 41, 70	2001-09 2001-09 2003-01	2003-12	2001-06 N/A	2002-03 2004-02 2004-12	2002-08 2004-07	ISO lead, EN ISO: 2002 ISO lead, EN ISO: 2004 ISO lead, TS sent again for enquiry by 2005-12-22
14689-1 14689-2	00341013 00341056		Identification of rock Electronic data exchange - rock	29, 41, 71	2001-09 2003-01	2003-12	2001-06 N/A	2003-07 2004-12	2003-12	ISO lead, EN ISO: 2005 ISO lead, TS sent again for enquiry by 2005-12-22
22475-1	00341038	1	Sampling – principles	19, 30, 39, 57, 63	2003-05	2003-11	2004-04	2005-02	2006-09	EN ISO:2006
22475-2	00341036	1	Sampling – qualification criteria	19, 28, 41, 42, 57	2003-03	2003-12	N/A	2004-07	2006-09	TS:2006
22475-3	00341037	1	Sampling – conformity assessment	28,41,42,57	2003-03	2003-12	N/A	2004-07	2006-06	TS, final draft accepted, sent to CMC by 2005-07 (for publication together with 22475-1)
22476-1	00341042	2	Electrical cone penetration tests	31, 41, 61, 76, 77	2003-03	2003-11	2005-01	2006-05	2007-02	Final Draft to TC 341 for approval for FV (76) and NWI by res. (77)
22476-2	00341004	3	Dynamic probing	37	2001-09	2001-12	2002-08	2004-07	2005-01	EN ISO: 2005
22476-3	00341005	3	Standard penetration test	37	2001-09	2001-12	2002-08	2004-07	2005-01	EN ISO: 2005
22476-4	00341016	5	Menard pressuremeter test	22, 64	2002-03	2003-09	2005-04	2005-07	2006-04	Comments on Enquiry sent to M Gambin and AFNOR on 2006-02-15
22476-5	00341017	5	Flexible dilatometer test	22, 64	2002-03	2003-09	2005-04	2005-07	2006-04	Comments on Enquiry sent to M Gambin and AFNOR on 2006-02-15
22476-6	00341057	5	Self-boring pressuremeter test	22, 59, 73	2002-03	2003-09				TS, NWI approved with Res.73, final draft to be accepted by TC
22476-7	00341019	5	Borehole jack test	22, 64	2002-03	2003-09	2005-04	2005-07	2006-04	Comments on Enquiry sent to M Gambin and AFNOR on 2006-02-15
22476-8	00341058	5	Full displacement pressuremeter	22, 59, 74	2002-03	2004-08				TS, NWI approved with Res.74, final draft to be accepted by TC
22476-9 ¹⁾	00341021	2	Field vane test	23	2002-03	2003-09	2004-12	2005-07		WD 2
22476-10	00341022		Weight sounding test	24	2002-10	2002-06	N/A	2004-04	2005-05	TS: 2005
22476-11	00341023		Flat dilatometer test	24	2002-10	2002-06	N/A	2004-04	2005-05	TS: 2005
22476-12	00341054	2	Mechanical cone penetration test	31, 41, 69	2003-05	2003-11	2007-02			(NWI) Enquiry, sent to ISO/CMC by 2006-01
22476-13 ¹⁾	00341008	4	Plate loading test	33, 62	2001-09	2003-11	2005-02	2005-09	2006-06	WD 1

DGF, Dansk og europæisk standardiseringsarbejde

TC 34I Investigation and testing

ISO work item number	CEN work item number	WG of CEN/TC 341	Short title	Resolutions CEN/TC 341	Accepted by CEN	Stage 20.60 CD	Stage 40.10 draft DIS	Stage 50.10 final draft FDIS	Publication ISO Ratification CEN	Remarks
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Stages of development in CEN/TC 341 and ISO/TC 182/SC 1 Geotechnical investigation and testing

Date: 2006-10-23

Page 2 of 3

22476-X	?	5	Phicometer shearing test	75						TS, NWI approved with Res.75 on 2006-03-03
22282-1 ¹⁾	00341050	1	General rules	56	2004-05	2004-07	2006-01	2007-01	2007-07	WD 5 (N 317)
22282-2 ¹⁾	00341039	1	Permeability tests using open systems	30, 41, 55	2003-05	2003-11	2006-01	2007-01	2007-07	WD 6 (N 318)
22282-3 ¹⁾	00341040	1	Water pressure test	30, 41, 55	2003-05	2003-11	2006-01	2007-01	2007-07	WD 10 (N 319)
22282-4 ¹⁾	00341041	1	Pumping tests	30, 41, 55	2003-05	2004-07	2006-01	2007-01	2007-07	WD 5 (N 320)
22282-5 ¹⁾	00341051	1	Infiltrometer tests	56	2004-05	2004-07	2006-01	2007-01	2007-07	WD 3 (N 321)
22282-6 ¹⁾	00341052	1	Permeability tests using closed systems	56	2004-05	2005-07	2006-01	2007-01	2007-02	WD 2 (N 322)
22477-1	00341053	4	Pile load test – static axially loaded compression test	32,38,65,66	2005-06	2005-12	2006-08	2008-07	2008-04	Enquiry until 2006-06-22
22477-2 ¹⁾	00341045	4	Pile load test – static axially loaded tension test	32, 38	2003-05	2003-11	2005-01	2006-05	2007-02	No progress
22477-3 ¹⁾	00341046	4	Pile load test – static transversally loaded tension test	32, 38	2003-05	2003-11	2005-01	2006-05	2007-02	WD 1 no progress
22477-4 ¹⁾	00341047	4	Pile load test – dynamic axially loaded compression test	32, 38	2003-05	2003-11	2005-01	2006-05	2007-02	WD 1 no progress
22477-5	00341007	4	Testing of anchorages	60	2001-09	2003-11	2005-02	2005-09	2006-06	Compiled comments sent to AFNOR on 2005-11-30
22477-6 ¹⁾	00341009	4	Testing of nailing	62	2001-09	2003-11	2005-02	2005-09	2006-06	WD 3
22477-7 ¹⁾	00341010	4	Testing of reinforced fill	62	2001-09	2003-11	2005-02	2005-09	2006-06	No progress
17892-1	00341024		Water content	25, 43	2002-10	2002-09	N/A	2003-06	2004-11	TS
17892-2	00341025		Density of fine grained soils	25, 44	2002-10	2002-11	N/A	2003-07	2004-11	TS
17892-3	00341026		Density of solid particles	25, 45	2002-10	2002-11	N/A	2003-07	2004-11	TS
17892-4	00341027		Particle size distribution	25, 46	2002-10	2002-11	N/A	2003-07	2004-11	TS
17892-5	00341028		Oedometer test	25, 47	2002-10	2002-11	N/A	2003-07	2004-11	TS
17892-6	00341029		Fall cone test	25, 48	2002-10	2002-09	N/A	2003-06	2004-11	TS
17892-7	00341030		Compression test	25, 49	2002-10	2003-02	N/A	2003-09	2004-11	TS
17892-8	00341031		Unconsolidated triaxial test	25, 50	2002-10	2003-02	N/A	2003-09	2004-11	TS
17892-9	00341032		Consolidated triaxial test	25, 51	2002-10	2003-02	N/A	2003-09	2004-11	TS
17892-10	00341033		Direct shear test	25, 52	2002-10	2003-02	N/A	2003-09	2004-11	TS
17892-11	00341034		Permeability test	25, 53	2002-10	2002-11	N/A	2003-07	2004-11	TS
17892-12	00341035		Atterberg limits	25, 54	2002-10	2003-02	N/A	2003-09	2004-11	TS

Explanations: see next page (3) !

Explanations:

yellow shadow: stage of progress

dates in italic: target dates

underlined dates: target dates including a tolerance of 9 months

WD: Working Draft

CD: Committee Draft (CEN stage 20.60)

DIS: Draft International Standard (CEN stage 40.10)

FDIS: Final Draft International Standard (CEN stage 50.10)

TS: Technical Specification

N/A: not applicable

FV: Formal vote

standard number in bold black: finalised project (standard)

standard number in blue: draft

standard number in green: final draft

standard number in red: work items with no progress

¹⁾ has been deleted by CEN, because the time schedule between approval of New WI and enquiry has been exceeded

S-415 reviews:

ISO 22282: Geohydraulic testing (Geohydraulisk prøvning)

prEN ISO 22282-3: Water pressure test in rock

prEN ISO 22282-4: Pumping test

prEN ISO 22282-5: Infiltrimeter test

ISO 22475: Sampling

prEN ISO 22475-5 Flexibel dilatometertest

prEN ISO 22475-7 Borehole jack test

ISO 22476: Field testing

prEN ISO 22476-4: Ménard pressumeter test

ISO 22477: Testing of geotechnical structures

prEN ISO 22477-1: Pile load test - static axially loaded compression test

prEN ISO 22477-2: Pile load test - static axially loaded tension test

prEN ISO 22477-3: Pile load test - static transversally loading test

prEN ISO 22477-4: Pile load test - dynamic axially loaded compression test

prEN ISO 22477-5: Testing of anchorages

prEN ISO 22477-6: Testing of nailing

prEN ISO 22477-7: Testing of reinforced fill

ISO TS 17872: Laboratory testing of soils

Review of Part 1 – 12, Target date: Stage 30.99: 2009-11.

according to Resolution 92 – 98 taken in Vilnius, Oct. 2007 (page 7)

Le comité membre français :



le : 2004-11-23

**CORRESPONDENCE RESOLUTION 72 –
Submission of Pr EN 14731 to FORMAL VOTE**

Association

Française de

Normalisation

11 avenue Francis de Pressensé

93571 Saint-Denis La Plaine Cedex

France

Tél. : +33 (0)1 41 62 80 00

Fax : +33 (0)1 49 17 90 00

<http://www.afnor.fr>

Dear Member,

I have been advised by the Convenor of CEN/TC 288/WG 12 that the following draft is now ready for submission to CMC for the launch of the formal vote:

Pr EN 14731 – Execution of geotechnical works – Ground treatment by deep vibration (WI00288013)

The table of decision on the comments received at the CEN Enquiry stage is in document CEN/TC 288 N 304.

Members are requested to review the attached draft, complete the draft resolution number 72 below and return it to me,

no later than 2005-01-04.

If you do not reply, I will assume that you approve the resolution.

Yours sincerely,

Catherine Pineau
AFNOR
Secretary of CEN/TC 288

Association reconnue

d'utilité publique

Comité membre français

du CEN et de l'ISO

Til S-415

Hermed fremsendes:

Forslag til CEN/TC 341 prEN ISO 22476-12 Geotechnical investigation and testing - Field testing - Part 12: Mechanical cone penetration test (CPT)

Forslaget er i offentlig høring i perioden 16. maj til 14. august med stemmefrist den 13. september 2006.

Se forslaget i EDDA på adressen:

<http://edda.ds.dk/Livelinek/llisapi.dll?func=ll&objId=2238634&objAction=browse&sort=name>

Hvis jeg ikke hører fra dig senest en uge før deadline, tager jeg det som udtryk for, at DS kan stemme "JA" uden kommentarer.*

Til S-415

Emne: prEN 14490 i høring

Hermed fremsendes

prEN 14490 Udførelse af specielle geotekniske arbejder - Borede pæle

Forslaget er i offentlig dansk høring i perioden 2007-10-27 til 2008-01-27

Der er officiel deadline for dansk stemmeafgivelse 2008-02-27.

Hvis jeg ikke hører fra dig senest to uger før fristen, tager jeg det som udtryk for, at DS kan stemme **"ABSTAIN" med en bemærkning om, at der ikke er dansk interesser.**

Er der andre end udvalget, der skal have direkte besked om forslaget?

Venlig hilsen

Lars Ravn-Jensen

Anchor task group

Responsable : Catherine Pineau
Phone Number: +33 (0)1 41 62 84 67
catherine.pineau@afnor.org

CEN/TC 288 N 361 E

Assistante : Mireille Mathieu
Phone Number: +33 (0)1 41 62 81 26
mireille.mathieu@afnor.org

Le comité membre français :



2007-09-06

**Report of the meeting of anchor standards
task group
and
Future items to be discussed with respect
to anchorages**

Place and time: Federal Waterways Engineering and Research Institute (BAW)
Karlsruhe, Germany
13.07.2007

Subject: Scope and harmonisation of EN's on ground anchor design and testing requirements (see resolution 87 taken by CEN/TC 288 – document CEN/TC 288 N 355)

Present:

Dr. Bernd Schuppener (BS), Chairman CEN/TC 250/SC7
Prof. Dr. Manfred Fross (MF), liaison officer CEN/TC 250/SC7-TC 288
Dr. Wolf-R. Linder (WRL), Chairman CEN/TC 288
Prof. Dr. Cesar Merrifield (CM), candidate convenor CEN/TC 288 /WG 14
Prof. Dr. Jean-P. Magnan (JPM), convenor CEN/TC 341/WG 4
Dipl.-Ing. Roland Schulze (RS), delegate CEN/TC 341/WG 4

Future items to be discussed with respect to anchorages

B. Schuppener

Section 8 „Anchorages“, of Eurocode 7-1 is applicable to;

- pre-stressed anchorages consisting of an anchor head, a tendon free length and a tendon bond length bonded to the ground by grout;
- non pre-stressed anchorages consisting of an anchor head, a tendon free length and a restraint such as a fixed anchor length bonded to the ground by grout, a deadman anchorage, a screw anchor or a rock bolt.” (8.1.1.(2)).

Anchor task group

Table: standards for anchorages:

Types of anchorage		Execution	Standards	
			Testing (Determination of characteristic value of resistance and acceptance testing)	Design
Pre-stressed grouted anchorage		EN 1537: Execution of special geotechnical work - Ground anchors	EN ISO 22477-5: Testing of anchorages	EN 1997-1 Eurocode 7: Geotechnical design - Part 1: General rules
Non pre-stressed anchorages	Grouted anchorage		?	
	Deadman anchorage	?	?	
	screw anchor	?	?	
	rock bolt	?	?	
	any other anchorage?	?	?	

The working group in charge of further harmonizing of the testing of anchorages will use EN ISO 22477-5 as a basis for their work. It will consider the comments that have been received by the inquiry and revise the draft in close contact and coordination with TC 288 and SC 7 of TC 250. The aim will be:

- to concentrate all provisions for testing of anchorages including the procedures for their evaluation in EN ISO 22477-5
- so that Annexes D and E of EN 1537 can be cancelled when it is revised.
- If necessary the working group will also propose amendments for Section 8 of EC 7-1 so that the determination of the characteristic value of the pull-out resistance described in EN ISO 22477-5 matches the provisions for the anchor design of EC 7-1.