May 2019

DIN EN ISO 22477-5

ICS 93.020

Geotechnical investigation and testing – Testing of geotechnical structures – Part 5: Testing of grouted anchors (ISO 22477-5:2018); English version EN ISO 22477-5:2018, English translation of DIN EN ISO 22477-5:2019-05

Geotechnische Erkundung und Untersuchung –
Prüfung von geotechnischen Bauwerken und Bauwerksteilen –
Teil 5: Prüfung von Verpressankern (ISO 22477-5:2018);
Englische Fassung EN ISO 22477-5:2018,
Englische Übersetzung von DIN EN ISO 22477-5:2019-05

Reconnaissance et essais géotechniques –
Essais des structures géotechniques –
Partie 5: Essais de tirants d'ancrage (ISO 22477-5:2018);
Version anglaise EN ISO 22477-5:2018,
Traduction anglaise de DIN EN ISO 22477-5:2019-05

Document comprises 52 pages

Translation by DIN-Sprachendienst.

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

04.19 3058080

A comma is used as the decimal marker.

National foreword

This document (EN ISO 22477-5:2018) has been prepared by Technical Committee ISO/TC 182 "Geotechnics" in collaboration with Technical Committee CEN/TC 341 "Geotechnical investigation and testing" (Secretariat: BSI, United Kingdom).

The responsible German body involved in its preparation was *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-05-17 AA "Grouted anchors (national mirror committee for ISO/TC 182/WG 3 and for sub-sections of CEN/TC 288)".

The national (German) building law refers to dated national standards, DIN SPECs and European standards. These national regulations approved by building authorities are to be considered for the dimensioning, construction and testing of grouted anchors. At the time of publication of this standard, the version DIN EN 1997-1:2009-09 was approved by building authorities in Germany.

According to DIN 1054, Method 1 is to be used in Germany.

For the alternating load testing according to subclause 6.8, an upper load value of 1,0 E_k and a lower load value of 0,5 E_k are specified in DIN SPEC 18537:2017-11. It is intended to include these data in DIN 1054.

An example of the presentation of the test results of an acceptance test according to subclause 8.4.4 is shown in National Annex NA. The DIN document corresponding to the international document referred to in this document is as follows:

ISO 14688-1 DIN EN ISO 14688-1

National Annex NA
(informative)

Example of the presentation of an acceptance test according to subclause 8.4.4

Acceptance test report

Company				**Acceptance test report for permanent anchors / temporary anchors according to DIN EN 1537**							
			Page								
Site				Anchor length L_A	m	Jack, type					
Anchor design				External tendon length L_e	m	Jack section		mm²			
Number		mm²		Tendon free length L_{tf}	m	Pressure gauge no.					
Steel type		N/mm²		Tendon bond length L_{tb}	m	Load cell, type no.					
Area At		mm²		Pressure pipe length L_D	m	P_d		kN			
E-module		N/mm²		Axial stiffness $E_t * A_t$	kN	Proof load P_P a)		kN			
Component				Anchor no.							
Date											
Load/pressure/displacement			[kN]	[bar]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
Load	Datum load	Pa									
		0,40 P_P									
		0,55 P_P									
		0,70 P_P									
		0,85 P_P									
	Proof load	1,00 P_P									
Constant proof load P_P	Displacement s at P_P	after 1 min	s 1								
		after 2 min	s 2								
		after 3 min	s 3								
		after 5 min	s 5								
		s 5 – s 2									
	in coarse soils s 5 – s 2 ≤ 0,20 mm				yes/no	yes/no	yes/no	yes/no	yes/no	yes/no	
		after 10 min	s 10								
		after 15 min	s 15								
		s 15 – s 5									
	in fine soils s 15 – s 5 ≤ 0,25 mm				yes/no	yes/no	yes/no	yes/no	yes/no	yes/no	
		after	min								
		after	min								
		after	min								
Load	Datum load	P_a									
	Lock-off load P_0	(kN)									
	Pre-stressing load (incl. slip b))										
For proof load $P_P = \gamma_a \cdot P_d$ k_s < 2,0 mm					yes/no	yes/no	yes/no	yes/no	yes/no	yes/no	
Limits of displacement	s_{bl} < c)	mm at P_a	$s_{el} = s_{max} - s_{bl}$		yes/no	yes/no	yes/no	yes/no	yes/no	yes/no	
	L_{app}										
	Limit lengths: max. L_{app}/min. L_{app}		$L_{app} = \frac{E_t \cdot A_t \cdot s_{el}}{(P_P - P_a)}$								
	Lapp between max. L_{app}/min. L_{app}				yes/no	yes/no	yes/no	yes/no	yes/no	yes/no	

a) $P_P = \gamma_a \cdot P_d$

b) Slip to be considered for strand and bar tendors according to approval.

c) The maximum permanent displacement may be specified due to the results of the suitability test.

Signature _____

National Annex NB
(informative)

Bibliography

DIN EN ISO 14688-1, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 22477-5

September 2018

ICS 93.020

English Version

Geotechnical investigation and testing - Testing of geotechnical structures - Part 5: Testing of grouted anchors (ISO 22477-5:2018)

Reconnaissance et essais géotechniques - Essais des structures géotechniques - Partie 5: Essais de tirants d'ancrage (ISO 22477-5:2018)

Geotechnische Erkundung und Untersuchung - Prüfung von geotechnischen Bauwerken und Bauwerksteilen - Teil 5: Prüfung von Verpressankern (ISO 22477-5:2018)

This European Standard was approved by CEN on 19 August 2018.

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 CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 22477-5:2018 E

Contents

Page