

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11313-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 23.06.2020

Date of issue: 23.06.2020

Holder of certificate:

**Hilti Aktiengesellschaft
Fastening Systems Research Laboratory (FSRL)
Feldkircherstraße 100, 9494 Schaan, Liechtenstein**

Tests in the fields:

**mechanical-technological testing of fastener systems and fastening tools in the construction business;
examination of the electrical insulation properties of fastening elements in the construction business;
determination of the strength properties and the surface roughness of concrete using destructive and non-destructive material testing methods**

Within the given testing field marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standards or equivalent testing methods.

Within the scope of accreditation marked with **, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing methods are exemplary. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

Annex to the accreditation certificate D-PL-11313-01-00

1 Mechanical-technological testing of fastener systems and fastening tools in the construction business

1.1 Procedures for the testing of dowels, anchors and concrete bolts*

EAD 330232-00-0601 10-2016	Mechanical fasteners for use in concrete chapter 2.2.2.2 - F1 - maximum crack width and large hole diameter chapter 2.2.2.3 - F2 - maximum crack width and small hole diameter chapter 2.2.2.4 - F3 - crack cycling under load chapter 2.2.2.5 - F4 – repeated loads
EAD 330250-00-0601 01-2018	Post-installed fasteners in concrete under fatigue cyclic loading A – test method A to determine the characteristic fatigue resistance: single fastener B – test method B to determine the characteristic fatigue limit resistance: single fastener
EAD 330008-03-0601 01-2019	Anchor Channels
EAD 330499-00-0601 07-2017	Bonded Fasteners for Use in Concrete chapter 2.2.2.6 - B14 - Sustained loads (normal ambient temperature) chapter 2.2.2.6 - B15 - Sustained loads (maximum long term temperature)
TR 048 08-2016	Details of tests for post-installed fasteners in concrete
TR 049 08-2016	Post-installed fasteners in concrete under seismic action

1.2 Procedures for the testing of direct fastening elements*

ASTM E 1190 11-2018	Standard test methods for strength of power-actuated fasteners installed in structural members
ICC-ES AC70 11-2017	Acceptance Criteria for Fasteners Power driven into Concrete, Steel and Masonry Elements
ICC-ES AC43 10-2018	Acceptance Criteria for Steel Deck Roof and Floor Systems
ICC-ES AC118 02-2016	Acceptance Criteria for tapping screw fasteners

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2 Examination of the electrical insulation properties of fastening elements in the construction business *

STF TE 637 A
11-2014

Bicomponent resin for chemical anchors
Chapter V.2.5

The testing areas above of of dowels, anchors and concrete bolts are characterized by the measured values shown in the following tables:

Type of testing	Test item	Test parameter/ measuring quantity	Specification of a standard method
Static loading	dowels, anchors and concrete bolts (fastener systems)	path	EAD 330232 EAD 330499 EAD 330008
		force	
		torsional moment	
		strain	
		temperature	
Dynamic loading		path	EAD 330232 EAD 330250 EAD 330008 TR 049
		force	
		torsional moment	
		strain	
		temperature	
Isolation	electrical resistance	STF TE 673 A	

The testing areas above of direct fastening elements are characterized by the measured values shown in the following tables:

Type of testing	Test item	Test parameter/ measuring quantity	Specification of a standard method
Static loading	Direct fastening elements	path	ASTM E 1190 ICC-ES AC43
		force	
		torsional moment	
		strain	
		temperature	
Dynamic loading		path	ASTM E 1190 ICC-ES AC70
		force	
		torsional moment	
		strain	
		temperature	

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3 Determination of the strength properties and surface roughness of concrete by destructive and non-destructive material testing methods **

DIN EN 13791 08-2019	Assessment of in-situ compressive strength in structures and precast concrete components
DIN EN 12390-1 12-2012	Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds
DIN EN 12390-2 10-2019	Testing hardened concrete - Part 2: Making and curing specimens for strength tests
DIN EN 12390-3 10-2019	Testing hardened concrete - Part 3: Compressive strength of test specimens
DIN EN 12390-7 10-2019	Testing hardened concrete - Part 7: Density of hardened concrete
ZTV-ING Part 1 03-2015	Additional Technical Terms of Contract and guidelines for civil engineering works – Part 1: General – section 3: Test during execution – Chapter 4: Determination of surface roughness using the sand surface method

Abbreviations used:

AC	Acceptance criteria
ASTM	American Society for Testing and Materials
DAKKS	Deutsche Akkreditierungsstelle GmbH (German Accreditation Body)
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardization)
EAD	European Assessment Document
EN	Europäische Norm (european standard)
ICC-ES	ICC ES International Code Council Evaluation Service
STF TE	Specifica Tecnica di Fornitura Trazione Elettrica
TR	Technical Report
ZTV ING	Zusätzliche Technische Vertragsbedingungen und Richtlinien für Ingenieurbauten (Hrsg.: BAST)

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