

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11087-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.04.2022

Date of issue: 04.07.2022

Holder of certificate:

Adolf Würth GmbH + Co. KG
Reinhold-Würth-Straße 12-17, 74653 Künzelsau

Tests in the fields:

mechanical tests, dimensional tests, measurement of coating thickness, corrosion and spark spectrometric element determination of connectors, tests on fasteners in construction in the laboratory and on site as well as strength tests on hardened concrete

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.**

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 standard or equivalent testing methods. The listed testing methods are exemplary.

The testing laboratory maintains a current list of all testing procedures within the flexible scope of accreditation.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de/en/content/accredited-bodies-dakks>.

Abbreviations used: see last page

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

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1 Mechanical tests

1.1 Tensile test ***

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| DIN EN ISO 898-1 2013-05 | Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread (here: <i>Chapter 9: Test methods</i> <i>Chapter 9.2: Tensile test for finished bolts for determination of tensile strength, R_m</i> <i>Chapter 9.4: Tensile test for bolts with reduced loadability due to head design</i> <i>Chapter 9.6: Proof load test for finished bolts</i> <i>Chapter 9.7: Tensile test for machined test pieces)</i> |
| DIN EN ISO 898-2 2012-08 | Mechanical properties of fasteners made of carbon steel and alloy steel - Part 2: Nuts with specified property classes - Coarse thread and fine pitch thread (here: <i>Chapter 9: Test methods</i> <i>Chapter 9.1: Proof load test)</i> |
| DIN 580 2018-04 | Lifting eye bolts (here: <i>chapter 6: Testing)</i> |
| DIN 582 2018-04 | Lifting eye nuts (here: <i>chapter 6: Testing)</i> |
| DIN EN 795 2012-10 | Personal fall protection equipment - Anchor devices (here: <i>Chapter 5.3: Type A anchor devices</i> <i>Chapter 5.3.2: Deformation</i> <i>Chapter 5.3.4: Static strength</i> <i>Chapter 5.5: Type C anchor devices</i> <i>Chapter 5.5.2 Deformation</i> <i>Chapter 5.5.4 Static strength</i> <i>Chapter 5.6: Type D anchor devices</i> <i>Chapter 5.6.2 Deformation</i> <i>Chapter 5.6.4 Static strength)</i> <i>(These tests are carried out stationary and mobile.)</i> |

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DIN CEN/TS 16415
2017-11 Personal fall protection equipment - Anchor devices - Recommendations for anchor devices for use by more than one person simultaneously
(here:
Chapter 5.2: Type A anchor devices
Chapter 5.2.3 Static strength
Chapter 5.4: Type C anchor devices
Chapter 5.4.3 Static strength test (Single Span)
Chapter 5.4.5 Static strength test (Multi Span)
Chapter 5.5: Type D anchor devices
Chapter 5.5.3 Static strength test)

1.2 Determination of the strength of connecting elements by means of tensile and pressure tests (2 to 250 kN) and displacement measurement (up to 300 mm) **

PA 04-455
2019-01 Shear test with various materials

PA 04-456
2019-01 Axis-parallel pull-out tests with various materials

PA 07-300
2018-04 Determining the breaking force of adhesive balancing weights

Labor-9-366
2021-07 QM-test instruction strength-Varifix hinge connector Vario

1.3 Hardness test ***

DIN EN ISO 6507-1
2018-07 Metallic materials - Vickers hardness test - Part 1: Test method

DIN EN ISO 898-1
2013-05 Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread
(here:
Chapter 9: Test methods
Chapter 9.9: Hardness test
Chapter 9.10: Decarburization test
Chapter 9.11: Carburization test)

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DIN EN ISO 898-2
2012-08 Mechanical properties of fasteners made of carbon steel and alloy steel -
Part 2: Nuts with specified property classes - Coarse thread and fine pitch
thread
(here:
Chapter 9: Test methods
Chapter 9.2 Hardness test)

DIN EN ISO 898-5
2012-09 Mechanical properties of fasteners made of carbon steel and alloy steel -
Part 5: Set screws and similar threaded fasteners with specified hardness
classes - Coarse thread and fine pitch thread
(here:
Chapter 9: Test methods
Chapter 9.1: Hardness test
Chapter 9.2: Decarburization test
Chapter 9.3: Carburization test)

2 Dimensional test

Würth 1
2016-02 Dimensional test of connectors

3 Measurement of coating thickness ***

DIN EN ISO 3497
2001-12 Metallic coatings - Measurement of coating thickness - X-ray spectrometric
methods

4 Corrosion test ***

DIN EN ISO 9227
2017-07 Corrosion tests in artificial atmospheres - Salt spray tests

5 Mechanical fasteners for gypsum board systems ***

DIN EN 14566
2009-10 Mechanical fasteners for gypsum board systems - Definitions, requirements
and test methods
(here: *chapter 5: tests*)

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6 Metal analysis

Würth 2 Element determination of C, Si, Mn, P, S, Cr, Mo, Ni, V, W, Co, Cu, Al, B, Ti and
2015-10 Nb in steel - Emission spectrometry determination with spark excitation

7 Tests on fasteners in construction ***

ETAG 001 Guideline for european technical approval of metal anchors for use in
2013-04 concrete
Part 1: General
Part 2: Torque-controlled expansion anchors
Part 3: Undercut anchors
(With the exception of Table 5.1, line 8 and table 5.2 line 8.)
Part 4: Deformation-controlled expansion anchors
Part 5: Bonded anchors
(Except section 5.1.4)
Annex A: Details of tests
Annex B: Recommendations for tests to be carried out on construction works

ETAG 020 Guideline for european technical approval of plastic anchors for use in
2012-03 concrete and masonry for non-structural applications
Part 1: General
Part 2: For use in normal weight concrete
Part 3: For use in solid masonry materials
Part 4: For use in hollow or perforated masonry
Part 5: For use in autoclaved aerated concrete
Annex A: Details of tests
Annex B: Recommendations for tests to be carried out on construction works

EAD 330011-00-0601 Adjustable concrete screws
2015-03 (Except section 2.2.5)
(All tests are carried out stationary and, with the exception of table 2.5, line
F5adj, also as on-site tests.)

EAD 330076-00-0604 Metal injection anchors for use in masonry
2014-07 (All tests are carried out stationary and, with the exception of table 3, lines 1,
2, 3, 4, 6 and 7 and the anchorage type d and table 4 with the anchorage type
d, also as on-site tests.)

EAD 330083-02-0601 Power actuated fastener for multiple use in concrete for non-structural
2018-03 applications
(Except table 2.4, lines F6 and F7 and section 2.2.6)
(All tests are carried out stationary and, with the the exception of table 2.4,
line F4 and table 2.6, lines A9, A10, A12 and A13, also as on-site tests.)

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| EAD 330087-00-0601 2018-05 | Systems for post installed rebar connections (Except table A1, lines 16, 17 and 18) (All tests are carried out stationary and, with the exception of table A,.1, lines 9, 10 and 15, also as on-site tests.) |
| EAD 330196-01-0604 2017-07 | Plastic anchors made of virgin or non-virign materials for fixing of external thermal insulation composite systems with rendering (Except table 2.1 lines 3 and 5, table 2.3, lines 10 and 11) (All tests are carried out stationary and, with the exception of table 2.3, lines 5, 6 and 7 as well as all tests with the base material type E also as on-site tests.) |
| EAD 330232-00-0601 2016-10 | Mechanical fasteners for use in concrete (Except table A.1 line N3 and section 2.2.13, 2.2.14 and 2.2.15) (All tests are carried out stationary and, with the exception of table A.1, test N1, F3 and F4, also as on-site tests.) |
| EAD 330499-00-0601 2018-12 | Bonded fasteners for use in concrete With the exception of table 2.1 lines 12, 13 14 and 15, table A.1 line R8, B18 and B19 and table B1 line B13 and B14) (All tests are carried out stationary and, with the exception of table A.1, line N1, R6, B2, B3, B4, B12, B13, B15, B16 and B20 and table B1, line E8, E10 and E11, also as on-site tests.) |
| EAD 330747-00-0601 2018-05 | Fasteners for use in concrete for redundant non-structural systems (With the exception of table A.1, lines N3, B18 and B19 and section 2.2.12) (All tests are carried out stationary and, with the exception of table A1, test N1, F4, R8, B2, B3, B4, B5, B14, B15 and B16, also as on-site tests.) |
| EAD 331072-00-0601 2017-10 | Anchor devices for fastening personal fall protection systems to concrete structures (With the exception of table 1, line 4) |
| EOTA TR048 2016-08 | Details of tests for post-installed fasteners in concrete (Except section 3.8) (All tests are carried out stationary and, with the excepton of sections 3.3.3 and 3.3.4, also as on-site tests.) |
| EOTA TR051 2018-04 | Recommendations for job site tests of plastic anchors and screws |
| EOTA 053 2016-04 | Recommondations for job-site tests of metal injection anchors for use in masonry |

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| EAD 330424-00-0604 2017-12 | Screw anchor for autoclaved aerated concrete and lightweight aggregate concrete (Except table 2.2, line F10 and table 2.3, line F10) (All tests are carried out stationary and, with the exception of table 2.2 lines F5 and F7 and table 2.3 lines F5 and F7, also as on-site tests.) |
| EAD 330460-00-0604 2020-07 | Screw anchor for use in masonry (Except section 2.2.11) (All tests are carried out stationary and, with the exception of table A.2 line F2, also as on-site tests.) |
| EAD 330284-00-0601 2018-03 | Plastic anchors for redundant non-structural systems in concrete and masonry (Except table 2.1, line 10 and table A2, line F9 and F10) (All tests are carried out stationary and as on-site tests.) |

8 Testing hardened concrete ***

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| DIN EN 12390-3 2019-10 | Testing hardened concrete - Part 3: Compressive strength of test specimens |
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Abbreviations used:

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|-------------|--------------------------------------------------|
| DIN | German Institute for Standardization |
| EAD | European Assessment Document |
| EN | European Standard |
| ETAG | Guideline for European Technical Approval |
| EOTA | European Organisation for Technical Approvals |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardization |
| Würth | In house method of the Adolf Würth GmbH + Co. KG |
| PA xx-xxx | Test instruction of Adolf Würth GmbH + Co. KG |
| Labor-x-xxx | Work instruction of Adolf Würth GmbH + Co. KG |