

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-13/0909
of 8 December 2016

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Trade name of the construction product

Product family
to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment
contains

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

Deutsches Institut für Bautechnik

Injection system VMU plus for masonry

Injection system for use in masonry

MKT
Metall-Kunststoff-Technik GmbH & Co. KG
Auf dem Immel 2
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Werk 2, D

61 pages including 3 annexes which form an integral part
of this assessment

Guideline for European technical approval of "Metal
Injection Anchors for Use in Masonry", ETAG 029, April
2013,
used as European Assessment Document (EAD)
according to Article 66 Paragraph 3 of Regulation (EU)
No 305/2011.



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DIVISION: 03 00 00—CONCRETE

SECTION: 03 16 00—CONCRETE ANCHORS

DIVISION: 05 00 00—METALS

SECTION: 05 05 19—POST-INSTALLED CONCRETE ANCHORS

REPORT HOLDER:

MKT-METALL-KUNSTSTOFF-TECHNIK GMBH & CO. KG

EVALUATION SUBJECT:

**MKT VMU PLUS AND LR700+ ADHESIVE ANCHOR SYSTEM
IN CRACKED AND UNCRACKED CONCRETE**



*"2014 Recipient of Prestigious Western States Seismic Policy Council
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SYSTEM IN CRACKED AND UNCRACKED CONCRETE**

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Property evaluated:

Structural

2.0 USES

MKT VMU plus and LR700+ adhesive anchors are used to resist static, wind or earthquake (IBC Seismic Design Categories A through F) tension and shear loads in cracked and uncracked normal-weight concrete with 1/2-, 5/8-, 3/4-, 7/8-, 1-, and 1 1/4-inch-diameter (12.7, 15.9, 19.1, 22.2, 25.4 and 31.8 mm) threaded steel rods and No. 4 through No. 10 steel reinforcing bars in hammer-drilled holes. The anchors are used to resist static, wind or earthquake (IBC Seismic Design Categories A and B only) tension and shear loads in uncracked normal-weight concrete only with 3/8-inch-diameter (9.5 mm) threaded steel rods and No. 3 steel reinforcing bars in hammer-drilled holes. Use is limited to normal-weight concrete with a specified compressive strength, f'_c , of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa) [minimum of 24 MPa is required under ADIBC Appendix L, Section 5.1.1].

The anchor system complies with anchors as described in Section 1901.3 of the 2015 IBC, Section 1909 of the 2012 IBC and is an alternative to cast-in-place and post-installed anchors described in Section 1908 of the

2012 IBC, and Sections 1911 and 1912 of the 2009 and 2006 IBC. The anchor systems may also be used where an engineered design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 General:

The MKT VMU plus and LR700+ Adhesive Anchor System is comprised of MKT VMU plus and LR700+ two-component adhesive filled in cartridges, static mixing nozzles and manual or powered dispensing tools, hole cleaning equipment and adhesive injection accessories.

MKT VMU plus and LR700+ adhesive may be used with continuously threaded steel rods or deformed steel reinforcing bars. The primary components of the MKT VMU plus and LR700+ Adhesive Anchor System, including the MKT VMU plus and LR700+ adhesive cartridge, static mixing nozzle, the nozzle extension tube and steel anchor elements, are shown in Figures 1 and 2 of this report. The manufacturer's printed installation instructions (MPII), included with each adhesive unit package, are shown in Figure 3 of this report.

3.2 Materials:

3.2.1 MKT VMU PLUS and LR700+ Adhesive: MKT VMU plus and LR700+ adhesive is an injectable two-component vinyl ester acrylic adhesive. The two components are kept separate by means of a labeled dual-cylinder cartridge. The two components combine and react when dispensed through a static mixing nozzle, supplied by MKT GmbH & Co. KG, which is attached to the cartridge. MKT VMU plus and LR700+ is available in 5-ounce (150 mL), 8-ounce (235 mL), 10-ounce (280 mL), 12-ounce (345 mL), 13-ounce (380 mL), and 28-ounce (825 mL) cartridges. Each cartridge label is marked with the adhesive expiration date. The shelf life, as indicated by the expiration date, applies to an unopened cartridge stored in a dry, dark, and cool environment, in accordance with the MPII, as illustrated in Figure 3 of this report.

3.2.2 Hole Cleaning Equipment: Hole cleaning equipment is comprised of steel wire brushes supplied by MKT GmbH & Co. KG, and air blowers which are shown in Figure 3 of this report.

3.2.3 Dispensers: MKT VMU plus and LR700+ adhesive must be dispensed with manual dispensers, pneumatic dispensers, or electric powered dispensers supplied by MKT GmbH & Co. KG.

3.2.4 Steel Anchor Elements:

3.2.4.1 Threaded Steel Rods: Threaded steel rods must be clean and continuously threaded (all-thread) in