TRANSLATION OF THE MPA (BRAUNSCHWEIG) – CERTIFICATE (3511/3276) - CM OF 2007-09-25

Note: *This translation was made by MKT GmbH & Co. KG to the best of our knowledge.*
March 2008, MKT GmbH & Co. KG

ABSTRACT OF THE ANALYSIS REPORT

DOCUMENT NO.:	**(3511/3276) -CM- OF 2007-09-25**
APPLICANT:	**MKT GMBH & CO. KG** **MR. LONGFEI LI** **AUF DEM IMMEL 2** **67685 WEILERBACH**
ORDER OF:	**SEPTEMBER 10, 2007**
ORDER CIPHER:	**DR. LI**
RECEIPT O ORDER:	**SEPTEMBER 10, 2007**
ORDER TOPIC:	**TESTING AND EVALUATION OF THE FIRE BEHAVIOUR OF MKT INJECTION SYSTEM COMBINED WITH VMU ANCHOR RODS** **- VMU-A (-AH), MADE OF GALVANIZED STEEL, RESPECTIVELY** **- VMU-A (-AH)-A4 AND VMU-A (-AH)-HCR, MADE OF STAINLESS STEEL** **IN THE SIZES M8 TO M12, ANCHORED IN DIFFERENT TYPES OF MASONRY AND LOADED IN AXIAL TENSION, IN ORDER TO EVALUATE FIRE RESISTANCE RATINGS**
TESTING BASIS:	**DIN EN 1363-1:1999-10**
RECEIPT OF SAMPLES:	**WEEK 3 OF 2007**
SAMPLE DRAWING:	**STATEMENTS REGARDING CERTIFIED SAMPLING WERE NOT PRESENTED TO THE INSPECTION AGENCY**
SAMPLE MARKING:	**-NONE-**
TEST DATE:	**JANUARY 29, 2005**
VALID THRU:	**SEPTEMBER 25, 2012**

THIS ABSTRACT OF THE ANALYSIS REPORT COMPRISES 3 PAGES INCLUDING THE COVER SHEET.

THE ANALYSIS REPORT (3511/3276) -CM- OF 2007-09-25 IS NOT A SUBSTITUTE FOR VERIFICATION ACCORDING TO REGULATIONS OF THE GERMAN BUILDING AUTHORITIES.

1 General

Based on these test results, the fire resistance ratings of MKT injection systems VMU, when subjected to the maximum allowable tensile load, can be as shown in table 2-1 and 2-2 of section 2 with special consideration given to section 3.

2 Evaluation of the test results

2.1 Design proposal for the MKT injection system VMU in sizes M8 to M12 in perforated brick masonry

Based on these test results the fire resistance ratings of table 2-1 with respect to the maximum tensile load are recommended for the MKT injection system VMU in combination with anchor rods VMU-A (-AH) made of galvanized steel (in sizes M8 to M12, strength class 5.8) when anchored in vertically perforated brick ≥ HLz 12 (according to DIN V 105) or sand-lime perforated brick ≥ KSL 12/II (according to DIN V 106) under one-sided fire exposure according to DIN EN 1363-1:1999-10.

Table 2-1: Design proposal for the MKT injection system VMU for anchorages in the above mentioned base material, concerning the fire resistance ratings dependent on the maximum allowable tensile load

MKT injection system VMU combined with VMU-A (-AH) (VMU-A (-AH) A4 and VMU-A (-AH) HCR)			
Fire resistance times in minutes [min]	**maximum tensile load max. F [kN]**		
	M8 [1)]	**M10** [2)]	**M12** [2)]
30	0,75	0,70	0,75
60	0,25	0,25	0,48
90	0,09	0,10	0,11

Drill holes in vertically perforated brick ≥ HLz 12 (according to DIN V 105) must be made with a hammer drill.

[1)] Design in combination with VMU-SH 14x100.

[2)] Design in combination with VMU-SH 16x100.

2.2 Design proposal for the MKT injection system VMU in sizes M8 to M12 in solid brick masonry

Based on these test results the fire resistance ratings of table 2-2 with respect to the maximum tensile load are recommended for the MKT injection system VMU combined with anchor rods VMU-A (-AH) made of galvanized steel (in sizes M8 to M12, strength class 5.8) when anchored in solid brick masonry ≥ Mz 12/II (according to DIN V 105) or solid sand-lime brick ≥ KS 12 (nach DIN V 106) under one-sided fire exposure according to DIN EN 1363-1:1999-10.

Table 2-2: Design proposal for the MKT injection system VMU for anchorages in the above mentioned base material, concerning the fire resistance ratings dependent on the maximum tensile load

MKT injection system VMU combined with VMU-A (-AH) (VMU-A (-AH) A4 and VMU-A (-AH) HCR)			
Fire resistance times in minutes [min]	**maximum tensile load max. F [kN]**		
	M8	**M10**	**M12**
30	0,75	0,70	0,75
60	0,25	0,25	0,48
90	0,09	0,10	0,11

3 Specific indications

3.1 The preceding evaluation only applies for the MKT injection system VMU combined with anchor rods VMU-A (-AH) made of galvanized steel (in sizes M8 to M12, strength class 5.8), resp. VMU-A (-AH)-A4 and VMU-A (-AH)-HCR, made of stainless steel (in sizes M8 to M12, material no. 1.4401, 1.4571, resp. 1.4529) and the appropriate perfo sleeve VMU-SH (for fixings in perforated brick) according to the technical attachments of the analysis report, resp. the associated technical data sheets of the contractor and with consideration of the boundary conditions of General Technical Approval Z-21.3-1803 dated 02-16-2006 by the building authorities.
The hex nuts and the washers are made of galvanized or stainless steel according to the anchor rod material.

3.2 The preceding evaluation is only valid for the certified MKT injection system VMU anchored in the following base materials:

vertically perforated brick ≥ HLz 12 (according to DIN V 105),
sand-lime perforated brick ≥ KSL 12/II (according to DIN V 106),
solid brick masonry ≥ Mz 12/II (according to DIN V 105),
solid sand-lime brick ≥ KS 12 (according to DIN V 106)

with the same or higher class of fire resistance as the fire resistance of the Chemical anchors.

3.3 The analysis report (3511/3276) -CM- of 2007-09-25 does not replace verification in accordance with the procedures of the German building authorities.

3.4 The validity of this abstract and of the analysis report is valid thru 2012-09-25.