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Institut für Baustoffe, Massivbau und Brandschutz | Materialprüfanstalt für das Bauwesen

Materialprüfanstalt für das Bauwesen · Beethovenstr. 52 · D-38106 Braunschweig

MKT GmbH & Co. KG
Frau Günther
Auf dem Immel 2
67685 Weilerbach

Letter **13241/2012**

Our Ref.:	(3200/214/12)-CM
Customer No.:	1856
Engineer/official in charge:	Mr Maertins
Department	BS
Contact:	0531-391-8265 c.maertins@ibmb.tu-bs.de
Your Ref.:	Julia.Guenther@mkt.de
Your message of:	-
Date	17/01/2014

Validity of Test Report No. (3019/272/07)-CM- of 01/11/2007

Dear Ms Günther,

In reply to your enquiry we wish to inform you that the statements made in the above Test Report No. (3019/272/07)-CM of 01/11/2007 regarding the reaction to fire of centrically tensioned MKT V anchors, consisting of

MKT V anchors in connection with MKT V-A anchor rods
(M8 to M24 made from electrogalvanised steel (strength class ≥ 5.8)),

MKT V anchors in connection with MKT V-A A4 anchor rods
(M8 to M24 made from stainless steel (material No. 1.4401 or 1.4404 or 1.4571 or 1.4578 (strength class ≥ 70)),

MKT V anchors in connection with MKT V-A HCR anchor rods
(M8 to M24 made from highly corrosion-resistant HCR steel (1.4529 or 1.4565 (strength class ≥ 70)),

which are set in uncracked reinforced concrete (strength class at least C20/25 and not higher than C50/60)) and exposed to a fire in accordance with the DIN 4102-2 : 1977-09 standard temperature-time curve (ETK), continue to apply until 17 July 2017.

This letter consists of 4 pages and contains an abstract of the above Test Report.

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Notified body (0761-CPD)
MPA Braunschweig has been approved and notified as a civil engineering supervisory, inspection and certification body. MPA Braunschweig has been ISO/IEC17025 accredited as a testing and calibration laboratory and ISO/IEC17020 accredited as an inspection body.

1 General

In view of the results that were achieved in the fire test, the fire resistance times that are listed in the tables in section 2 below can be assigned to the MKT V anchors for given maximum tensile loads, due consideration being given to the notes in section 3 below. The edge and centre distances have to be selected, so the steel failure / the mortar failure (failure as a result of ETK temperature exposure) becomes decisive.

2 Evaluation of test results

Table 2-1: Fire resistance times of MKT V anchors, consisting of MKT V anchors in connection with MKT V-A anchor rods (M8 to M24 made from electrogalvanised steel (strength class ≥ 5.8)), in substrates made from uncracked reinforced concrete (strength class at least C20/25 and not higher than C50/60)) as a function of the maximum tensile load

Designation	**Fire resistance time in minutes**			
MKT V anchor in connection with MKT V-A anchor rods	**30 max. F [kN]**	**60 max. F [kN]**	**90 max. F [kN]**	**120 max. F [kN]**
M8	≤ 2.30	≤ 1.29	≤ 0.79	≤ 0.53
M10	≤ 3.64	≤ 2.04	≤ 1.30	≤ 1.00
M12	≤ 5.26	≤ 3.07	≤ 2.00	≤ 1.50
M14	≤ 7.17	≤ 4.19	≤ 2.70	≤ 1.95
M16	≤ 9.79	≤ 5.72	≤ 3.68	≤ 2.67
M20	≤ 15.28	≤ 8.93	≤ 5.75	≤ 4.16
M24	≤ 22.01	≤ 12.86	≤ 8.28	≤ 6.00

1) For the normal intended use, loads resulting from an ETA may in the future be the determining loads

Table 2-2: Fire resistance time of MKT V anchors, consisting of MKT V anchors in connection with MKT V-A A4 anchor rods (M8 to M24 made from stainless steel (material No 1.4401 or 1.4404 or 1.4571 or 1.4578 (strength class ≥ 70)) or MKT V anchors in connection with MKT V-A HCR anchor rods (M8 to M24 made from highly corrosion resistant HCR steel (material No 1.4529 or 1.4565 (strength class ≥ 70)), in substrates made from uncracked reinforced concrete (strength class at least C20/25 and not higher than C50/60), ad a function of the maximum tensile load

Designation	**Fire resistance time in minutes**			
MKT V anchor in connection with MKT V-A A4 / HCR anchor rods	**30 max. F [kN]**	**60 max. F [kN]**	**90 max. F [kN]**	**120 max. F [kN]**
M8	≤ 2.30	≤ 1.29	≤ 0.79	≤ 0.53
M10	≤ 3.64	≤ 2.04	≤ 1.30	≤ 1.00
M12	≤ 5.26	≤ 3.07	≤ 2.00	≤ 1.50
M14	≤ 7.17	≤ 4.19	≤ 2.70	≤ 1.95
M16	≤ 9.79	≤ 5.72	≤ 3.68	≤ 2.67
M20	≤ 15.28	≤ 8.93	≤ 5.75	≤ 4.16
M24	≤ 22.01	≤ 12.86	≤ 8.28	≤ 6.00

1) For the normal intended use, loads resulting from an ETA may in the future be the determining loads

If the edge distance c is so large that steel failure becomes the failure mode, the load values in tables 2-1 to 2-2 can also be applied to anchors that are subjected to shear loads.

3 Special notes

The above-mentioned Test Report does not replace an approval (Building Code Test Certificate - abP, National Technical Approval - abZ, European Technical Approval - ETA) that is required under the German building code procedure. It should, in particular, be noted that fire load values for MKT anchors may in the future be regulated by a National Technical Approval (ABZ) or a European Technical Approval (ETA).

The above assessment only applies to the tested MKT V anchors on the basis of the conditions that are set out in the Technical Data Sheets of MKT GmbH. In accordance with the specifications pro-

vided by MKT GmbH, the anchors must be installed in compliance with European Technical Approval No. ETA-05/0231 of 24/11/2010.

The assessment for the above MTK V anchors only applies in connection with substrates made from uncracked reinforced concrete (strength class at least C20/25 and not higher than C50/60)) that can at least be classified under a fire resistance class that corresponds to that of the anchors. It must also be considered that the anchors have for the time being only been approved of for the normal intended use in uncracked reinforced concrete.

The validity of Test Report No. (3019/272/07)-CM of 01/11/2007 will in connection with this letter expire on 17/07/2017.

This document is the translated version of Letter No. 13241/2012 dated 02/08/2012. The legally binding text is the aforementioned German Letter.

Yours truly

i.A.
ORR Dr.-Ing. Blume
Deputy Head of Testing Laboratory

i.A.
Dipl.-Ing. Maertins
Engineer/official in charge