

FRIULSIDER SPA
Via Trieste 1
33048 SAN Giovanni al Natisone
Italien

Letter**8678/2013**

Our Ref.: (3469/596/13)-NB
Customer-No.: 13192
Official in Charge: Frau Bollmohr
Dept.: BS
Contact: 0531-391-5461
n.bollmohr@ibmb.tu-bs.de

Your Ref.:
Your message of:

Date: 30.05.2013

**Extension of the validity of Test Report No. (3319/384/09)-NB of 04/03/2009,
"Friulsider Injection system KEM-UP + Vinylester" bonded anchor**

Dear Sir or Madam,

In reply to your enquiry we wish to inform you that the statements made in the above Test Report No. (3319/384/09)-NB of 04/03/2009 regarding the reaction to fire of centrally tensioned

"Friulsider Injection system KEM-UP + Vinylester"

bonded anchors, with M8 to M30 anchor rods made from electrogalvanised steel (strength class ≥ 5.8) or

with M8 to M30 anchor rods made from A4 stainless steel or HCR steel (strength class $\geq A70$),

which are set in uncracked reinforced concrete (strength class between $\geq C20/25$ and $\leq C50/60$) and exposed on one side to a fire in accordance with the DIN EN 1363-1:1999-10 standard temperature-time curve (ETK), continue to apply until 6 March 2018.

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

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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 "Friulsider Injection system KEM-UP + Vinylester" bonded anchors as a function of the maximum tensile loads, due consideration being to the notes in section 3 below. The edge and centre distances have to be selected so that the steel failure / the mortar failure (failure as a result of ETK temperature exposure) becomes decisive.

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

2 Evaluation of test results

Table 1: Fire resistance times of the "Friulsider Injection system KEM-UP + Vinylester" bonded anchor in conjunction with M8 to M30 anchor rods made from electrogalvanised steel strength class ≥ 5.8) as a function of the maximum tensile load

Designation	Fire resistance time in minutes			
	30 max. N [kN]	60 max. N [kN]	90 max. N [kN]	120 max. N [kN]
"Friulsider Injection system KEM-UP + Vinylester" bonded anchor ¹⁾				
M8	≤ 1.64	≤ 1.12	≤ 0.59	≤ 0.33
M10	≤ 2.60	≤ 1.77	≤ 0.94	≤ 0.52
M12	≤ 3.35	≤ 2.59	≤ 1.82	≤ 1.44
M16	≤ 6.25	≤ 4.82	≤ 3.40	≤ 2.69
M20	≤ 9.75	≤ 7.52	≤ 5.30	≤ 4.19
M24	≤ 14.04	≤ 10.84	≤ 7.64	≤ 6.04
M30	≤ 18.26	≤ 14.10	≤ 9.94	≤ 7.86

¹⁾ When rating fasteners it has to be checked whether the permissible loads of the general type approvals (e.g. ETA-08/0383) are decisive.

Table 2: Fire resistance times of the “Friulsider Injection system KEM-UP + Vinylester” bonded anchor in conjunction with M8 to M30 anchor rods made from A4 stainless steel or HCR steel as a function of the maximum tensile load

Designation	Fire resistance time in minutes			
	30 max. N [kN]	60 max. N [kN]	90 max. N [kN]	120 max. N [kN]
“Friulsider Injection system KEM-UP + Vinylester” bonded anchor ¹⁾				
M8	≤ 1.64	≤ 1.12	≤ 0.59	≤ 0.33
M10	≤ 2.60	≤ 1.77	≤ 0.94	≤ 0.52
M12	≤ 3.35	≤ 2.59	≤ 1.82	≤ 1.44
M16	≤ 6.25	≤ 4.82	≤ 3.40	≤ 2.69
M20	≤ 9.75	≤ 7.52	≤ 5.30	≤ 4.19
M24	≤ 14.04	≤ 10.84	≤ 7.64	≤ 6.04
M30	≤ 18.26	≤ 14.10	≤ 9.94	≤ 7.86

- ¹⁾ When rating fasteners it has to be checked whether the permissible loads of the general type approvals (e.g. ETA-08/0383) are decisive.

3 Special notes


The above-mentioned Test Report, together with this extension, 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 addition, be noted that load values under fire exposure conditions may in the future be regulated by European Technical Approvals.

The above assessment only applies to the tested “Friulsider Injection system KEM-UP + Vinylester” bonded anchors on the basis of the conditions that are set out in the Technical Data Sheets of FRIULSIDER SPA. The anchors must be installed in accordance with the specification provided by FRIULSIDER SPA and in accordance with valid type approval (ETA, abZ).

The assessment for the above "Friulsider Injection system KEM-UP + Vinylester" bonded anchors only applies in connection with substrates made from reinforced concrete (strength class \geq C20/25 and \leq C50/60) that can at least be classified under a fire resistance class that corresponds to the fire resistance class of the anchors.

The validity of Test Report No. (3319/384/09)-NB of 04/03/2009 will in connection with this letter expire on 06/03/2018.

Yours sincerely

i. A. 
ORR Dr.-Ing. Rohling
Head of Testing Laboratory

i. A. 
Dipl.-Ing. Bollmohr
Engineer in Charge