

DECLARATION OF PERFORMANCE
DoP No. MKT- 441 - en

1. Unique identification code of the product-type: **Chemical Anchor V**
2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

ETA-05/0231, Annex A2
Batch number: see packaging of the product.

3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

Generic type	bonded anchor
for use in	uncracked concrete C20/25 – C50/60 (EN 206)
Option	8
Loading	static or quasi-static
Material	<u>zinc-plated steel:</u> dry internal conditions only covered sizes: M8, M10, M12, M16, M20, M24 <u>hot-dip galvanized steel:</u> dry internal conditions only covered sizes: M8, M10, M12, M16, M20, M24 <u>stainless steel (marking A4):</u> internal and external use without particular aggressive conditions covered sizes: M8, M10, M12, M16, M20, M24 <u>highly corrosion resistant steel (marking HCR):</u> internal and external use with particular aggressive conditions covered sizes: M8, M10, M12, M16, M20, M24
Temperature range (if applicable)	Temperature Range I: -40°C to +40°C Temperature Range II: -40°C to +80°C

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

MKT Metall-Kunststoff-Technik GmbH & Co. KG
Auf dem Immel 2
D - 67685 Weilerbach

5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): --
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: **System 1**
7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: --

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

issued **Deutsches Institut für Bautechnik, Berlin**
 on the basis of **ETA-05/0231**
EAD 330499-00-0601

The notified body 1343-CPR performed under system 1:

- (i) determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product;
- (ii) initial inspection of the manufacturing plant and of factory production control;
- (iii) continuous surveillance, assessment and evaluation of factory production control.

and issued: Certificate of Consistency of Performance 1343-CPR-M550-22/08.14

9. Declared performance:

Essential characteristics	Design method	Performance	Harmonized technical specification
characteristic resistance for tension	FprEN 1992 and TR055	Annex C1	EAD 330499-00-0601
characteristic resistance for shear	FprEN 1992 and TR055	Annex C2	
displacement for serviceability limit state	FprEN 1992 and TR055	Annex C1 and C2	

Where pursuant to Article 37 or 38 in the Specific Technical Documentation has been used, the requirements with which the product complies: --


10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:



Stefan Weustenhagen
 (General Manager)
 Weilerbach, 29.05.2018

i.V. 

Dipl.-Ing. Detlef Bigalke
 (Head of product development)



Table C1: Characteristic values for tension loads

Anchor size			M8	M10	M12	M16	M20	M24
Steel failure								
Characteristic resistance	Steel, zinc plated property class 5.8	$N_{Rk,s}$ [kN]	18	29	42	78	123	177
	Steel, zinc plated property class 8.8	$N_{Rk,s}$ [kN]	29	46	67	126	196	282
	Stainless steel A4 property class 70	$N_{Rk,s}$ [kN]	26	40	59	110	172	247
	Stainless steel A4 property class 80	$N_{Rk,s}$ [kN]	29	46	67	126	196	282
	High corrosion resistant steel HCR	$N_{Rk,s}$ [kN]	26	40	59	110	172	247
Combined pull-out and concrete failure								
Characteristic resistance in uncracked concrete C20/25 to C50/60								
Temperature range I	τ_{Rk} [N/mm ²]		10	11	9,5	9,5	8,5	7,5
Temperature range II	τ_{Rk} [N/mm ²]		10	11	9,5	8,0	7,0	5,5
Concrete cone failure								
Factor for k_1	$k_{ucr,N}$ [-]		11,0					
Edge distance	$c_{cr,N}$ [mm]		1,5 h_{ef}					
Spacing	$s_{cr,N}$ [mm]		3 h_{ef}					
Splitting								
Characteristic resistance	$N^0_{Rk,sp}$ [kN]		min [$N^0_{Rk,p}$; $N^0_{Rk,c}$]					
Edge distance	$c_{cr,sp}$ [mm]		1,5 h_{ef}	1 h_{ef}				
Spacing	$s_{cr,sp}$ [mm]		3 h_{ef}	2 h_{ef}				
Installation factor	γ_{inst} [-]		1,2					

Table C2: Displacements under tension load

Anchor size			M8	M10	M12	M16	M20	M24
Tension load	N [kN]		8	12	16	20	30	38
Displacement	δ_{N0} [mm]		0,1	0,2	0,2	0,2	0,5	0,4
	$\delta_{N\infty}$ [mm]		0,5					

Chemical Anchor V

Performance
Characteristic values and displacements under **tension load**

Annex C1

Table C3: Characteristic values for shear loads

Anchor size			M8	M10	M12	M16	M20	M24
Steel failure without lever arm								
Characteristic shear resistance	Steel, zinc plated property class 5.8	$V_{RK,s}^0$ [kN]	9	14	21	39	61	88
	Steel, zinc plated property class 8.8	$V_{RK,s}^0$ [kN]	15	23	33	63	98	141
	Stainless steel A4 property class 70	$V_{RK,s}^0$ [kN]	13	20	29	55	86	124
	Stainless steel A4 property class 80	$V_{RK,s}^0$ [kN]	15	23	33	62	98	141
	High corrosion resistant steel HCR	$V_{RK,s}^0$ [kN]	13	20	29	55	86	124
Ductility factor	k_7 [-]	0,8						
Steel failure with lever arm								
Characteristic bending moment	Steel, zinc plated property class 5.8	$M_{RK,s}^0$ [Nm]	19	37	65	166	325	561
	Steel, zinc plated property class 8.8	$M_{RK,s}^0$ [Nm]	30	60	105	266	519	898
	Stainless steel A4 property class 70	$M_{RK,s}^0$ [Nm]	26	52	92	233	454	785
	Stainless steel A4 property class 80	$M_{RK,s}^0$ [Nm]	30	60	105	266	519	898
	High corrosion resistant steel HCR	$M_{RK,s}^0$ [Nm]	26	52	92	233	454	785
Pry-out failure								
Factor	k_8 [-]	2,0						
Concrete edge failure								
Effective length of anchor	l_f [mm]	80	90	110	125	170	210	
Effective diameter of anchor	d_{nom} [mm]	10	12	14	18	25	28	
Installation factor	γ_{inst} [-]	1,0						

Table C4: Displacements under shear load

Anchor size			M8	M10	M12	M16	M20	M24
Shear load	V [kN]	5	8	12	22	35	50	
Displacement	δ_{V0} [mm]	2	3	3	4	5	5	
	$\delta_{V\infty}$ [mm]	4	5	5	6	7	7	

Chemical Anchor V

Performance
Characteristic values and displacements under **shear load**

Annex C2