

Declaration of Performance

DoP Number : 0679-DOP-1151



Revision	1
Revised by	Ryszard
Date	1-Sep-2016

Unique identification code of the product-type

TX... M8-M16	TX Throughbolt (Electroplated)
TX...G M8-M16	TX...G Throughbolt (Mechanical Galvanized)

Intended use of the construction product

Base material	Reinforced and unreinforced normal weight concrete strength classes C20/25 to C50/60 acc. EN 206-1:2003
Actions	Static or quasi-static actions
Use categories	Use in cracked and non-cracked concrete, ETAG 001-1 Option 1
Durability categories	Use in structures subject to dry, internal conditions Fire exposure
Design	Assumed the design of the anchorages and the specification of the anchor are under the control of an engineer experienced in anchorages and concrete work. Anchorages under static and quasi-static loads are designed in accordance with ETAG 001, Annex C, design method A. Anchorages under fire exposure are designed in accordance with EOTA Technical Report TR 020.
Installation	Assumed that the anchor installation is undertaken by trained personnel under the supervision of the site engineer.

Manufacturer

Name	Trutek Fasteners Polska Sp. z o.o.
Address	Al. Krakowska 55, Sękocin Nowy, 05-090 Raszyn, Polska

European technical assessment

Document number	ETA-16/0574 of 01-08-2016
Issued by	Centre Scientifique et Technique du Bâtiment
Address	84 avenue Jean Jaurès CHAMPS-SUR-MARNE F-77447 Mame-la Vallée Cedex 2
On basis of ETA	ETAG 001 - Part 1 & 2

Certificate of consistency of performance

Certificate number	0679-CPR-1151 of 30-08-2016
Issued by	Centre Scientifique et Technique du Bâtiment
Address	84 avenue Jean Jaurès CHAMPS-SUR-MARNE F-77447 Mame-la Vallée Cedex 2
Notify body number	0679
System of AVCP	1

Installation parameters

ETA-16/0574 Table B1 & B2

		M8	M10	M12	M16
Nominal drill hole diameter	d_o [mm]	8	10	12	16
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	10,45	12,50	16,50
Depth of drill hole	$h_1 \geq$ [mm]	55	75	75	100
Embedment depth	h_{ef} [mm]	40	60	60	80
Installation Torque	T_{inst} [N.m]	30	50	70	130
Clearance hole in the fixture	$d_f \geq$ [mm]	9	12	14	18
Minimum thickness of base material	h_{min} [mm]	100	120	120	160
Minimum spacing	s_{min} [mm]	65	150	80	85
Minimum edge distance	c_{min} [mm]	65	60	80	85

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Essential characteristics	
BR1 - Mechanical resistance and stability	Declared performances
1. Characteristic resistance for tension loads	See Table 1
2. Edge distances and spacing	See Table 1
3. Displacements under tension loads	See Table 2
4. Characteristic resistance for shear loads	See Table 3
5. Characteristic resistance for bending moments	See Table 3
6. Displacements under shear loads	See Table 4
BR2 - Safety in case of fire	Declared performances
1. Reaction to fire	Class A1
2. Resistance to fire	See Table 5 & 6
BR3 - Hygiene health and environment	No SVHC in Candidate List present in the product with a concentration excess above 0.1% (w/w), in accordance with REACH Regulation (EU) No. 1907/2006.
BR4 - Safety and accessibility in use	the same criteria are valid as for BWR 1
BR5 - Protection against noise	NPD
BR6 - Energy economy and heat retention	NPD
BR7 - Sustainable use of natural resources	NPD

Declared performances – Table 1						
Characteristic resistance for tension loads in cracked and non-cracked concrete C20/25 to C50/60						
ETA-16/0574 Table C1		design acc. to	ETAG 001, Annex C, design method A			
			M8	M10	M12	M16
Steel failure						
Characteristic resistance	$N_{Rk,s}$ [kN]		22,2	31,6	43,4	75,4
Partial safety factor	γ_{Ms}		1,88			
Pullout failure						
Characteristic resistance in non-cracked concrete C20/25	$NR_{k,p}$ [kN]		6	12	12	35
Characteristic resistance in cracked concrete C20/25	$NR_{k,p}$ [kN]		3	9	12	12
Increasing factors for $NR_{k,p}$	ψ_c	C30/37	1,22	1,22	1,22	1,22
		C40/50	1,41	1,41	1,41	1,41
		C50/60	1,55	1,55	1,55	1,55
Partial safety factor for cracked and non-cracked concrete	γ_{Mp}		1,8	1,8	2,1	1,8
Concrete cone and splitting failure						
Effective anchorage depth	h_{ef} [mm]		40	60	60	80
Spacing	$s_{cr,N}$ [mm]		120	180	180	240
Edge distance	$c_{cr,N}$ [mm]		60	90	90	120
Spacing	$s_{cr,sp}$ [mm]		200	300	360	400
Edge distance	$c_{cr,sp}$ [mm]		100	150	180	200
Declared performances – Table 2						
Displacements under tension loads						
ETA-16/0574 Table C2						

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			M8	M10	M12	M16
Non-cracked concrete C20/25	Tension load	N [kN]	2,38	4,76	5,44	11,90
	Displacement	δ_{NO} [mm]	0,05	0,10	0,06	0,30
		$\delta_{N\infty}$ [mm]	0,65	1,17	1,53	0,65
Non-cracked concrete C50/60	Tension load	N [kN]	3,69	9,92	10,20	18,45
	Displacement	δ_{NO} [mm]	0,05	0,24	0,10	0,10
		$\delta_{N\infty}$ [mm]	0,65	1,17	1,53	0,65
Cracked concrete C20/25	Tension load	N [kN]	1,19	4,76	4,08	4,08
	Displacement	δ_{NO} [mm]	0,05	0,83	1,04	0,40
		$\delta_{N\infty}$ [mm]	1,15	1,17	1,53	1,14
Cracked concrete C50/60	Tension load	N [kN]	1,85	4,76	10,20	6,33
	Displacement	δ_{NO} [mm]	2,95	0,94	1,89	3,43
		$\delta_{N\infty}$ [mm]	2,95	1,17	1,53	3,43

Declared performances – Table 3
Characteristic resistance for shear loads in cracked and non-cracked concrete C20/25 to C50/60

ETA-16/0574 Table C3

design acc. to

ETAG 001, Annex C, design method A

			M8	M10	M12	M16
Steel failure without lever arm						
Characteristic resistance	$V_{Rk,s}$ [kN]		8,1	17,6	24,7	45,9
Partial safety factor	γ_{Ms}		1,25			
Steel failure with lever arm						
Characteristic bending resistance	$M_{Rk,s}^0$ [Nm]		22,8	45,5	76,6	194,8
Partial safety factor	γ_{Ms}		1,25			
Concrete pryout failure						
Factor in equation (5.6) of ETAG 001 Annex C, 5.2.3.3	k		1,0	2,0		
Concrete edge failure						
Effective length of anchor under shear loading	l_f [mm]		40	60	60	80
Effective diameter of anchor	d_{nom} [mm]		8	10	12	16
Partial safety factor	γ_{Mc}		1,5			

Declared performances – Table 4
Displacements under shear loads

ETA-16/0574 Table C4

			M8	M10	M12	M16
Non-cracked and cracked concrete C20/25 to C50/60	Shear load	V [kN]	4,63	9,14	9,52	26,23
	Displacement	δ_{VO} [mm]	5,50	5,26	5,84	3,60
		$\delta_{V\infty}$ [mm]	8,25	7,89	8,76	5,40

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Declared performances – Table 5
Char. resistance for tension loads under fire exposure in cracked and non-cracked concrete C20/25 - C50/60

ETA-16/0574 Table C5

design acc. to

EOTA Technical Report TR020

			M8	M10	M12	M16
Steel failure						
Characteristic resistance	R30	$N_{Rk,s,fi}$ [kN]	0,4	0,9	1,7	3,1
	R60	$N_{Rk,s,fi}$ [kN]	0,3	0,8	1,3	2,4
	R90	$N_{Rk,s,fi}$ [kN]	0,3	0,6	1,1	2,0
	R120	$N_{Rk,s,fi}$ [kN]	0,2	0,5	0,8	1,6
Pullout failure (cracked and non-cracked concrete)						
Characteristic resistance	R30	$N_{Rk,p,fi}$ [kN]	0,8	2,3	3,0	4,0
	R60	$N_{Rk,p,fi}$ [kN]	0,8	2,3	3,0	4,0
	R90	$N_{Rk,p,fi}$ [kN]	0,8	2,3	3,0	4,0
	R120	$N_{Rk,p,fi}$ [kN]	0,6	1,8	2,4	3,2
Concrete cone failure						
Characteristic resistance	R30	$N_{Rk,c,fi}$ [kN]	1,8	5,0	5,0	10,3
	R60	$N_{Rk,c,fi}$ [kN]	1,8	5,0	5,0	10,3
	R90	$N_{Rk,c,fi}$ [kN]	1,8	5,0	5,0	10,3
	R120	$N_{Rk,c,fi}$ [kN]	1,8	4,0	4,0	8,2
Characteristic spacing		$s_{cr,N,fi}$ [mm]	160	240	240	320
Characteristic edge distance		$c_{cr,N,fi}$ [mm]	80	120	120	160

Declared performances – Table 6
Char. resistance for shear loads under fire exposure in cracked and non-cracked concrete C20/25 - C50/60

ETA-16/0574 Table C6

design acc. to

EOTA Technical Report TR020

			M8	M10	M12	M16
Steel failure without lever arm						
Characteristic resistance	R30	$V_{Rk,s,fi}$ [kN]	0,4	0,9	1,7	3,1
	R60	$V_{Rk,s,fi}$ [kN]	0,3	0,8	1,3	2,4
	R90	$V_{Rk,s,fi}$ [kN]	0,3	0,6	1,1	2,0
	R120	$V_{Rk,s,fi}$ [kN]	0,2	0,5	0,8	1,6
Steel failure with lever arm						
Characteristic resistance	R30	$M^0_{Rk,s,fi}$ [N·m]	0,4	1,1	2,6	6,7
	R60	$M^0_{Rk,s,fi}$ [N·m]	0,3	1,0	2,0	5,0
	R90	$M^0_{Rk,s,fi}$ [N·m]	0,3	0,7	1,7	4,3
	R120	$M^0_{Rk,s,fi}$ [N·m]	0,2	0,6	1,3	3,3
Concrete pry-out failure						
	R30	k	1		2	
Characteristic resistance	R30	$V_{Rk,s,fi}$ [kN]	1,8	10,0	10,0	20,6
	R60	$V_{Rk,s,fi}$ [kN]	1,8	10,0	10,0	20,6
	R90	$V_{Rk,s,fi}$ [kN]	1,8	10,0	10,0	20,6
	R120	$V_{Rk,s,fi}$ [kN]	1,5	8,0	8,0	16,5
Concrete edge failure						
Eff. length of anchor under loading		l_f [mm]	40	60	60	80
Outside diameter of anchor		d_{nom} [mm]	8	10	12	16

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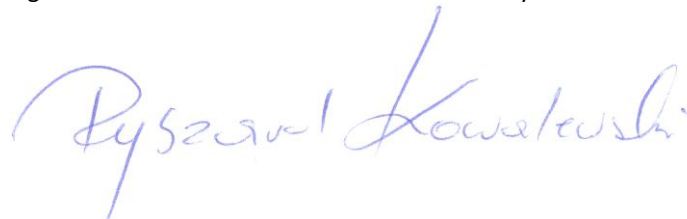


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The performance of the product identified above is in conformity with the set of declared performance(s).

This declaration of performance is issued, in accordance with Construction Product Regulation (EU) No. 305/2011, Under the sole responsibility of the manufacturer of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:



Mr. Ryszard Kowalewski / Technical Manager
Sękocin Nowy, on the 1th of September, 2016