Declaration of Performance

DoP Number : 1488-CPR-0525/W

Revision	
Revised by	
Date	01.11.2015

Unique identification code of the product-type

TAPCON 4 H 8-14	SPIT TAPCON 4 - Hex Head (Electroplated)
TAPCON 4 F 8-14	SPIT TAPCON 4 - Flanged Hex Head (Electroplated)
TAPCON 4 C 8-14	SPIT TAPCON 4 – Countersunk Trox Head (Electroplated)
TAPCON 4 HM 8-14	SPIT TAPCON 4 - Hex Head (Mechanical galvanized)
TAPCON 4 FM 8-14	SPIT TAPCON 4 - Flanged Hex Head (Mechanical galvanized)
TAPCON 4 CM 8-14	SPIT TAPCON 4 – Countersunk Trox Head (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	Societe SPIT
Address	Route de Lyon 26501 BOUG-LES-VALANCE FRANCE

European technical assessment

Document number	**ETA-15/0368**	of	12-06-2015
Issued by	Instytut Techniki Budowlanej		
Address	ul. Filtrowa 1, PL 00-611 WARSZAWA, POLAND		
On basis of ETA	ETAG 001 - Part 1 & 3		

Certificate of consistency of performance

Certificate number	1488-CPR-0525/W	of	14-10-2015
Issued by	Instytut Techniki Budowlanej		
Address	ul. Filtrowa 1, PL 00-611 WARSZAWA, POLAND		
Notify body number	1488		
System of AVCP	1		

Installation parameters

ETA-15/0368 Table B1 & B2

		8	**10**	**12**	**14**
Nominal drill hole diameter	d_o [mm]	8	10	12	13
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	10,45	12,50	14,50

Depth of drill hole	$h_1 \geq$ [mm]	55	60	75	60	70	85	60	70	105	70	80	125
Nominal anchorage depth	h_{nom} [mm]	45	50	65	50	60	75	50	60	95	60	70	115
Clearance hole in the fixture	$d_f \geq$ [mm]	12			14			16			18		
Minimum thickness of base material	h_{min} [mm]	110			110			130			150		
Minimum spacing	s_{min} [mm]	60			70			80			90		
Minimum edge distance	c_{min} [mm]	60			70			80			90		

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-15/0368 Table C1	**design acc. to**		**ETAG 001, Annex C, design method A**											
			8			**10**			**12**			**14**		
Nominal anchorage depth	h_{nom} [mm]		45	50	65	50	60	75	50	60	95	60	70	115
Steel failure														
Characteristic resistance	$N_{Rk,s}$ [kN]		42,4			67,2			99,4			134,0		
Partial safety factor	γ_{Ms}		1,4											
Pullout failure														
Characteristic resistance in non-cracked concrete C20/25	NRk,p [kN]		6	6	12	6	9	16	6	9	25	9	12	35
Characteristic resistance in cracked concrete C20/25	NRk,p [kN]		3	4	7,5	4	6	9	4	6	16	5	7,5	20
Increasing factors for $N_{Rk,p}$	Ψ_c	C30/37	1,17			1,17			1,17			1,22		
		C40/50	1,32			1,32			1,32			1,41		
		C50/60	1,42			1,42			1,42			1,55		
Partial safety factor for cracked and non-cracked concrete	γ_{Mp}		1,8											

Concrete cone and splitting failure													
Effective anchorage depth	h_{ef} [mm]	30	34	47	33	42	54	33	42	71	40	48	86
Spacing	$s_{cr,N}$ [mm]	90	102	141	100	124	162	100	124	213	118	144	258
Edge distance	$c_{cr,N}$ [mm]	45	51	71	50	62	81	50	62	107	59	72	129
Spacing	$s_{cr,sp}$ [mm]	90	102	141	100	124	162	100	124	213	118	144	258
Edge distance	$c_{cr,sp}$ [mm]	45	51	71	50	62	81	50	62	107	59	72	129

Declared performances – Table 2

Displacements under tension loads

ETA-15/0368 Table C2

			8	**10**	**12**	**14**
Non-cracked concrete C20/25 to C50/60	Tension load	N [kN]	5,8	8,5	12,6	15,6
	Displacement	δ_{NO} [mm]	0,3	0,4	0,4	0,6
		$\delta_{N\infty}$ [mm]	1,4	1,5	1,8	1,9
Cracked concrete C20/25 to C50/60	Tension load	N [kN]	3,2	4,0	6,9	9,6
	Displacement	δ_{NO} [mm]	0,4	0,5	0,5	0,6
		$\delta_{N\infty}$ [mm]	2,0	2,0	2,0	2,0

Declared performances – Table 3

Characteristic resistance for shear loads in cracked and non-cracked concrete C20/25 to C50/60

ETA-15/0368 Table C3 **design acc. to** **ETAG 001, Annex C, design method A**

		8			**10**			**12**			**14**		
Nominal anchorage depth	h_{nom} [mm]	45	50	65	50	60	75	50	60	95	60	70	115
Steel failure without lever arm													
Characteristic resistance	$V_{Rk,s}$ [kN]	17,0			26,9			39,8			53,5		
Partial safety factor	γ_{Ms}	1,5											
Steel failure with lever arm													
Characteristic bending resistance	$M^0_{Rk,s}$ [Nm]	46,8			93,2			167,7			261,8		
Partial safety factor	γ_{Ms}	1,5											
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]	30	34	47	33	42	54	33	42	71	40	48	86
Effective diameter of anchor	d_{nom} [mm]	8			10			12			16		
Partial safety factor	γ_{Mcp}	1,5											

Declared performances – Table 4

Displacements under shear loads

ETA-15/0368 Table C4

			8	**10**	**12**	**14**
Non-cracked and cracked concrete	Shear load	V [kN]	6,9	11	15	15,5
	Displacement	δ_{VO} [mm]	1,5	1,7	2,0	2,7

C20/25 to C50/60		$\delta_{V\infty}$ [mm]	2,3	2,6	3,0	4,1

Declared performances – Table 5

Characteristic resistance for tension loads under fire exposure in cracked and non-cracked concrete C20/25 to C50/60

ETA-15/0368 Table C5		**design acc. to**	**EOTA Technical Report TR020**			
			8	**10**	**12**	**14**
Nominal anchorage depth		h_{nom} [mm]	65	75	95	115
Steel failure						
Characteristic resistance	R30	$N_{Rk,s,fi}$ [kN]	0,64	1,34	1,99	2,68
	R60	$N_{Rk,s,fi}$ [kN]	0,55	1,01	1,49	2,01
	R90	$N_{Rk,s,fi}$ [kN]	0,42	0,87	1,29	1,74
	R120	$N_{Rk,s,fi}$ [kN]	0,34	0,67	0,99	1,34
Pullout failure						
Characteristic resistance	R30	$N_{Rk,p,fi}$ [kN]	1,9	2,2	4,0	5,0
	R60	$N_{Rk,p,fi}$ [kN]	1,9	2,2	4,0	5,0
	R90	$N_{Rk,p,fi}$ [kN]	1,9	2,2	4,0	5,0
	R120	$N_{Rk,p,fi}$ [kN]	1,5	1,8	3,2	4,0
Concrete cone failure						
Characteristic resistance	R30	$N_{Rk,c,fi}$ [kN]	2,7	3,9	7,6	12,3
	R60	$N_{Rk,c,fi}$ [kN]	2,7	3,9	7,6	12,3
	R90	$N_{Rk,c,fi}$ [kN]	2,7	3,9	7,6	12,3
	R120	$N_{Rk,c,fi}$ [kN]	2,2	3,1	6,1	9,9
Edge distance						
	R30	$c_{cr,N,fi}$ [kN]	96	108	142	172
	R60	$c_{cr,N,fi}$ [kN]				
	R90	$c_{cr,N,fi}$ [kN]				
	R120	$c_{cr,N,fi}$ [kN]				
Spacing						
	R30	$s_{cr,N,fi}$ [kN]	192	216	284	344
	R60	$s_{cr,N,fi}$ [kN]				
	R90	$s_{cr,N,fi}$ [kN]				
	R120	$s_{cr,N,fi}$ [kN]				

Declared performances – Table 6

Characteristic resistance for shear loads under fire exposure in cracked and non-cracked concrete C20/25 to C50/60

ETA-15/0368 Table C6		**design acc. to**	**EOTA Technical Report TR020**			
			8	**10**	**12**	**14**
Nominal anchorage depth		h_{nom} [mm]	65	75	95	115
Steel failure without lever arm						
Characteristic resistance	R30	$V_{Rk,s,fi}$ [kN]	0,64	1,34	1,99	2,68
	R60	$V_{Rk,s,fi}$ [kN]	0,55	1,01	1,49	2,01
	R90	$V_{Rk,s,fi}$ [kN]	0,42	0,87	1,29	1,74
	R120	$V_{Rk,s,fi}$ [kN]	0,34	0,67	0,99	1,34

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		Revised by	
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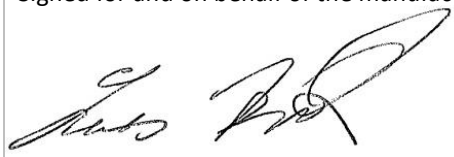
Steel failure with lever arm						
Characteristic resistance	R30	$M^0_{Rk,s,fi}$ [N·m]	0,70	1,86	3,36	5,24
	R60	$M^0_{Rk,s,fi}$ [N·m]	0,61	1,40	2,52	3,93
	R90	$M^0_{Rk,s,fi}$ [N·m]	0,47	1,21	2,18	3,40
	R120	$M^0_{Rk,s,fi}$ [N·m]	0,37	0,93	1,68	2,62
Concrete pry-out failure						
	R30	k	1		2	
	R60	k				
	R90	k				
	R120	k				
Concrete edge failure						
	R30	$V^0_{Rk,c,fi}$ [kN]	$0,25 \cdot V^0_{Rk,c}$			
	R60	$V^0_{Rk,c,fi}$ [kN]				
	R90	$V^0_{Rk,c,fi}$ [kN]				
	R120	$V^0_{Rk,c,fi}$ [kN]	$0,20 \cdot V^0_{Rk,c}$			

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:



Lars Holbæk
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ITW Construction Products ApS

Middelfart the 1st of November 2015