

Declaration of Performance
DoP SL-en



1. Product type: SL heavy duty anchor

2. Identification:

Product code	Length [mm]	Metric	Outer diameter [mm]	Fixture thickness [mm]
SLPT10070/ SLPC10070	70	M6	10	10
SLPT10080/ SLPC10080	80			20
SLPT10100/ SLPC10100	100			40
SLPT10110	110			50
SLPT12080	80	M8	12	5
SLPT12090	90			15
SLPT12100/ SLPC12100	100			25
SLPT12120	120			45
SLPT16100	100	M10	16	15
SLPT16120	120			35
SLPT16140	140			55
SLPT16160	160			75
SLPT18110	110	M12	18	10
SLPT18120	120			20
SLPT18140	140			40
SLPT18150	150			50
SLPT18170	170			70
SLPT18200	200			100
SLPT24140	140	M16	24	20
SLPT24170	170			50
SLPT24200	200			80
SLPT24220	220			100
SLPT28170	170	M20	28	20
SLPT28200	200			50
SLPT28240	240			90

3. Intended use: Generic type: Torque controlled anchor sleeve type
 Base material: Concrete C20/25 to C50/60 according to EN 206-1.
 Material: Made of steel, zin plated ISO 4042 A2
 Durability: Internal dry conditions
 Loading: Static, quasi static loads
 Seismic: Not declared performance
 Fire Resistance: F120
 Assumed work life: 50 years

4. Manufacturer: Index Fixing Systems. Técnicas Expansivas S.L.
 Segador, 13
 26006 Logroño, La Rioja, ESPAÑA

5. Authorised representative: No applicable

6. System of assessment of performance: 1

7. Harmonised standard: No applicable

8. European technical assessment
 Tech. assessment body: IETcc; Instituto Eduardo Torroja de ciencias de la construcción. Notified body 1219
 issued: ETA 18/1108
 on the basis of: EAD 33032-00-0601
 performed: Determination of product type, initial inspection of the manufacturing plant, evaluation and surveillance del CPF 1
 under system: 1
 and issued: Certificate CE 1219-CPR-0219
9. Declared performances:

Essential characteristics		Performance						Technical specification	
		M6 Ø10	M8 Ø12	M10 Ø16	M12 Ø18	M16 Ø24	M20 Ø28		
Installation parameters								ETA 18/1108	
d_o	Nominal diameter of drill bit:	[mm]	10	12	16	1	24	28	
D_f	Fixture clearance hole diameter:	[mm]	12	14	18	20	26	31	
T_{inst}	Nominal installation torque:	[Nm]	15	30	50	80	160	240	
h_{min}	Minimum thickness of concrete member:	[mm]	100	120	140	170	200	250	
h_1	Depth of drilled hole:	[mm]	70	85	95	110	130	160	
h_{m}^{ho}	Minimum installation depth:	[mm]	59	72	83	97	117	146	
h_{ef}	Effective embedment depth:	[mm]	50	60	70	85	100	125	
d_f	Fixture clearance hole diameter:	[mm]	12	14	18	20	26		
t_{fix}	Thickness of element to be fixed: <small>1) Total length of anchor</small>	[mm]	L-60	L-75	L-85	L-100	L-120	L-150	
s_{min}	Minimum edge distance:	[mm]	100	120	175	200	220	320	
c_{min}	Minimum spacing:	[mm]	50	60	70	80	100	160	
d_c	Countersunk diameter in base plaque:	[mm]	16.4	20.6	26.8	30.8	38.8	44.8	
h_c	Countersunk depth in the base plaque:	[mm]	3.2	4.3	5.4	6.4	7.4	8.4	
SW	Socket wrench for SLPT:	[-]	10	13	17	19	24	30	
SW	Hexagon wrench for SLPC:	[-]	4	5	6	8	10	12	
1) Total length of anchor:									
Tension load: Steel failure								ETA 18/1108	
$N_{Rk,s}$	Characteristic resistance:	[kN]	16.1	29.3	46.4	67.4	126.0	196.0	
γ_{Ms}	Partial security factor:	[-]	1.5						
Tension load: Pull-out failure in concrete								ETA 18/1108	
$N_{Rk,p,ucr}$	Characteristic resistance in non-cracked concrete C20/25:	[kN]	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	
$N_{Rk,p,c}$	Characteristic resistance in cracked concrete C20/25:	[kN]	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	-- ¹⁾	
γ_{ins}	Partial security factor: ¹⁾	[-]	1.0	1.0	1.0	1.0	1.2	1.2	
ψ_c	Enlargement factor for $N_{Rk,p}$	C30/37	[-]	1.22	1.22	1.22	1.22	1.08	1.08
		C40/45	[-]	1.41	1.41	1.41	1.4	1.15	1.15
		C50/60	[-]	1.58	1.58	1.58	1.58	1.2	1.2
Tension load: Concrete pryout failure and cracking								ETA 18/1108	
h_{ef}	Effective embedment depth:	[mm]	50	60	70	85	100	125	
$K_{ucr,N}$	Factor for non-cracked concrete	[-]	11.0						
$K_{cr,N}$	Factor for cracked concrete	[-]	7.7						
γ_{ins}	Safety factor for installation	[-]	1.0	1.0	1.0	1.0	1.2	1.2	
$S_{cr,N}$	Pryout concrete failure	[mm]	$3 \times h_{ef}$						
		[mm]	$1.5 \times h_{ef}$						
$S_{cr,sp}$	Cracking concrete failure	[mm]	205	245	285	345	410	510	
		[mm]	105	125	145	175	205	255	
1) Pull-out failure is not critical									
Displacements under tensión loads								ETA 18/1108	
N	Service tension load in non-cracked concrete C20/25 to C50/60	[kN]	7.67	10.90	13.71	18.38	19.52	27.30	
δ_{ND}	Short term displacement:	[mm]	1.18	2.02	1.79	1.15	2.46	2.12	
$\delta_{N\rightarrow}$	Long term displacement:	[mm]	2.68	2.68	2.68	2.68	2.68	2.68	
N	Service shear load in cracked concrete C20/25 to C50/60:	[kN]	5.81	7.62	9.62	12.86	13.65	19.09	
δ_{ND}	Short term displacement:	[mm]	1.75	2.69	2.57	3.53	1.76	2.41	
$\delta_{N\rightarrow}$	Long term displacement:	[mm]	3.75	4.69	4.57	5.53	3.76	4.41	
Characteristic resistance values under chear load. Calculation method A								ETA 18/1108	
Shear loads: Steel failure without lever arm									
$V_{Rk,s}$	Characteristic resistance:	[kN]	20.2	33.0	62.2	75.1	111.2	141.7	
K_f	Ductility factor:	[-]	1.0						
γ_{Ms}	Partial safety factor:	[-]	1.25						
Shear loads: Steel failure with lever arm									
$M^0_{Rk,s}$	Characteristic bending:	[Nm]	12.2	30.0	59.8	104.8	266.4	519.3	
γ_{Ms}	Partial safety factor:	[-]	1.25						
Shear loads: Pryout concrete failure									
K_B	Pryout factor:	[-]	1.0	2.0	2.0	2.0	2.0	2.0	
γ_{ins}	Safety factor of installation:	[-]	1.0						
Shear loads: Edge failure of concrete									
l_f	Effective length of anchor under shear	[mm]	50	60	70	85	100	125	

loads:									
d_{nom}	Outside anchor diameter:	[mm]	10	12	16	18	24	28	
γ_{ins}	Safety factor of installation:	[-]	1.0						
Displacements under shear loads									ETA 18/1108
V	Service shear load in cracked and non-cracked concrete C20/25 to C50/60:	[kN]	9.62	15.71	29.62	35.76	44.13	56.23	
δ_{V0}	Short term displacement:	[mm]	2.15	1.22	1.31	1.72	1.41	1.96	
$\delta_{V\infty}$	Long term displacement:	[mm]	3.23	1.83	1.96	2.58	2.11	2.93	
Characteristic resistance values in fire conditions									ETA 18/1108
$N_{Rk,s,fi}$	Tension characteristic resistance:	R30	[kN]	0.2	0.4	0.9	1.7	3.1	4.9
		R60	[kN]	0.2	0.3	0.8	1.3	2.4	3.7
		R90	[kN]	0.1	0.3	0.6	1.1	2.0	3.2
		R120	[kN]	0.1	0.2	0.5	0.8	1.6	2.5
$V_{Rk,s,fi}$	Shear characteristic resistance:	R30	[kN]	0.2	0.4	0.9	1.7	3.1	4.9
		R60	[kN]	0.2	0.3	0.8	1.3	2.4	3.7
		R90	[kN]	0.1	0.3	0.6	1.1	2.0	3.2
		R120	[kN]	0.1	0.2	0.5	0.8	1.6	2.5
$M_{Rk,s,fi}$	Bending characteristic resistance:	R30	[kN]	0.2	0.4	1.1	2.6	6.7	13.0
		R60	[kN]	0.1	0.3	1.0	2.0	5.0	9.7
		R90	[kN]	0.1	0.3	0.7	1.7	4.3	8.4
		R120	[kN]	0.1	0.2	0.6	1.3	3.3	6.5

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 on behalf of the manufacturer by:



Santiago Reig. Technical manager
Logroño, 16.05.2019