DECLARATION OF PERFORMANCE
N° CHIMFORTATE 01A EN

LR ETANCO SAS
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1. Unique identification code of the product-type :

CHIMFORT ATE

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

ETA-06/0198 – ETA-06/0202 – ETA/11/0116
Batch number: see packaging of the product

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

ETA-06/0198	
Generic type and intended use of the product	Bonded injection type anchor made of galvanized steel, sizes M8, M10, M12, M16 and M20
For use in	Un-cracked concrete (C20/25 to C50/60 according to EN 206-1:2003)
Option / category	ETAG 001 option 8
Loading	Static and quasi-static
Material	Steel class 5.8 to 10.9 according to EN ISO 898-1 Zinc-plated steel according to EN ISO 4042: Dry internal conditions only
Temperature range	-40 °C to +40°C (max short term temperature +40°C and max long term temperature +24°C)
Fire class	A1 according to EN 13501-1
Hygiene, health and environment	See packaging of the product and Safety Data Sheet

ETA-06/0202	
Generic type and intended use of the product	Bonded injection type anchor made of stainless steel, sizes M8, M10, M12, M16 and M20
For use in	Un-cracked concrete (C20/25 to C50/60 according to EN 206-1:2003)
Option / category	ETAG 001 option 8
Loading	Static and quasi-static
Material	Stainless steel ASI316 grade A4-70 or A4-80 according to EN ISO 3506-1: internal dry conditions and external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal conditions if no particular aggressive conditions exist.
Temperature range	-40 °C to +40°C (max short term temperature +40°C and max long term temperature +24°C)
Fire class	A1 according to EN 13501-1
Hygiene, health and environment	See packaging of the product and Safety Data Sheet

ETA-11/0116	
Generic type and intended use of the product	Post-installed rebar connections, sizes diameters 8 to 32 mm with injection mortar
For use in	Non-carbonated concrete (C12/15 to C50/60 according to EN 206-1:2000)
Option / category	ETAG 001 + TR 023
Loading	Predominantly static – Eurocode 2 EN 1992-1-1:2004
Material	Rebar class B and C according to EN 1992-1-1 Annex C
Temperature range	-40 °C to +40°C (max short term temperature +40°C and max long term temperature +24°C)

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Fire class	**A1 according to EN 13501-1**
Hygiene, health and environment	**See packaging of the product and Safety Data Sheet**

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

LR ETANCO
66 route de Sartrouville – BP49
78231 Le Pecq Cedex
France

5. Where applicable name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12 (2):

Not relevant

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 1 – ETA-06/0198 – ETA-06/0202 – ETA-11/0116

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

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

CSTB approval body issued ETA-06/0198 on the basis of 'ETAG 001 part 5.
CSTB notified body n°0679 issued according to system 1 the certificate of conformity n° 0679-CPD-0345.

CSTB approval body issued ETA-06/0202 on the basis of 'ETAG 001 part 5.
CSTB notified body n°0679 issued according to system 1 the certificate of conformity n° 0679-CPD-0346.

ITB approval body issued ETA-11/0116 on the basis of 'ETAG 001 TR023.
CSTB notified body n°0679 issued according to system 1 the certificate of conformity n° 0679-CPD-0834.

9. Declared Performances:

ETA-06/0198							
Essential characteristics – ETAG 001 Annex C			**Performance**				
Installation parameters			**M8**	**M10**	**M12**	**M16**	**M20**
d_0	Nominal diameter of the drill bit	[mm]	10	12	14	18	22
h_0 « 8d »	Depth of the hole	[mm]	64	80	96	128	160
h_0 « 12d »	Depth of the hole	[mm]	96	120	144	192	240
h_{ef} « 8d »	Effective anchoring depth	[mm]	64	80	96	128	160
h_{ef} « 12d »	Effective anchoring depth	[mm]	96	120	144	192	240
h_{min} « 8d »	Minimum thickness of the concrete slab	[mm]	100	110	125	160	200
h_{min} « 12d »	Minimum thickness of the concrete slab	[mm]	125	150	175	225	280
T_{inst}	Tightening torque	[Nm]	10	20	40	80	150
s_{min} « 8d »	Minimum spacing	[mm]	35	40	48	64	80
s_{min} « 12d »	Minimum spacing	[mm]	48	60	72	96	120
c_{min} « 8d »	Minimum edge distance	[mm]	35	40	48	64	80
c_{min} « 12d »	Minimum edge distance	[mm]	48	60	72	96	120

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Tension steel failure mode (class 5.8)							
$N_{Rk,s}$	Characteristic resistance	[kN]	19	30	43	81	127
$\gamma_{m,sN}$ [1)]	Partial safety factor	[-]			1,49		
Tension steel failure mode (class 8.8)							
$N_{Rk,s}$	Characteristic resistance	[kN]	29	46	67	126	196
$\gamma_{m,sN}$ [1)]	Partial safety factor	[-]			1,50		
Tension steel failure mode (class 10.9)							
$N_{Rk,s}$	Characteristic resistance	[kN]	37	58	84	157	245
$\gamma_{m,sN}$ [1)]	Partial safety factor	[-]			1,40		
Pullout and concrete cone failure mode							
$N_{Rk,p} = N^0_{Rk,c}$ « 8d »	Characteristic resistance	[kN]	**25**	**30**	**40**	**60**	**75**
$N_{Rk,p} = N^0_{Rk,c}$ « 12d »	Characteristic resistance	[kN]	**35**	**40**	**60**	**95**	**115**
$\gamma_{m,p} = \gamma_{m,c}$ [1)]	Partial safety factor	[-]			1,5		
Splitting failure mode							
$s_{cr,N}$ « 8d »	Spacing	[mm]	128	160	192	256	320
$s_{cr,N}$ « 12d »	Spacing	[mm]	192	240	288	384	480
$s_{cr,sp}$ « 8d »	Spacing	[mm]	256	320	384	512	640
$s_{cr,sp}$ « 12d »	Spacing	[mm]	384	480	576	768	960
$c_{cr,N}$ « 8d »	Edge distance	[mm]	64	80	96	128	160
$c_{cr,N}$ « 12d »	Edge distance	[mm]	96	120	144	192	240
$c_{cr,sp}$ « 8d »	Edge distance	[mm]	128	160	192	256	320
$c_{cr,sp}$ « 12d »	Edge distance	[mm]	192	240	288	384	480
$\gamma_{m,sp}$ [1)]	Partial safety factor	[-]			1,5		
Displacement under axial tension loads							
N	Admissible service load	[kN]	**12**	**14**	**18**	33	38
δ_{N0}	Short term displacement	[mm]	0,3	0,3	0,3	0,3	0,3
$\delta_{N\infty}$	Long term displacement	[mm]	0,5	0,5	0,5	0,5	0,5
Shear steel failure mode (class 5.8)							
$V_{Rk,s}$	Characteristic resistance without lever arm	[kN]	**9,5**	**15,1**	**21,9**	**40,8**	**63,7**
$M_{Rk,s}$	Characteristic resistance with lever arm	[Nm]	19	39	68	173	337
$\gamma_{m,sV}$ [1)]	Partial safety factor	[-]			1,5		
Shear steel failure mode (class 8.8)							
$V_{Rk,s}$	Characteristic resistance without lever arm	[kN]	**14,6**	**23,2**	**33,7**	**62,8**	**98,0**
$M_{Rk,s}$	Characteristic resistance with lever arm	[Nm]	30	60	105	266	519
$\gamma_{m,sV}$ [1)]	Partial safety factor	[-]			1,5		
Shear steel failure mode (class 10.9)							
$V_{Rk,s}$	Characteristic resistance without lever arm	[kN]	**18,3**	**29,0**	**42,2**	**78,5**	**122,5**
$M_{Rk,s}$	Characteristic resistance with lever arm	[Nm]	37	75	131	333	649
$\gamma_{m,sV}$ [1)]	Partial safety factor	[-]			1,5		
Pry out failure mode							
k	Factor in equation 5.6	[-]	2	2	2	2	2
γ_{mp} [1)]	Partial safety factor	[-]			1,5		
Concrete edge failure mode							
Lf « 8d »	Effective length of anchor under shear loading	[mm]	64	80	96	128	160
Lf « 12d »	Effective length of anchor under shear loading	[mm]	96	120	144	192	240
d_{nom}	Outside diameter of anchor	[mm]	8	10	12	16	20
γ_{mc} [1)]	Partial safety factor	[-]			1,5		
Displacement under shear loads							
V	Admissible service load	[kN]	**5,4**	**8,6**	**12,5**	**23,3**	**36,4**
δ_{V0}	Short term displacement	[mm]	2,0	2,0	2,0	2,0	2,0
$\delta_{V\infty}$	Long term displacement	[mm]	4,0	4,0	4,0	4,0	4,0

[1)] *In absence of other national regulations.*

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ETA-06/0202							
Essential characteristics – ETAG 001 Annex C			**Performance**				
Installation parameters			**M8**	**M10**	**M12**	**M16**	**M20**
d_0	Nominal diameter of the drill bit	[mm]	10	12	14	18	22
h_{nom} « 8d »	Depth of the hole	[mm]	64	80	96	128	160
h_{nom} « 12d »	Depth of the hole	[mm]	96	120	144	192	240
h_{ef} « 8d »	Effective anchoring depth	[mm]	64	80	96	128	160
h_{ef} « 12d »	Effective anchoring depth	[mm]	96	120	144	192	240
h_{min} « 8d »	Minimum thickness of the concrete slab	[mm]	100	110	125	160	200
h_{min} « 12d »	Minimum thickness of the concrete slab	[mm]	125	150	175	225	280
T_{inst}	Tightening torque	[Nm]	10	20	40	80	150
s_{min} « 8d »	Minimum spacing	[mm]	35	40	48	64	80
s_{min} « 12d »	Minimum spacing	[mm]	48	60	72	96	120
c_{min} « 8d »	Minimum edge distance	[mm]	35	40	48	64	80
c_{min} « 12d »	Minimum edge distance	[mm]	48	60	72	96	120
Tension steel failure mode (class A4-70)							
$N_{Rk,s}$	Characteristic resistance	[kN]	26	41	59	110	171
$\gamma_{m,sN}$ [1)]	Partial safety factor	[-]			1,9		
Tension steel failure mode (class A4-80)							
$N_{Rk,s}$	Characteristic resistance	[kN]	29	46	67	126	196
$\gamma_{m,sN}$ [1)]	Partial safety factor	[-]			1,6		
Pullout and concrete cone failure mode							
$N_{Rk,p} = N^0_{Rk,c}$ « 8d »	Characteristic resistance	[kN]	**25**	**30**	**40**	**60**	**75**
$N_{Rk,p} = N^0_{Rk,c}$ « 12d »	Characteristic resistance	[kN]	**35**	**40**	**60**	**95**	**115**
$\gamma_{m,p} = \gamma_{m,c}$ [1)]	Partial safety factor	[-]			1,5		
Splitting failure mode							
$s_{cr,N}$ « 8d »	Spacing	[mm]	128	160	192	256	320
$s_{cr,N}$ « 12d »	Spacing	[mm]	192	240	288	384	480
$s_{cr,sp}$ « 8d »	Spacing	[mm]	256	320	384	512	640
$s_{cr,sp}$ « 12d »	Spacing	[mm]	384	480	576	768	960
$c_{cr,N}$ « 8d »	Edge distance	[mm]	64	80	96	128	160
$c_{cr,N}$ « 12d »	Edge distance	[mm]	96	120	144	192	240
$c_{cr,sp}$ « 8d »	Edge distance	[mm]	128	160	192	256	320
$c_{cr,sp}$ « 12d »	Edge distance	[mm]	192	240	288	384	480
$\gamma_{m,sp}$ [1)]	Partial safety factor	[-]			1,5		
Displacement under axial tension loads							
N	Admissible service load	[kN]	**12**	**14**	**18**	33	38
δ_{N0}	Short term displacement	[mm]	0,3	0,3	0,3	0,3	0,3
$\delta_{N\infty}$	Long term displacement	[mm]	0,5	0,5	0,5	0,5	0,5
Shear steel failure mode (class A4-70)							
$V_{Rk,s}$	Characteristic resistance	[kN]	**12,8**	**20,3**	**29,5**	**55,0**	**85,8**
$M_{Rk,s}$	Characteristic resistance	[Nm]	26	52	92	233	454
$\gamma_{m,sV}$ [1)]	Partial safety factor	[-]			1,56		
Shear steel failure mode (class A4-80)							
$V_{Rk,s}$	Characteristic resistance	[kN]	**14,6**	**23,2**	**33,7**	**62,8**	**98,0**
$M_{Rk,s}$	Characteristic resistance	[Nm]	30	60	105	266	519
$\gamma_{m,sV}$ [1)]	Partial safety factor	[-]			1,33		

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Pry out failure mode							
k	Factor in equation 5.6	[-]	2	2	2	2	2
γ_{mp} [1)]	Partial safety factor	[-]	1,5				
Concrete edge failure mode							
Lf « 8d »	Effective length of anchor under shear loading	[mm]	64	80	96	128	160
Lf « 12d »	Effective length of anchor under shear loading	[mm]	96	120	144	192	240
d_{nom}	Outside diameter of anchor	[mm]	8	10	12	16	20
γ_{mc} [1)]	Partial safety factor	[-]	1,5				
Displacement under shear loads							
V	Admissible service load	[kN]	**5,9**	**9,3**	**13,5**	**25,2**	**39,3**
δ_{V0}	Short term displacement	[mm]	2,0	2,0	2,0	2,0	2,0
$\delta_{V\infty}$	Long term displacement	[mm]	4,0	4,0	4,0	4,0	4,0

[1)] *In absence of other national regulations.*

ETA-11/0116										
Essential characteristics – ETAG 001 TR023			**Performance**							
Installation parameters			**Ø 8**	**Ø 10**	**Ø 12**	**Ø 14**	**Ø 16**	**Ø 20**	**Ø 25**	**Ø 28**	**Ø 32**
d_0	Drill bit diameter	[mm]	12	14	16	18	20	25	30	35	40
$l_{b,min}$	Min. anchorage length	[mm]	115	145	170	200	230	285	355	600	685
$l_{o,min}$	Min. anchorage overlap loint	[mm]	200	200	200	210	240	300	375	630	720
$l_{v,min}$	Max. anchorage depth	[mm]	400	500	600	700	800	1000	1000	1000	1000
c_{min}	Min. concrete cover	[mm]	$= 30 + 0{,}06\ l_v \geq 2 \cdot Ø$								
a	Min clear spacing between two post installed rebars	[mm]	$= 40 \geq 4 \cdot Ø$								
Desing values of the ultimate bond resistance according to EN1992-1-1										
f_{bd} **C12/50**	Ultimate bond resistance*	[N/mm²]	1,60	1,60	1,60	1,60	1,60	1,60	1,60	1,60	1,60
f_{bd} **C16/20**		[N/mm²]	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
f_{bd} **C20/25**		[N/mm²]	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
f_{bd} **C25/30**		[N/mm²]	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70
f_{bd} **C30/37**		[N/mm²]	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	2,70
f_{bd} **C35/45**		[N/mm²]	3,40	3,40	3,40	3,40	3,40	3,40	3,40	3,40	3,00
f_{bd} **C40/50**		[N/mm²]	3,70	3,70	3,70	3,70	3,70	3,40	3,40	3,40	3,00
f_{bd} **C45/55**		[N/mm²]	4,00	4,00	4,00	4,00	4,00	3,40	3,40	3,40	3,40
f_{bd} **C50/60**		[N/mm²]	4,30	4,30	4,30	4,00	4,00	3,70	3,70	3,40	3,40

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Design values for anchoring rebar* (f_{yk} = 500 N/mm² ; C20/25 ; f_{bd} = 2,3 N/mm²)

Rebar diameter	$\alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 1,0$			α_2 or $\alpha_5 = 0,7$ $\alpha_1 = \alpha_3 = \alpha_4 = 1,0$		
	Anchorage length l_{bd}	Tension load	Mortar volume V	Anchorage length l_{bd}	Tension load	Mortar volume V
[mm]	[mm]	[kN]	[ml]	[mm]	[kN]	[ml]
8	115	6,6	9	115	9,5	9
	200	11,6	15	200	16,5	15
	280	16,2	21	-	-	-
	360	20,8	27	-	-	-
	380	21,9	29	265	21,9	20
10	145	10,5	13	145	15,0	13
	200	14,5	18	200	20,6	18
	300	21,7	27	300	31,0	27
	400	28,9	36	-	-	-
	475	34,1	43	330	34,1	30
12	170	14,7	18	170	21,1	18
	240	20,8	25	240	29,7	25
	360	31,2	38	360	44,6	38
	480	41,6	51	-	-	-
	500	43,4	53	-	-	-
	570	49,1	60	400	49,1	42
14	200	20,2	24	200	28,9	24
	280	28,3	34	280	40,5	34
	420	42,5	51	420	60,7	51
	560	56,6	68	-	-	-
	665	67,0	80	465	67,0	56
16	230	26,6	31	230	38,0	31
	320	37,0	43	320	52,9	43
	480	55,5	65	480	79,3	65
	640	74,0	87	-	-	-
	760	87,4	103	530	87,4	72
20	285	41,2	60	285	58,8	60
	400	57,8	85	400	82,6	85
	600	86,7	127	600	123,9	127
	800	115,6	170	-	-	-
	945	136,5	200	662	136,5	140
25	355	64,1	92	355	91,6	92
	500	90,3	130	500	129,0	130
	750	135,5	194	750	193,5	194
	1000	180,6	259	830	213,3	215
28	600	121,4	249	600	173,4	249
	840	169,9	349	840	242,8	349
	1000	202,3	416	930	267,7	387
32	685	158,4	372	685	226,3	372
	700	161,9	380	700	231,2	380
	1000	231,2	543	1000	330,3	543

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Design values for overlapping joint* (f_{yk} = 500 N/mm² ; C20/25 ; f_{bd} = 2,3 N/mm²)						
Rebar diameter	$\alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = \alpha_6 = 1,0$			α_2 or $\alpha_5 = 0,7$ $\alpha_1 = \alpha_3 = \alpha_4 = \alpha_6 = 1,0$		
	Lap length l_0	Tension load	Mortar volume V	Lap length l_0	Tension load	Mortar volume V
[mm]	[mm]	[kN]	[ml]	[mm]	[kN]	[ml]
8	200	11,6	15	200	16,5	15
	280	16,2	21	-	-	-
	360	20,8	27	-	-	-
	380	21,9	29	265	21,9	20
10	200	14,5	18	200	20,6	18
	300	21,7	27	300	31,0	27
	400	28,9	36	-	-	-
	475	34,1	43	330	34,1	30
12	200	17,3	21	200	24,8	21
	240	20,8	25	240	29,7	25
	360	31,2	38	360	44,6	38
	480	41,6	51	-	-	-
	500	43,4	53	-	-	-
	570	49,1	60	400	49,1	42
14	210	21,2	25	210	30,3	25
	280	28,3	34	280	40,5	34
	420	42,5	51	420	60,7	51
	560	56,6	68	-	-	-
	665	67,0	80	465	67,0	56
16	240	27,7	33	240	39,6	33
	320	37,0	43	320	52,9	43
	480	55,5	65	480	79,3	65
	640	74,0	87	-	-	-
	760	87,4	103	530	87,4	72
20	300	43,3	64	300	61,9	64
	400	57,8	85	400	82,6	85
	600	86,7	127	600	123,9	127
	800	115,6	170	-	-	-
	945	136,5	200	662	136,5	140
25	375	67,7	97	375	96,8	97
	500	90,3	130	500	129,0	130
	750	135,5	194	750	193,5	194
	1000	180,6	259	830	213,3	215
28	630	127,5	262	630	182,1	262
	840	169,9	349	840	242,8	349
	1000	202,3	416	930	267,7	387
32	720	166,5	391	720	237,8	391
	900	208,1	489	900	297,3	489
	1000	231,2	543	1000	330,3	543

** The given values are valid for « good bond conditions » according to EN 1991-1-1. For all other conditions the values shall be multiplied by 0,7.*

We inform you that LR ETANCO is classified in the EC 1907/2006 Reach Directive as a Downstream-user of substances. The product supplied does not contain substances classified as SVHC according to the Candidate List in a concentration equal or greater than 0.1% (weight / weight).

10. The performance of the product identified in points 1 and 2 is in conformity with declared performance in the point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and behalf of the manufacturer by:

Benoit Cheramy Product Manager	Le Pecq – France, 2013-06-21	