DECLARATION OF PERFORMANCES
N° LR7 A EN

According to RPC 305/2011/EU

LR ETANCO SAS
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1 – Product identification :

BARACO LR7

2 – Intended use :

Torque controlled expansion zinc plated steel anchor for uncracked concrete in internal dry use

3 - Manufacturer :

LR ETANCO sas – Parc des Erables – Bât.I – 66 route de Sartrouville – BP 49 – 78 231 LE PECQ Cedex – France

4 – Authorized representative :

Not allowed

5 – Systems of assessment (Annex V) :

Systèm 1

6a/b – Harmonised standard / European assessment document :

Standard / EAD	Notified body	Report
EAD 330232-00-0601	**ITB notified body nb 1488**	**ETA-20/0820 of 22/10/2020**
EAD 330232-00-0601	**ITB notified body nb 1488**	**1488-CPR-0910/W**

7 – Declared performances :

See annex

8 – Appropriate technical documentation and/or specific technical documentation :

Not allowed

The performance of the product identified above is consistent with the reported performance. In accordance with Regulation (EU) No. 305/2011, this performance statement is made under the sole responsibility of the manufacturer mentioned above.

Manufacturer's representation signatures: Le Pecq – 12/03/2021

Function	Name	Sign
Technical director	Philippe Tolleret	
Quality manager	Frédéric Lucas	

CE	**DECLARATION OF PERFORMANCES** **N° LR7 A EN** According to RPC 305/2011/EU	ETANCO

Annex

Declared performances :

Intended use :

Generic type and intended use of the product	Torque controlled expansion anchor made of galvanized steel, sizes M8, M10, M12, M16 and M20 Dry internal condition only	
For use in	Uncracked concrete (C20/25 à C50/60 according to EN 206)	
Option / catégory	EAD 330232-00-0601 option 7	
Loading	Static or quasi-static load	
Matérial	Hexagonal nut	Carbon steel classe 8 according to EN ISO 898-2 Zinc plated according EN ISO 4042:
	Washer	DIN 125 ou EN ISO 7089 Zinc plated according EN ISO 4042
	Bolt	Q195 cold formed f_{uk} ≥ 400 Mpa f_{yk} ≥ 320 Mpa Zinc plated according EN ISO 4042
	Expansion sleeve	
Fire class	A1 according EN 13501-1	

Essential caracteristics			**Performances**				
Installation			M8	M10	M12	M16	M20
$d_0 = d_{out}$	Nominal drill hole diameter	[mm]	8	10	12	16	20
$h_{0,STD}$	Depth of drill hole (standard)	[mm]	53	58	80	99	110
$h_{0,RED}$	Depth of dnll hole (reduced)	[mm]	43	48	60	70	90
$h_{ef,STD}$	Effective anchorage depth (standard)	[mm]	45	50	70	85	100
$h_{ef,RED}$	Effective anchorage depth (reduced)	[mm]	35	40	50	65	80
h_{min}	Minimum thickness of member	[mm]	100	100	140	170	200
T_{inst}	Installation torque	[Nm]	25	35	60	120	200
S_{min}	Minimum spacing	[mm]	35	40	50	65	80
C_{min}	Minimum edge distance	[mm]	35	40	50	65	80
d_f	Diameter of clearance hole in the fixture	[mm]	9	12	14	18	22
Steel failure							
N_{Rks}	Characteristic resistance	[kN]	14,6	23,2	33,7	62,8	98
E_s	Modulus of elasticity	[Nmm²]	210000				
gM_s 1)	Partial safety factor	gM_s 1)	1,5				
Pull-out failure							
$N_{Rk,p,STD}$	Characteristic resistance in uncracked concrete C20/25 (standard depth)	[kN]	9,5	11	20	26	48
$N_{Rk,p,RED}$	Characteristic resistance in uncracked concrete C20/25 (reduced depth)	[kN]	9,5	9,5	12	24	34
g_{inst} 2)	Installation safety factor	g_{inst} 2)	1,0	1,0	1,0	1,2	1,2
Ψ_c	Increasing factor for concrete C30/37	Ψ_c	1,22	1,22	1,22	1,22	1,22
	Increasing factor for concrete C40/50		1,41	1,41	1,41	1,41	1,41
	Increasing factor for concrete C50/60		1,55	1,55	1,55	1,55	1,55

Concrete cone failure and splitting failure			M8	M10	M12	M16	M20
$h_{ef,STD}$	Effective anchorage depth (standard)	[mm]	45	50	70	85	100
$h_{ef,RED}$	Effective anchorage depth (reduced)	[mm]	35	40	50	65	80
K_1 2) = $K_{ucr,N}$ 2)	Factor for uncracked concrete		11,0	11,0	11,0	11,0	110
$S_{cr,N,STD}$	Spacing (standard depth)	[mm]	135	150	210	255	300
$C_{cr,N,STD}$	Edge distance (standard depth)	[mm]	67,5	75	105	127,5	150
$S_{cr,N,RED}$	Spacing (reduced depth)	[mm]	105	120	150	195	240
$C_{cr,N,RED}$	Edge distance (reduced depth)	[mm]	52,5	60	75	97,5	120
$N^o_{Rk,sp,STD}$ 2)	Characteristic resistance for splitting (standard depth)	[kN]	9,5	11	20	26	48
$N^o_{Rk,sp,RED}$ 2)	Characteristic resistance for spiriting (reduced depth)	[kN]	9,5	9,5	12	24	34
$S_{cr,as,STD}$	Spacing (standard depth)	[mm]	135	150	210	255	300
$C_{cr,as,STD}$	Edge distance (standard depth)	[mm]	67,5	75	105	127,5	150
$S_{cr,as,RED}$	Spacing (reduced depth)	[mm]	105	120	150	195	240
$C_{cr,as,RED}$	Edge distance (reduced depth)	[mm]	52,5	60	75	97,5	120
g_{inst} 2)	Installation safety factor		1,0	1,0	1,0	1,2	1,2
Displacements under tension loads							
N	Tension load	[kN]	4,5	4,6	6,1	10,8	14,8
d_{VO}	Displacement short terme	[mm]	2	1	1,6	1	0,4
$d_{V\infty}$	Displacement long terme	[mm]	0,6	0,6	0,6	0,6	0,6
Steel failure without lever arm							
$V^O_{Rk,s}$ 2)	Characteristic resistance	[kN]	7,3	11,6	16,9	31,4	49,0
k_7 2)	Ductility factor		0,8	0,8	0,8	0,8	0,8
γ_{Ms} 1)	Partial safety factor		1,25	1,25	1,25	1,25	1,25
Steel failure with lever arm							
$M^O_{Rk,s}$	Charactenstic bending resistance	[Nm]	15	29,9	52,4	133,2	259,6
γ_{Ms} 1)	Partial safety factor		1,25	1,25	1,25	1,25	1,25
Concrete pry-out failure							
k_8 2)	Concrete pry-out failure factor		1,0	1,0	2,0	2,0	2,0
γ_{Mc} 1)	Partial safety factor		1,5	1,5	1,5	1,8	1,8
Concrete edge failure							
$l_{f,STD}$	Effective length of anchor under shear loading (standard depth)	[mm]	45	50	70	85	100
$l_{f,RED}$	Effective length of anchor under shear loading (reduced depth)	[mm]	35	40	50	65	80
d_{nom}	Effective diameter of anchor	[mm]	8	10	12	16	20
γ_{Mc} 1)	Partial safety,factor		1,5	1,5	1,5	1,8	1,8
Displacements under shear loads							
V	Shear load	[kN]	4,2	6,6	9,7	18,0	28,0
d_{VO}	Displacement short terme	[mm]	1,4	1,3	1,2	2,1	1,5
$d_{V\infty}$	Displacement long terme	[mm]	2,1	1,9	1,8	3,2	2,3

1) In absence of other national regulations
2) Parameter in design according to EN 1992-4:2018