

	DICHIARAZIONE DI PRESTAZIONE In accordo a Regolamento Prodotti da Costruzione n° 305/2011
	DoP N°09/0246

1. Unique identification code of the product-type: BCR V PLUS / BCR V PLUS-W / BCR V PLUS-T

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4): BCR + contenuto in ml + V PLUS. Esempio BCR 400 V PLUS
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3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
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Generic type and use	Generic type and use												
Size covered	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	
lv [mm]	min	according to EN 1992-1-1 and EAD330087-00-0601											
	max	250*- 400	250*- 500	250*- 600	700	800	1000	1000	1000	1000	1000	1000	1000
	Intermediate depths are included * Valid lengths for drilling with reduced diameter												
Base material and strength class	Normal weight concrete of a minimum grade C12/15 and maximum grade C50/60 according to EN 206-1.												
Base material condition	Cracked and non-cracked concrete.												
Anchor metal material and corresponding environmental exposure	Straight reinforced bars category B or C according to Annex C of EN 199-1-1 table C1 and C2N. Exposure category from X0 to XA according to EN 206-1.												
Type of loading	Static or quasi static load and fire resistance												
Service temperature range	-40°C to +80°C (max. short term temperature +80°C and max. long term temperature +50°C).												
Use category	Dry and wet concrete, not flooded hole. Non-carbonated concrete with the allowable chloride content of 0,40% (Cl 0,40) related to the cement content according to EN 206-1. Overhead installation is allowed. Perforation with hammer drilling machine or hollow drill bit.												

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5): Bossong S.p.A. - via Enrico Fermi 49/51 - 24050 Grassobbio (Bg) - Italy - www.bossong.com

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2): Not applicable
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6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 1

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not applicable

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
ITB issued ETA-09/0246 on the basis of EAD 331522-00-0601.
ITB (n°1488) performed:
the determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product; the initial inspection of the factory and of the factory production control; the continuous surveillance; assessment and approval of the factory production control; under system 1 and issue the certificate of conformity n° 1488-CPR-0123/W.

9. Declared performance:

HARMONIZED TECHNICAL SPECIFICATION: EAD330087-00-0601												
ESSENTIAL CHARACTERISTICS	PERFORMANCE ACCORDING TO ETA-09/0246											
Installation parameters	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32
Ø [mm]	8	10	12	14	16	20	22	24	25	28	30	32
d ₀ [mm]	10**-12	12**-14	14**-16	18	20	25	26	30	30	35	35	40
a [mm]	40 mm ≥ 4-Ø											
C _{min} [mm]	30 + 0,06 l _v ≥ 2·Ø per Ø<25 mm 40 + 0,06 l _v ≥ 2·Ø per Ø≥25 mm (the minimum concrete cover according to EN 1992-1-1 must be observed)											
Setting depth	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32
l _{b,min} [mm] under tensile	max {0,3 · l _{b,rqd} ; 10 Ø; 100 mm}											
l _{b,min} [mm] under compression	max {0,6 · l _{b,rqd} ; 10 Ø; 100 mm}											
l _{0,min} [mm]	max {0,3 α ₆ l _{b,rqd} ; 15 Ø; 200 mm}											
l _{b,rqd} [mm]	according to EN 1992-1-1 point 8.4.3											
Amplification factor for concrete class C12/15 a C50/60	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32
α _{lb}	1,0											
Efficiency factor k _b	C12/15	C16/20	20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60			
Ø8 a Ø14	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Ø16 a Ø20	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,93
Ø22	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,92	0,92	0,93
Ø24 a Ø25	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,92	0,92	0,86
Ø28	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,91	0,84	0,84	0,79
Ø30 a Ø32	1,00	1,00	1,00	1,00	1,00	0,89	0,80	0,73	0,73	0,67	0,67	0,63

** Valid for drilling with reduced diameter

HARMONIZED TECHNICAL SPECIFICATION: EAD330087-00-0601									
ESSENTIAL CHARACTERISTICS	PERFORMANCE ACCORDING TO ETA-09/0246								
* Design bond strength $f_{bd,PIR}$ according to EN 1992-1-1 [N/mm ²]	C12/15	C16/20	20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
Ø8 a Ø14	1,60	2,00	2,30	2,70	3,00	3,40	3,70	4,00	4,30
Ø16 a Ø20	1,60	2,00	2,30	2,70	3,00	3,40	3,70	4,00	4,00
Ø22	1,60	2,00	2,30	2,70	3,00	3,40	3,70	3,70	4,00
Ø24 a Ø25	1,60	2,00	2,30	2,70	3,00	3,40	3,70	3,70	3,70
Ø28	1,60	2,00	2,30	2,70	3,00	3,40	3,40	3,40	3,40
Ø30 a Ø32	1,60	2,00	2,30	2,70	2,70	2,70	2,70	2,70	2,70

* Values valid only for good bond condition according to EN 1992-1-1. For other bond conditions multiply the values for 0,7

HARMONIZED TECHNICAL SPECIFICATION: EAD331522-00-0601 – SEISMIC PERFORMANCE									
ESSENTIAL CHARACTERISTICS	PERFORMANCE ACCORDING TO ETA-09/0246								
* Design bond strength $f_{bd,Seis}$ according to EN 1992-1-1 [N/mm ²]	C12/15	C16/20	20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
Ø12 a Ø25	-	2,00	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Ø25 a Ø32	-	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00

HARMONIZED TECHNICAL SPECIFICATION: EAD330087-00-0601	
ESSENTIAL CHARACTERISTICS	PERFORMANCE
Reaction to fire	In the final application the thickness of the mortar layer is about 1 to 2 mm and most of the mortar is material classified class A1 according to EC Decision 96/603/EC. Therefore it may be assumed that the bonding material (synthetic mortar or a mixture of synthetic mortar and cementitious mortar) in connection with the metal anchor in the end use application do not make any contribution to fire growth or to the fully developed fire and they have no influence to the smoke hazard.

HARMONIZED TECHNICAL SPECIFICATION: EAD330087-00-0601																					
ESSENTIAL CHARACTERISTICS	PERFORMANCE ACCORDING TO ETA-09/0246																				
<p>Reduction factor under fire exposure $k_{fi}(\theta)$</p>	<p>For $21^{\circ}\text{C} \leq \theta \leq 271^{\circ}\text{C}$ $k_{fi}(\theta) = \frac{17,563 \cdot e^{-0,01\theta}}{f_{bd,PIR} \cdot 4,3} \leq 1,0$ For $\theta > 271^{\circ}\text{C}$ $k_{fi}(\theta) = 0$</p> <table border="1"> <caption>Data points for the graph (Example for C20/25)</caption> <thead> <tr> <th>Temperature θ [°C]</th> <th>Reduction factor $k_{fi}(\theta)$ [-]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>21</td><td>1.0</td></tr> <tr><td>57</td><td>1.0</td></tr> <tr><td>100</td><td>~0.65</td></tr> <tr><td>150</td><td>~0.40</td></tr> <tr><td>200</td><td>~0.25</td></tr> <tr><td>250</td><td>~0.15</td></tr> <tr><td>271</td><td>0</td></tr> <tr><td>300</td><td>0</td></tr> </tbody> </table>	Temperature θ [°C]	Reduction factor $k_{fi}(\theta)$ [-]	0	0	21	1.0	57	1.0	100	~0.65	150	~0.40	200	~0.25	250	~0.15	271	0	300	0
Temperature θ [°C]	Reduction factor $k_{fi}(\theta)$ [-]																				
0	0																				
21	1.0																				
57	1.0																				
100	~0.65																				
150	~0.40																				
200	~0.25																				
250	~0.15																				
271	0																				
300	0																				
<p>* Values of the adhesion tension of project $f_{bd, fi}$ for exposure to fire</p>	$f_{bd, fi}(\theta) = k_{fi}(\theta) \cdot f_{bd, PIR} \cdot \frac{\gamma_c}{\gamma_{M, fi}}$																				

TERMINOLOGY AND SYMBOLS	
\emptyset	Nominal diameter of the reinforced bar
d_0	Drill hole diameter
lv	Setting depth
a	Minimum clear spacing between two post-installed rebar
C_{min}	Minimum concrete cover
$l_{b,min}$	Minimum anchorage length
$l_{0,min}$	Minimum overlap joint length
$l_{b,reqd}$	Required basic anchorage length
α_{lb}	Amplification factor
k_b	Efficiency factor
γ_c	Safety installation coefficient
$\gamma_{M,fi}$	Safety installation coefficient for exceptional actions
$f_{bd,PIR}$	Design values of bond adhesion
θ	Temperature
$k_{fi}(\theta)$	Reduction factor under fire exposure
$f_{bd,fi}$	Design value of the ultimate bond stress in case of fire

Regulation REACH n°1907/2006

Estimate customer,

We inform you that in the REACH supply chain our company is classified as DU: Downstream-user.

About the product detailed in the point 1 we confirm you that we don't use in our production substances classified as SVHC according to the Candidate List published on ECHA site web:

http://echa.europa.eu/chem_data/candidate_list_table_en.asp

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 for and on behalf of the manufacturer by:

Name and function	Place and date of issue	Signature
Andrea Taddei General Manager	Grassobbio (Bg) - Italy 23.05.2019	

Nota: questa DoP sostituisce la versione precedente datata 18.02.2014.