sistemi di fissaggio BOSSONG®
BOSSONG S.p.A. Via Enrico Fermi, 51 (Z.I.2) - 24050 GRASSOBBIO (Bergamo) Italy
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FASTENING SYSTEMS SYSTEMES DE FIXATION BEFESTIGUNGSSYSTEME SISTEMAS DE FIJACIÒN

CE

DECLARATION OF PERFORMANCE
In accordance with Construction Products Regulation No. 305/2011

DoP No. 24/0719

1. Unique identification code of the product-type:

BCR HYBRID

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

BCR + content in ml + HYBRID. Example: BCR 400 HYBRID

3. Intended use or uses of the construction product, in accordance with the relevant harmonised technical specification, as foreseen by the manufacturer:

Intended use	Chemical anchor for anchoring threaded rods and rebars.	
Measures	M12- ϕ12	M16
hef [mm] Category B	160	200
Type and resistance of the support	Solid brick masonry (use category B) The strength class of the masonry mortar shall be at least M 5 in accordance with EN 998-2:2010.	
Metal anchor material and related environmental exposure condition	Threaded rods: X1) Structures subject to dry internal conditions: elements made of galvanized steel (zinc plated or hot dip galvanized) and A2, A4 stainless steel or high corrosion resistance (HCR) steel. X2) Structures subject to external atmospheric exposure (including industrial and marine environments) and to permanently humid internal conditions, if no particular aggressive conditions exist: Elements made of A4 stainless steel or high corrosion resistance (HCR) steel. X3) Structures subject to external atmospheric exposure (including industrial and marine environments) and to permanently humid internal conditions, if other particularly aggressive conditions exist. Such particularly aggressive conditions are e.g. permanent, alternating immersion in sea water or in the sea water spray zone, chloride atmosphere of swimming pools or internal environments with chemical pollution (e.g. in desulphurisation plants or road tunnels where anti-icing materials are used): Elements made of corrosion-resistant steel (HCR) Rebars class B or C in accordance with EN 1992-1-1	
Load type	Static and quasi-static load and seismic load	
Serving temperatures	a) from -40°C to +40°C (max. short-term temperature +40°C and max. continuous long-term temperature +24°C). b) from -40°C to +50°C (max. short-term temperature +50°C and max. continuous long-term temperature +40°C).	
Category of use	Category w/d w/w: Installation in wet substrate and use in structures subject to dry and wet conditions. Drilling.	

ATTACHMENT: Type and resistance of the support

Brick No.	Brick Name – Use Category Density [kg/m3] Dimensions L x W x H [mm]	Brick image
1	Solid brick (b) EN 771-1 Classic red ρ=1560 120 x 250 x 55	

Cap.Soc. € 520.000
S.V. € 260.000
P.IVA IT 00227840162
R.E.A. BG n.98000
Iscr.Reg.Impr. BG n. 00227840162

BPU – Banca Popolare di Bergamo
Agenzia di Longuelo Via Mattioli, 69
ABI 5428 CAB 11103 C/C 220
IBAN:
IT70 C054 2811 1030 0000 0000 220

Deutsche Bank S.p.A.
Sede Bergamo Via Camozzi,82
ABI 3104 CAB 11100 C/C13030
IBAN:
IT 76 J 03104 11100 000000013030

ASSOCIATO MEMBER OF ECAP assorestauro
Numero Verde 800121962

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

5. Where applicable, name and address of the authorised representative whose mandate covers the tasks referred to in Article 12(2):
Not applicable

6. System or systems of assessment and verification of constancy of performance of the construction product referred to in Annex V:
System 1

7. In the case of a declaration of performance relating to a construction product covered by a harmonised standard:
Not applicable

8. In the case of a declaration of performance relating to a construction product for which a European Technical Assessment has been issued:
ETA- Denmark A/S has issued ETA-24/0719 based on EAD330076-01-0604. TZUS (No. 1020) has performed: determination of the product-type on the basis of type testing (including sampling), type calculations, values derived from tables or descriptive documentation of the product; initial inspection of the manufacturing plant and of factory production control; continuous surveillance, assessment and evaluation of factory production control, with attestation system 1 and issued the certificate of conformity No. 1020-CPR-090-064342.

9. Declared performance:

HARMONIZED TECHNICAL SPECIFICATION: EAD330076-01-0604			
ESSENTIAL FEATURES	**PERFORMANCE IN ACCORDANCE WITH ETA-24/0719**		
Installation parameters	**ϕ12**	**M12**	**M16**
d [mm]	12	12	16
d_0 [mm] category b	16	14	18
d_{fix} [mm]	-	14	18
h_1 [mm]	h_{ef} + 5 mm		
T_{inst} [Nm] category b (solid masonry)		10	10

Brick	Conditions of installation and use	Diameter	β factor	Factor $\alpha_{N,seis}$	Factor $\alpha_{V,seis}$
Brick #1	d/d - w/d - w/w	M12	0.85	0.75	0.64
		M16	0.85	-	-
		ϕ12	0.85	0.67	0.55

Classic Red Brick

Type of brick	Classic Red Brick	
Compressive strength [N/mm2]	≥ 21	
Brick size [mm]	≥ 250 x 120 x 55	
Drilling method	Rotary Percussion Drilling	

Installation parameters

Diameter	Anchoring depth [mm]	Distance from edge [mm]		Spacing [mm]	
		c_{min}	c_{cr}	s_{min}	$s_{cr,\perp} = s_{cr,II}$
M12	160	55	240	55	480
ϕ12	160	55	240	55	480
M16	200	55	300	55	600

Characteristic values of resistance to tensile and shear loads for static loads

Diameter	Anchoring depth [mm]	Categories d/d, w/d and w/w Temperature range -40°C/+24°C/+40°C and -40°C/+40°C/+50°C			
		N_{Rk} [kN]		$V_{Rk,b}$ [kN]	
		$c = c_{min} - s = s_{min}$	$c = c_{cr} - s = s_{cr}$	$c = c_{min} - s = s_{min}$	$c = c_{cr} - s = s_{cr}$
M12	160	3.5	4.0	10.5	14.0
ϕ12	160	4.0	4.0	10.5	17.0
M16	200	4.5	5.0	12.0	26.0

1) For design according to TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054
2) For V_{Rk} , see Annex C2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Displacement

Diameter	Anchoring depth [mm]	Displacements under service load Tensile and shear load					
		F [kN]	δ_{N0} [mm]	$\delta N_{[\infty}$ mm]	F [kN]	δ_{V0} [mm]	$\delta_{V\infty}$ [mm]
M12	160	1.31	0.11	0.22	3.42	0.34	0.51
ϕ12	160	1.21	0.15	0.30	3.33	0.38	0.57
M16	200	1.48	0.13	0.26	3.87	0.35	0.53

Group factor

Configuration	Tensile		Shear parallel to the free edge		Shear perpendicular to the free edge	
	$\alpha_{g\,II,N}$	$\alpha_{g\,\perp,N}$	$\alpha_{g\,II,V\,II}$	$\alpha_{g\,\perp,V\,II}$	$\alpha_{g\,II,V\perp}$	$\alpha_{g\,\perp,,V\perp}$
$S \geq S_{min}$ and $C \geq C_{min}$	2.0	2.0	2.0	2.0	2.0	2.0

Classic Red Brick

Type of brick	Classic Red Brick	
Compressive strength [N/mm2]	≥ 21	
Brick size [mm]	≥ 250 x 120 x 55	
Drilling method	Rotary Percussion Drilling	

Installation parameters

Diameter	Anchoring depth [mm]	Distance from edge [mm]		Spacing [mm]	
		c_{min}	c_{cr}	s_{min}	$s_{cr,\perp} = s_{cr,II}$
M12	160	55	240	55	480
ϕ12	160	55	240	55	480

Characteristic values of resistance to tensile and shear loads for seismic loads

Diameter	Anchoring depth [mm]	Categories d/d, w/d and w/w Temperature range -40°C/+24°C/+40°C and -40°C/+40°C/+50°C			
		N_{Rk} [kN]		$V_{Rk,b}$ [kN]	
		$c = c_{min} - s = s_{min}$	$c = c_{cr} - s = s_{cr}$	$c = c_{min} - s = s_{min}$	$c = c_{cr} - s = s_{cr}$
M12	160	3.0	3.7	6.8	9.7
ϕ12	160	3.4	3.4	5.8	10.3

1) For design according to TR 054: $N_{Rk} = N_{Rk,p} = N_{Rk,b}$; $N_{Rk,s}$ according to Table C2 Annex C2; Calculation $N_{Rk,pb}$ see TR 054
2) For V_{Rk}, see Annex C2, Table C2; Calculation of $V_{Rk,pb}$ and $V_{Rk,c}$ see TR 054

Displacement

Diameter	Anchoring depth [mm]	Displacements under service load Tensile and shear load	
		δ N,eq [mm/ kN]	δ V,eq [mm/ kN]
M12	160	0.05	0.59
ϕ12	160	0.03	0.50

Group factor

Configuration	Tensile		Shear parallel to the free edge		Shear perpendicular to the free edge	
	$\alpha_{g\,II,N}$	$\alpha_{g\,\perp,N}$	$\alpha_{g\,II,V\,II}$	$\alpha_{g\,\perp,V\,II}$	$\alpha_{g\,II,V\perp}$	$\alpha_{g\,\perp,,V\perp}$
$S \geq S_{min}$ and $C \geq C_{min}$	2.0	2.0	2.0	2.0	2.0	2.0

Bolt-hole clearance reduction factor

Reduction factor			
Without filling	αgap	[-]	0.5
With filling	αgap	[-]	1.0

Characteristic tensile and shear resistance for threaded rods and rebars for steel failure under seismic action

Size			**M12**
Steel failure – characteristic tension resistance			
Steel class 4.8	NRk,s,SEIS	[kN]	25,5
Steel class 5.8	NRk,s,SEIS	[kN]	31,5
Steel class 8.8	NRk,s,SEIS	[kN]	50,2
Stainless steel A2, A4, HCR class 50	NRk,s,SEIS	[kN]	31,5
Stainless steel A2, A4, HCR class 70	NRk,s,SEIS	[kN]	44,2
Stainless steel A4, HCR class 80	NRk,s,SEIS	[kN]	50,2
Steel failure – characteristic shear resistance			
Steel class 4.8	VRk,s,SEIS	[kN]	10,8
Steel class 5.8	VRk,s,SEIS	[kN]	13,4
Steel class 8.8	VRk,s,SEIS	[kN]	21,7
Stainless steel A2, A4, HCR class 50	VRk,s,SEIS	[kN]	13,4
Stainless steel A2, A4, HCR class 70	VRk,s,SEIS	[kN]	18,5
Stainless steel A4, HCR class 80	VRk,s,SEIS	[kN]	21,7
Size			**ϕ12**
Steel failure – characteristic tension and shear resistance			
Reinforced bar type B450C	NRk,s,SEIS	[kN]	40,8
	VRk,s,SEIS	[kN]	16,7

HARMONIZED TECHNICAL SPECIFICATION: EAD330076-01-0604	
ESSENTIAL FEATURES	**PERFORMANCE**
Reaction to fire	In the final application the thicknesses of the layer of product are approximately 1 ÷ 2 mm and most of it of these products are classified in class A1 according to the decision THERE IS 96/603/EC . Therefore it can be assumed that the material binder (resin synthetic or a mixture of synthetic resin and cementitious) in connection with the metal anchor, in the use application final, Not makes any contribution to the development of fire or to a fire fully developed and he doesn't have no influence on the risk of smoke development .

HARMONIZED TECHNICAL SPECIFICATION: EAD330076-01-0604	
ESSENTIAL FEATURES	**PERFORMANCE**
Fire resistance	NPD

SYMBOL LEGEND	
d	Diameter of the bolt or threaded part
from $_0$	Hole diameter
d $_{fix}$	Diameter of the hole in the object to be fixed
h e $_f$	Effective anchoring depth
h $_1$	Depth of the hole
T $_{inst}$	Tightening torque
S $_{min}$	Minimum wheelbase
C $_{min}$	Minimum distance from edges
N $_{Rk}$	Characteristic tensile strength for single anchorage
V $_{Rk}$	Characteristic shear resistance for single anchor
γ_{Mm}	Partial safety factor
S $_{cr,N}$	Interaxis to ensure the transmission of the characteristic load for a single anchorage
C $_{cr,N}$	Distance from the edge to ensure the transmission of the characteristic load for a single anchorage
β	Factor according to EAD330076-01-0604
$\alpha_{N,six}$	Factor for in situ tensile testing
$\alpha_{V,six}$	Factor for in situ shear testing
α	Group factor
F	Service load
δ_0	Short-term displacement under service load
δ_∞	Long-term displacement under service load
NPD	Undeclared performance

REACH Regulation No. 1907/2006

Dear customer,
We inform you that our company within the REACH supply chain is classified as a downstream user of substances and preparations.
With regard to the product defined in point 1, we would like to confirm that it does not currently contain substances considered SVHC based on the list published at the address:
http://echa.europa.eu/chem_data/candidate_list_table_en.asp .
The product safety data sheet can be requested from our technical office: tek@bossong.com or downloaded from our website www.bossong.com .

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10. The performance of the product referred to in points 1 and 2 is in conformity with the declared performance referred to in point 9.
This declaration of performance is issued under the sole responsibility of the manufacturer referred to in point 4.
Signed for and on behalf of:

Name and function	Place and date of issue	Signature
Andrea Taddei **General Manager**	**Grassobbio (Bg) - Italy** **08.01.2025**