CE

DECLARATION OF PERFORMANCE
According to Construction Product Regulation n° 305/2011

DoP N°17/0294

1. Unique identification code of the product-type:

JNS-PLUS

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

JNS-PLUS external diameter x total length + type of head + type of steel
Exemples: JNS-PLUS 10x100 or JNS-PLUS TE X4 10x100 or JNS-PLUS X4

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

Generic type and use	Plastic anchor	
Size covered	Ø 8	Ø 10
hef [mm]	70	
Base material and strength class	Concrete strength class (cracked and non-cracked) C16 / 20 minimum and C50 / 60 maximum, according to EN 206-1: 2000 Annex C1. Solid masonry (use category b) or hollow or perforated masonry (use category c) according to characteristics detailed in the annex at the following page (pag.2). The mortar strength class of the masonry has to be M 2,5 according to EN 998-2:2010 at minimum. Volcanic tuff or AAC as reported in the table at point 9.	
Anchor metal material and corresponding environmental exposure	Carbon steel of grade 5.8 (galvanized min. 5 µm according to ISO 2081) and stainless steel A4/70 (AISI 316) according to ISO 3506-1 and EN 10088-3	
Type of loading	Static and almost static load, multiple fixing for non-structural applications.	
Service temperature range	a) -40°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C), b) -40°C to +80°C (max. short term temperature +80°C and max. long term temperature +50°C).	
Use category	Category a,b,c,d	

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

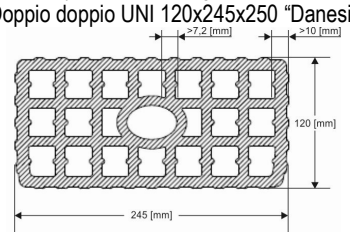
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

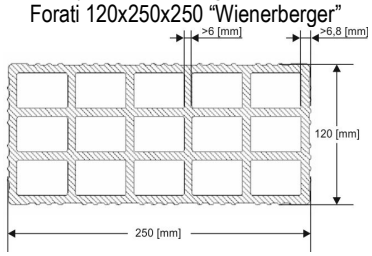
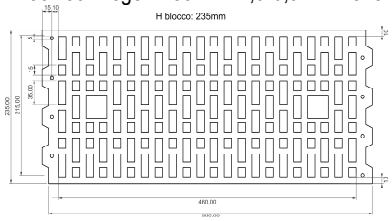
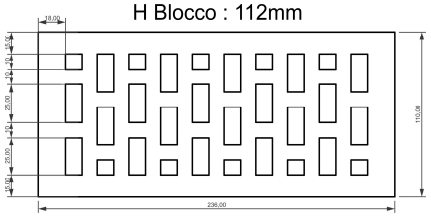
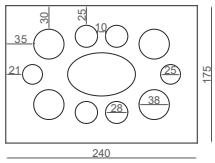
System 2+

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:
DIBt issued ETA-17/0294 on the basis of ETAG 020. TZUS (n°1020) 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° 1020-CPR-010039205

9. Declared performance:

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020				
CHARACTERISTIC OF BASE MATERIALS	**PERFORMANCE ACCORDING TO ETA-17/0294**			
Base material	**Drill method**	**Use category**	**Density ρ [kg/dm³]**	**Minimum compressive strength f_b [N/mm²]**
Concrete	Rotary + Hammer	a	According to EN 206-1:2000	According to EN 206-1:2000
Masonry type A Solid clay brick according to EN 771-1:2011 Mattone pieno 110x60x240 "Danesi"	Rotary + Hammer	b	1,7	39,0
Masonry type B Solid clay brick according to EN 771-1:2011 Mattone pieno 250x120x55 "Terreal Italia"	Rotary + Hammer	b	1,7	27,0
Masonry type E Vulcanic tuff brick according to EN 771-3:2011 Fior di tufo 370x370x110 "Cave riunite"	Rotary + Hammer	b	2,4	7,5
Masonry type F Calcium silicate solid brick according to EN 771-2:2011 Kalksandsteine KS-Plansteine KS-R(P)-20-2,0-8DF (240) "Heidelberger-Kalksandstein"	Rotary + Hammer	b	1,9	28,2
Masonry type C Hollow clay brick according to EN 771-1:2011 Doppio doppio UNI 120x245x250 "Danesi" 	Rotary	c	0.9	13.0

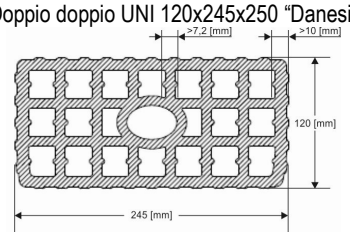
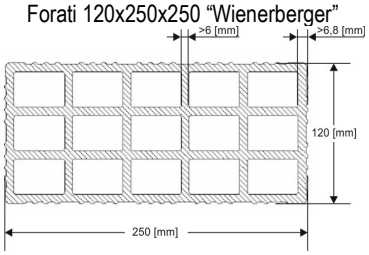
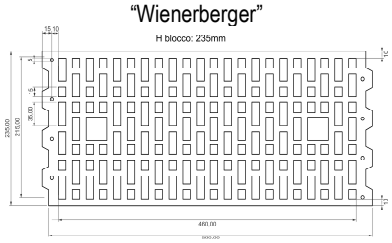
HARMONIZED TECHNICAL SPECIFICATION: ETAG 020				
CHARACTERISTIC OF BASE MATERIALS	**PERFORMANCE ACCORDING TO ETA-17/0294**			
Base material	**Drill method**	**Use category**	**Density ρ [kg/dm³]**	**Minimum compressive strength f_b [N/mm²]**
Masonry type D Hollow clay brick according to EN 771-1:2011 Forati 120x250x250 "Wienerberger" 	Rotary	c	0.6	2.0
Masonry type G Hollow brick according to.EN 771-1:2011 Poroton-Hochlochziegel-Block-T-24,0-0,9 L "Wienerberger" 	Rotary	c	0,9	7,0
Masonry type H Hollow clay brick according to.EN 771-1:2011 Poroton-Kleinformat HlzB- 2DF -0,9 "Wienerberger" H Blocco : 112mm 	Rotary	c	0,9	16,4
Masonry type I Hollow brick (calcium silicate) according to.EN 771-2:2011 "Heidelberger-Kalksandstein" KS-L 	Rotary	c	1,5	16,3
AAC Concrete Non-cracked aerated autoclaved concrete (AAC Blocks) according to EN 771-4:2011	Rotary	d	0,5	3,5

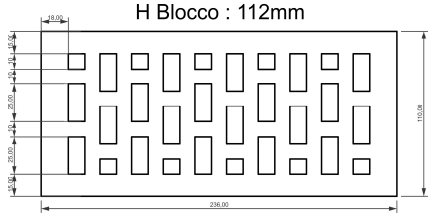
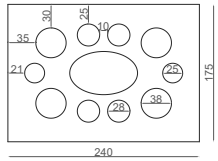
HARMONIZED TECHNICAL SPECIFICATION: ETAG 020			
ESSENTIAL CHARACTERISTICS		**PERFORMANCE ACCORDING TO ETA-17/0294**	
Installation parameters		**Ø 8**	**Ø 10**
d [mm]		8	10
d vite [mm]		6	7
d_0 [mm]		8	10
d_f [mm]		9	11
h_1 [mm]		90	
t_{fix} [mm]	Min	10	10
	Max	70	160
Torx T		30	40
SW only hexagonal head [mm]		10	13
Concrete		**Ø 8**	**Ø 10**
S_{min} [mm]		90	100
C_{min} [mm]		90	100
h_{min} [mm]		140	140
$S_{cr,N}$ [mm]		75	90
$C_{cr,N}$ [mm]		105	105
Masonry type A		**Ø 8**	**Ø 10**
h_{min} [mm]		110	
Single fixing			
C_{min} [mm]		120	
Group fixing			
$S_{1,min}$ [mm]		240	
$S_{2,min}$ [mm]		480	
c_{min} [mm]		120	
Masonry type B		**Ø 8**	**Ø 10**
h_{min} [mm]		120	
Single fixing			
C_{min} [mm]		125	
Group fixing			
$S_{1,min}$ [mm]		250	
$S_{2,min}$ [mm]		500	
c_{min} [mm]		125	
Masonry type E		**Ø 8**	**Ø 10**
h_{min} [mm]		370	
Single fixing			
C_{min} [mm]		185	
Group fixing			
$S_{1,min}$ [mm]		370	
$S_{2,min}$ [mm]		740	
c_{min} [mm]		185	

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020		
ESSENTIAL CHARACTERISTICS	**PERFORMANCE ACCORDING TO ETA-17/0294**	
Masonry type F	**Ø 8**	**Ø 10**
h_{min} [mm]	240	
Single fixing		
C_{min} [mm]	120	
Group fixing		
$S_{1,min}$ [mm]	240	
$S_{2,min}$ [mm]	480	
c_{min} [mm]	120	
Masonry type C	**Ø 8**	**Ø 10**
h_{min} [mm]	120	
Single fixing		
C_{min} [mm]	125	
Group fixing		
$S_{1,min}$ [mm]	250	
$S_{2,min}$ [mm]	500	
c_{min} [mm]	125	
Masonry type D	**Ø 8**	**Ø 10**
h_{min} [mm]	120	
Single fixing		
C_{min} [mm]	125	
Group fixing		
$S_{1,min}$ [mm]	250	
$S_{2,min}$ [mm]	500	
c_{min} [mm]	75	
Masonry type G	**Ø 8**	**Ø 10**
h_{min} [mm]	240	
Single fixing		
C_{min} [mm]	120	
Group fixing		
$S_{1,min}$ [mm]	240	
$S_{2,min}$ [mm]	480	
c_{min} [mm]	120	
Masonry type H	**Ø 8**	**Ø 10**
h_{min} [mm]	115	
Single fixing		
C_{min} [mm]	120	
Group fixing		
$S_{1,min}$ [mm]	240	
$S_{2,min}$ [mm]	480	
c_{min} [mm]	120	

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020		
ESSENTIAL CHARACTERISTICS	**PERFORMANCE ACCORDING TO ETA-17/0294**	
Masonry type I	**Ø 8**	**Ø 10**
h_{min} [mm]	175	
Single fixing		
C_{min} [mm]	120	
Group fixing		
$S_{1,min}$ [mm]	240	
$S_{2,min}$ [mm]	480	
c_{min} [mm]	120	
AAC	**Ø 8**	**Ø 10**
h_{min} [mm]	240	
Single fixing		
C_{min} [mm]	120	
Group fixing		
$S_{1,min}$ [mm]	240	
$S_{2,min}$ [mm]	480	
c_{min} [mm]	120	

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020				
ESSENTIAL CHARACTERISTICS	**PERFORMANCE ACCORDING TO ETA-17/0294**			
Parameters	**Ø 8**		**Ø 10**	
	galvanized	**Inox A4**	**galvanized**	**Inox A4**
$M_{Rk,s}$ [Nm]	12,1	16,9	19,3	27,1
γ_{Ms}	1,25			
$N_{Rk,s}$ [kN]	11,3	15,8	15,4	21,6
γ_{Ms}	1,5			
$V_{Rk,s}$ [kN]	5,6	7,9	7,7	10,8
γ_{Ms}	1,25			
Resistence pull-out for concrete (Class≥C16/20)	**Ø 8**		**Ø 10**	
	24/40 °C	**50/80 °C**	**24/40 °C**	**50/80 °C**
$N_{Rk,p}$ [kN]	3,5	3,0	4,5	4,0
γ_{Mc}	1,8			

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020					
CHARACTERISTIC RESISTANCE	**PERFORMANCE ACCORDING TO ETA-17/0294**				
Base material	**Drill method**	**Density ρ [kg/dm³]**	**Minimum compressive strength f_b [N/mm²]**	**Ø 8 F_{Rk} [kN]**	**Ø 10 F_{Rk} [kN]**
Masonry type A Solid clay brick according to EN 771-1:2011 Mattone pieno 110x60x240 "Danesi"	Rotary + Hammer	1,7	39,0	3,0	2,0
Masonry type B Solid clay brick according to EN 771-1:2011 Mattone pieno 250x120x55 "Terreal Italia"	Rotary + Hammer	1,7	27,0	4,0	5,0
Masonry type E Vulcanic tuff brick according to EN 771-3:2011 Fior di tufo 370x370x110 "Cave riunite"	Rotary + Hammer	2,4	7,5	-	0,3
Masonry type F Calcium silicate solid brick according to EN 771-2:2011 Kalksandsteine KS-Plansteine KS-R(P)-20-2,0-8DF (240) "Heidelberger-Kalksandstein"	Rotary + Hammer	1,9	28,2	5,5	6,0
Masonry type C Hollow clay brick according to EN 771-1:2011 Doppio doppio UNI 120x245x250 "Danesi" 	Rotary	0.9	13.0	-	0,3
Masonry type D Hollow clay brick according to EN 771-1:2011 Forati 120x250x250 "Wienerberger" 	Rotary	0.6	2.0	0,3	-
Masonry type G Hollow brick according to.EN 771-1:2011 Poroton-Hochlochziegel-Block-T-24,0-0,9 L "Wienerberger" 	Rotary	0,9	7,0	0,9	0,9

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020					
CHARACTERISTIC RESISTANCE	**PERFORMANCE ACCORDING TO ETA-17/0294**				
Base material	**Drill method**	**Density ρ [kg/dm³]**	**Minimum compressive strength f_b [N/mm²]**	**Ø 8 F_{Rk} [kN]**	**Ø 10 F_{Rk} [kN]**
Masonry type H Hollow clay brick according to.EN 771-1:2011 Poroton-Kleinformat HlzB- 2DF -0,9 "Wienerberger" H Blocco : 112mm 	Rotary	0,9	16,4	0,9	0,9
Masonry type I Hollow brick (calcium silicate) according to.EN 771-2:2011 "Heidelberger-Kalksandstein" KS-L 	Rotary	1,5	16,3	5,0	5,5
AAC Concrete Non-cracked aerated autoclaved concrete (AAC Blocks) according to EN 771-4:2011	Rotary	0,5	3,5	0,5	0,6

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020			
CHARACTERISTIC RESISTANCE		**PERFORMANCE ACCORDING TO ETA-17/0294**	
Parameters		**Ø 8**	**Ø 10**
Concrete			
Traction service load in concrete N [kN]		1,2	1,6
Displacement	δ_{N0} [mm]	0,24	0,29
	$\delta_{N\infty}$ [mm]	0,48	0,58
Shear service load in concrete V [kN]		3,2	4,4
Displacement	δ_{V0} [mm]	2,00	1,67
	$\delta_{V\infty}$ [mm]	3,00	2,50
Masonry type A			
Traction service load N [kN]		0,9	0,6
Displacement	δ_{N0} [mm]	0,04	0,06
	$\delta_{N\infty}$ [mm]	0,08	0,12
Masonry type B			
Traction service load N [kN]		1,1	1,4
Displacement	δ_{N0} [mm]	0,25	0,67
	$\delta_{N\infty}$ [mm]	0,50	1,34
Masonry type E			
Traction service load N [kN]		0,09	-
Displacement	δ_{N0} [mm]	0,01	-
	$\delta_{N\infty}$ [mm]	0,02	-
Masonry type F			
Traction service load N [kN]		1,57	1,71
Displacement	δ_{N0} [mm]	0,14	0,07
	$\delta_{N\infty}$ [mm]	0,29	0,15
Masonry type A,B,E			
Shear service load V [kN]		3,2	4,4
Displacement	δ_{V0} [mm]	2,67	3,67
	$\delta_{V\infty}$ [mm]	4,00	5,50
Masonry type F			
Shear service load V [kN]		1,57	1,71
Displacement	δ_{V0} [mm]	1,31	1,43
	$\delta_{V\infty}$ [mm]	1,96	2,14
Masonry type C			
Traction service load N [kN]		-	0,09
Displacement	δ_{N0} [mm]	-	0,12
	$\delta_{N\infty}$ [mm]	-	0,24
Masonry type D			
Traction service load N [kN]		0,09	-
Displacement	δ_{N0} [mm]	0,03	-
	$\delta_{N\infty}$ [mm]	0,06	-

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020			
CHARACTERISTIC RESISTANCE		**PERFORMANCE ACCORDING TO ETA-17/0294**	
Masonry type G			
Traction service load N [kN]		0,26	0,26
Displacement	δ_{N0} [mm]	0,01	0,01
	$\delta_{N\infty}$ [mm]	0,02	0,02
Masonry type H			
Traction service load N [kN]		0,26	0,26
Displacement	δ_{N0} [mm]	0,01	0,01
	$\delta_{N\infty}$ [mm]	0,02	0,02
Masonry type I			
Traction service load N [kN]		1,43	1,57
Displacement	δ_{N0} [mm]	0,11	0,08
	$\delta_{N\infty}$ [mm]	0,21	0,17
Masonry type C,D			
Shear service load V [kN]		3,2	4,4
Displacement	δ_{V0} [mm]	6,40	8,80
	$\delta_{V\infty}$ [mm]	9,60	13,20
Masonry type G,H			
Shear service load V [kN]		0,26	0,26
Displacement	δ_{V0} [mm]	0,21	0,21
	$\delta_{V\infty}$ [mm]	0,32	0,32
Masonry type I			
Shear service load V [kN]		1,43	1,57
Displacement	δ_{V0} [mm]	1,19	1,31
	$\delta_{V\infty}$ [mm]	1,79	1,96
AAC			
Traction service load N [kN]		0,18	0,21
Displacement	δ_{N0} [mm]	0,01	0,01
	$\delta_{N\infty}$ [mm]	0,02	0,02
Shear service load V [kN]		0,18	0,21
Displacement	δ_{V0} [mm]	0,36	0,43
	$\delta_{V\infty}$ [mm]	0,54	0,64

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020	
ESSENTIAL CHARACTERISTICS	**PERFORMANCE**
Reaction to fire	NPD

HARMONIZED TECHNICAL SPECIFICATION: ETAG 020	
ESSENTIAL CHARACTERISTICS	**PERFORMANCE**
Resistance to fire	According to EOTA TR020 for diameter ø10
FRk [kN] R 90	0,8

TERMINOLOGY AND SYMBOLS	
d	Diameter of anchor bolt or thread diameter
d_0	Drill hole diameter
d_{fix}	Diameter of clearance hole in the fixture
h_{ef}	Effective anchorage depth
h_1	Depth of the drilling hole
T_{inst}	Torque moment to installation
t_{fix}	Thickness to be fixed
S_{min}	Minimum allowable spacing
C_{min}	Minimum allowable edge distance
N_{Rk}	Characteristic tensile resistance for single anchor
V_{Rk}	Characteristic shear resistance for single anchor
$N_{R,pk}$	Characteristic pull-out resistance for single anchorage
F_{Rk}	Characteristic resistance in generic direction
$M_{Rk,s}$	Characteristic bending moment
γ_{Mm}	Partial safety factors
$S_{cr,N}$	Spacing for ensuring the transmission of the characteristic tensile resistance of a single anchor without spacing and edge effects
$C_{cr,N}$	Edge distance for ensuring the transmission of the characteristic tensile resistance of a single anchor without spacing and edge effects
F	Service load
δ_0	Short term displacement under service load
δ_∞	Long term displacement under service load
NPD	No declared performance

Regulamentation 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.

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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** **06.03.2018**