



BI FIX 300

PRODUCT DESCRIPTION

BI FIX is an amphibious two-component chemical anchor, vinyl ester without styrene, for quick high-performance fastening of connectors and iron tools even in damp or fully wet environments, made of two components (A+B) which are mixed using the special nozzle at the time of extrusion.



PRODUCT APPLICATION

- High performance chemical anchoring of connectors for structural cracked and non-cracked concrete reinforcement
- Anchoring of iron tools in the casting
- Anchoring of metal bars in a wet environment or subject to permanent humidity, even in marine or industrial environment, on vertical or horizontal surfaces
- Anchoring of various metal elements in the plant engineering, medical, industrial, construction sector, etc...

ADVANTAGES

- Fast, solid and resolute anchoring
- It can be fastened on horizontal, vertical, inclined or overhead axis
- Also suitable for fixing on intact or cracked concrete supports, solid and perforated masonry, stone, wood...
- Applicable on dry, wet or flooded concrete
- Also suitable for applications in poorly ventilated environments thanks to the absence of styrene
- Easy and quick to use with traditional silicone guns
- Applicable with surface temperatures up to -10 °C

PREPARATION AND APPLICATION Preparation in case of solid substrate

Drill the substrate (see table 1) with rotating or rotary percussion tools according to the degree of material strength, possibly using suction tips that independently clean the hole or with subsequent vacuuming

Otherwise remove dust and loose parts from inside the hole with pressurised air, then clean using a long-bristle brush and then again with pressurised air.

Preparation in case of water flooded hole

If the hole is water flooded after drilling, proceed as described in the previous point if the flooding times allow it, otherwise if the water quickly fills the hole not allowing time for dry preparations, use the pipe cleaner inside the hole and remove water with loose residues by means of a liquid vacuum or blower pump.

Preparation in case of hollow bricks

Drill the substrate (see table 1) with rotating or rotary percussion tools removing dust and loose parts in the hole with pressurised air and insert a suitably sized reticulated bush in it.



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Application

The minimum product temperature for application **MUST NOT BE LESS THAN +5°**.

After removing the stopper, extract the yellow strip, mount the mixing nozzle and engage the cartridge on a traditional silicone gun.

Eliminate the first 2/3 of pumped resin because they may not be well mixed.

Extrude BI FIX 300 inside the hole starting from the substrate and insert the connector or metal bar by turning it slightly on itself until the bottom of the hole is reached, checking that excess resin comes out.

Degrease and clean the metal bar or element from oxides or anything else before fixing it in the substrate.

If the package is partially used, the remainder can be reused by replacing the mixer nozzle.

WARNINGS - IMPORTANT NOTES

Do not use on dusty or loose surfaces.

Do not use on surfaces with presence of oils or greases which could affect adhesion.

Do not apply at surface temperatures below -10°C or above +40°C.

PACKAGING AND STORAGE

Box with no. 2 300 ml/each cartridges + no. 2 nozzles

The products can be stored for a maximum of 14 months in a dry area protected from sunlight and humidity with temperatures between +5°C and +30°C.

CONSUMPTION AND YIELD

They are in relation to the filling volume that it varies according to the hole/bar diameters, see Table 1.

1 x 300 cc cartridge every 55 holes approximately in case of STEEL CONNECTORS 20 (Ø 12 mm, 65 mm deep hole).

1 x 300 cc cartridge every 25 holes approximately in case of STEEL CONNECTORS 38 (Ø 12 mm, 153 mm deep hole).

PHYSICAL AND TECHNICAL SPECIFICATIONS

Specification	Declared performance
Appearance	Thixotropic paste
Colour	Light grey
Application temperature	-10°C + 40°C
Setting start T_{gel}	See table
Final hardening T_{cure}	See table
Chemical resistance	Excellent
Water resistance	Excellent
Working temperature	-10°C + 40°C

Product application time

Surface temperature (°C)	Setting start T_{gel}	Final hardening T_{cure} (min)	
		Dry surface	Wet surface
-	-		
40	1 min	20 min	40 min
35	2 min	25 min	50 min
30	3 min	30 min	1 h
25	5 min	35 min	1 h 10 min
20	7 min 30 sec	40 min	1 h 20 min
15	11 min 30 sec	45 min	1 h 30 min
10	16 min	1 h	2 h
5	25 min	1 h 30 min	3 h
0	45 min	7 h	14 h
- 5*	1 h 5 min	14 h	28 h
- 10*	1 h 45 min	24 h	48 h

*Minimum product temperature: +5°C

Table of number of fastenings for 300 ml cartridge for threaded bar inserted in solid materials



BI FIX 300

Bar diameter d (mm)	Hole diameter d ₀ (mm)	Effective anchor depth (h _{ef})	No. of fastenings per cartridge
M8	10	80	± 60.5
M10	12	90	± 37.5
M12	14	110	± 23
M14	16	115	± 17
M16	18	125	± 12
M18	20	150	± 8.5
M20	24	170	± 5
M22	26	190	± 4
M24	28	210	± 3
M27	30	240	± 2.5
M30	35	270	± 1.5
M33	37	300	± 1
M36	40	330	± 1
M39	42	360	± 1

**Table of number of fastenings for 300 ml cartridge
for improved adhesion bar inserted in solid materials**

Bar diameter d (mm)	Hole diameter d ₀ (mm)	Effective anchor depth (h _{ef})	No. of fastenings per cartridge
Ø 8	12	80	± 42
Ø 10	14	100	± 25
Ø 12	16	120	± 16
Ø 14	18	140	± 11
Ø 16	20	160	± 8
Ø 18	22	180	± 6
Ø 20	25	200	± 4
Ø 22	26	220	± 3.5
Ø 24	28	240	± 2.5
Ø 25	30	250	± 2
Ø 26	32	260	± 2
Ø 28	34	280	± 1.5
Ø 30	37	300	± 1
Ø 32	40	320	± 1

PLEASE NOTE: Refer to the tables attached at the end of the data sheet for further technical data.

SAFETY

Refer to the related Safety Data Sheet.

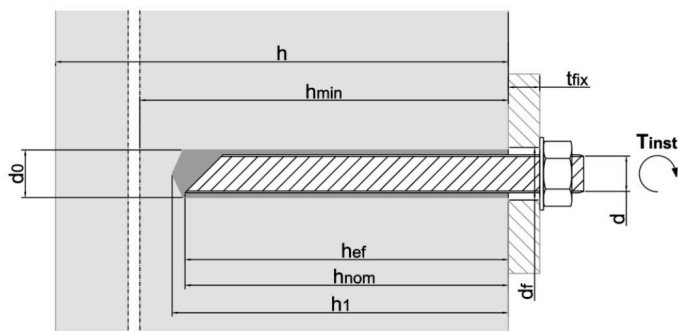
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ANNEXES

**Dati installazione**
Installation data**LEGENDA**

	Materiale - Material
d [mm]	Diametro barra - Rod diameter Tipologia di barra - Type of rod
h_{min} [mm]	Spessore minimo del supporto - Minimum thickness of base material
d₀ [mm]	Diametro foro - Hole diameter
h₁ [mm]	Profondità del foro - Hole depth
h_{nom} [mm]	Profondità di inserimento - Embedment depth
h_{ef} [mm]	Profondità effettiva ancoraggio - Effective anchorage depth
S_{cr} [mm]	Interasse caratteristico - Characteristic spacing
C_{cr} [mm]	Distanza dal bordo caratteristica - Characteristic edge distance
S_{min} [mm]	Interasse minimo - Minimum allowable spacing
C_{min} [mm]	Distanza minima dal bordo - Minimum allowable edge distance
t_{fix} [mm]	Spessore fissabile - Fixture thickness
d_r [mm]	Diametro foro spessore fissabile - Diameter of clearance hole in the fixture
S_w [mm]	Chiave - Key
T_{inst} [Nm]	Coppia di serraggio - Installation torque



Parametri d'installazione barre filettate Threaded rod installation parameters

SPECIFICA TECNICA ARMONIZZATA / HARMONIZED TECHNICAL SPECIFICATION: EAD 330499-01-0601										
PRESTAZIONE IN ACCORDO A / PERFORMANCE ACCORDING TO ETA -20/0532										
Utilizzo previsto Generic type and use		Ancorante chimico per l'ancoraggio di barre filettate / Chemical anchoring for threaded rods								
Misure / Size		M8	M10	M12	M16	M20	M24	M27	M30	
h _{ef} [mm]	min	60	70	80	100	120	145	145	145	
	max	160	200	240	320	400	480	540	600	
d ₀ [mm]		10	12	14	18	24	28	30	35	
d _{fix} [mm]		9	12	14	18	22	26	30	33	
h ₁ [mm]		h _{ef} + 5 mm								
h _{min} [mm]		MAX { h _{ef} + 30 mm; ≥ 100 mm; h _{ef} + 2d ₀ }								
T _{Fix} [Nm]		10	20	40	80	130	200	250	280	
S _{min} e C _{min} [mm]		40	50	60	75	100	115	120	140	
γ _{inst} [-] Categoria I1		1,00								
γ _{inst} [-] Categoria I2		1,20								

Parametri d'installazione per barre ad aderenza migliorata Reinforcing bar installation parameters

SPECIFICA TECNICA ARMONIZZATA / HARMONIZED TECHNICAL SPECIFICATION: EAD 330499-01-0601										
PRESTAZIONE IN ACCORDO A / PERFORMANCE ACCORDING TO ETA -20/0532										
Utilizzo previsto Generic type and use		Ancorante chimico per l'ancoraggio di barre ad aderenza migliorata / Chemical anchoring for reinforcing bars								
Misure - Size		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
h _{ef} [mm]	min	60	70	80	80	100	120	150	180	200
	max	160	200	240	280	320	400	500	560	640
d [mm]		8	10	12	14	16	20	25	28	32
d ₀ [mm]		10*-12	12*-14	14*-16	18	20	25	30	35	40
h ₁ [mm]		h _{ef} + 5 mm								
h _{min} [mm]		MAX { h _{ef} + 30 mm; ≥ 100 mm; h _{ef} + 2d ₀ }								
S _{min} e C _{min} [mm]		50	60	65	75	80	100	120	140	160
γ _{inst} [-] Categoria/Category I1		1,00								
γ _{inst} [-] Categoria/Category I2		1,20								

LEGENDA SIMBOLI - LEGEND OF SYMBOLS

d	Diametro del bullone o della parte filettata / Rod diameter
d ₀	Diametro del foro / Drill hole diameter
d _{fix}	Diametro del foro nell'oggetto da fissare/Hole diameter of the object to be fixed
h _{ef}	Profondità effettiva di ancoraggio / Effective anchorage depth
h ₁	Profondità del foro / Hole depth
h _{min}	Spessore minimo del supporto in calcestruzzo / Minimum thickness of base material
T _{Fix}	Coppia di serraggio / Installation torque
t _{fix}	Spessore fissabile / Fixture thickness
S _{min}	Minimo interasse / Minimum allowable spacing
C _{min}	Minima distanza dai bordi / Minimum allowable edge distance
γ _{inst}	Coefficiente parziale di sicurezza relativo all'installazione dell'ancoraggio / Partial safety factor related to the anchoring installation
S _{cr,N}	Interasse per assicurare la trasmissione del carico caratteristico per formazione del cono di calcestruzzo per un singolo ancoraggio / Interaxle spacing to ensure the transmission of the characteristic load due to formation of the concrete cone for a single anchoring
C _{cr,N}	Distanza dal bordo per assicurare la trasmissione del carico caratteristico per formazione del cono di calcestruzzo per un singolo ancoraggio / Distance from the edge to ensure the transmission of the characteristic load due to formation of the concrete cone for a single anchoring

*Per ulteriori e più completi dati tecnici e meccanici richiedere la Dichiarazione di Prestazione del prodotto a Volteco S.p.A. /
For further and more complete technical and mechanical data, please request the relevant Declaration of Performance from Volteco S.p.A.



Dati di carico ammissibile trazione per barre filettate
Maximum permissible tensile load for threaded rods

	Temperatura di esercizio / Service temperature range		Unità / Unit	M8	M10	M12	M16	M20	M24	M27	M30
Trazione Tensile load	-40°C/40°C 24 °C (T _{LF})	Non fessurato / Uncracked	N _{Res} KN	9.0	12.0	17.0	24.0	31.6	41.9	42.0	42.0
		Fessurato / Cracked		-	9.1	12.2	17.1	22.5	-	-	-
	-40°C/80°C 50 °C (T _{LF})	Non fessurato / Uncracked		8.2	8.6	12.2	20.3	25.3	36.2	37.6	41.0
		Fessurato / Cracked		-	6.5	9.3	14.0	17.1	-	-	-
Taglio Shear (M=0)	-40°C/40°C 24 °C (T _{LF})	Non fessurato / Cracked	V _{Res} KN	5.4	8.6	12.5	23.3	36.3	52.5	68.2	83.4
		Fessurato / Cracked		-	8.6	12.5	23.3	34.3	-	-	-
	-40°C/80°C 50 °C (T _{LF})	Non fessurato / Uncracked		5.4	8.6	12.5	23.3	36.3	52.5	68.2	83.4
		Fessurato / Cracked		-	8.6	12.5	23.3	34.3	-	-	-
Profondità effettiva ancoraggio / Effective anchorage depth			h _{efMIN}	mm	60	70	80	100	120	145	145
Distanza dal bordo caratteristica / Characteristic edge distance			C _{cr,N}	mm	90	105	120	150	180	218	218
Interasse caratteristico / Characteristic spacing			S _{cr,N}	mm	180	210	240	300	360	435	435
Coppia di serraggio / Installation torque			T _{inst}	Nm	10	20	40	80	130	200	280

Note:

- Calcestruzzo **C20/25** / Concrete **C20/25**
- Qualità barre filettate ≥ 5.8 Threaded rod quality ≥ 5.8
- Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo / Loads for single anchor with no influence of spacing and edge distance
- Per evitare rottura per splitting lo spessore del supporto di calcestruzzo dovrà essere $h \geq 2 h_{ef}$ / To avoid splitting failure, the thickness of the concrete member shall be $h \geq 2 h_{ef}$
- 1kN = 100 kg
- $\Psi_{sus} = 1.0$
- Azione di taglio non diretta verso il bordo / Shear directed away from the edge
- Coefficiente di sicurezza globale incluso / General safety factor included
- Coefficiente lato carichi utilizzato = 1,4 / Load increasing safety coefficient used = 1,4
- Riduzione consigliata del carico con foro allagato 20% / With flooded hole, reduction of the recommended load of 20%

**BI FIX 300****Dati di carico ammissibile trazione per barre aderenza migliorata**
Maximum permissible tensile load for rebars

	Temperatura di esercizio / Service temperature range		Unità Unit	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32	
Trazione/ Tensile load	-40°C/40°C 24 °C (T _{LF})	Non fessurato Uncracked	N _{Rec}	kN	10.1	13.5	17.2	17.2	24.0	31.6	44.2	58.1	68.0
	-40°C/80°C 50 °C (T _{LF})	Non fessurato Uncracked			7.2	9.7	13.0	14.6	18.1	25.2	41.3	47.2	52.2
Taglio/ Shear (M=0)	-40°C/40°C 24 °C (T _{LF})	Non fessurato Uncracked	V _{Rec}	kN	7.8	12.1	17.4	23.8	31.0	48.5	75.7	95.0	124.1
	-40°C/80°C 50 °C (T _{LF})	Non fessurato Uncracked			7.8	12.1	17.4	23.8	31.0	48.5	75.7	95.0	124.1
Profondità ancoraggio barre / Anchorage depth of rods			H _{af}	mm	60	70	80	80	100	120	150	180	200
Diametro foro / Hole diameter			d ₀	mm	10** -12	12** -14	14** -16	18	20	25	30	35	40
Distanza dal bordo / Edge Distance			c _{min}	mm	50	60	65	75	80	100	120	140	160
Interasse minimo tra le barre / Interaxle spacing among rebars			s _{min}	mm	50	60	65	75	80	100	120	140	160

Note:

(**) Consigliata perforazione con diametro ridotto fino ad una lunghezza di 250 mm / Perforation with reduced hole is suggested for setting depth up to 250 mm

- Calcestruzzo **C20/25** / Concrete **C20/C25**
- Qualità barre aderenza migliorata **B450C, BST 500** / Quality of rebars **B450C, BST 500**
- Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo / Loads for single anchor with no influence of spacing and edge distance
- Per evitare rottura per splitting lo spessore del supporto di calcestruzzo dovrà essere $h \geq 2 h_{ef}$ / To avoid splitting failure, the thickness of the concrete member shall be $h \geq 2 h_{ef}$
- 1kN = 100 kg
- $\Psi_{sus} = 1.0$
- Azione di taglio non diretta verso il bordo / Shear directed away from the edge
- Coefficiente di sicurezza globale incluso / General safety factor included
- Coefficiente lato carichi utilizzato = 1,4 / Load increasing safety coefficient used = 1,4
- Riduzione consigliata del carico con foro allagato **20%** / With flooded hole, reduction of the recommended load of **20%**

LEGENDA

N _{rec} [kN]	Carico ammissibile a trazione / Admissible tensile load
V _{rec} [kN]	Carico ammissibile a taglio / Admissible shear load