

# AZAM

Denomination: **ANCLAJE ZAMAK**

Codes: AZAMC, AZAMT, ZTXXL, ZTXXC, AZAME, AZAMA, AZAMG, AZAMAF, AZAMGF

Reference: **FT AZAM-en**

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**ZA-CA**



**ZA-TO**



**ZA-TL**



**ZA-PR**



**ZA-ES**



**ZA-AR**



**ZA-GA**



**ZA-AF**



**ZA-GF**

## CHARACTERISTICS

Wings and cone manufactured in zamak-5 by injection.

Zinc plated coating

Due to its higher cone expansion capacity, it is recommended in concrete as well as in lower resistance base materials (bricks, hollow bricks, low resistance concrete, etc.) which requires a higher expansion capacity.

Use for high load

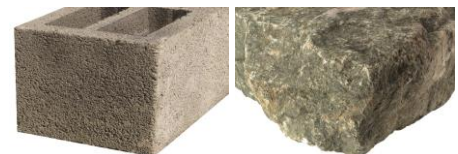
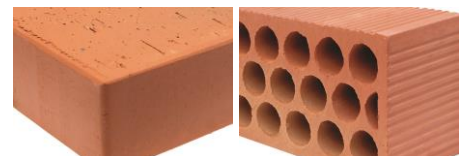
Easy installation

Installation before the fixing material

Versions:

- capsule
- loose bolt
- long loose bolt
- long loose bolt with pipe
- projecting bolt
- eye bolt
- pressed eye bolt
- hook bolt
- pressed hook bolt

## BASE MATERIAL



## APPLICATION EXAMPLES



Fixing of awnings, notices, urban fittings, etc.

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## 1. RANGE

ITEM	CODE	SIZE	PHOTO	COMPONENT	MATERIAL	COATING
1	<b>AZAMCXX</b>	M6 a M16		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
2	<b>AZAMTXX</b>	M6 a M16		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Bolt	Steel class 6.8	
				Washer	DIN 9021	
3	<b>ATXXLXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Bolt	Steel class 6.8	
				Washer	DIN 9021	
4	<b>ZPXXCXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Bolt	Steel class 6.8	
				Washer	DIN 9021	
				Tube	Tube EN 10305-2	
5	<b>AZAMEXX</b>	M6 a M16		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Stud bolt	Steel class 6.8	
				Washer	DIN 9021	
				Nut	DIN 934	
6	<b>AZAMAXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Eye	Carbon Steel	
				Washer	DIN 9021	
7	<b>AZAMGXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Hook	Carbon Steel	
				Washer	DIN 9021	
8	<b>AZAMAFOXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Eye	Carbon Steel	
				Washer	DIN 9021	
9	<b>AZAMGFOXX</b>	M6 a M12		Capsule	Zamak 5	Zinc plated $\geq 5 \mu\text{m}$
				Hook	Carbon Steel	
				Washer	DIN 9021	
				Nut	DIN 934	

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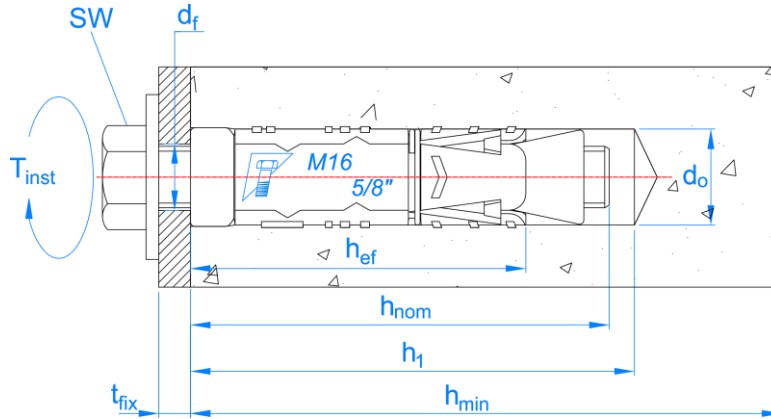
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## 2. INSTALLATION DATA



SIZE		M6	M8	M10	M12	M16
$d_0$ : drill diameter	[mm]	12	14	16	20	25
$d_2$ : washer diameter	[mm]	28	25	30	40	50
$d_f$ : fixture hole diameter	[mm]	7	9	12	14	18
$d_{f,ZA-PR}$ : fixture hole diameter, long loose bolt with pipe	[mm]	14	16	18	22	18
$h_{nom}$ : nominal depth	[mm]	48	50	58	72	107
$h_{ef}$ : effective depth	[mm]	41	43	51	61	96
$h_1$ : drill depth $\leq$	[mm]	60	65	75	90	125
$h_{min}$ : base material minimum thickness $\leq$	[mm]	100	100	102	122	192
$s_{min}$ : minimum spacing	[mm]	125	130	155	185	290
$c_{min}$ : minimum distance to edge	[mm]	65	65	80	95	145
$t_{ins}$ : torque	[Nm]	7	15	30	50	120
$t_{fix}$ : fixture thickness	[mm]	1	10	20	25	30
$t_{fix,ZA-TL}$ : fixture thickness long loose bolt	[mm]	10-30	15-45	10-80	15-65	--
$t_{fix,ZA-PR}$ : fixture thickness long loose bolt with pipe	[mm]	40	15-45	50-80	15-65	--
$d_3$ : inside diameter eye bolt/pressed eye bolt	[mm]	10/10	13/12	14/14	22/17	--
$e$ : minimum hook opening/ pressed hook	[mm]	10/10	13/11	14/14	22/18	--
$S_w$ : nut wrench	[mm]	10	13	17	19	24

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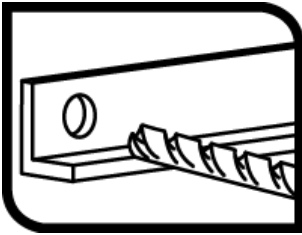
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## 3. INSTALLATION PROCEDURE



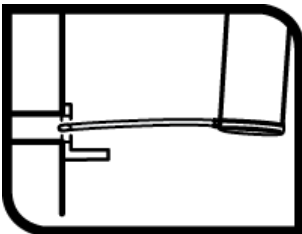
### 1. DRILL

Check the concrete base is compact and porosity is insignificant.

Suitable for wet, dry or flooded drill holes.

Use drill in hammer mode. In case of hollow materials do not use the hammer mode to prevent damages inside the base material. Reduce the speed when are about to finish the drill.

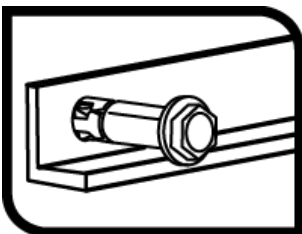
Drill to the specified diameter and depth values in previous table.



### 2. BLOW AND CLEAN

Clear the drill holes completely of dust and fragments.

Use air pump and brush.

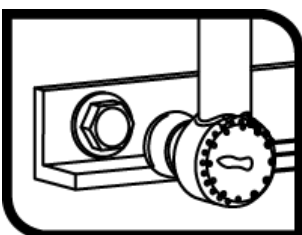


### 3. INSTALL

Insert the anchor in the hole until the red ring mark is flat with concrete surface.

Use hammer in case of need; DOMTA tool could be used alternatively.

The installation could be done through the fixture baseplate.



### 4. APPLY TORQUE

Apply nominal installation torque using a torque wrench.

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## 4. RESISTANCES

Characteristic resistance in non-cracked concrete C20 / 25 for an isolated anchor (no effects edge distance or distances between anchors) is indicated in the following table:

CHARACTERISTIC RESISTANCE								
METRICA			M6	M8	M10	M12	M16	
Loose bolt		N <sub>Rk</sub> : tension [KN]	13,2	14,2	18,4	24,0	32,9	
		V <sub>Rk</sub> : shear [KN]	<u>6,0</u>	<u>11,0</u>	18,3	<u>25,3</u>	<u>47,1</u>	
Long loose bolt		N <sub>Rk</sub> : tension [KN]	13,2	14,2	18,4	24,0	--	
		V <sub>Rk</sub> : shear [KN]	<u>6,0</u>	<u>11,0</u>	18,3	<u>25,3</u>	--	
Long loose bolt with pipe		N <sub>Rk</sub> : tension [KN]	13,2	14,2	18,4	24,0	--	
		V <sub>Rk</sub> : shear [KN]	<u>6,0</u>	<u>11,0</u>	18,3	<u>25,3</u>	--	
Projecting bolt		N <sub>Rk</sub> : tension [KN]	8,4	14,2	18,4	24,0	33,0	
		V <sub>Rk</sub> : shear [KN]	<u>4,2</u>	<u>7,7</u>	<u>12,2</u>	<u>17,7</u>	<u>33,0</u>	
Eye bolt		N <sub>Rk</sub> : tension [KN]	<u>1,5</u>	<u>3,0</u>	<u>5,0</u>	<u>6,5</u>	--	
		V <sub>Rk</sub> : shear [KN]	--	--	--	--	--	
Hook bolt		N <sub>Rk</sub> : tension [KN]	<u>1,5</u>	<u>3,0</u>	<u>5,0</u>	<u>6,5</u>	--	
		V <sub>Rk</sub> : shear [KN]	--	--	--	--	--	
Pressed eye bolt		N <sub>Rk</sub> : tension [KN]	<u>4,2</u>	<u>11,4</u>	<u>15,8</u>	<u>16,8</u>	--	
		V <sub>Rk</sub> : shear [KN]	--	--	--	--	--	
Pressed hook bolt		N <sub>Rk</sub> : tension [KN]	<u>1,7</u>	<u>3,1</u>	<u>5,8</u>	<u>8,1</u>	--	
		V <sub>Rk</sub> : shear [KN]	--	--	--	--	--	

DESIGN RESISTANCE								
SIZE			M6	M8	M10	M12	M16	
Loose bolt		N <sub>Rd</sub> : tension [KN]	7,3	7,9	10,2	13,3	18,3	
		V <sub>Rd</sub> : shear [KN]	<u>4,8</u>	<u>8,7</u>	12,2	<u>20,2</u>	<u>37,6</u>	
Long loose bolt		N <sub>Rd</sub> : tension [KN]	7,3	7,9	10,2	13,3	--	
		V <sub>Rd</sub> : shear [KN]	<u>4,8</u>	<u>8,7</u>	12,2	<u>20,2</u>	--	
Long loose bolt with pipe		N <sub>Rd</sub> : tension [KN]	7,3	7,9	10,2	13,3	--	
		V <sub>Rd</sub> : shear [KN]	<u>4,8</u>	<u>8,7</u>	12,2	<u>20,2</u>	--	
Projecting bolt		N <sub>Rd</sub> : tension [KN]	5,7	7,9	10,2	13,3	18,3	
		V <sub>Rd</sub> : shear [KN]	<u>3,3</u>	<u>6,1</u>	<u>9,7</u>	<u>14,1</u>	<u>26,3</u>	
Eye bolt		N <sub>Rd</sub> : tension [KN]	<u>1,0</u>	<u>2,0</u>	<u>3,3</u>	<u>4,3</u>	--	
		V <sub>Rd</sub> : shear [KN]	--	--	--	--	--	
Hook bolt		N <sub>Rd</sub> : tension [KN]	<u>1,0</u>	<u>2,0</u>	<u>3,3</u>	<u>4,3</u>	--	
		V <sub>Rd</sub> : shear [KN]	--	--	--	--	--	
Pressed eye bolt		N <sub>Rd</sub> : tension [KN]	<u>2,8</u>	<u>7,6</u>	<u>10,2</u>	<u>11,2</u>	--	
		V <sub>Rd</sub> : shear [KN]	--	--	--	--	--	
Pressed hook bolt		N <sub>Rd</sub> : tension [KN]	<u>1,1</u>	<u>2,1</u>	<u>3,9</u>	<u>5,4</u>	--	
		V <sub>Rd</sub> : shear [KN]	--	--	--	--	--	

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## RECOMMENDED RESISTANCE

SIZE			M6	M8	M10	M12	M16
Loose bolt		N <sub>recom</sub> : tension [KN]	5,2	5,6	7,2	9,5	13,0
		V <sub>recom</sub> : shear [KN]	<u>3,4</u>	<u>6,2</u>	8,7	<u>14,43</u>	<u>26,8</u>
Long loose bolt		N <sub>recom</sub> : tension [KN]	5,2	5,6	7,2	9,5	--
		V <sub>recom</sub> : shear [KN]	<u>3,4</u>	<u>6,2</u>	8,7	<u>14,4</u>	--
Long loose bolt with pipe		N <sub>recom</sub> : tension [KN]	5,2	5,6	7,2	9,5	--
		V <sub>recom</sub> : shear [KN]	<u>3,4</u>	<u>6,2</u>	8,7	<u>14,4</u>	--
Projecting bolt		N <sub>recom</sub> : tension [KN]	4,0	5,6	7,2	9,5	13,0
		V <sub>recom</sub> : shear [KN]	<u>2,3</u>	<u>4,3</u>	<u>6,9</u>	<u>10,0</u>	<u>18,7</u>
Eye bolt		N <sub>recom</sub> : tension [KN]	<u>0,7</u>	<u>1,4</u>	<u>2,3</u>	<u>3,0</u>	--
		V <sub>recom</sub> : shear [KN]	--	--	--	--	--
Hook bolt		N <sub>recom</sub> : tension [KN]	<u>0,7</u>	<u>1,4</u>	<u>2,3</u>	<u>3,0</u>	--
		V <sub>recom</sub> : shear [KN]	--	--	--	--	--
Pressed eye bolt		N <sub>recom</sub> : tension [KN]	<u>2,0</u>	<u>5,4</u>	<u>7,2</u>	<u>8,0</u>	--
		V <sub>recom</sub> : shear [KN]	--	--	--	--	--
Pressed hook bolt		N <sub>recom</sub> : tension [KN]	<u>0,7</u>	<u>1,5</u>	<u>2,7</u>	<u>3,8</u>	--
		V <sub>recom</sub> : shear [KN]	--	--	--	--	--

1KN ≈ 100 Kg

\*The *italic and underlined* values indicate steel failure