NEW PRODUCT

WEDGE Anchor

SA TS 101:2015

Expansion anchor designed to fix steel components to concrete

FEATURES

- **Complies Australian Standard for concrete anchors - SA TS 101:2015**
- **ETA Approval - 12/0397**
- **For use in cracked and non cracked concrete**
- **Hex Head**
- **Class 5.8 Steel**
- **Galvanised**
- **Available in Trade Box Pack**
- **Designed for medium to heavy loads**

Approvals & Certifications

ETA 12/0937 STRUCTURAL FIXINGS IN CONCRETE

Fire Resistance

Seismic C1 & C2

CODE	SIZE	BOX QTY	BARCODE
38AG10070	10mm x 70mm	100	230381
38AG10090	10mm x 90mm	100	230398
38AG12080	12mm x 80mm	50	230404
38AG12110	12mm x 110mm	50	230411
38AG12130	12mm x 130mm	50	230428
38AG12150	12mm x 150mm	50	230435
38AG12180	12mm x 180mm	50	230442
38AG16125	16mm x 125mm	25	230459
38AG16145	16mm x 145mm	25	230466
38AG16175	16mm x 175mm	25	230473

Barcode Prefix: 9312862

FOR MORE INFORMATION & YOUR DISCOUNT STRUCTURE
Speak to your Masbolt® Sales Representative
or phone on 02 9881 2450

MACSIM®
www.macsim.com.au

MACSIM®	TECHNICAL DATA SHEET	Reference	FT MTP-en
		Date	16/06/14
		Revision	1
		Page	1 of 6

WEDGE ANCHORS **Code: 38AG**

1.- CHARACTERISTICS

- Metallic anchor, with functioning principle by expansion and installation by controlled torque.
- Male thread
- Zinc plated and hot dip galvanized versions
- Use in both cracked and non-cracked concrete
- Easy assembly
- Use for medium-high loads
- Previous installation, or through the fixture hole itself.
- Variety of lengths: assembly flexibility.
- Approved in option 1 to be used in cracked concrete and non cracked concrete according to European Technical Assessment ETA 12/0397.

Approvals & Certifications

ETA 12/0937
STRUCTURAL FIXINGS
IN CONCRETE

Fire Resistance

Seismic C1 & C2

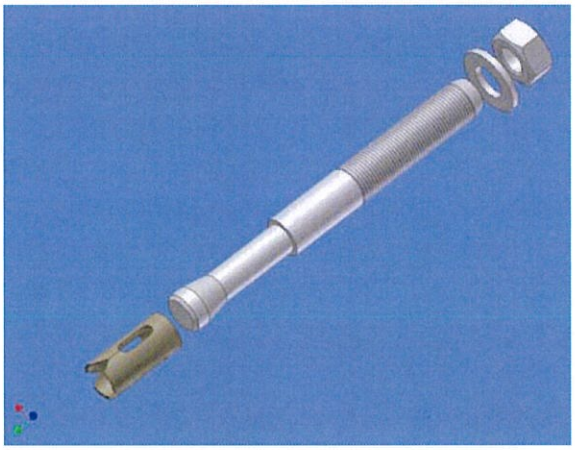
European Technical Approval

2.- MATERIALS

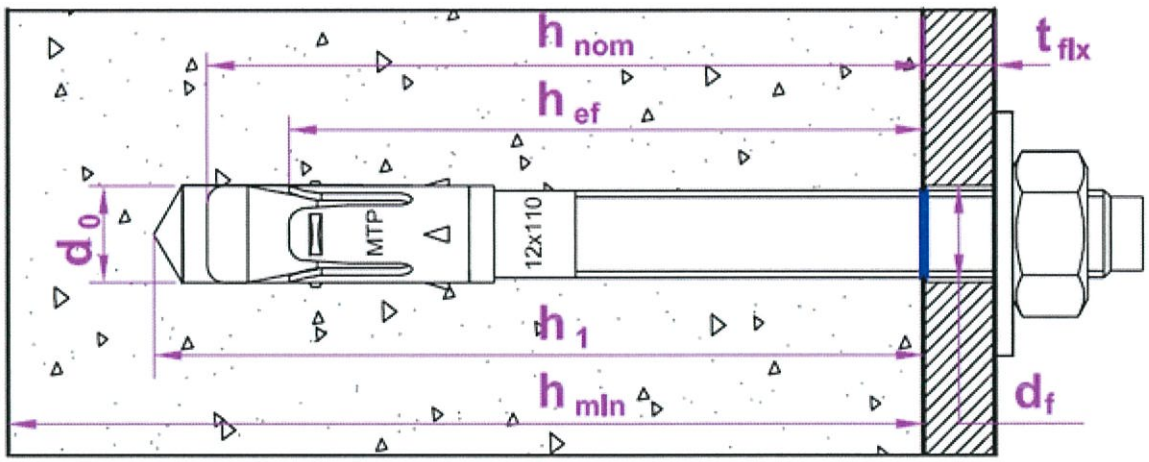
ITEM	COMPONENT	MTP ANCHOR	MTP-G ANCHOR
1	WEDGE BOLT	Cold forged steel, galvanized ≥ 5 µm ISO 4042 A2	Carbon steel wire rod cold forged, sherardized EN 13811 ≥ 40 µm
2	WASHER	DIN 125 or DIN 9021 galvanized ≥ 5µm ISO 4042 A2	DIN 125 or DIN 9021, hot dip galvanized EN ISO 1461 ≥ 40 µm
3	NUT	DIN 934 galvanized ≥ 5 µm ISO 4042 A2	DIN 934 class 6, sherardized EN 13811 ≥ 40 µm
4	CLIP	Stainless steel A4 (AISI 316)	Stainless steel, grade A4

3.- DIMENSIONS

METRIC			M8	M10	M12	M16	M20
Codes			-	38AG10XXX	38AG12XXX	38AG16XXX	-
d_p: bolt diameter		[mm]	8	10	12	16	20
Lengths		[mm]	75 ÷ 115	90 ÷ 185	110 ÷ 200	145 ÷ 250	170 ÷ 220
d_3: hammering diameter		[mm]	6	8	9	12.5	16
DIN 125	d_2: washer diameter	[mm]	16	20	24	30	37
	s_2: washer thickness	[mm]	1.6	2	2.5	3	3
DIN 9021	d_2: washer diameter	[mm]	24	30	37	50	60
	s_2: washer thickness	[mm]	2	2.5	3	3	4
s_w: spanner		[mm]	13	17	19	24	30



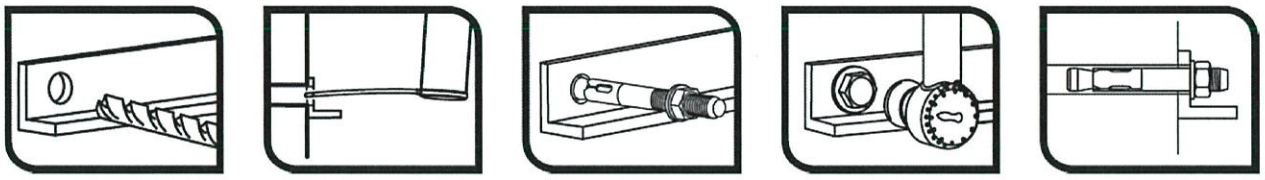
4.- INSTALLATION DATA



METRIC		M8	M10	M12	M16	M20
Codes		-	38AG10XXX	38AG12XXX	38AG16XXX	-
d_0: drill diameter	[mm]	8	10	12	16	20
T_{ins}: torque	[Nm]	20 / 15[1)]	40	60	100	200
d_w: fixture diameter	[mm]	9	12	14	18	22
h_1: minimum drill depth	[mm]	60	75	85	105	125
h_{nom}: embedment depth	[mm]	55	68	80	97	114
h_{ef}: effective depth.	[mm]	48	60	70	85	100
h_c: base material min. thickness	[mm]	100	120	140	170	200
t_{fix}: max. fixture thickness	[mm]	L – 66	L - 80	L - 96	L - 117	L-138
$s_{cr,N}$: critical spacing	[mm]	144	150	175	213	250
$c_{cr,N}$: critical edge distance	[mm]	72	90	105	128	150
$s_{cr,sp}$: splitting critical spacing	[mm]	288	300	350	425/510[1)]	500/600[1)]
$c_{cr,sp}$: splitting edge distance	[mm]	144	150	175	213/255[1)]	250/300[1)]
s_{min}: minimum spacing	[mm]	50	60	70	85/128[1)]	100/150[1)]
c_{min}: min. edge distance	[mm]	50	60	70	85/128[1)]	100/150[1)]

1) Values for MTP-G

5.- INSTALLATION PROCEDURE



- The concrete to be well compacted, e.g. without significant voids.
- Base material temperatures during installation: -5 / + 50 ºC (80 ºC in a short period of time).
- Anchors to be installed ensuring not less than the specified embedment depth, The edge distance and spacing to be kept to the specified values, no minus tolerances to be allowed.
- Drill to the minimum depth and diameter specified, maintaining perpendicular to the surface of the base material. Fixture holes themselves can be used as template.
- When drilling holes, care to be taken not to damage reinforcement in close proximity to the holes position. Action to be taken in the event that drilling is aborted, e.g. due to encountering reinforcement: it is recommended to either install the anchors immediately beside the aborted drill hole, provide that anchoring depth is increased by the depth of the aborted drill hole, or make a new drilling at a minimum distance away of two the depth of the aborted hole. Alternatively, a smaller distance may be chosen, provided the aborted drill hole is filled with high strength mortar. However, unless the aborted drill hole is filled

with mortar, it is not permissible under a shear or oblique tension load for it to be closer than installation depth h_{nom} in the direction of load application.

- Thoroughly clean hole from dust and drilling fragments. Use cylindrical brush.
- For holes to be subjected to temperatures below 0 °C, measures to be taken to avoid the ingress of water into the hole and subsequent risk of local cracking of the concrete due to ice expansion.
- To introduce the anchor into the hole up to the embedment depth through the fixture. A hammer can be use to assure this depth. Do not apply any intermediate lay between the fixture and the washer (sealant, etc.). Apply the specified torque with a torque wrench.
- In case of fixture holes with diameters higher than specified use washers of bigger diameter and thickness, but in this case it is not assured a correct distribution of shear loads amongst all the anchors of a same group. The shear load will be applied on those anchors with the correct diameter on the fixture.

6.- CHARACTERISTIC RESISTANCES

6.1.- Characteristic resistances in concrete C20/25 for an isolated anchor (without spacing and edge distances effects) are as per this table:

METRIC			M8	M10	M12	M16	M20
Codes			-	38AG10XXX	38AG12XXX	38AG16XXX	-
Uncracked concrete	$N_{R,k}$ tension	[KN]	9.0	16.0	20.0/30.0[1)]	35.0	50.0
	$V_{R,k}$ shear	[KN]	*11.0*	*17.4*	*25.3*	*47.1*	*73.1*
Crcked coancrete	$N_{R,k}$ tension	[KN]	5.0/6.0[1)]	9.0	12.0/16.0[1)]	25.0	30.0
	$V_{R,k}$ shear	[KN]	11.9	*17.4*	*25.3*	56.4	72.0

1) Values for MTP-G
1 KN ≈ 100 Kg

Underlined and cursive values correspond to steel failure.

The recommended resistance for tension and shear must be considered separately.

6.2.- Recommended safety factors

SAFETY COEFFICIENT	RESISTANCE SAFETY COEFFICIENTS		LOAD INCREASING SAFETY COEFFICIENT
	CONCRETE FAILURE	*STEEL FAILURE*	
Tension	1,50 / 1.80[1)]	--	1.4
Shear	1.50	*1.25*	

1) For M8

6.3.- Calculation example

Fixing a load tension of 900 kg, in cracked concrete

900 kg ≈ 9 KN
Increasing coefficient for loads: 1.4
Using two MTP M12 anchors
Pull load recommended resistance for MTP M12 anchor: 12.0 KN
Concrete reduction for resistances coefficient: 1.5

Check: the increased load must be lower than reduced resistance

$$9\ KN \times 1.4 \leq 2 \times 12.0\ KN / 1.5$$
$$12.6 \leq 16.0$$

The anchors' studs must be at a minimum distance of 175 mm, and must also keep a minimum distance of 105 mm to any edges.

7. OFFICIAL DOCUMENTATION

The following documents are available on our official website www.indexfix.com or by request to our Sales Dpt.:

- European Technical Assessment ETA for use on cracked and uncracked concrete.
- CE certificate.
- Declaration of Performance.
- Anchor calculation software.

8.- EXAMPLES OF USE