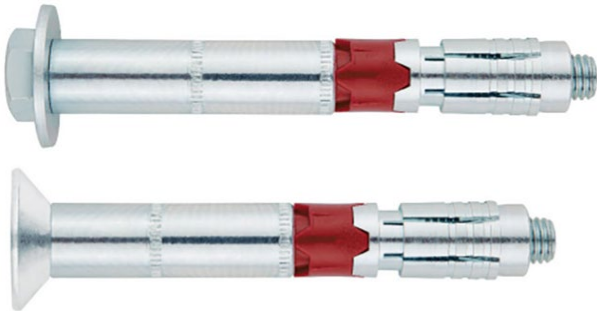


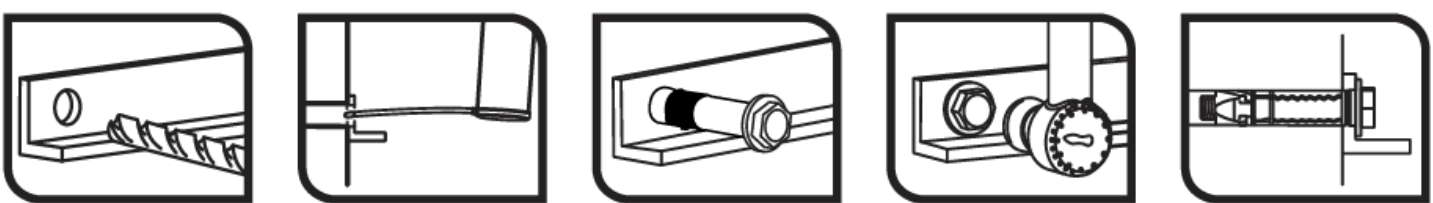
AU Option 1 Heavy Duty Anchor

MASONMATE
EXTRA[®]
ETA APPROVED FIXINGS

TECHNICAL DATA SHEET



Zinc Plated

Characteristics	Suitable Materials
• Functioning by friction; install by controlled torque • Use for heavy duty loads in tension and shear • Easy assembly • Use for static or quasi-static loads • Hexagonal and countersunk heads • Installation through the material to be fixed • Assessment for structural uses in cracked and non-cracked concrete • It can be disassembled so that the surface is smooth (the expansion tool and cone remain inside the drill) • VdS available for M8 to M20	• Reinforced Concrete • Cracked Concrete • Concrete • Stone 
Installation	
	

UK: Harrison & Clough Ltd.,
Galleon Blvd, Crossways Bus. Park,
Dartford, Kent, DA2 6QE

EU: QFF Distribution Ltd.,
24 Magna Drive, Magna Bus. Park,
Citywest Road, Dublin, D24 FNYO

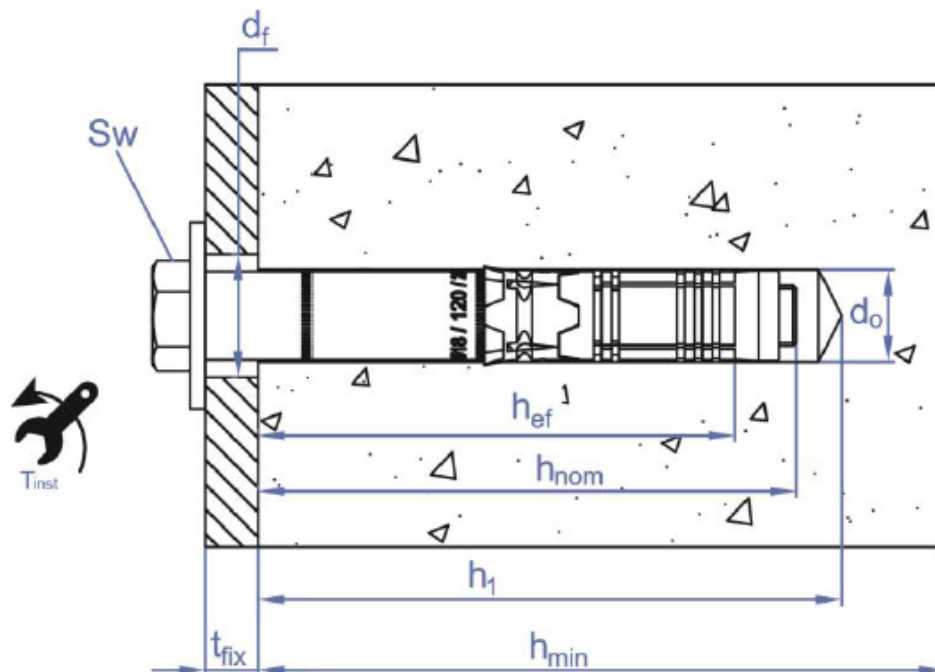
Email: masonmate@harclo.com
Web: www.materange.com

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TECHNICAL DATA SHEET

Installation Data



TECHNICAL DATA SHEET

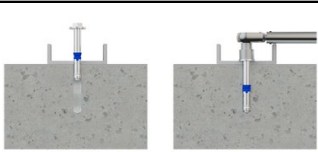
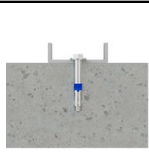
Installation Parameters

General Installation Parameters

Code	Size	Assessed	Drill Bit Diameter	Fixture Clearance Hole	Torque	Total Length of Anchor	Minimum Concrete Thickness	Depth of Drill Hole	Embedment Depth	Effective Depth	Thickness of Fixture	Minimum Spacing	Minimum Edge Distance
		ETA	d _o mm	d _f mm	T _{inst} Nm	L mm	h _{min} mm	h ₁ mm	h _{nom} mm	h _{ef} mm	t _{fix} Mm	S _{min} mm	C _{min} mm
Hexagon Head													
MAMAUH10070	M6 x 70 Ø10	✓	10	12	15	70	100	70	59	50	10	100	50
MAMAUH10100	M6 x 100 Ø10	✓				100					40		
MAMAUH10110	M6 x 110 Ø10	✓				110					50		
MAMAUH12080	M8 x 80 Ø12	✓	12	14	30	80	120	85	72	60	5	120	60
MAMAUH12090	M8 x 90 Ø12	✓				90					15		
MAMAUH12100	M8 x 100 Ø12	✓				100					25		
MAMAUH12120	M8 x 120 Ø12	✓				120					45		
MAMAUH16100	M10 x 100 Ø16	✓	16	18	50	100	140	95	83	70	15	175	70
MAMAUH16120	M10 x 120 Ø16	✓				120					35		
MAMAUH16140	M10 x 140 Ø16	✓				140					55		
MAMAUH16160	M10 x 160 Ø16	✓				160					75		
MAMAUH18110	M12 x 110 Ø18	✓	18	20	80	110	170	110	97	85	10	200	80
MAMAUH18120	M12 x 120 Ø18	✓				120					20		
MAMAUH18140	M12 x 140 Ø18	✓				140					40		
MAMAUH18150	M12 x 150 Ø18	✓				150					50		
MAMAUH18170	M12 x 170 Ø18	✓				170					70		
MAMAUH24140	M16 x 140 Ø24	✓	24	26	160	140	200	130	117	100	20	220	100
MAMAUH24170	M16 x 170 Ø24	✓				170					50		
MAMAUH28200	M20 x 200 Ø28	✓	28	31	240	200	250	160	146	125	50	320	160
MAMAUH28240	M20 x 240 Ø28	✓				240					90		
Countersunk Head													
MAMAUC10070	M6 x 70 Ø10	✓	10	12	15	70	100	70	59	50	10	100	50
MAMAUC10080	M6 x 80 Ø10	✓				80					20		
MAMAUC10100	M6 x 100 Ø10	✓				100					40		
MAMAUC12100	M8 x 100 Ø12	✓	12	14	30	100	120	85	72	60	25	120	60
MAMAUC16100	M10 x 100 Ø16	✓	16	18	50	100	140	95	83	70	15	175	70
MAMAUC16120	M10 x 120 Ø16	✓				120					35		
MAMAUC18120	M12 x 120 Ø18	✓	18	20	80	120	170	110	97	85	20	200	80

TECHNICAL DATA SHEET

Installation Procedure

			
1. Drilling Check the concrete base is well compacted and porosity insignificant. Dry, wet and flood drill allowed. Drill at hammer or percussion position. Respect specified diameter and depth.	2. Blow and Clean Clean the drill hole from dust and concrete remains. Use blow pump and brush.	3. Install Introduce the anchor until the head is in the same level of the fixture material surface. Use hammer if necessary. The anchor must be introduced through the material to be fixed.	4. Apply the Torque Apply the nominal torque specified by using a dynamometric wrench.

TECHNICAL DATA SHEET

Resistances						
Characteristic Resistance [kN]						
Resistances in concrete class C20/C25 for an isolated anchor without spacing or concrete edge distance effects are indicated in the following table:						
Code	Size	Assessed	Non-cracked Concrete		Cracked Concrete	
			Tension	Shear	Tension	Shear
		ETA	N _{Rk}	V _{Rk}	N _{Rk}	V _{Rk}
Hexagon Head						
MAMAUH10070	M6 x 70 Ø10	✓	15,00	17,39	12,17	12,17
MAMAUH10100	M6 x 100 Ø10	✓				
MAMAUH10110	M6 x 110 Ø10	✓				
MAMAUH12080	M8 x 80 Ø12	✓	20,00	33,00	16,00	32,01
MAMAUH12090	M8 x 90 Ø12	✓				
MAMAUH12100	M8 x 100 Ø12	✓				
MAMAUH12120	M8 x 120 Ø12	✓				
MAMAUH16100	M10 x 100 Ø16	✓	28,81	57,62	20,17	40,34
MAMAUH16120	M10 x 120 Ø16	✓				
MAMAUH16140	M10 x 140 Ø16	✓				
MAMAUH16160	M10 x 160 Ø16	✓				
MAMAUH18110	M12 x 110 Ø18	✓	38,55	77,10	26,99	53,97
MAMAUH18120	M12 x 120 Ø18	✓				
MAMAUH18140	M12 x 140 Ø18	✓				
MAMAUH18150	M12 x 150 Ø18	✓				
MAMAUH18170	M12 x 170 Ø18	✓	49,19	98,39	34,44	68,87
MAMAUH24140	M16 x 140 Ø24	✓				
MAMAUH24170	M16 x 170 Ø24	✓				
MAMAUH28200	M20 x 200 Ø28	✓	68,75	137,50	48,13	96,25
MAMAUH28240	M20 x 240 Ø28	✓				
Countersunk Head						
MAMAUC10070	M6 x 70 Ø10	✓	15,00	17,39	12,17	12,17
MAMAUC10080	M6 x 80 Ø10	✓				
MAMAUC10100	M6 x 100 Ø10	✓				
MAMAUC12100	M8 x 100 Ø12	✓	20,00	33,00	16,00	32,01
MAMAUC16100	M10 x 100 Ø16	✓	28,81	57,62	20,17	40,34
MAMAUC16120	M10 x 120 Ø16	✓				
MAMAUC18120	M12 x 120 Ø18	✓	38,55	77,10	26,99	53,97
1 kN = 100 kg Values <i>underlined and in italics</i> show Steel failure, bold values concrete failure and other indicate pull out failure.						

TECHNICAL DATA SHEET

Resistances						
Design Resistance [kN]						
Resistances in concrete class C20/C25 for an isolated anchor without spacing or concrete edge distance effects are indicated in the following table:						
Code	Size	Assessed	Non-cracked Concrete		Cracked Concrete	
			Tension	Shear	Tension	Shear
		ETA	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Hexagon Head						
MAMAUH10070	M6 x 70 Ø10	✓	10,00	11,60	8,12	8,12
MAMAUH10100	M6 x 100 Ø10	✓				
MAMAUH10110	M6 x 110 Ø10	✓				
MAMAUH12080	M8 x 80 Ø12	✓	13,33	<u>26,40</u>	10,67	21,34
MAMAUH12090	M8 x 90 Ø12	✓				
MAMAUH12100	M8 x 100 Ø12	✓				
MAMAUH12120	M8 x 120 Ø12	✓				
MAMAUH16100	M10 x 100 Ø16	✓	19,21	38,41	13,45	26,89
MAMAUH16120	M10 x 120 Ø16	✓				
MAMAUH16140	M10 x 140 Ø16	✓				
MAMAUH16160	M10 x 160 Ø16	✓				
MAMAUH18110	M12 x 110 Ø18	✓	25,70	51,40	17,99	35,98
MAMAUH18120	M12 x 120 Ø18	✓				
MAMAUH18140	M12 x 140 Ø18	✓				
MAMAUH18150	M12 x 150 Ø18	✓				
MAMAUH18170	M12 x 170 Ø18	✓				
MAMAUH24140	M16 x 140 Ø24	✓	27,33	65,59	19,13	45,91
MAMAUH24170	M16 x 170 Ø24	✓				
MAMAUH28200	M20 x 200 Ø28	✓	38,19	91,67	26,74	64,17
MAMAUH28240	M20 x 240 Ø28	✓				
Countersunk Head						
MAMAUC10070	M6 x 70 Ø10	✓	10,00	11,60	8,12	8,12
MAMAUC10080	M6 x 80 Ø10	✓				
MAMAUC10100	M6 x 100 Ø10	✓				
MAMAUC12100	M8 x 100 Ø12	✓	13,33	<u>26,40</u>	10,67	21,34
MAMAUC16100	M10 x 100 Ø16	✓	19,21	38,41	13,45	26,89
MAMAUC16120	M10 x 120 Ø16	✓				
MAMAUC18120	M12 x 120 Ø18	✓	25,70	51,40	17,99	35,98
1 kN = 100 kg Values <u>underlined and in italics</u> show Steel failure, bold values concrete failure and other indicate pull out failure.						

TECHNICAL DATA SHEET

Resistances						
Maximum Recommended Loads [kN]						
Resistances in concrete class C20/C25 for an isolated anchor without spacing or concrete edge distance effects are indicated in the following table:						
Code	Size	Assessed	Non-cracked Concrete		Cracked Concrete	
			Tension	Shear	Tension	Shear
		ETA	N _{Rec}	V _{Rec}	N _{Rec}	V _{Rec}
Hexagon Head						
MAMAUH10070	M6 x 70 Ø10	✓	7,14	8,28	5,80	5,80
MAMAUH10100	M6 x 100 Ø10	✓				
MAMAUH10110	M6 x 110 Ø10	✓				
MAMAUH12080	M8 x 80 Ø12	✓	9,52	<i>18,86</i>	7,62	15,24
MAMAUH12090	M8 x 90 Ø12	✓				
MAMAUH12100	M8 x 100 Ø12	✓				
MAMAUH12120	M8 x 120 Ø12	✓				
MAMAUH16100	M10 x 100 Ø16	✓	13,72	27,44	9,60	19,21
MAMAUH16120	M10 x 120 Ø16	✓				
MAMAUH16140	M10 x 140 Ø16	✓				
MAMAUH16160	M10 x 160 Ø16	✓				
MAMAUH18110	M12 x 110 Ø18	✓	18,36	36,72	12,85	25,70
MAMAUH18120	M12 x 120 Ø18	✓				
MAMAUH18140	M12 x 140 Ø18	✓				
MAMAUH18150	M12 x 150 Ø18	✓				
MAMAUH18170	M12 x 170 Ø18	✓				
MAMAUH24140	M16 x 140 Ø24	✓	19,52	46,85	13,66	32,80
MAMAUH24170	M16 x 170 Ø24	✓				
MAMAUH28200	M20 x 200 Ø28	✓	27,28	65,48	19,10	45,83
MAMAUH28240	M20 x 240 Ø28	✓				
Countersunk Head						
MAMAUC10070	M6 x 70 Ø10	✓	7,14	8,28	5,80	5,80
MAMAUC10080	M6 x 80 Ø10	✓				
MAMAUC10100	M6 x 100 Ø10	✓				
MAMAUC12100	M8 x 100 Ø12	✓	9,52	<i>18,86</i>	7,62	15,24
MAMAUC16100	M10 x 100 Ø16	✓	13,72	27,44	9,60	19,21
MAMAUC16120	M10 x 120 Ø16	✓				
MAMAUC18120	M12 x 120 Ø18	✓	18,36	36,72	12,85	25,70
1 kN = 100 kg Values <i>underlined and in italics</i> show Steel failure, bold values concrete failure and other indicate pull out failure.						

Safety Coefficients In Pullout For Tension Loads In High Resistance Concrete ψ_c (Cracked and non-cracked)							
Diameter		M6	M8	M10	M12	M16	M20
C30/37		1,22	1,22	1,22	1,22	1,08	1,08
C40/50		1,41	1,41	1,41	1,41	1,15	1,15
C50/60		1,58	1,58	1,58	1,58	1,20	1,20