

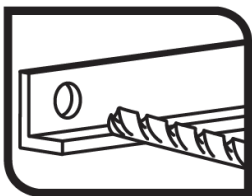
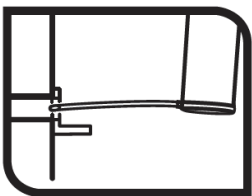
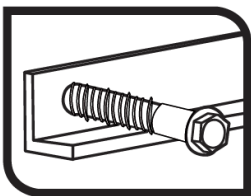
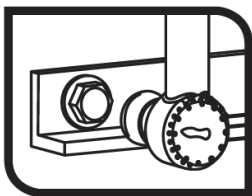
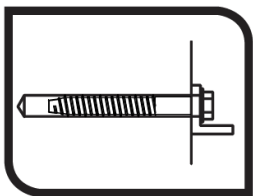
SBU-A4 Option 1 Concrete Screwbolt

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TECHNICAL DATA SHEET



Bimetal / A4 Stainless Steel Body and Hardened Carbon Steel Tip

Characteristics	Suitable Materials
- Pilot hole in concrete needed, thread is created by the anchor during the installation process - Use for high loads - Assessed for 2 installation depths - Use in cracked and non-cracked concrete - Comply with guideline VdS CEA 4001:2021-01(07) "Guidelines for sprinkler systems. Planning and installation." Ø8 to Ø10 - Suitable when reduced edge distances or spacing required - Qualified for static and quasi-static and seismic C1 loads - Easy installation - Installation through the fixture - Reusable - Removable, leaving concrete surface flat - Variety of lengths and sizes, assembly flexibility	- 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

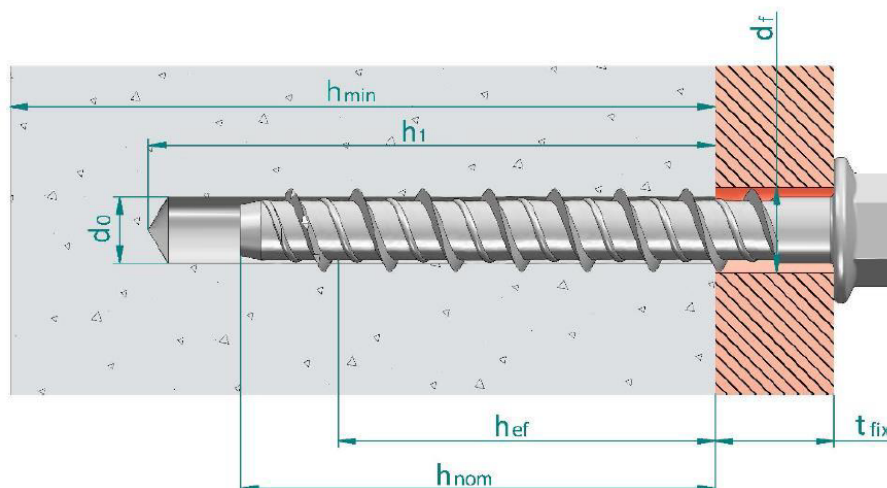
Email: masonmate@harclo.com
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TECHNICAL DATA SHEET

Installation Data



- d_0 : Nominal diameter of drill bit
 d_f : Fixture clearance hole diameter
 h_{ef} : Effective anchorage depth
 h_1 : Depth of drilled hole
 h_{nom} : Overall fastener embedment depth in the concrete
 h_{min} : Minimum thickness of concrete member
 t_{fix} : Fixture thickness

Seismic Load Assessment

Code	Size	Assessed	C1
		ETA	
MAMSBU406060	M6 x 60	✓	✓
MAMSBU408070	M8 x 70	✓	✓
MAMSBU408080	M8 x 80	✓	✓
MAMSBU408105	M8 x 105	✓	✓
MAMSBU410070	M10 x 70	✓	✓
MAMSBU410100	M10 x 100	✓	✓
MAMSBU412110	M12 x 110	✓	✓

TECHNICAL DATA SHEET

Installation Parameters

General Installation Parameters

Code	Size	Assessed	Drill Bit Diameter	Fixture Clearance Hole	Spanner	Maximum Torque	Minimum Allowable Spacing	Minimum Allowable Edge Distance
		ETA	D _o mm	D _f mm	SW/Tx -	T _{inst} Nm	S _{min} mm	C _{min} mm
Hexagon Head Concrete Screwbolt								
MAMSBU406060	M6 x 60	✓	6	7,5 - 9	SW 10	10	35	35
MAMSBU408070	M8 x 70	✓	8	10,1 - 12	SW 13	20	35	35
MAMSBU408080	M8 x 80	✓						
MAMSBU408105	M8 x 105	✓						
MAMSBU410070	M10 x 70	✓	10	12,3 - 14	SW 15	30	50	40
MAMSBU410100	M10 x 100	✓						
MAMSBU412110	M12 x 110	✓	12	14,4 - 16	SW 18	50	75	45

Installation Parameters

Standard Installation Depth (h_{ef, std})

Code	Size	Assessed	Minimum Concrete Thickness	Depth of Drill Hole	Installation Depth	Effective Anchorage Depth	Thickness of Fixture	Critical Spacing (concrete cone)	Critical Edge Distance (concrete cone)	Critical Spacing (splitting)	Critical Edge Distance (splitting)
		ETA	h _{min} mm	H ₁ mm	h _{nom} mm	h _{ef} mm	t _{fix} mm	S _{cr,N} mm	C _{cr,N} mm	S _{cr,sp} mm	C _{cr,sp} mm
Hexagon Head Concrete Screwbolt											
MAMSBU406060	M6 x 60	✓	80	65	55	43,0	5	129	65	190	95
MAMSBU408070	M8 x 70	✓	80	75	65	50,5	5	152	76	220	110
MAMSBU408080	M8 x 80	✓					15				
MAMSBU408105	M8 x 105	✓					40				
MAMSBU410070	M10 x 70	✓	-	-	-	-	-	-	-	-	-
MAMSBU410100	M10 x 100	✓	100	95	85	67,0	15	201	101	230	115
MAMSBU412110	M12 x 110	✓	160	120	105	83,5	5	251	126	240	120

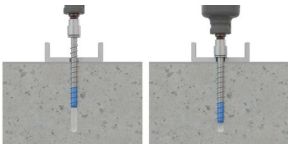
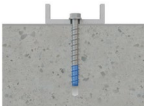
TECHNICAL DATA SHEET

Installation Parameters

Reduced Installation Depth ($h_{ef, red}$)

Code	Size	Assessed	Minimum Concrete Thickness	Depth of Drill Hole	Installation Depth	Effective Anchorage Depth	Thickness of Fixture	Critical Spacing (concrete cone)	Critical Edge Distance (concrete cone)	Critical Spacing (splitting)	Critical Edge Distance (splitting)
		ETA	h_{min} mm	H_1 mm	h_{nom} mm	h_{ef} mm	t_{fix} mm	$S_{cr,N}$ mm	$C_{cr,N}$ mm	$S_{cr,sp}$ mm	$C_{cr,sp}$ mm
Hexagon Head Concrete Screwbolt											
MAMSBU406060	M6 x 60	✓	80	45	35	26,0	25	78	39	90	45
MAMSBU408070	M8 x 70	✓	80	60	50	37,5	20	113	57	130	65
MAMSBU408080	M8 x 80	✓					30				
MAMSBU408105	M8 x 105	✓					55				
MAMSBU410070	M10 x 70	✓	80	65	55	41,5	15	125	63	140	70
MAMSBU410100	M10 x 100	✓					45				
MAMSBU412110	M12 x 110	✓	90	90	75	58,0	35	174	87	190	95

Installation Procedure

			
1. Drilling Check the concrete is well compacted and without significant porosity. Use drill in hammer mode. Drill according to specified depths in previous tables.	2. Blow and Clean Clean the drill hole from dust and concrete remains. Use blow pump and brush.	3. Install Select a powered impact wrench or a torque wrench that does not exceed the maximum torque indicated in previous tables. Attach an appropriate size hex socket to the wrench. Mount the screw anchor head in the socket.	4. Apply the Torque Drive the anchor with an impact driver or a torque wrench through the fixture and into the hole until the anchor head washer comes in contact with the fixture. The anchor must be snug after installation. Do not spin the hex socket off the anchor to disengage.

TECHNICAL DATA SHEET

Resistances											
Characteristic Resistance (Structural Application) [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 $N_{Rk, ucr}$		Shear $V_{Rk, ucr}$		Tension $N_{Rk, cr}$		Shear $V_{Rk, cr}$	
		ETA		($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
Hexagon Head Concrete Screwbolt											
MAMSB406060	M6 x 60	✓		12,00	5,50	<u>8,79</u>	<u>8,79</u>	7,50	1,00	10,20	8,54
MAMSB408070	M8 x 70	✓		17,65	10,00	<u>14,65</u>	<u>14,65</u>	12,36	5,00	17,18	13,52
MAMSB408080	M8 x 80	✓									
MAMSB408105	M8 x 105	✓									
MAMSB410070	M10 x 70	✓		-	13,15	-	24,07	-	9,21	-	16,85
MAMSB410100	M10 x 100	✓		26,98	13,15	<u>24,06</u>	24,07	18,89	9,21	<u>24,06</u>	16,85
MAMSB412110	M12 x 110	✓		37,54	21,73	<u>34,84</u>	<u>34,84</u>	26,27	14,10	<u>34,84</u>	33,31
1 kN = 100 kg Values <u>underlined and in italics</u> show Steel failure, bold values concrete failure and other indicate pull out failure.											

Resistances											
Design Resistance (Structural Application) [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 $N_{Rd, ucr}$		Shear $V_{Rd, ucr}$		Tension $N_{Rd, cr}$		Shear $V_{Rd, cr}$	
		ETA		($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
Hexagon Head Concrete Screwbolt											
MAMSB406060	M6 x 60	✓		6,67	3,06	<u>7,03</u>	<u>7,03</u>	4,17	0,56	6,80	5,69
MAMSB408070	M8 x 70	✓		9,81	5,56	<u>11,72</u>	<u>11,72</u>	6,87	2,78	11,45	9,01
MAMSB408080	M8 x 80	✓									
MAMSB408105	M8 x 105	✓									
MAMSB410070	M10 x 70	✓		-	7,31	-	16,04	-	5,11	-	11,23
MAMSB410100	M10 x 100	✓		14,99	7,31	<u>19,25</u>	16,04	10,49	5,11	<u>19,25</u>	11,23
MAMSB412110	M12 x 110	✓		25,02	12,07	<u>27,87</u>	<u>27,87</u>	17,52	7,83	<u>27,87</u>	22,21
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 (Structural Application) [kN] (con $\gamma_F=1.4$)											
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 $N_{Rec, ucr}$		Shear $V_{Rec, ucr}$		Tension $N_{Rec, cr}$		Shear $V_{Rec, cr}$	
		ETA		($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
Hexagon Head Concrete Screwbolt											
MAMSBU406060	M6 x 60	✓		4,76	2,18	<u>5,02</u>	<u>5,02</u>	2,98	0,40	4,85	4,07
MAMSBU408070	M8 x 70	✓		7,01	3,97	<u>8,37</u>	<u>8,37</u>	4,90	1,98	8,18	6,44
MAMSBU408080	M8 x 80	✓									
MAMSBU408105	M8 x 105	✓									
MAMSBU410070	M10 x 70	✓		-	5,22	-	11,46	-	3,65	-	8,02
MAMSBU410100	M10 x 100	✓		10,71	5,22	<u>13,75</u>	11,46	7,49	3,65	<u>13,75</u>	8,02
MAMSBU412110	M12 x 110	✓		17,87	8,62	<u>19,91</u>	<u>19,91</u>	12,51	5,60	<u>19,91</u>	15,86
1 kN = 100 kg Values <u>underlined and in italics</u> show Steel failure, bold values concrete failure and other indicate pull out failure.											

Pull Out Increasing Factors for Tension Loads In High Resistance Concrete ψ_c								
Diameter	M6		M8		M10		M12	
Installation Depth	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)
C30/37	1,12	1,06	1,10	1,08	1,08	1,08	1,10	1,08
C40/50	1,21	1,10	1,17	1,15	1,14	1,14	1,18	1,15
C50/60	1,29	1,14	1,23	1,19	1,19	1,19	1,25	1,19