SAMMYS® Seismic Anchor
## SCREW-IN ANCHOR FOR THREADED ROD

Ramset™

Seismic

Table 1 - Installation and seismic performance details in Cracked Concrete

Table 1 - Reduced characteristic tension and shear capacities derived in accordance with ACI355.2-07											
Anchor Size, d_b (mm)	Installation details			NOTE 5 Optimum dimensions			NOTE 1,2 Reduced Characteristic Seismic Capacity (kN)				
							Concrete Compressive Strength f'_c = 32MPa				
	Drilled hole diameter, d_h inch (mm)	Metric Thread for Fixing	Anchor effective depth, h_{ef} (mm)	Edge distance, e_c (mm)	Anchor spacing, a_c (mm)	Concrete substrate thickness (mm)	Off Form Concrete Slab		NOTE 3,4 Composite/Metal Deck Slab		
							Tension 0.75 $\phi N_{sa, eq}$	Shear 0.75 $\phi V_{sa, eq}$	Tension 0.75 $\phi N_{sa, eq, md}$	Shear 0.75 $\phi V_{sa, eq, md}$	
M10	¼" (6.5mm)	M10	29	55	100	100	1.9	4.8	1.8	4.2	

Notes:

1. Seismic capacities shown at f'c=32 MPa only. Refer to University of Auckland Qualification of SAMMYS® Anchors according to ACI355.2, May 2017
2. Capacity Reduction Factor φ =0.65 for tension and shear values
3. ComFlor™ 80 composite floor metal tray decking profile used to derive performance data, for alternative metal decking profile, contact ramsetreid® to verify capacities (ComFlor™ 80 is a trademark of Tata Steel UK Ltd).
4. Capacities for shear and tension apply to Lower and Upper flute locations of metal decking
5. Where minimum dimensions are not achievable contact ramsetreid® to verify capacities
6. Cracked tension and cracked shear values for Composite/ Metal Deck Slabs were derived using test results from cracked Off-Form Concrete and Uncracked Composite/ Metal Deck specimens (refer to Table 2)
7. For summary of test anchor data for use with seismic design refer to Table 2
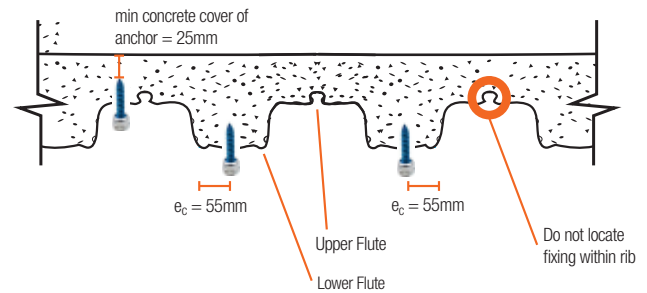
Installation:
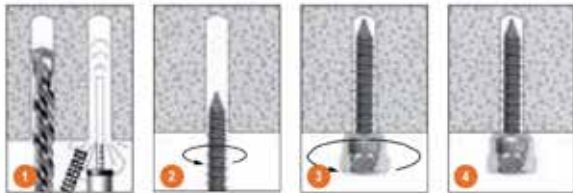
1. Drill hole to correct diameter and depth. Clean thoroughly with brush. Remove debris by way of vacuum or hand pump, compressed air etc.

2. Using the nut driver 8113910 with a 1200rpm max portable drill, screw the SAMMYS® into the hole using slight pressure until the self tapping action starts.

3. Push the face of the nut driver tight to the anchor

4. When the nut driver spins freely on the cap of the SAMMYS®, stop drill and remove.

Note: Do not set SAMMYS® with drill in iMPact mode

SAMMYS® Anchor fixing location to composite/metal deck slab soffit

(ComFlor™ 80 deck profile shown below)

min concrete cover of anchor = 25mm

e_c = 55mm e_c = 55mm

Upper Flute

Lower Flute

Do not locate fixing within rib

DESCRIPTION AND PART NUMBERS

Anchor 3ize, d_b (mm)	Description	Part No.
M10	SAMMYS Screw Anchor for threaded rod	8173957
Socket to suit M10 SAMMYS®	SOCKET – SAMMYS® nut driver installation socket	8113910

The test results summarized in Table 2 below and extracted from the University of Auckland SAMMYS® ACI 355.2 @ qualification program Report (May 2017), are presented in a format consistent with ACI 355.2-07 Table 11.3, which presents the tension and shear strength capacities for SAMMYS® and the installation parameters under which these values were obtained.

The characteristic capacity (5% probability of non- exceedance) as calculated in ACI 355.2-07 Appendix A2 is also included in Table 2 which has been used to derive the Reduced Characteristic Values shown in Table 1. For anchor design and installation beyond the scope of the parameters tabulated in Table 2 contact ramsetreid®

Table 2 - Anchor system qualified ƒor use in Seismic Design in cracked and uncracked concrete in accordance with test program in ACI 355.2-07 Table 4.2

Characteristic	Symbol	Units	ACI355.2 -07 Chapter reference	Mean Value	N5% Value
Installation Information					
Outside diameter	d_o	mm	2.2	6	-
Effective embedment depth	h_{ef}	mm	2.2	29	-
Minimum Nominal Embedment	h_{nom}	mm	2.2	43	
Minimum Hole Depth	h_{hole}	mm	2.2	48	
Minimum edge distance	c_{min}	Nm	2.2	55	-
Minimum spacing	s_{min}	mm	2.2	100	-
Minimum concrete thickness	h_{min}	mm	2.2	100	-
Critical edge distance	c_{cr}	mm	2.2	65	-
Anchor Data					
Category number	1, 2 or 3	-	Table 10.1	1	-
Yield strength of anchor steel	f_y	MPa	2.2	510	
Ultimate strength of anchor steel	f_{ut}	MPa	2.2	640	
Effective tensile stress area	A_{se}	mm²	2.2	27	
Effective shear stress area	A_{se}	mm²	2.2	30.2	
Nominal shear strength in shear of a single anchor as governed by steel strength	V_{sa}	kN	9.4	13.0	11.5
Effectiveness factor for concrete breakout in uncracked concrete	k_{uncr}	-	7.3.1	11.7	-
Effectiveness factor for concrete breakout in cracked concrete	k_{cr}	-	7.3.1	6.6	-
$\psi_{c,N} = k_{uncr}/k_{cr}$ for ACI318 design	$\psi_{c,N}$	-	-	1.78	-
Nominal pullout strength in tension of a single anchor in uncracked concrete (32MPa)	$N_{p,uncr}$	kN	7.3.3	10.7	7.1*
Nominal pullout strength in tension of a single anchor in cracked concrete (32MPa)	$N_{p,cr}$	kN	7.3.3	5.6*	3.2*
Tension resistance of single anchor in tension for seismic loads in concrete (32MPa)	$N_{p,eq}$	kN	7.3.3	5.9*	4.0*
Shear resistance of single anchor for seismic loads	$V_{sa,eq}$	kN	9.6	10.5	9.9
Axial stiffness in service load range	β	kN/mm	5.5.2	3.7	-
Nominal shear strength of a single anchor as governed by the steel strength (metal deck)	V_{sa}	kN	9.4	10.5	10.1
Nominal pull-out strength in tension of a single anchor in high strength uncracked concrete 32MPa (metal deck)	$N_{p,uncr}$	kN	7.3.3	8.5*	6.8*

*Normalised values for 32MPa concrete strength