

Bottom Plate Fixings

Introduction

This document is intended to provide specifiers with guidance on Ramset™ Anchoring Solutions for fixing bottom plates as per NZS 3604:2011. Chapter 2.4.7 of NZS 3604:2011 stipulates that connector/fixing capacity shall be derived by testing in accordance with BRANZ Evaluation Method EM1, while Chapter 7.5.12 of NZS 3604:2011 stipulates the minimum capacity of the connector/fixing when tested as per the above test method as follows:

For External Walls:

- Horizontal loads in the plane of the wall of 2kN
- Horizontal loads out of the plane of the wall of 3kN
- Vertical loads in axial tension of the fastener of 7kN




For Internal Walls:

- Horizontal loads in the plane of the wall of 2kN
- Horizontal loads out of the plane of the wall of 2kN

In addition, there is a minimum characteristic uplift requirement of 150 BUs/m (15kN) for anchors used as hold-downs for walls containing bracing.

This Technical Datasheet presents three different types of anchors.

The applications suitable for each anchor type is described in the following sections of this document.

Product Type	Part Description	Part Number	Finish	
Screw Anchor	12mm x 150mm WERCS AnkaScrew™	ASI2150WGM	Mechanically Galvanised	
Expansion Anchor	12mm x 140mm TruBolt™ Bottom Plate Kit	P12140BPK20 (pack of #20) P12140BPK50 (pack of #50)	Hot Dipped Galvanised	
Drive Pins	75mm Washered Drive Pins*	LWU75	Zinc Electroplated	

*LWU75 is installed using the Ramset™ Spitfire C75 Powder Actuated Tool with red charges. Alternatively, Ramset™ FrameBoss™ XPM with red charges can be used

Technical Information

Min. Concrete Cylinder Compressive Strength, $f'_c = 17.5\text{MPa}$								Application Suitability		
Part Number	Drilled Hole Diam, d_h (mm)	Anchor Effective Depth, h (mm)	Drill depth, h_1 (mm)	Tightening Torque, T , (Nm)	Min. Edge Distance, e_c (mm)	Max. Spacing, a_c (mm)	Max. Fixture Thickness*, T_{fix} (mm)	Internal Wall	External Wall	15kN uplift for walls w/ bracing
ASI2150WGM	12	94	106	80	59	900	50	Yes	Yes	Yes
P12140BPK	12	61	85	50	59	900	50	Yes	Yes	No
LWU75	N/A**	N/A**	N/A**	N/A**	N/A***	900	45	Yes	No	No

* Fixture thickness including bottom plate thickness and washer thickness.

** LWU75 Drive Pins are direct fixed, thus no requirement for drill hole, min embedment & tightening torque.

*** LWU75 Drive Pins are for internal wall applications only, thus edge distance is not applicable.

Note:

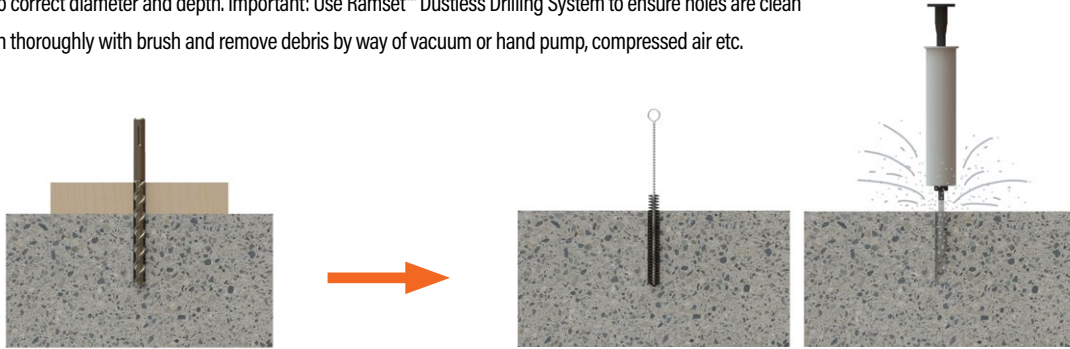
1. The above information is derived from independent testing by BRANZ (Ref #ST15654-01-4).
2. 50mm x 50mm x 3mm square washer as per Chapter 2.4 of NZS 3604:2011 was incorporated for the ASI2150WGM and P12140BPK testing.
3. The above information is applicable for in-situ concrete slab edge, and not applicable for masonry header block slab edge.

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Installation:

AS12150WGM - 12mm x 150mm WERCS AnkaScrew™ and P12140BPK - 12mm x 140mm TruBolt™ Bottom Plate Kit.

Step 1: Drill hole to correct diameter and depth. Important: Use Ramset™ Dustless Drilling System to ensure holes are clean. Alternatively, clean thoroughly with brush and remove debris by way of vacuum or hand pump, compressed air etc.



AS12150WGM - 12mm x 150mm WERCS AnkaScrew™

Step 2: Install 50mm x 50mm x 3mm square washer (or the appropriate panel hold-down bracket when used as hold-downs for walls containing bracing). Using a socket wrench, screw the WERCS AnkaScrew™ into the hole using slight pressure until the self-tapping action starts.



Step 3: Step 3: Tighten WERCS AnkaScrew™ until flush with fixture (washer and bottom plate). If resistance is experienced when tightening, unscrew anchor one turn and re-tighten. Ensure not to over tighten by using a torque wrench. Refer to tightening torque value as specified in the Technical information table.



P12140BPK - 12mm x 140mm TruBolt™ Bottom Plate Kit

Step 2: Install 50mm x 50mm x 3mm square washer. Insert TruBolt™ through the fixture and drive with a hammer until washer contacts the fixture.



Step 3: Tighten the TruBolt™ nut using a torque wrench to the torque value as specified in the Technical Information table.



Installation: LWU75 - 75mm Washered Drive Pins.

Given the requirement to install the LWU75 Drive Pins with a specific tool, please contact your local representative for Installation Training and/or Operator's Manual.

* The images shown are representative only.

For further information, please contact Ramset™
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