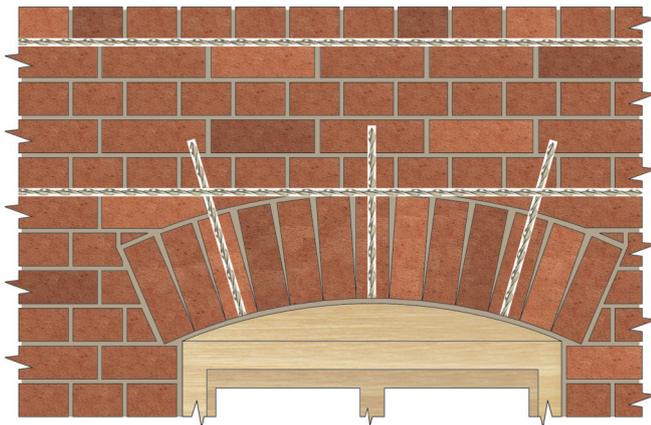
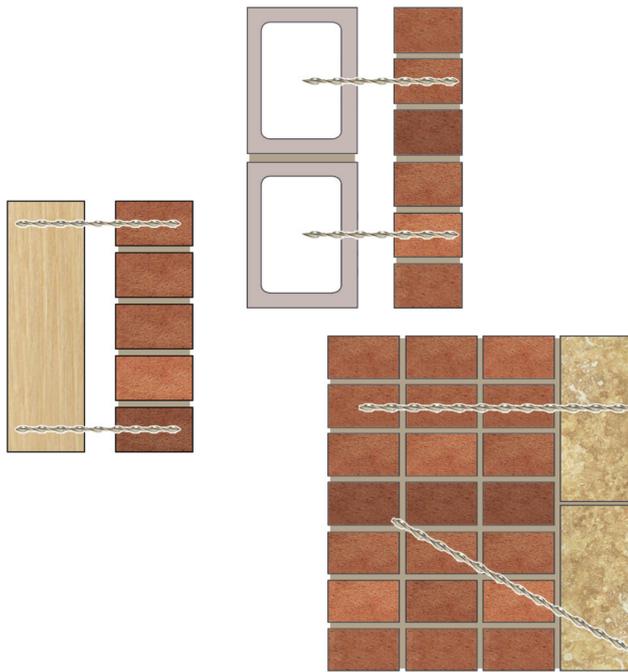


DryFix

Dry mechanical pinning and remedial tying system



Over 50 standard repair specifications are available online, covering all common structural faults.

Relevant Repair Details: RP01, RT01, RT04, RT05, RT06, RT08, RT09



Scan the QR Code for full Product Information, Case Studies and downloadable Repair Details



Applications

- Versatile replacement wall tie
- For securing multiple layers of masonry
- For pinning delicate masonry features
- For pinning render and thin panels
- Seismic retrofit of masonry walls

Features

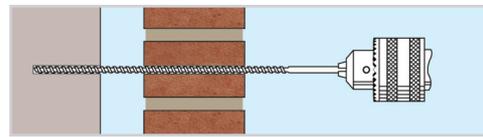
- Requires no resin, grout or mechanical expansion
- Quick, easy, non-disruptive installation using the Power Driver Attachment
- Installed tie is recessed below face of masonry
- Highly economical with low installed costs
- Effective in all common building materials
- Leaves masonry virtually unmarked
- Usable in all weather, temperature and environmental conditions
- Security of fixing in both leaves should be tested separately



DryFix tie being power-driven into pilot hole

Installation Procedures

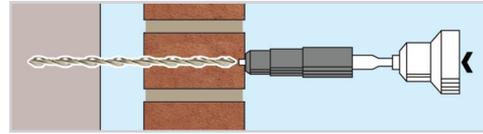
1. Mark the position for the DryFix tie on the face of the near leaf.
2. Drill an appropriate diameter pilot hole (depending on the density of near and far leaf materials) which must be evaluated, prior to commencement of the works, using a Helifix Load Test Unit. Drill through the near leaf and into the back-up substrate, to the predetermined depth, using an appropriate rotary percussion drill (3-jaw-chuck-type).
3. Fit the special DryFix PDA insertion tool to a rotary hammer drill (SDS type).
4. Load the DryFix tie into the insertion tool.
5. Power-drive the tie into position until its outer end is recessed below the face of the near leaf by the insertion tool.
6. Make good the entry hole with matching materials.



1. Drill small pilot hole, typically 5mm in diameter, using rotary percussion drill, 3-jaw-chuck type



2. Load tie into DryFix Power Driver Attachment fitted to SDS hammer drill



3. Drive in tie until outer end is fully recessed below face of masonry

NOTE: Some substrates, such as hard concrete and granite, are not suitable for DryFix installation, due to the inability of the tie to cut into the material. Appropriately sized pilot holes for near and far leaves are essential for a successful tie. Too large, and the tie will 'push in', and too small, the tie will 'wedge', not cut into the substrate.

Technical Specifications

Material:	Austenitic stainless steel Grade 316 as standard (Grade 304 also available)
Diameter*:	8mm standard (10mm and Asymmetric Dryfix available)
Cross sectional area:	10mm ² (15mm ²)
Stock Lengths:	50 — 400mm
Required Length:	Near leaf thickness less 10mm + cavity width + far leaf penetration, typically 70mm (Refer to Installation Details for further instruction)
Pull Out Capacity:	Site specific. Attainable loads assessed through on-site proof load testing
Minimum Fixing Density:	Project Specific. Determined by specific engineering design to suit engineering objectives
Diameter of pilot hole:	Diameter of pilot hole (typically 5mm) to be ascertained on site
Depth of pilot hole:	Length of Dryfix + 10mm
Bonding agent:	None required

* NOTE Diameter measures from fin edge to fin edge.

Characteristic Performance Data

AS/NZS2699.1 Type B remedial classification (8.0mm tie)*					
Test Type (Connection type)	Cavity Width (mm)	Axial Stiffness (kN/mm)	Axial Strength (kN)	Residual Strength (kN)	Classification*
Remedial Tie (Drive-in connection to brick at both ends of the tie)	75	0.61	1.902	2.321	Type B classification does not strictly apply to tested cavity tie application. Refer to Note.

* NOTE Standard AS/NZS2699.1 type B classification does not apply to tying of cavity brick construction. AS/NZS2699.1 type B classification pertains to veneer ties. Remedial tying of a cavity brick wall to reach even a proportion of the New Zealand new build standard may require the strengthening or bracing of the load-bearing (typically internal) masonry leaf. Results derived from laboratory testing using selected materials. See Helifix Remedial Wall tie sheet (PS/DFRTRTi01) and related test materials for further details. Site conditions, including base materials and cavity widths, can vary widely and published loads and classifications are to be used as guide values only. Use subject to specific engineering design.

RECOMMENDED TOOLING	
For drilling pilot hole:	Rotary percussion 3-jaw-chuck drill
For installing DryFix tie:	Power Driver Attachment fitted to a rotary hammer drill (SDS type).
For proof testing:	Helifix Load Test Unit

Related Publications

Technical:	Remedial Stainless Steel Wall Ties PS/DFRTRTi01
Drilling and Load Testing:	Drilling and Testing Guide PS/DT01
Health and Safety:	Safe Installation Guide
Relevant Repair Details:	RP01, RT01, RT04, RT05, RT06, RT08 and RT09



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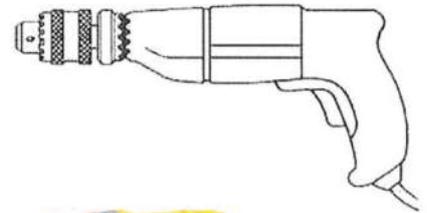
Drilling Guide

Correct drilling techniques are essential to ensure efficacy of the remedial wall tie, and to minimise aesthetic and structural damage to the property under repair.

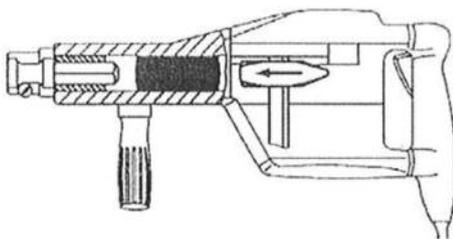
The use of Rotary Percussion Drills should be used wherever possible for drilling pilot/clearance holes to ensure accuracy and keep disruption to the masonry to a minimum. Damage caused to the masonry by incorrect drilling and any spalling of the brick/block rear may reduce the effectiveness of the wall ties installed.

Rotary Percussion Drill (3-jaw chuck type)

This type of electric hammer drill uses a 3-jaw rotating chuck to clamp and rotate straight-shanked drill bits. It is designed to provide a rotary drilling action, which may be amplified by a light ‘tapping’ action. This light percussion improves the drilling rate but is gentle and permits fragile masonry substrates such as brick, terracotta, mortar and hollow concrete block to be drilled with minimal damage, particularly when the drill breaks through the material into a void or cavity. This kind of drill will commonly have a chuck speed up to 2,500 rpm with 10-40,000 percussive ‘taps’ per minute.



Example: DeWalt Percussion DWD525KS



Rotary Hammer Drill (SDS chuck type)

The rotary hammer drill, SDS type, is for drilling blind holes in very hard and dense materials such as reinforced concrete and sometimes hard masonry or hard natural stone where rotary percussion drilling may not be practical. SDS-shanked drill bits are required to fit the chuck.

A lightweight SDS type rotary hammer drill, fitted with an appropriate Helifix SDS support tool attachment, is required to set all Helifix “drive-in ties” (e.g. DryFix Ties, RetroTies and StarTies) into position.

Suitable lightweight SDS type rotary hammers have a small motor (approx. 800W) and a chuck speed range of 600-800 r.p.m. with approximately 4,000 hammer blows per minute. There are a wide variety of lightweight tools available.



Example: Bosch Rotary 2-28 DFV

Note: A 3-jaw-chuck adaptor fitted to an SDS machine must NEVER be used in place of a Rotary Percussion drill. Fitting a 3-jaw chuck attachment to a Rotary Hammer drill does NOT alter its performance – it remains an SDS type drill.

Remedial Wall Tie Testing & Spacing

Proof Testing

Proof testing of obtainable pull-out loads can be conducted on site using the Helifix Load Test Unit. The Load Test Unit allows tensile proof loading to a maximum of 3kN. On-site assessment should inform specific engineering design and be conducted during the course of the repair work to suit the requirements of the specifying engineer.



1



2



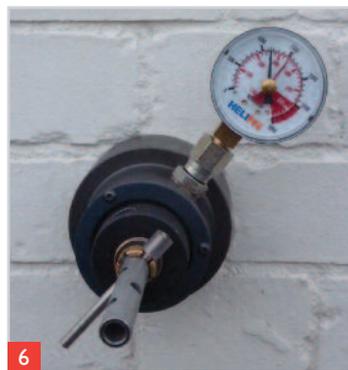
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4



5



6

1. Install tie into inner or outer leaf masonry
2. Fit the appropriate sized Load Test Key (LTK) at least 50mm (normally one full turn) over the end of the tie. Remove the cross pin, if fitted
3. Slide the Load Test Unit (LTU) over the LTK and replace the cross pin, engaging it in the castellation on the top of the centre stud
4. Place the cross pin through the LTK and take up the slack on the central nut
5. Turn the Tommy bar slowly until the proof or maximum load is achieved. DO NOT enter the red zone and DO NOT OVERLOAD
6. Note the reading and then release the tension on the tested wall tie



Refer to the Product Information Sheet for the Load Test Unit for further details

Tie Spacing

Wall ties should be spaced to suit site conditions and locations and in accordance with the relevant Standards and Building Code requirements (e.g. NZS4210, NZS3604, NZS4229 and NZS4230). Relevant design variables include the wind and seismic conditions that are expected to act on the wall, its material condition and composition.

Remedial wall ties may be retrofitted to buildings built in different eras and to earlier building standards, and comprise materials or construction methods that do not comply with the current standards. Specific engineering design will be required in instances where performance comparable or proportionate with current standards or parts thereof is required.