**HELIFIX**
SUSTAINABLE STRUCTURAL SOLUTIONS

# TorkFix

## Brick to Brick / Concrete Block / CMU
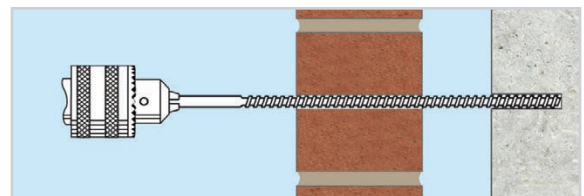
### Retrofit mechanical repair anchor
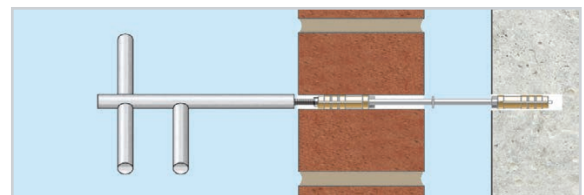


## Applications

- For securing masonry veneers to brick, concrete block or CMU backup material

- To provide structural stability and resist wind pressure forces where wall ties have failed or been omitted

## Installation Procedures

1. Mark the position for the TorkFix tie on the face of the facade.

2. Drill a $^7/16$" diameter pilot hole through the facade, through either the solid brick or mortar joint, and approximately $2\frac{1}{2}$" into the back-up substrate, using a rotary percussion drill (3-jaw-chuck-type).

3. Screw the threaded end of Setting Tool 1 onto the outer end of the anchor.

4. Insert the anchor fully into the hole in the backup material.

5. Turn the Setting Tool 1 until the inner shell has expanded and is tight.

6. Apply the torque wrench to the end of the Setting Tool 1 ($^1/4$" square) to check the torque – usually 36lbf-ins for standard brick but may be increased to 54lbf-ins for harder substrates.

7. Fit Setting Tool 2 over the end nut and turn until the outer shell has expanded and is tight (36-54lbf-ins).

8. Fit the torque wrench to the end of Setting Tool 2 ($^1/4$" square) and check the torque, as before.

9. Make good the hole and seal the surface with color matched mastic or mortar.

For full Product Information, Case Studies and downloadable Repair Details, giving specifications for many common structural faults, go to:
**www.helifix.com/products/retrofit-products/torkfix**



**1.** Drill the appropriate clearance hole through the facade and into the backup material.



**2.** Screw the threaded end of Setting Tool 1 onto the outer end of the anchor and insert fully into the hole.
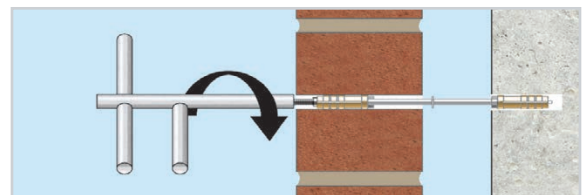


**3.** Turn Setting Tool 1 until the inner shell expands and is tight. Apply the torque wrench to the end of the Setting Tool 1 to check the torque.



**4.** Fit Setting Tool 2 over the end nut and turn until the outer shell has expanded and is tight. Fit the torque wrench to the end of Setting Tool 2 to check the torque.

# Anchor Selection
## Masonry – Masonry

| Maximum Cavity Standard Masonry * | Nominal Anchor Length |
|---|---|
| Ins | Ins |
| 1¹/₂" | 4¹/₂" |
| 2¹/₂" | 5¹/₂" |
| 3¹/₂" | 6¹/₂" |
| 4¹/₂" | 7¹/₂" |
| 5¹/₂" | 8¹/₂" |
| 6¹/₂" | 9¹/₂" |
| 7¹/₂" | 10¹/₂" |
| 8" | 11" |

Minimum cavity is dependant on the width of the facade and the maximum depth that can be drilled into the backup material.

* For the purposes of this table the masonry strength has been assumed to be 1,000psi. Weaker masonry will require the expander to be embedded deeper to avoid breakout, reducing the maximum cavity for a particular length of anchor.
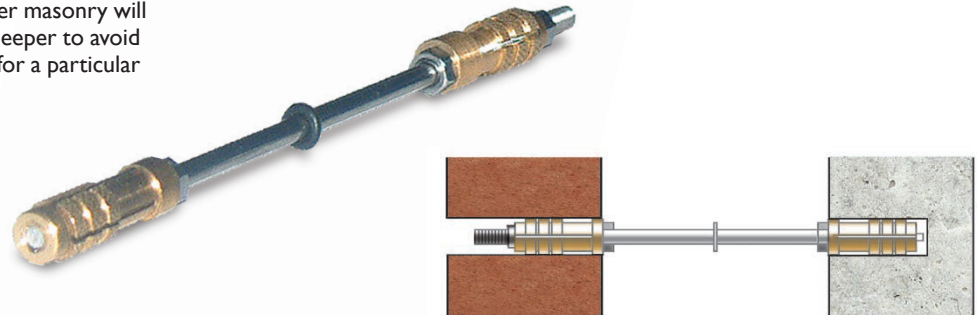
# Typical Performance
## Average of 20 tests

| Substrate material | Compressive strength psi | Pull Out Lbf |
|---|---|---|
| Engineering Brick | 7250 | 1325+ ** |
| Brick | 3990 | 1127 |
| Soft Brick | 2465 | 818 |
| Reinforced Conc. | 7250 | 1105 |
| Precast Conc. | 2900 | 1150 |
| CMU 15 MPa | 2175 | 600 |
| CMU – LW | 1015 | 398 |
| Pavers | – – | 990 |
| 1" Travertine | – – | 400 |

** Limit of test equipment

# Technical Specifications

| Material: | Austenitic stainless steel Grade 304 |
|---|---|
| Diameter: | 11/64" |
| Length: | Facade thickness + cavity width + backup penetration of 2½" |
| Diameter of clearance hole, facade and backup: | 7/16" |
| Depth of clearance hole: | Length of TorkFix + 2½" |
| Fixing density: | To engineer's specification |
| Bonding agent: | None required |
| Additional technical information: | |
| RECOMMENDED TOOLING | |
| For drilling pilot hole: | Rotary percussion 3-jaw-chuck drill |

![HELIFIX - SUSTAINABLE STRUCTURAL SOLUTIONS]

# TorkFix

## Brick to Steel Stud
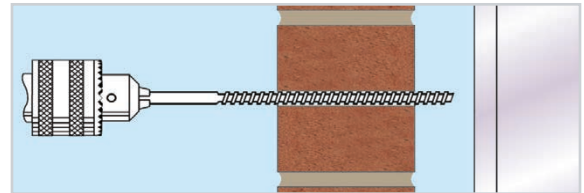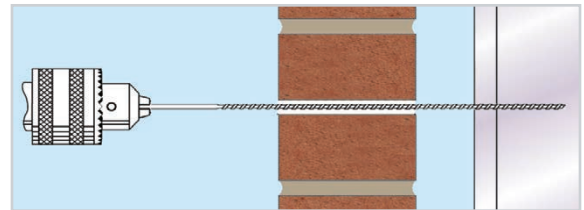
### Retrofit mechanical repair anchor



## Applications

- For securing masonry veneers to steel stud
- To provide structural stability and resist wind pressure forces where wall ties have failed or been omitted



**1.** Drill the appropriate clearance hole through the facade



**2.** Drill a hole in the steel stud using a $3/16"$ drill bit



**3.** Screw the threaded end of Setting Tool 1 onto the outer end of the anchor and screw it into the steel stud to a minimum depth of $3/8"$.



**4.** Fit hexagon of Setting Tool 2 over the end nut and turn until the outer shell has expanded and is tight. Apply the torque wrench to the end of Setting Tool 2 to check the torque.
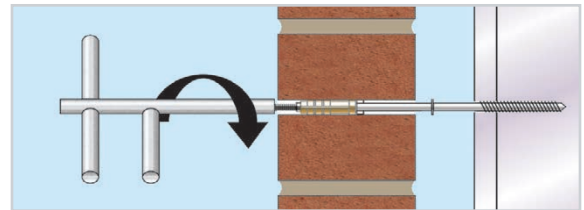
## Installation Procedures

1. Mark the position for the TorkFix tie on the face of the facade

2. Drill a 7/16" diameter pilot hole through the facade, through either the solid brick or mortar joint, using a rotary percussion drill (3-jaw-chuck-type)

3. Drill a hole in the steel stud using a $3/16"$ drill bit

4. Screw the threaded end of Setting Tool 1 onto the outer end of the anchor

5. Insert the anchor through the facade and screw it into the steel stud to a minimum depth of $3/8"$

6. Fit hexagon of Setting Tool 2 over the end nut and turn until the outer shell has expanded and is tight

7. Apply the torque wrench to the end of the Setting Tool 2 ($1/4"$ square) to check the torque (36-54lbf-ins)

8. Make good the hole and seal the surface with color matched mastic or mortar
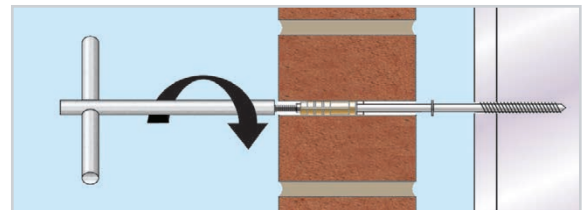
For full Product Information, Case Studies and downloadable Repair Details, giving specifications for many common structural faults, go to:
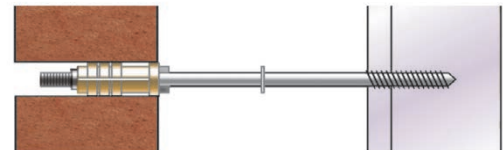**www.helifix.com/products/retrofit-products/torkfix**

# Anchor Selection
## Masonry – Steel

| Cavity Range | Nominal Anchor Length |
|---|---|
| Ins | Ins |
| 1$^1$/$_2$" | 4$^1$/$_2$" |
| 2$^1$/$_2$" | 5$^1$/$_2$" |
| 3$^1$/$_2$" | 6$^1$/$_2$" |
| 4$^1$/$_2$" | 7$^1$/$_2$" |
| 5$^1$/$_2$" | 8$^1$/$_2$" |
| 6$^1$/$_2$" | 9$^1$/$_2$" |
| 7$^1$/$_2$" | 10$^1$/$_2$" |
| 8" | 11" |

# Typical Performance
## Average of 20 tests

| Substrate material | Compressive strength psi | Pull Out Lbf |
|---|---|---|
| Engineering Brick | 7250 | 1325+ * |
| Brick | 3990 | 1127 |
| Soft Brick | 2465 | 818 |
| Reinforced Conc. | 7250 | 1105 |
| Precast Conc. | 2900 | 1150 |
| CMU 15 MPa | 2175 | 600 |
| CMU – LW | 1015 | 398 |
| Pavers | – – | 990 |
| 1" Travertine | – – | 400 |

\* Limit of test equipment



# Technical Specifications

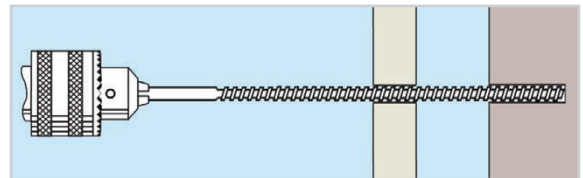| | |
|---|---|
| Material: | Austenitic stainless steel Grade 304 |
| Diameter: | 11/64" |
| Length: | Facade thickness + cavity width + minimum steel stud penetration of $^3$/8" |
| Diameter of clearance hole, facade and backup: | $^7$/16" |
| Depth of clearance hole: | All of the facade |
| Fixing density: | To engineer's specification |
| Bonding agent: | None required |
| RECOMMENDED TOOLING | |
| For drilling pilot hole: | Rotary percussion 3-jaw-chuck drill |
| For drilling hole in steel stud: | $^3$/16" drill bit |

# TorkFix

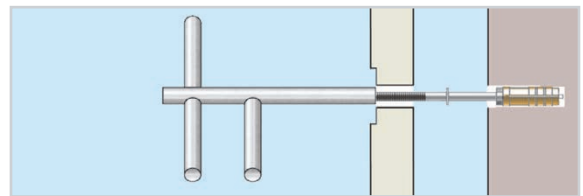## Veneer Panel Anchor

### Retrofit mechanical repair anchor



## Applications

- For securing veneer panels to masonry backup materials
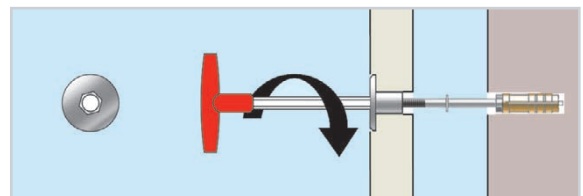- To provide structural stability and resist wind pressure forces where wall ties have failed or been omitted

## Installation Procedures

1. Mark the position for the TorkFix tie on the face of the veneer panel.

2. Drill a $^{7}/_{16}$" diameter pilot hole through the outer panel and approximately 1½" into the backup material, using a rotary percussion drill (3-jaw-chuck-type).

   NOTE: The anchor head may be fitted to the outside face of the panel or recessed below the surface. If the head is to be recessed, drill a 3/4" diameter counter bore into the panel at least $^{3}/_{16}$" deep.

3. Screw the threaded end of Setting Tool 1 onto the outer end of the anchor.

4. Insert the anchor fully into the hole in the backup material.

5. Turn the Setting Tool 1 until the inner shell has expanded and is tight.

6. Apply the torque wrench to the end of the Setting Tool 1 ($^{1}/_{4}$" square) to check the torque – usually 36lbf-ins for standard brick but may be increased to 54lbf-ins for harder substrates.

7. Fit the nut to the anchor shank and tighten with the $^{1}/_{4}$" Allen key to provide support and seal against water



For full Product Information, Case Studies and downloadable Repair Details, giving specifications for many common structural faults, go to:
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**1.** Drill the appropriate clearance hole through the panel and into the backup material.



**2.** Screw the threaded end of Setting Tool 1 onto the outer end of the anchor and insert fully into the hole.
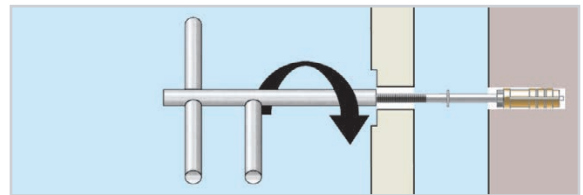


**3.** Turn Setting Tool 1 until the inner shell expands and is tight. Apply the torque wrench to the end of the Setting Tool 1 to check the torque.



**4.** Fit the nut to the anchor shank and tighten with the $^{1}/_{4}$" Allen key to provide support and seal against water.

# Anchor Selection
## Veneer – Masonry

| From underside of head to face of backup material 'C' | Nominal Anchor Length |
|---|---|
| 3" | 4$^{1}$/2" |
| 4" | 5$^{1}$/2" |
| | Other lengths available to order |

# Typical Performance
## Average of 20 tests

| Substrate material | Compressive strength psi | Pull Out Lbf |
|---|---|---|
| Engineering Brick | 7250 | 1325+ * |
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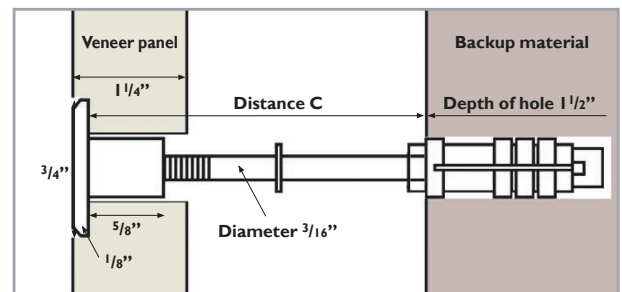


Veneer panel — 1$^{1}$/4" — Distance C — Backup material — Depth of hole 1½" — 3/4" — 5/8" — Diameter 3/16" — 1/8"

# Technical Specifications

| | |
|---|---|
| Material: | Austenitic stainless steel Grade 304 |
| Diameter: | 11/64" |
| Length: | Panel thickness + cavity width + backup material penetration of 1½" |
| Diameter of clearance hole, facade and backup: | 7/16" |
| Depth of clearance hole: | Length of TorkFix + ½" |
| Fixing density: | To engineer's specification |
| Bonding agent: | None required |
| RECOMMENDED TOOLING | |
| For drilling pilot hole: | Rotary percussion 3-jaw-chuck drill |