Scell-it®
(UK) Group Ltd

High Load & Universal

Installation instructions

How the chemical resins work

All injection chemical anchor systems operate using the same basic principle: the base resin mixes with a second component (a hardener) to begin the chemical curing process and achieve a strong bond.

A resign injection gun (or caulking gun) is used to squeeze out and mix the two components which are packed in a disposable tube.

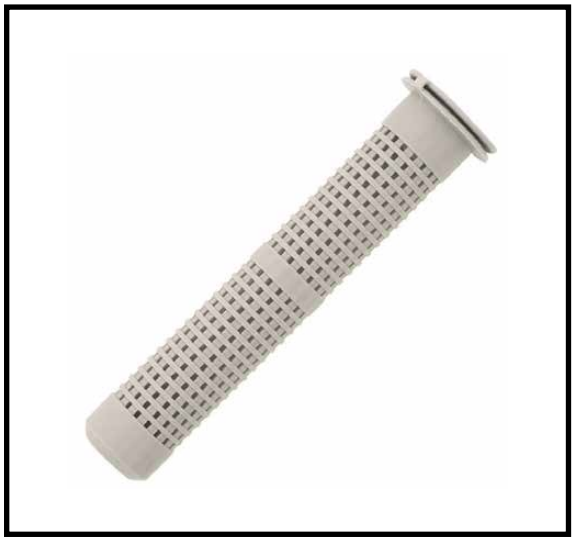
A chemical anchor has a resin injected into the hole prior to insertion of a stud. For hollow masonry a sleeve is first inserted into the hole and resin injected into this.

After a set curing time has elapsed this is then used to attach a fixture with a suitable nut and washer. This resin fills any imperfections and irregularities in the drilled hole and so creates an airtight and water proof fit whilst protecting the anchor from corrosion within the base substrate.

Unlike expansion anchors, they have low stress on the substrate and so can be used close to the edge of concrete substrates, or through masonry block, as the non-expanding nature reduces the chances of it cracking the surrounding substrate. Also, slight adjustments can be made during the chemical working time which allows for imperfections in the drilling process.

Other advantages include the ability to provide unlimited setting depths and the ability to apply the load to the entire length of the required embedment.

Chemical anchors are considered complicated to install and incorrect fitting can lower their holding capacity. When in doubt we recommend the installation be ‘proof checked’ using a suitable calibrated device - call Scell-it UK for advice if required.



Preparation

Before installation, check the concrete base is compact and strong in order to make sure its class (C) & standard is suitable (min C20). Ensure resin is suitable for the base material and is in date.

The ambient temperature should be within usable range for the resin.

Common tools required

1. Drill and correct size drill bit
2. Dust Blower Pump
3. Cleaning brush
4. Resin Injection Gun
5. Resin
6. Spanner or torque wrench

Spanner / Socket size	
Nut	**Across flats**
M8	13mm
M10	17mm
M12	19mm
M16	24mm
M20	30mm
M24	36mm

1

2 3

4

5

6

Solid Substrate Installation Method

1. Drill the hole. Drilling must follow manufacturer's recommended values for depth and diameter of anchor whilst observing the 'anchor to-anchor' and 'anchor-to-edge' specified minimum distances.

2. Clean the hole. Remove dust and debris from the hole with a pump and/or a suitably sized brush (preferably a wire brush).

   Blow out any debris with the pump then clean out with the brush. Repeat this three times as any debris or dust left will interfere with the setting of the resin.

   If the hole has collected water, it should be removed before cleaning the hole and injecting the resin. Best way to remove this excess water is to insert the stud into the hole which should remove 90% of the water. Further drying can take place if required.

3. Select the appropriate static mixer nozzle for the installation. Open the cartridge/foil pack and screw nozzle onto the mouth of the cartridge. Insert the cartridge into a good quality applicator (eg resin gun).

4. Extrude about 5 – 10ml (100mm) of the resin onto a scrap piece of paper until the colour of the mixture becomes evenly grey (this means it has mixed correctly). Release the pressure on the gun using the release button to prevent more resin dripping out.

5. If necessary, attach extension tubing and resin stopper. Cut the extension tube to the depth of the hole and push onto the end of the mixer nozzle, and (for rebars 16mm dia. or more) fit the correct resin stopper to the other end.

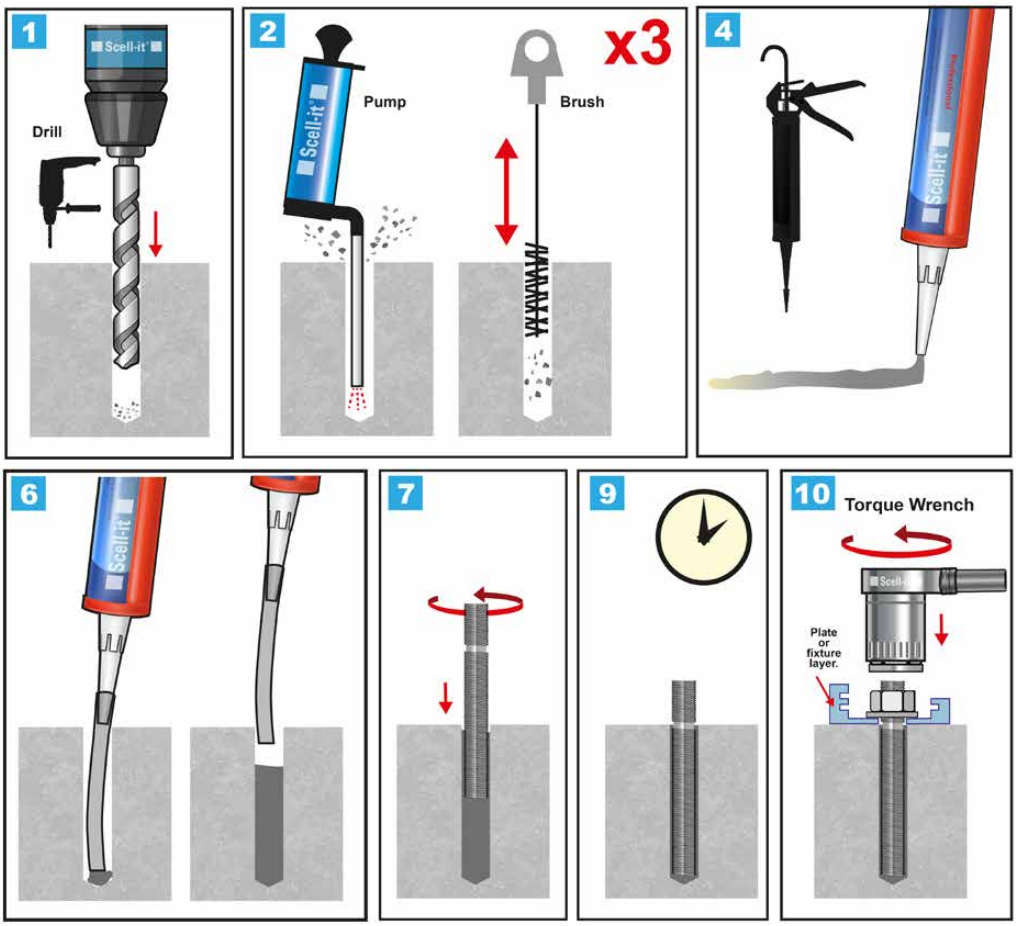
6. Insert the mixer nozzle (resin stopper / extension tube if applicable) to the bottom of the hole. Begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately ½ to ¾ full and withdraw the nozzle completely.

7. Insert the clean stud/bolt/anchor/rebar/threaded rods (free from oil or other release agents) to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time.

8. Any excess resin will be expelled from the hole evenly around the steel element showing that the hole is full. This excess resin should be removed from around the mouth of the hole before it sets.

9. Wait for the recommended time to leave the resin to cure. Do not disturb the anchor until the appropriate loading time has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture (nut and washer) and tighten it to the recommended torque within the specified manufacturers max torque. Do not over-tighten (a digital torque wrench is recommended).



Hollow Masonry Installation Method

1. Drill the hole. Drilling must follow manufacturer's recommended values for depth and diameter of anchor whilst observing the 'anchor to-anchor' and 'anchor-to-edge' specified minimum distances.

2. Clean the hole. Remove dust and debris from the hole with a pump and/or a suitably sized brush (preferably a wire brush).

   Blow out any debris with the pump then clean out with the brush. Repeat this three times as any debris or dust left will interfere with the setting of the resin.

   If the hole has collected water, it should be removed before cleaning the hole and injecting the resin. Best way to remove this excess water is to insert the stud into the hole which should remove 90% of the water. Further drying can take place if required.

3. Select the appropriate static mixer nozzle for the installation. Open the cartridge/foil pack and screw nozzle onto the mouth of the cartridge. Insert the cartridge into a good quality applicator (eg resin gun).

4. Extrude about 5 – 10ml (100mm) of the resin onto a scrap piece of paper until the colour of the mixture becomes evenly grey (this means it has mixed correctly). Release the pressure on the gun using the release button to prevent more resin dripping out.

5. Select the appropriate perforated sleeve and insert into the hole.

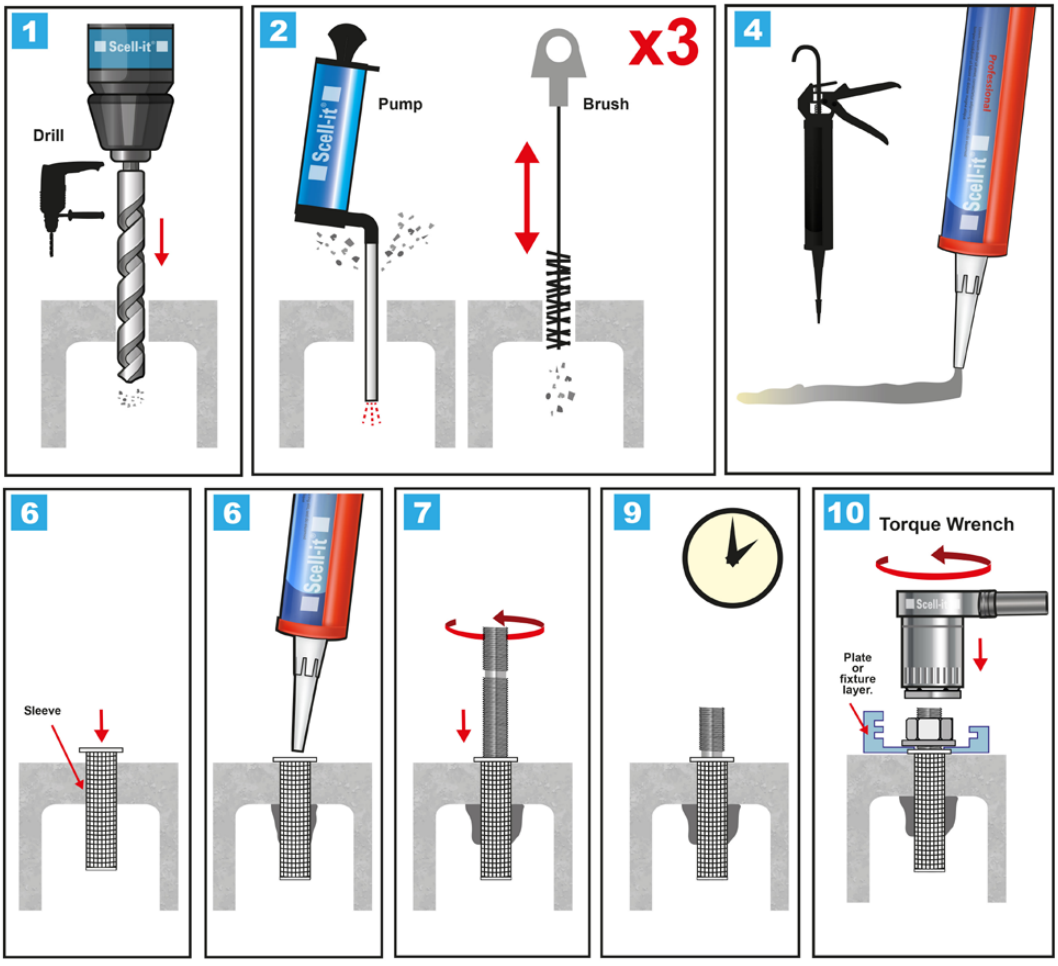
6. Insert the mixer nozzle to the bottom of the perforated sleeve, withdraw 2-3mm then begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the perforated sleeve and withdraw the nozzle completely.

7. Insert the clean stud/bolt/anchor/rebar/threaded rods (free from oil or other release agents) to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time.

8. Any excess resin will be expelled from the hole evenly around the steel element showing that the hole is full. This excess resin should be removed from around the mouth of the hole before it sets.

9. Wait for the recommended time to leave the resin to cure. Do not disturb the anchor until the appropriate loading time has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture (nut and washer) and tighten it to the recommended torque within the specified manufacturers max torque. Do not over-tighten (a digital torque wrench is recommended).



Additional installation information

Anchor retaining plugs

To align the stud correctly in the hole we suggest the use of a retaining plug that is inserted into the hole after injecting the resin.

In a wall installation the stud will tend to drop to the base side of the hole (fig 1).
In the case of an overhead installation, the stud will have a tendancy to drop out (fig 2).

The use of an anchor retaining plug will align the stud exactly (figs 3 & 4) and prevent an incorrect installation.

Anchor retaining plug.

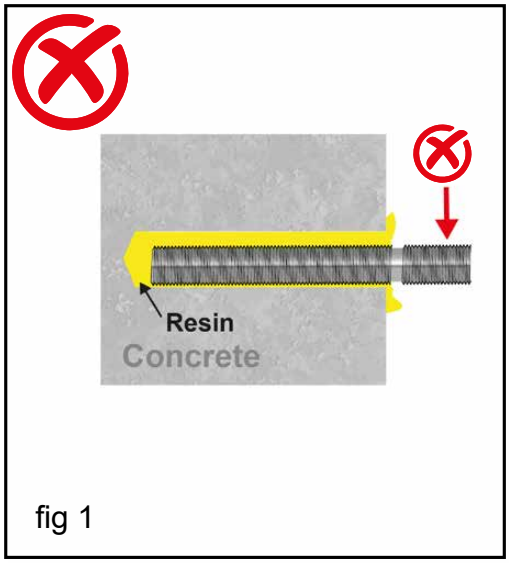


fig 1

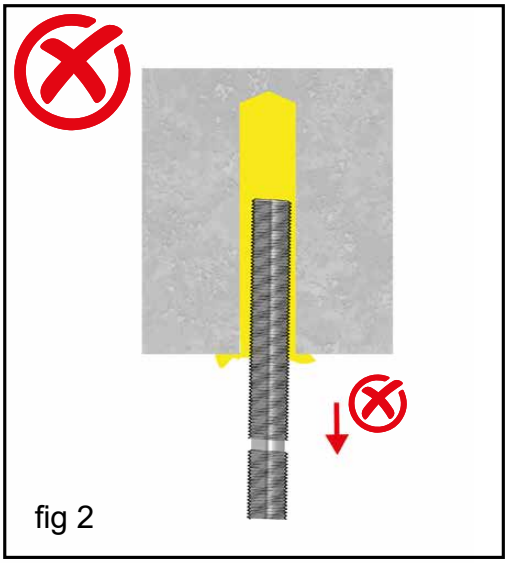


fig 2

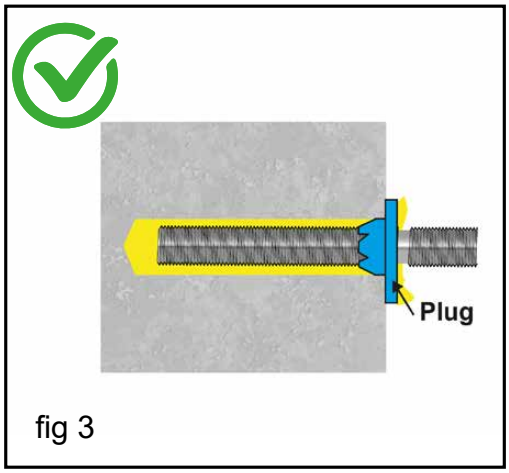


fig 3

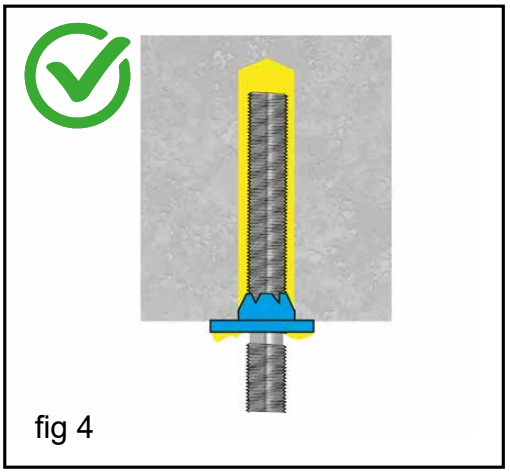


fig 4

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