



# EWI Install Guide

**EWI STORE**  
Insulation & Render Specialists



## STEP 1

# Surface Preparation

As with every other job, preparation is extremely important. Before applying any insulation to the substrate, it needs to be examined and checked. The substrate must be clean, dry and dust-free. If applicable, it also needs to be cleaned of paint and other substances which may affect the way the EPS Adhesive will perform. One of the best ways to achieve a clean and ready surface is to use a high-pressure water-jet or prepare the wall mechanically using a wire brush.

## STEP 2

# Substrate Suitability Check

Prior to commencing any project it is recommended that pull-out tests for the specified fixings are undertaken. In order to do this you need to use a Hydrajaw fixing tester (or equivalent). This piece of kit allows you to test the strength of the substrate and ensure it is strong enough to hold the solid wall insulation system to the wall. It is recommended that the substrate is tested in 15 places per project, although on larger projects you may wish to carry out more. At EWI Pro we offer independent testing from one of our field based operatives if you are unfamiliar with the process.



## STEP 3

# Surface Priming

Once the substrate has been prepared, it then needs to be primed before any EPS/adhesive can be applied.

We recommend priming the substrate with EWI-301, which is a deep-penetrating Water Based Primer. It works in a similar manner to PVA primer, by helping seal porous surfaces prior to carrying out any works.

If the substrate requires increased adhesion (on very smooth surfaces for example), then we recommend using our EWI-310 Universal Primer. This contains silicate, which provides a rougher surface on which to mount the adhesives/insulation boards.

The amount of priming (and therefore volume of primer required) will depend on how absorptive the underlying substrate is, but typically this can be anywhere from 50-300ml per m<sup>2</sup>.

The primers will take approximately 4 hours to dry. However, additional coats may be required depending upon the absorptivity of the substrate. 24 hours should be left between primer coats.

### MATERIALS REQUIRED

EWI-301 Water Based Substrate Primer (5 litres)  
EWI-310 - Universal Primer (20 litres)

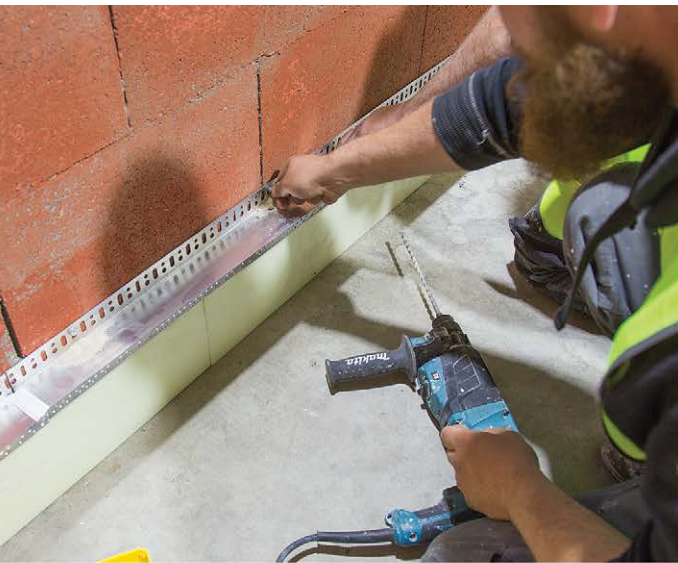


## STEP 4

# Starter Track Installation

Once the walls are primed, Starter Track needs to be installed. The starter track is attached to the substrate above the DPC. This not only provides a level surface for easy installation of the insulation; it also protects the bottom of the surface of the insulation against weather, damp and other damage.

We offer either a uPVC Starter Track or an Aluminium Starter Track. The uPVC Starter Track is our premium product and helps minimise thermal bridging. Aluminium Starter Track requires a uPVC starter track connector, which provides a layer of mesh that helps to tie the system together with the insulation when the reinforcement layer is added. Both types of starter tracks are fixed to the substrate using rawlplugs, fixed at 300mm centres to ensure the Starter Track is held securely in place.





## STEP 5

# Applying Adhesive to EPS Insulation Boards (ready to apply to substrate)

The graphite EPS insulation boards are attached to the substrate with one of our adhesives. We normally recommend using EWI-220 EPS Basecoat as the adhesive for attaching the EPS to the substrate/wall because it means that on-site, only one type of adhesive is required (EWI-220 is the adhesive also used in the reinforcement layer) - you can however use EWI-210 if you prefer.

Correct preparation of EPS adhesive is absolutely crucial. EWI-220 EPS Basecoat adhesive should be mixed with clean water at a ratio of 2.8-5.3 litres per 25kg bag. The compound should be mixed using a heavy-duty power plaster mixer on a slow rotating setting. Freshly mixed compound should be left for approximately 5-10 minutes and then re-mixed for a short period of time before use. Bucket life is approximately 1 hour, although this is dependent upon the weather conditions.

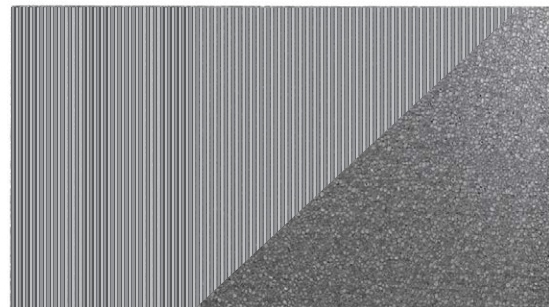
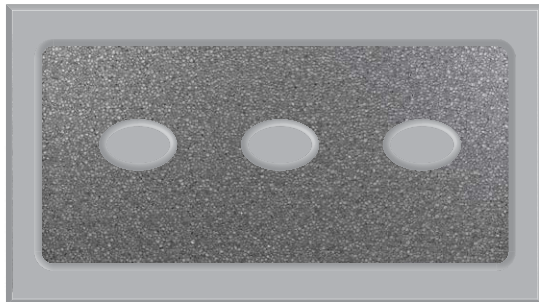
We recommend applying the adhesive onto the EPS insulation boards using a modified 'dot and dab' method. The EPS adhesive needs to be applied to the perimeter of the EPS board and 3 large dabs should be applied in the centre of the board.

Using a trowel, you need to apply adhesive evenly around the edges of polystyrene (3-4cm wide track) and inside that area, Dot and Dab adhesive spots (approximately 3 of them). In general, EPS adhesive should cover no less than 40% of the surface of the insulation sheet. It is also perfectly acceptable to use a notched trowel to apply a layer of the adhesive to the entirety of the EPS board, and this is preferable if the wall is flat.

The amount of adhesive used by either of these methods should be approximately the same - each 25kg bag should be able to mount approximately 8-10m<sup>2</sup> of boards to the substrate - although this does vary depending upon the quality of the surface on which the boards are being mounted (a flat wall will use less - an undulating wall will use more).

### MATERIALS REQUIRED

EWI-210 EPS Adhesive or EWI-220 EPS Basecoat  
EWI-410 Graphite EPS boards (1200x600mm)



## STEP 6

# Applying the EPS to the Substrate

The insulation boards should be attached to the wall in a staggered formation. At the corners, it is important to interlink the insulation from the two sides. When installing EPS insulation around window and door openings, it is important that the joints between boards are not in line with these openings. This will prevent cracks appearing in the future. For best results and ease of installation we recommend the use of Lintel Mesh Corner, which helps strengthen this area.



## STEP 7

# Level Control and Filling Gaps Between EPS Insulation Boards

It is important to ensure the EPS insulation boards (EWI-410) are aligned properly when attached to the substrate. These need to be aligned correctly both horizontally and vertically and this is best achieved using a spirit level.

Where there are gaps between the EPS boards and these are larger than 2mm, these need to be filled with polystyrene strips (cut from the insulation boards). The common mistake is to use EPS Adhesive for filling these gaps, but this can lead to a formation of cold-bridges and cracks around the joints between the boards.



## STEP 8

# Mechanical Fixings

Mechanical fixings are used as an additional fixing mechanism to tie the EPS to the substrate. The mechanical fixings help to make for an even more secure installation. Drilling the holes for fixings should take place at least 2-3 days after the EPS boards have been attached to the substrate with the EPS Adhesive and prior to adding the reinforcing fibreglass mesh layer.

We recommend using 4 mechanical fixings in every corner of each EPS board as well as at least another 2 further fixings in the middle of the boards. Depending upon the fixing that is used, they can either be hammered into place or - in the case of the EcoDrive fixings - they can be driven straight into the insulation with a power tool.

The mechanical fixings used can be seen in the photo to the right. As a general rule of

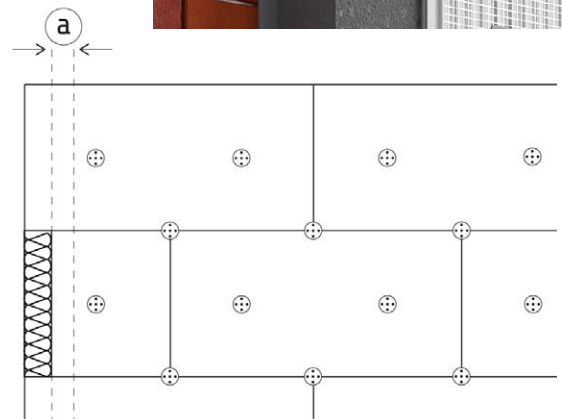
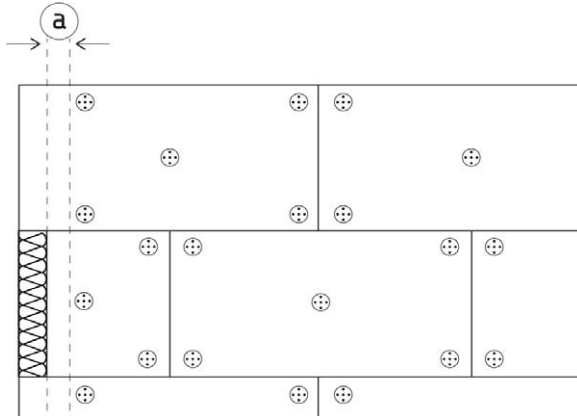
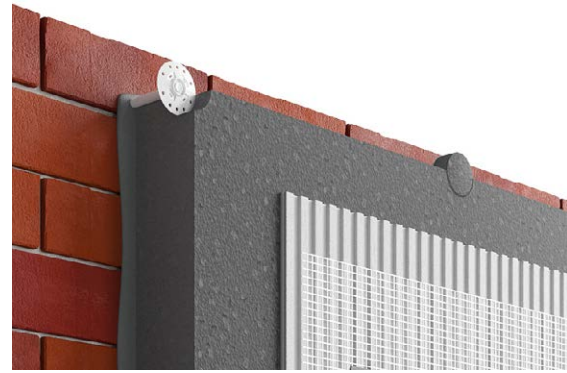




thumb, the mechanical fixings need to be a minimum of 40mm longer than the thickness of the insulation.

If Metal Pin Mechanical Fixings are used, then we recommend using EPS dowel caps to minimise thermal bridging. These are held in place using the EW1-220 Adhesive and the result is that once the system is dry, you will not be able to see any hint of the mechanical fixings coming through.

Note: if you use the EcoDrive fixings the last step will not be necessary as they come with a dowel cap already. Likewise, the plastic pin fixings don't require EPS Dowels as very little thermal bridging occurs through the plastic core.



## STEP 9

# Smoothing and Levelling the Facade

The surface of the EPS boards must be smooth and level throughout the facade. All uneven areas should be made good prior to applying the reinforcement layer. For this job a polystyrene rasp needs to be used that will remove the outer surface of the graphite EPS boards. Smoothing of EPS boards should take at least 1-2 days after they have been installed to ensure the EPS Adhesive has had sufficient time to go off.



## STEP 10

# Installing the Basecoat Reinforcement Mesh Layer

For the reinforcement layer please use the EWI-220 EPS Basecoat. The preparation of EWI-220 is covered in Step 5 of this guide.

The basecoat is applied with a notched trowel to the top of the EPS insulation boards - this layer needs to be between 5-6mm. The mesh is then placed onto the basecoat in vertical strips and embedded into the adhesive using the flat edge of a notched trowel.

Each vertical strip of Fibreglass Mesh should overlap its neighbouring vertical strip by approximately 10-15cm.

### MATERIALS REQUIRED

EWI-220 EPS Basecoat  
EWI-640 Fibreglass Reinforcement  
Mesh (50m<sup>2</sup>) - 150/m





## STEP 11

# Priming the Wall before Rendering

Once the reinforcement layer has dried for a period of 24-72 hours (depending on the weather conditions), it needs to be primed prior to applying the render.

The primer to be used depends on the top coat render, but provided the correct primer is used, the application process is the same. The primer is simply painted on top of the basecoat reinforcement layer.

This primer needs to be left 12-24 hours to dry prior to adding the final layer of render.

### MATERIALS REQUIRED

EWI-330 Mineral/Acrylic Primer  
EWI-332 Silicone Primer  
EWI-333 Silicone Silicate Primer



## STEP 12

# Rendering the Wall

The renders listed are all ready to use straight from the bucket - if a coloured render is being used, ensure the colour matches your order.

Using a trowel apply a thin layer of the render to the primer surface - remember these are all thin coat renders, so your finished render layer may just be 1mm thick (if using the 1mm granulate renders). Once the render has been applied, smooth it out using the trowel, taking out the excess off the wall (to ensure an extremely thin layer). Using a PVC float, work the render by moving it in circular movements - this will provide the textured finish of the render. Although at first it may seem complicated, the application procedure is in fact easy and straightforward. We recommend practicing on a small area at first. Remember to have enough tradesmen on site to ensure that whole sections of walls can be done at the same time. If you do attempt to do 'half a wall' at a time, you will notice scarring where the two sections of render meet. Natural breaks in render surfaces include corners and where render ends.

### MATERIALS REQUIRED Ready to use renders

EWI-010 Acrylic render  
EWI-040 Silicone Silicate Render  
EWI-075 Silicone Render



### MATERIALS REQUIRED Dry mix Mineral Render

EWI-010 Acrylic render  
EWI-040 Silicone Silicate Render  
EWI-075 Silicone Render



Unlike the ready to use renders, Mineral Render comes as a white dry mix. This is then painted with a Silicone Paint to give the desired colour for the client.

The dry mix Mineral Render dries far quicker than the ready to use liquid renders and therefore is often used when installing in colder/humid climates. The Mineral Render requires 6.5 litres of clean water per 25kg bag. The compound should be mixed using a heavy-duty power plaster mixer on a slow-rotating setting to produce a homogenous white plaster prior to application.

Give the render at least 24 hours drying time before applying the EWI-003 Silicone Paint. For a full and detailed guide to installing our renders, please see our thin coat and thick coat render install guides.

