



LEADING THE UK EWI INDUSTRY

## INCA Technical Guidance Document 05

### External Wall Insulation Maintenance Guidance Manual



## **INCA Technical Guidance Document 05**

**February 2023**

### **Maintenance Guidance Manual for EWI Systems**

This document is designed to provide important maintenance guidance and general advice to homeowner's on how to look after their property once an external wall insulation system has been installed. It also provides general guidance to the home owner on what steps to follow should they experience any problems or where the installed EWI system becomes damaged.

The information contained herein is for guidance only and INCA advise seeking advice from the system designer or installing contractor regarding any specific issues. INCA would expect that all areas highlighted in this document to be covered in system holders supporting maintenance guides.

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This guidance document is split into 4 sections for easy reference.

***Living with external wall insulation systems.***

***As a homeowner what you should know and do?***

***Making physical alterations to your property.***

***Damage, what to do next?***



Your home has benefitted from the installation of an external wall insulation system to the external walls, but what does that mean for you the occupier/ homeowner?

### **What is External Wall Insulation?**

External Wall Insulation (otherwise known as EWI) is built up of multiple layers comprising a thermally efficient insulation boards, which are bonded and / or mechanically fixed to the surface of the existing walls of your property, with a protective reinforced render and completed with a decorative coloured texture or brick slip finish to improve the thermal efficiency of the envelope.

### **How long will it last?**

Your EWI system should continue to function and remain durable in excess of 25 years. To maximise the performance and benefits of the system over this timeframe there will be a need for periodic maintenance. When properly maintained your EWI system should not need to be replaced during this period.

### **How does it work?**

The insulation provides a highly thermally efficient layer which significantly reduces any heat loss from the property, reducing the energy costs associated with heating the property during the colder months. In the warmer summer months, it will also help to maintain a cooler and more comfortable internal environment by stopping the property from warming up too quickly and overheating. Any sealant used should be maintained and replaced in line with the manufacturers guidelines to maintain the integrity of the system at critical junctions.

### **Will it change the way we live?**

There are a few key important things to remember when living in a house with an EWI system. Not only does it provide a thermally efficient layer the installed system also reduces air leakage through the wall, therefore maintaining adequate ventilation is very important. The degree of ventilation in your property must be sufficient to prevent the build-up of condensation particularly during the colder winter months. Ventilation is encouraged and can be achieved by the opening of vents, window and by the

use of mechanical extraction fans in wet areas such as bathrooms, kitchens, and laundry rooms.

As the airtightness of the property is much improved, the drying of laundry inside your property is discouraged, as this can introduce an excessive build-up of water vapour into the internal environment which can lead to condensation. If the drying of laundry inside is unavoidable, it should be in a well-ventilated room where any water vapour can escape to the outside of the property by means of vents, mechanical fans or by opening windows.

Further consideration to moisture control can be achieved via the use of thermal modelling which is achieved using WUFI (BS EN 15026).

**Your property has a weatherproof jacket, ensure that people know and understand this.**

Your EWI system is not just a thermal upgrade of your property, it also provides an attractive weather resistant finish which also offers protection to the insulating layer from any water ingress or damage. It is very important to ensure that this protective layer is not inadvertently subject to accidental damage from any visiting trades or workman (i.e., window cleaner, heating engineers, telephony/TV providers etc.) when carrying out work to the property's facade. Before any work is undertaken, they need to be aware and understand how they should treat the external walls to ensure that no damage to the EWI occurs and the warranty / guarantee remains in place.

**Care and consideration.**

In the same way that you look after your vehicle, the more care and attention you give to your property and EWI system, the longer it will last and any future repair costs will be reduced. Please take time to read and understand the contents of this maintenance guide and keep this document in a safe place alongside details of the following:

- The External Wall Insulation system designer's name and contact details.
- The External Wall Insulation installers name and contact details.
- Any guarantee or warranties, along with guarantee/warranty provider's name and contact details.
- Any other pertinent documentation handed over upon completion of the installation.

Please note that this document and the above information should be passed on to any subsequent owners / tenants.

## As a homeowner, what you should know and do?

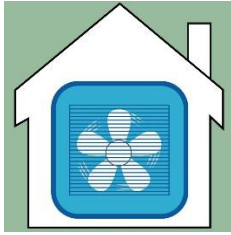


### Inspections



- The homeowner must undertake an initial visual inspection 30 days after the completion of the works.
- A visual inspection must be undertaken at the end of the first year following the installation.
- Thereafter, it is recommended that inspections are then undertaken annually; however, the EWI system designer's own maintenance manual's recommendations should also be taken into consideration.
- Any physical changes in the appearance of the finish must be notified to the EWI system designer. These could be signs of cracking, bubbling or any areas of damage such as from impact or similar.
- Check that all mastic seals are in good condition and continue to function. After a period of 5 years, mastic may well debond from the system in small areas, this must be replaced by a competent tradesperson.
- Check for areas of ponded water that is in regular contact with the EWI system.
- Check on the gutters and pipes to ensure that the joints are sealed properly and that there is no water freely running down the face of the finish.
- Clean out gutters and downpipes to prevent overflow.
- Check that the window sills have not moved.
- Check on all external fixtures, to ensure that they are still fixed tightly in place with no openings for possible water ingress.
- Check plastic and aluminum beads to ensure there is a good seal.
- It is recommended that the homeowner arranges a comprehensive system inspection on the 10-year and 20-year anniversary of the installation. This must be carried out a reputable experience company in the field of external wall insulation, or the system designer or a person / company nominated by the system designer. The cost of this is the responsibility of the homeowner.

## Ventilation



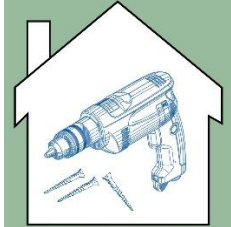
- Maintain good ventilation within the property.
- DO NOT cover up any operational air bricks or ventilators, these must be kept clear at all times, covering these up will create a risk to your home and your health.
- Regularly open windows and vents to allow for air flow and avoid an excessive build-up of water vapour or moisture within the property, especially during the colder months. Maintain open trickle vents.
- Be careful if drying clothes within the property, as this can cause condensation.
- Resist the urge to keep all windows closed during winter, instead, allow for a small opening to maintain a good internal climate.

## Mastic Seal



- The inspection of the mastic seals should include, although not limited to, around windows, doors, pipes, flue outlets, brackets, canopies, etc.
- Mastic seals should be checked annually.
- It is recommended that if the mastic sealant is starting to pull away or has perished, that this is replaced by the homeowner.
- Failure to maintain the mastic seals will invalidate the warranty.

## Fixings



- The EWI system is NOT designed to be loadbearing, therefore any fixings used to attach fixtures or fittings to the façade must either: -
- Penetrate the full depth of the insulation system and be embedded to a correct depth into the substrate.  
Or
- Should be a specialist EWI fixing solution as specified by the EWI system designer.
- The loads of the fixtures should be anchored back to the substrate using the specialist fixing solutions. These solutions will vary depending upon the type and design of the fixture.
- Where heavy duty fixings may be required, for gates or fence posts, the EWI system designer should be contacted for design advice.
- Any installed fixtures or fittings must be well sealed to the face of the EWI System to avoid a route for water to penetrate the protective finish layer.

## Cleaning



- If the façade becomes dirty, it can be cleaned following the recommendations provided by the EWI system designer. This normally allows for the cleaning of the façade by using a light spray on a standard domestic power washer. Avoid the use of heavy scrubbing and use soft bristle brushes to clean the surface of the system.
- The cleaning of the façade may be permitted by using warm water and a light household detergent. If applying this to the surface of the EWI system, it is recommended that a small test area is trialed first before extensive cleaning is undertaken. If the EWI system coating being cleaned is affected by the cleaning process, such as exposing any aggregate or losing its colour, do not continue.
- Algae can occur on the façade, whilst this can be unsightly, it is not a technical issue with the EWI system. The EWI system designer will provide a method statement for the correct procedure and products to remove and clean down the algae. Please note, once the algae growth has occurred it may well develop again, especially on North facing elevations or close proximity to foliage or in areas of continual shade.
- Areas which are showing signs of staining should be cleaned as soon as possible. If staining is left unattended then the cleaning processes may not be affective.
- DO NOT use general cleaning acids as this may affect the surface coating of the EWI system.



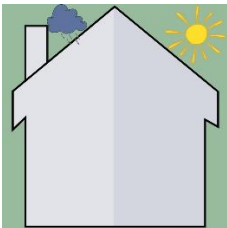
### Examples of staining & algae

*Image left* black algae

*Image middle* staining

*Image right* red algae

## Weathering



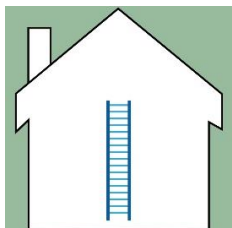
- The natural process of weathering will start immediately and is caused by a combination of UV radiation, rainfall, and atmospheric exposure.
- It should be expected that over a period of time that the original appearance of the EWI system finish may start to fade slightly or may potentially darken slightly with atmospheric pollution. The degree of change may vary on different elevations depending upon their exposure and the property's geographical location.
- Weathering is a visual issue and not a technical one. If you wish to re-decorate or overcoat the finish due to weathering or the visual appearance of the system then please speak to the EWI system designer for guidance on application, installers, and suitable products.

## Painting



- Depending upon the type of finish used on your property, you may wish to redecorate the exterior at some point in the future. Contact the EWI system designer for their procedure for undertaking this, in addition to suitable paint coatings, which are compatible to the finish on your property.
- DO NOT use a coating unless specified by the EWI system designer as this may lead to an increase in the maintenance of the façade, possibly trap moisture between the paint and render layers and may also invalidate your warranty.
- Paints used for over coating an EWI system will need to achieve the minimum reaction to fire requirements stipulated within the Building Regulations. Therefore, advice is to be obtained from the EWI system designer.
- Any redecoration of the façade may result in a colour difference compared to the appearance of the original weathered finish.
- Partial localised re-decoration may leave a visible line between the newly painted area and the existing unpainted finish.
- Always ensure to mask up areas not being painted to protect them and always clean down the wall in accordance with the EWI system designer's guidance to remove dirt and debris before commencing with the over-painting.

## Use of ladders



- Ladders must not be used without the support of a spreader board, as the pressure against the EWI system can cause indentations or impact damage.
- Rubber ladder pads can also be used to prevent damage to the surface.
- DO NOT lean a ladder against an EWI System window sill.
- DO inform all tradesmen, such as window cleaners, TV, and Satellite engineers of the above requirements.

## Use of hot items



- Keep all hot items such as barbeques and blow torches well away from the surface of the façade.
- The façade should be protected at all times from high heat producing appliances as this can cause surface scorching, whilst smoke emitting items (such as car exhausts) can also cause discolouration.

## Plants



- Avoid planting close to the EWI system as this could cause damage and also potentially void the warranty.
- Long-term foliage contact with the surface of the EWI system may result in the development of algae, discolouration, and damage.
- Prune branches and leaves so they are at least 500mm away from the surface of the façade to help mitigate the development of algae and plant staining.



## Soil



- Avoid having grass or soil directly in contact with the EWI system as this will cause staining of the surface due to the splash-back from the rainfall.
- It is recommended that a 150mm gravel trap or French drain is installed at the base of the EWI System to limit the amount of any splash-back occurring.
- If a French drain is installed then it is important to ensure that this is free draining and kept clear of debris, such as leaves.
- Ensure the base of the EWI system is protected from any extensive ground works.

## Impact



- Avoid leaning heavy objects on the EWI system.
- DO NOT play ball games against the façade or throw any objects at the wall.
- Be careful with bikes, wheelbarrows, lawnmowers, and wheelie bins etc. when moving these close to the façade as impact may leave scratch marks upon the surface.
- Be careful at the corners of the property as these can be easily damaged if impacted.

## Vehicle Emissions



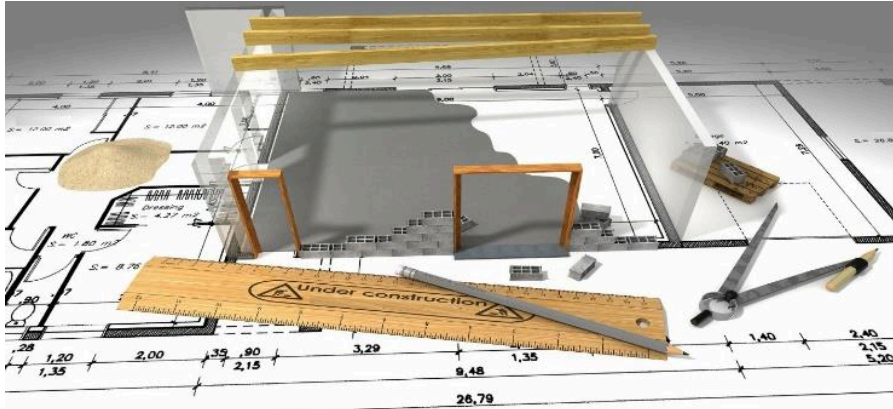
- Avoid parking vehicles too close to the EWI system. Vehicle emissions from diesel / petrol vehicle exhausts can leave unsightly black marks on the surface of the system, which may be difficult to clean and remove.

## DIY



- Only undertake DIY as instructed within this maintenance guidance manual or as instructed by the EWI system designer.
- DO NOT attempt to fix any issues yourself outside of the permitted DIY items within this document, as this will invalidate the warranty.
- Always contact the EWI system designer or EWI system installer for guidance.

## Making physical alterations to your property.



### Adding an Extension



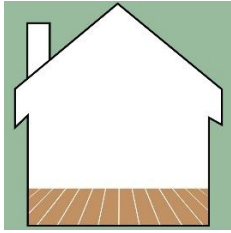
- Adding an extension to your property will cause extensive damage to the External Wall Insulation system.
- If a room in the roof is to be installed (excluding single story buildings) you will need to ensure that fire barriers have been installed with a system that incorporates thermal plastic insulations.
- The addition of a car port, garage or large canopies may require that the EWI system is cut back or modified.
- The addition of a conservatory may or may not result in damage to the EWI system, this is dependent upon the type of conservatory and the requirements for tying this into the existing structure.
- *It is recommended that you seek advice from the system designer prior to the commencement of any works to establish a methodology that will limit any potential damage, will allow the warranty to be maintained and also allow for suitable repairs following completion of any modifications.*

### Replacing Windows



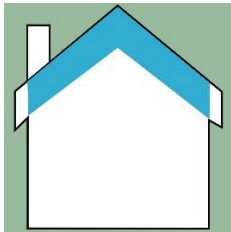
- If you intend to replace any windows and doors, then please contact the EWI system designer for advice on the best procedure. Replacing the windows and doors will break the weather resistant seals and cause damage to the EWI system, including fire barriers if applicable.
- Replacing windows and doors from the outside will cause damage to the reveals, which will require repairing by one of the EWI system designer's approved installers.
- In some instances, it might be possible to replace the window or door internally and whilst this would not cause as much damage to the external finish, the new window / door must be sealed correctly to the EWI system with original seal details maintained if possible or like for like replaced.
- Seek advice from the new window / door supplier regarding their methodology for installation before speaking to the EWI system designer.

## Decking & Patios



- Where the addition of new decking, patios or driveways raises the height of the ground level, then care should be taken not to encroach on the EWI system.
- If possible, maintain a minimum clearance of 150mm from the underside of the EWI system to the new ground level.
- Where the clearance to the ground is below 150mm, seek guidance from the EWI system designer for suitable solutions such as the incorporation of a slotted drain or gravel trap.
- The base of the EWI system should never be in contact with the ground unless specifically designed by the EWI system designer.
- Decking should be kept a minimum of 150mm away from the façade surface to help prevent rainwater splash-back.

## Replacement Facias



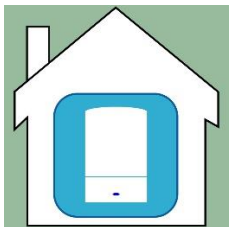
- The replacement of any fascia boards or verge trims must meet the design and specification requirements of the EWI system designer.
- Any contractor which may be carrying out this work should contact the EWI system designer, to ensure they have suitable products and solutions. Failure to do so will likely invalidate the warranty.

## Gas & Electric



- Any gas, electric or cable supply work must be carried out by a suitably qualified person.
- Any works identified that require the cutting out of the EWI system, must be referred to the EWI system designer, to enable them to issue the appropriate procedures and details.
- Any electrical ventilation system that requires cutting through of the EWI system, must be notified to the EWI system designer or for comment.

## New Boiler



- The replacement of an old boiler, should only be carried out by a suitably qualified gas safe engineer.
- All new seals should be installed in accordance with best practice and EWI system designer's recommendations.
- If the system requires cutting back or is damaged in the process of the installation, then please refer to the EWI system designer for repair and sealing recommendations.
- If the boiler is to be re-positioned then please check with the EWI system designer to ensure that the system materials in the new location are suitable for a hot appliance to be located there, it may require non-combustible insulation to be added in the immediate location.

## Damage, what to do next?



### Damage



- Areas of damage must be repaired to prevent the possibility of water ingress or further spalling of the basecoat & topcoat.
- It is important to follow the procedure set out by your EWI system designer; however, it should be noted that any repair work should be carried out by an approved installer to maintain the warranty.
- Any repairs which have been undertaken are likely to be noticeable, this is unavoidable and due to the nature of repairing EWI systems.
- If you have a brickslip system and any of the slips become loose and / or detached, these should be repaired as soon as possible to prevent further moisture ingress.



Typical examples of impact damage, which will require repairing to prevent any further deterioration in the system.

Light surface abrasions should not cause any technical issues, but may be deemed as unsightly. If the abrasion does break the render surface, then it will require a repair.

### DIY Repairs



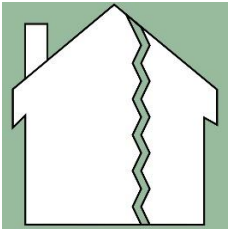
- DO NOT attempt to repair any damaged areas as this will invalidate the guarantee.
- If any areas of surface finish have come away at high level, then secure the area below and prevent any further access. Contact the EWI system designer, contractor or guarantee provider immediately.

## Temporary Protection



- If there is an area of significant damage, exposing the insulation, then a plastic sheet adhered with tape only, can be applied over the damaged area as a temporary measure to prevent any rainwater ingress.

## Building Movement



- Cracking caused by the structural movement of the building is not a fault of the EWI system.
- Ensure that if there is structural movement, a suitably qualified structural engineer has provided a remediation report and that all structure repairs are completed before the remedial works to the EWI system.
- If there is structural movement of the building, please notify both the EWI system designer and the guarantee provider as soon as possible.
- Hairline cracks less than 2mm may not require any remedial works but should be monitored, cracks greater than 2mm should be repaired, following the EWI system designers' guidance.

This guide is issued by INCA to give general guidance on best practice. INCA and the organisations responsible for its content do not accept any liability arising in any way from relying on this guide. If you require advice on a specific issue, you should seek your own independent professional advice.

Requests to use any part of this guide should be made in writing to:

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