

# PPG EWI & Render Technical Specification



**STORMSHIELD**  
EWI & RENDER





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**Project**

Herding Neb  
90mm Enhanced EPS Insulation

**Client Reference**

Herding Neb  
Drigg Road  
Seascale  
CA20 1NP

**PPG Reference**

SPEC / 650447

**Prepared for**

YORKSHIRE RENDERING COMP LTD (6091591)  
534-536 HESSLE ROAD  
HULL  
HU3 5BQ

**Written by**

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**Date**

Tuesday, 12 September 2023



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### Johnstone's Stormshield External Wall Insulation System Specified

Substrate: **Brick and Stone construction.**

Insulation: **90mm Enhanced EPS.**

Finish: **Johnstone's Stormshield Full Silicone 1.5mm**

Finish Colour: **White Samples being sent to client.**

|                        |                                                                     |                                                      |
|------------------------|---------------------------------------------------------------------|------------------------------------------------------|
| Bespoke detailing:     | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Standard Detailing Attached                          |
| Fixing test report:    | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Not required on building substrate.                  |
| Thermal report include | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Pending Info. Will achieve 0.3 or lower with system. |
| Wind load Calculation: | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | Private Dwelling not required for location.          |
| Altitude:              | <b>70m</b>                                                          |                                                      |
| Wind speed:            | <b>N/A</b>                                                          |                                                      |



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## **Specification Preliminaries**

Properties that are of a cavity construction need to have any cavity insulation checked prior to installing specified external wall insulation system. Consult appointed building design engineer for guidance and recommendations in all instances.

This Specification is issued by PPG Architectural Coatings UK Limited (the “Seller”) to **YORKSHIRE RENDERING COMP LTD (6091591)** the (“Recipient”) in connection with the possible sale of the external wall insulation system and component parts of such system (“EWI”).

While the information in this Specification has been prepared in good faith to the best of our knowledge and belief, any recommendation contained in this Specification is only provided for guidance. The Seller (and any third party that provides a recommendation) is a supplier of EWI and is not an expert or professional advisor in relation to engineering, architectural, building or other related fields. The Seller only provides (or obtains from third parties) recommendations based upon a preliminary analysis of the Property.

The Seller reserves the right to amend the Specification where necessary to comply with any applicable statutory, regulatory or safety requirements.

The Recipient must satisfy itself that its requirements are met by any recommendations in this Specification and if necessary it should procure advice from an appropriate engineering, architectural, building and/or other expert as to the appropriate combinations of EWI products. The Seller is not liable (including in negligence) if this Specification does not meet the Buyer’s requirements.

Any sale of EWI is subject to the Seller’s Standard Conditions of Sale and Supply and the Special Conditions for the Sale and Supply of External Wall Insulation, together with any express terms set out in this Specification.

1. Careful attention must always be paid to safety procedures during application, in particular to the Health & Safety at Work Act, Control of Substances Hazardous to Health (COSHH) Regulations and Working at Height Regulations (WAHR).
2. Ensure that any works involving the preparation and treatment of surfaces which contain asbestos are carried out in accordance with The Control of Asbestos at Work Regulations 1987 (Amended 1992 and 1997).
3. Please note that if this specification is not fully adhered to, either by yourself, or a third party, PPG Architectural Coatings UK Limited will not accept any liability for any future technical issues or system failures resulting from deviations from the specification.
4. Any attached test reports for fixings, anchors or thermal calculation reports have been created at client request and carried out by a third party. PPG accepts no liability for the content of any pull test reports contained within this specification.



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5. If there is any doubt about any aspect of this specification, it must be brought to the attention of the specifier prior to the commencement of any works.
6. Any changes to the specification must be agreed to by PPG Architectural Coatings UK Limited and specification documents amended and reissued before any works commence.
7. It is the responsibility of the application contractor to fully familiarise themselves and their application teams with all of the materials and application requirements contained in this specification and the Johnstone's Stormshield External Wall Insulation Application Guide.
8. All works must be undertaken by Johnstone's Approved External Wall Installation Appliers. For further information or to join please call 01924 354354.
9. This document and all associated application literature must be read and understood in full before the commencement of any works.
10. The condition of the substrate and any existing coatings may deteriorate if application is deferred. Therefore this specification is only considered valid for a period of 6 (six) months following date of issue.
11. Weather conditions for the application and drying of Johnstone's Stormshield External Wall Application Systems are critical. See general conditions, application guide and product data sheets for additional information.



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**Project Specific details (if applicable)**

Phone lines, electricity wires, gas ducting etc. to be re-located as recommended by the relevant service provider. Alternatively, they should be enclosed within a ducting channel with safe face plate. Contact Johnstone's Technical Sales Manager for further information.

Substrate confirmed. This is brick construction on some elevations and stone / cobble on other elevations. The thickness of the render varies however some elevations this is 25mm in depth to the substrate.

There is a requirement to use a minimum of 5 EJOT STRU 175mm Fixings per 1,200mm x 600mm x 90mm. EPS insulation board following the fixing design highlighted within this document. Additional Fixings should be installed on corners, reveals and stress areas. Fixing Option 1 as highlighted within this document. STU plugs need to be used to seal the pins. Panel adhesive can be used on the insulation but only needed if requiring to level out the board profile.

Heated Flues surrounded by Adhesively Fixed Mineral Wool following guidelines.

Roofline of the building is to be extended and will allow a minimum of 40mm overhang over the face of the render system being applied.

All new windows are to be installed on the property. The windows are to be brought forward to the level of the substrate to allow the insulation to cover the frame and create the reveal of the window. This is the best system and PAS2035 approved system to stop cold bridging around the frames of the windows.

Please refer to relevant product data sheets, BBA Certification, and the Johnstone's Stormshield Applicator Guide. Applicators would need to be trained and approved by Johnstone's PPG.



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| SAP Code/Product                                                  |                                                                  | Materials                                         | Size          |
|-------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------|---------------|
| <b>Cleaning &amp; Preparation</b>                                 |                                                                  |                                                   |               |
| 736949                                                            | Fungicidal Wash                                                  | Mangers Fungicidal Wash                           | 2.5 Litres    |
| <b>Tracks &amp; Trims</b>                                         |                                                                  |                                                   |               |
| 737621                                                            | Aluminium basetrack                                              | Aluminium basetrack/ box base, 2.5 metre          | 90 mm         |
| 737642                                                            | Clip on nose                                                     | Box Base clip on PVC nose WITH MESH, 2.5 metre    | 6 mm          |
| 680203                                                            | Fixings for Base Tracks                                          | R-FX-N- 06L060mm NKU-SDK 65mm                     | 100 Box       |
| 738464                                                            | Basetrack Joint Clips                                            | Base track joint clips                            | 100 bag       |
| 639968                                                            | Compressible tape                                                | Compressible Seal 10M                             | 1 Each        |
| 737443                                                            | Silicone sealant                                                 | Everbuild Tecnic Silicone Sealant - trade size    | 380 ml        |
| <b>See other accessories for End Caps and External Angles</b>     |                                                                  |                                                   |               |
| <b>Insulation &amp; Fixings</b>                                   |                                                                  |                                                   |               |
| 649636                                                            | Insulation board ENH EPS                                         | Lambdatherm 70E 90mm                              | 1200x600 mm   |
| 737780                                                            | Fixings for Insulation Boards                                    | STRU2G 175mm (max 140mm insulation)               | 100 box       |
| 739809                                                            | Fixings for Insulation Boards                                    | STR Plug                                          | 500 box       |
| 737956                                                            | Adhesive for Insulation board (if required to level out profile) | Johnstone's Stormshield Insulation Panel Adhesive | 25 Kg         |
| <b>Fire Break Detail (If Required)</b>                            |                                                                  |                                                   |               |
| <i>(Required at the floor line on the second story and above)</i> |                                                                  |                                                   |               |
| <b>Renderers</b>                                                  |                                                                  |                                                   |               |
| 737957                                                            | Basecoat                                                         | High performance Render Basecoat                  | 25 kg         |
| 737420                                                            | Mesh                                                             | Render Reinforcing Mesh Cloth                     | 1.1x50 metres |
| <b>Beads &amp; Trims</b>                                          |                                                                  |                                                   |               |
| 737706                                                            | Angle bead EWI                                                   | White Plastic Angle Bead with MESH , 2.5 metre    | - mm          |
| 737689                                                            | Stop bead EWI                                                    | White Plastic Stop Bead , 2.5 metre               | 6 mm          |
| 737673                                                            | Expansion joints EWI                                             | White Plastic Expansion Bead, 2.5 metre           | 6 mm          |
| 737707                                                            | Reveal Bead EWI                                                  | Adhesive Backed, mesh wing reveal bead, 2.5 metre | 6 mm          |
| <b>Decorative Finish</b>                                          |                                                                  |                                                   |               |
| 737541                                                            | Primer                                                           | Full Silicone Primer *Colours                     | 15 Litres     |
| 737543                                                            | Finish coat                                                      | 1.5mm Full Silicone Render *Colours               | 25 kg         |
| <b>Other Accessories</b>                                          |                                                                  |                                                   |               |
| 737444                                                            | Foam Insulation for any gaps.                                    | Soudal Fix All Gun Grade PU Foam                  | 750 ml        |
| 738573                                                            | One coat render (Dubbing Out)                                    | One Coat Render                                   | 25 kg         |
| 737720                                                            | Flue Detail (If Required) To cut down as required                | Dual Density Mineral Wool 90mm                    | 1200x600 mm   |
| 737956                                                            | Adhesive for Flue Detail (If Required)                           | Johnstone's Stormshield Insulation Panel Adhesive | 25 Kg         |

## System Details

Client allocated fire officer and/or appointed building control team should provide bespoke guidelines / recommendations regarding EWI System fire control requirements.

External Wall Insulation fire control guidelines within this document are for guidance only

Fire Break Design and Detail should be confirmed with client and building control in advance



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### **Fire Break Detail**

- Any EPS (polystyrene) or phenolic insulation systems that are installed on buildings that go over 2 stories high must contain a firebreak at second floor ceiling / third floor level and the system must not be installed over the 18 meter high restriction set down by the BBA certification for the system.
- Firebreaks consist of a continuous layer of lamella mineral wool (supplied in 200mm x 1000mm panels) which are adhesively fixed at the required locations using Johnstone's Insulation Panel Adhesive (making sure 100% of the surface is covered) and fixed to the substrate and allowed to dry.
- The location of firebreaks which can be specified for installation both horizontally and vertically to prevent the spread of flame should be outlined and submitted by the contractor to the relevant client building control department for approval before completing the works.
- Once the first pass of Johnstone's High Performance Basecoat has been applied and the render reinforcing mesh cloth has been bedded into the material, drill through the lamella fire break every linear meter and insert a fire fixing and hammer home flush with the surface (there must be at least one fire fixing per lamella insulation panel).
- Cut standard mesh cloth to 150mm squares and embed this over the head of the fire fixing using the basecoat and then continue to apply basecoat (second pass) and specified finishes as per the standard method.
- In addition to the fire fixing in the lamella firebreak, additional fire fixings should be installed in the same way throughout the EWI system at 1 fire fixing per M2 to the entire surface area above the first fire break.

### **Preparation of Masonry Substrates**

- Johnstone's Stormshield External Wall Insulation Systems can only be applied to suitably prepared masonry substrates that are stable, clean, level and free of surface contamination.
- A full survey of the building may be required to be carried out by the relevant bodies prior to the application of any Johnstone's Stormshield System to confirm its suitability.
- If the condition of the substrate is not suitable any issues must be brought to the attention of PPG Architectural Coatings and addressed prior to system application.
- All cracks or damage to the substrate must be assessed and repaired.
- All services, fixtures and fittings attached to the substrate must be surveyed and removed to facilitate installation of the system by qualified personnel and only reattached in line with the Johnstone's Stormshield application guide.
- All masonry substrates must be level and in line prior to system application. Do not bridge surface imperfections with insulation panels or attempt to dub out large areas with insulation panel adhesive or basecoat. Use a suitable dubbing render and apply as per the product specification.
- All surfaces should be thoroughly cleaned down to remove any dirt or surface contaminants and allowed to dry prior to application.
- Any areas of existing render should be hammer tested and any defective areas hacked off until a solid substrate is achieved.
- Apply a suitable fungicidal wash to all areas subject to algae lichen or other contaminants as per the product instructions.



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- On chalky, porous or areas of uneven suction it may be necessary to apply Johnstone's Stormshield Stabilising solution to the substrate to bind the surface and provide a strong, suitable key.

#### **Scaffolding**

- Scaffolding should be independent of the building to prevent visible breaks in the finish where areas of scaffolding have been worked around.
- Scaffolding should cover the whole elevation of the building to allow for uninterrupted application to prevent finish differences or 'day joints'.
- Scaffold should allow suitable access to the whole elevation to prevent different application methods or angles creating visible differences in the finish
- All scaffolding should be carefully removed after completion of works to prevent marking or damage to the system.

#### **Application of Base Rail & System (Verge, Cill and Stop) Profiles**

- Apply Specified System Profiles with Specified Profile Fixings. Fully secure the Profiles with centres no more than 300mm apart.
- To comply with PAS 2030 a compressible sealing tape is required to the back of the base track
- Ensure sufficient fixings are used for smaller sections of Profile and always endeavour to use the longest pieces of profile possible.
- Base Rail must be installed above property DPC and all Profiles must be fixed straight and level.
- Do not bend or warp System Profiles to substrate if uneven- use packing shims and seal all gaps to substrate with specified silicone mastic.
- Allow a 2mm expansion gap between all sections of System Profile and seal all gaps to substrate with a suitable low modulus silicone mastic.
- If profiles specified feature a clip on plastic nose this should be fitted to bridge all joints between sections of System Profile.
- Always wipe product from exposed faces of profiles before it dries to avoid unsightly stains/ marks.
- Ensure all system profiles are applied to prevent any water ingress into system. Joints in verge, stop and cill profiles may need covering with a suitable capping piece to achieve this.

#### **Insulation Material**

- Specified Insulation material must be stored, handled and installed as per the specification.
- Damaged insulation panels should be discarded.
- Plan application of insulation panels carefully to avoid using small offcuts.
- Extra care should be taken when fixing panels at building stress points such as reveal corners and quoins. Always use an L shaped piece of insulation around window and door corners. Avoid using small pieces of insulation in these locations.
- Avoid gaps between insulation panels. Small gaps (<6mm) can be filled with the specified insulation gap filler. Larger gaps will require panel to be removed and recut.
- Gap filler must be allowed to cure and then cut flush to insulation board face.
- Insulation panel faces must be flush and even prior to application of basecoat.

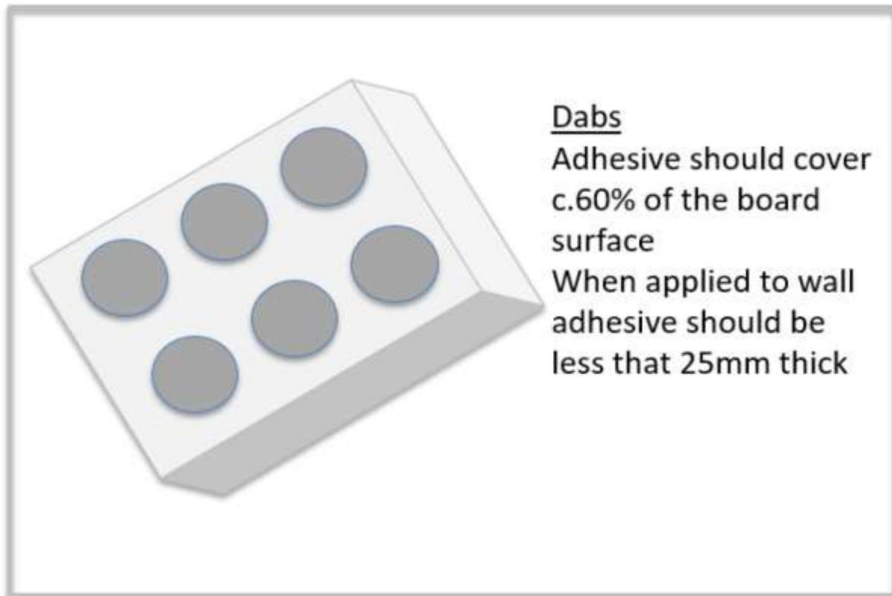


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#### **Insulation Panel Adhesive (If applicable)**

- Mix and apply Johnstone's Stormshield High Performance Insulation Panel Adhesive to the back of the insulation panels as specified in the application guide (at approx. 4kg/m<sup>2</sup>). Apply panels to masonry using a twisting and pushing motion to ensure strong adhesive to substrate transfer. Allow adhesive to fully set before applying basecoat to insulation panels.
- Required on installation of any Mineral Wool insulation around Heated Flues as outlined within this specification document. See images for further guidance.
- We would recommend "dot and dab" method of application to all EPS boards
- Full surface coverage of Panel Adhesive on the reverse side of the Mineral Wool Lamella Fire Break 200mm band around the building.

#### **Application Guidance on Panel Adhesive Applied to EPS**

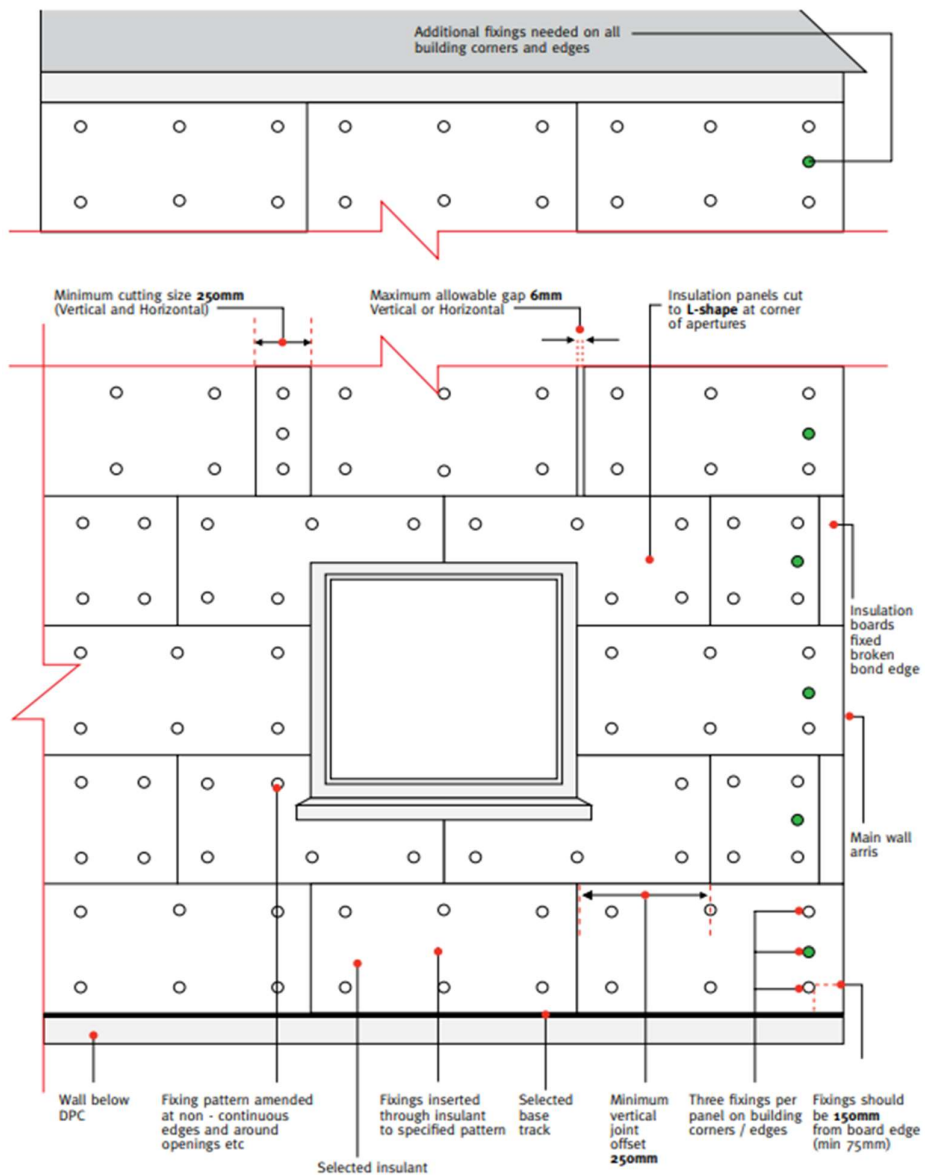




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## Fixing Pattern

### OPTION 2: FIXING PATTERN 6 PIN



Please note that additional fixings are required at external corners.



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### **Insulation Panel Fixings**

- Always use the specified insulation panel fixing/ anchor.
- Apply insulation fixings to the system configuration.
- Additional fixings will be required at stress points on the building such as around window and door reveals and on building quoins / edges. Generally additional fixings are required in the centre of the regular fixing pattern in the insulation boards horizontally and vertically on the perimeter edges.
- Refer to the application guide for further information.

### **Basecoat and Reinforcing Mesh Cloth**

- Mix and apply Johnstone's Stormshield High Performance Basecoat as per the product instructions to the face of the fixed and finished insulation panels.
- Apply first pass of material to a depth of 3-4mm, notch horizontally and incorporate Johnstone's Stormshield Render Reinforcing Mesh Cloth into the basecoat.
- Always ensure a 100mm overlap between all sections of Mesh Cloth and use reinforcing patches where required at building stress points. Reinforcing patches should be applied over the main Mesh Cloth and should be a minimum of 250mm square.
- Allow first pass of Basecoat to 'take up' and stiffen before applying a second pass of material.
- Apply a second coat of Basecoat to a depth of 2-3mm over the first coat. All traces of Mesh Cloth must be covered by the second layer of material.
- Ensure a level and even surface to the basecoat across the application using suitable tools.
- Finish basecoat with a comb to create a keyed finish.
- Allow basecoat to fully cure before applying finishing coats.

### **Silicone Enhanced or Full Resin Silicone Render Primer**

- Apply Johnstone's Stormshield Silicone Enhanced Primer or Full Silicone Render Primer to the fully cured and hardened Basecoat with a paint brush, roller or suitable spray equipment.
- Completely cover the basecoat with primer to ensure there is no contact between Basecoat and finish. No traces of basecoat should be visible on completion.
- Allow to fully dry before applying selected finishing render.

### **Silicone Enhanced or Full Silicone Render**

- Apply Johnstone's Stormshield Silicone Enhanced or Full Silicone Render only after Primer has been applied and is fully dried.
- Ensure render product is well mixed and check colour consistency and batch numbers before application.
- Attempt to apply with a continuous wet edge to a natural break to prevent visible 'day joint'.
- Apply product with a stainless steel trowel and finish with a plastic float.
- Render should be finished with a plastic float by rubbing down to aggregate size. For example 1.0mm render should be applied to a film thickness of 1mm and 1.5mm render to a thickness of 1.5mm.



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- Do not leave thicker layers on substrate as this may cause cracking at a later stage. Take extra care to remove excess material around reveals and corners.
- Ensure a test panel is applied and the colour and finish has been fully approved prior to commencing large scale application.
- In damp or humid conditions silicone renders may become touch fry before they have fully cured. Always take care to protect the surface until it has fully cured.

### **Render & Movement Beads**

- Only use the render and movement beads on the system specified in this document and supplied by Johnstone's.
- All beads should be placed and fixed as detailed on Architect's drawings or System Manufacturer's details. Refer to application guide for standard system detail drawings.
- Fix beads in place until basecoat hardens with fir tree fixings if required.
- Always wipe product from exposed faces of beads before it dries to avoid unsightly staining and marks.

### **Accessories**

- Johnstone's supply a range of accessories selected for their suitability. We recommend that you obtain your sheeting and protection materials, sealants and foams from PPG to ensure compatibility and performance.

### **Product Storage**

- Bagged powder products such as Johnstone's Stormshield Insulation Panel Adhesive, Render Basecoat and Dash Receiver must be stored off the ground and protected from water or sources of damp.
- Johnstone's Stormshield powder products contain cement and are highly sensitive to damp. Any damp or moisture ingress to the powders prior to use may make them unsuitable for use.
- Stored under proper conditions, Johnstone's bagged products have a shelf life of 12 months.
- All Johnstone's Stormshield products must be stored frost free and protected from extreme heat.
- Insulation panels must be protected from rain and physical damage. Factory packaging does not provide a level of protection which would allow the materials to be stored outside.
- Care should be taken in the handling and storage of all Johnstone's Stormshield External Wall Insulation materials in line with the product datasheets.



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### **Application & Drying**

#### **WEATHER CONDITIONS FOR THE STORAGE, APPLICATION AND DRYING OF JOHNSTONE'S STORMSHIELD EXTERNAL WALL APPLICATION SYSTEMS ARE CRITICAL.**

- Drying times will vary significantly depending on wind, temperature and humidity and may take longer than specified or indicated in adverse conditions.
- Do not work with frosted materials or on frosted substrates.
- Do not apply in temperatures below 5°C or when the temperature is forecasted to drop below 5°C for a period of at least 24 hours after application.
- Do not work in high temperatures or on surfaces directly exposed to strong sunlight. Do not apply to surfaces that are hot to the touch.
- Do not work during rainfall or if rainfall is anticipated within 24 hours following application.
- Do not apply materials if relative humidity is above 85% and note that damp or humid conditions will impact on drying and curing times.
- Do not allow rain or water run off to strike newly applied material until it has time to fully set and divert all rain water outflows away from the substrate.
- Provide adequate protection from frost, high winds & precipitation during application and curing.
- Wherever possible fully sheet the elevation during all works to protect from strong sun, wind and water until fully set.
- Apply all materials in accordance with PPG guidelines- refer to the application guide for additional information/

### **Mixing & Colour Consistency**

- Always mix products where specified using only clean water.
- Correctly mix powder product with suitable equipment in full accordance to the product specification. Always discard materials if there is suspicion of damp or contamination.
- Once material has been mixed if not used immediately do not attempt to add additional water at a later stage to improve the consistency of any Johnstone's Stormshield products
- When using coloured renders it is always advisable to check the batch numbers are the same and to mix multiple bags or buckets together prior to application to create high levels of colour accuracy
- Whilst every attempt is taken to ensure colour consistency in highly controlled factory and tinting operations some colour variances may occur.
- Always apply product to a single elevation in one application – wet on wet – to avoid day joints. It may be necessary of large elevations to use a render profile or other suitable detail to create a natural break on the elevation to allow for continuous application.

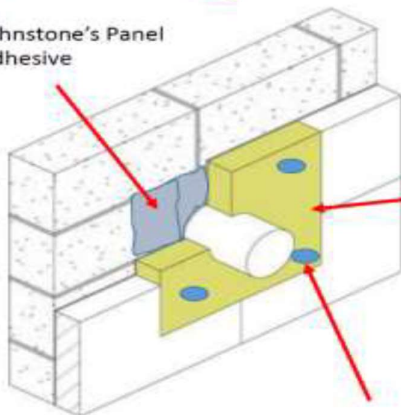


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### Hot Flue Detail – Where Required



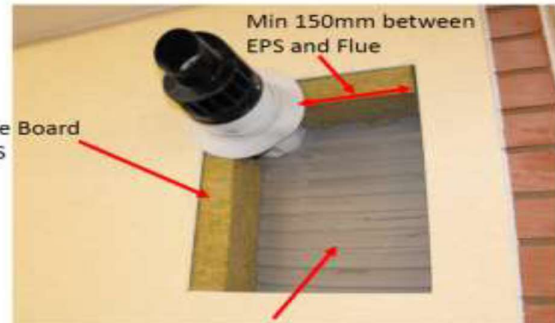
Johnstone's Panel  
Adhesive



Mineral Fibre Board  
Rockwool DS

Fixings used will be the same as the EPS

### Hot Flue Detail



Min 150mm between  
EPS and Flue

Johnstone's Panel  
Adhesive

### System Example Image





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**Other Pictures (If required)**



Front / Road elevation  
of the building

Has been confirmation  
that the ground level  
around the building is  
to be lowered to allow  
a 150mm from floor  
high to the floor level.

Mentioned that the  
system ideally needs  
to be above DPC line  
however in the solid  
stone this will not be  
achievable due to  
construction. 150mm  
from Ground level will  
be achieved.



Back elevation to sea elevation.



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Back elevation to sea elevation,

The current extension lean to will be removed  
back to the main wall of the property.



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Side elevation of the property.

The flue detail may be going however if stopping then this wants to be extended and insulated around as per specification.



Internal wall make up pictures.



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T 01924 354354  
E [ppgextra@ppg.com](mailto:ppgextra@ppg.com)  
W [johnstonetrade.com](http://johnstonetrade.com)



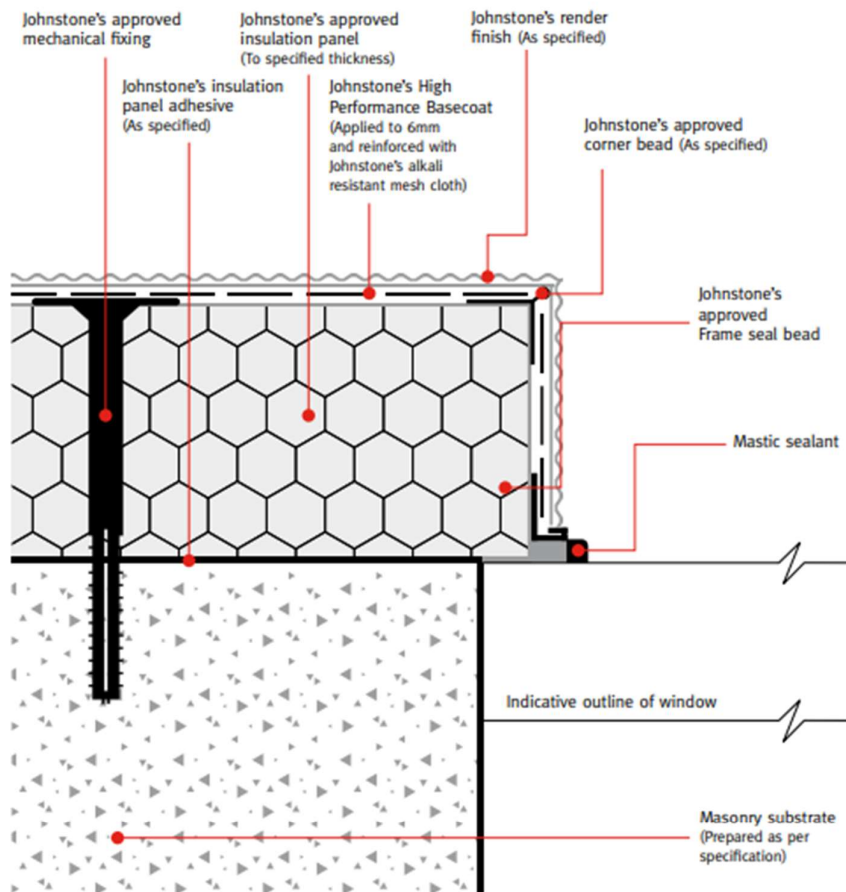
**STORMSHIELD**  
E W I G R E N D E R



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**Window design to fit the EWI system over the fitted windows:**

**Detail Section: Reveal Detail 3** (No masonry reveal)



PAS 2030  
Performance Indicator

|          |          |           |
|----------|----------|-----------|
| Standard | Improved | Excellent |
|----------|----------|-----------|

DRAWING: Standard Detail | DATE: NOV 2013 | REF: JS 10 | NO: 10