Proposed Climate Action and Fabric Defects Works at St. Mary's Primary School

at

St. Mary's Primary School,
Youghal Road,
Dungarvan,
Co. Waterford,
X35 TN99.

Volume A.1

PROJECT PARTICULARS, GENERAL CONDITIONS AND SPECIFICATION

(Ref. 26/108/Vol A.1)

July 2026

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VOLUME A

PROJECT PARTICULARS, GENERAL CONDITIONS AND SPECIFICATION

for

PROPOSED CLIMATE ACTION AND FABRIC DEFECTS WORKS

To

ST. MARY'S PRIMARY SCHOOL

at

YOUGHAL ROAD,
DUNGARVAN,
CO. WATERFORD,
X35 TN99.

JULY 2026

Prepared by:

Mary Harrington Architects,
The Pines,
Ballyduff East,
Kilmeaden,
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Note:

Where trade names are used to describe the quality of a product, the contractor may propose an alternative product, which meets the same specification and provides the same warranties as that specified. The Architect's agreement to same must be received.

Note:
See Appendix A for **Mary Harrington Architects Design Risk Assessment**

See Appendix B for **Cavity Wall Insulation – Kingspan Ecobead Cavity Wall Insulation - Agrément Cert and Declaration of Performance**

See Appendix C for **Cavity Wall Insulation – Rockwool Roll and Twin Roll - Declaration of Performance**

See Appendix D for **Cavity Wall Insulation – Sika Siloxane (Top Coat) and Paramurex (Base Coats) - Declaration Of Performance**

See Appendix E for **Cavity Wall Insulation – Ventilation (Part F) - Minimum Equivalent Area of Background Ventilation (mm2) Calculations and Purge Ventilation Calculations**

See Appendix F for **Cavity Wall Insulation – Energy Conservation (Part L) - U-Value Calculations and Thermal Bridging Calculations for Cavity Wall Insulation and Attic Insulation**

General Conditions

The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the architect.

Proprietary items shall be fixed in strict accordance with manufacturer's instructions.
Sizes of proprietary items shall be checked with manufacturer.

The contractor shall be responsible for the co-ordination of structure, finishes and services.
All construction methods, materials, services & installations to be in accordance with all Irish Building Regulations and codes of practice at the time of construction,

All sub-contractors are ultimately responsible for ensuring compliance with Regulations within their own trade.

Note:
Specification to be read in conjunction with all Architect's Drawings & Architect's Finishes Schedule & other associated tender documents.

CONTENTS

1.0 INTRODUCTION **1**

2.0 PROJECT PARTICULARS **2**

3.0 GENERAL REQUIREMENTS **5**

4.0 PROGRAMME & COMPLETION **22**

5.0 WORKS SPECIFICATION **26**

- **5.1 A33 QUALITY STANDARDS / CONTROL** **27**
- **5.2 A90 GENERAL TECHNICAL REQUIREMENTS** **32**
- **5.3 INJECTED CAVITY WALL INSULATION** **34**
- **5.4 EXTERNAL RENDERING** **36**

MARY HARRINGTON ARCHITECTS DESIGN RISK ASSESSMENT
- Appendix A.

KINGSPAN ECOBEAD CAVITY WALL INSULATION - AGRÉMENT CERT AND DECLARATION OF PERFORMANCE
- Appendix B.

ROCKWOOL ROLL AND TWIN ROLL - DECLARATION OF PERFORMANCE.
- Appendix C.

SIKA SILOXANE (TOP COAT) AND PARAMUREX (BASE COATS) - DECLARATION OF PERFORMANCE.
- Appendix D.

VENTILATION (PART F) - MINIMUM EQUIVALENT AREA OF BACKGROUND VENTILATION (mm2) CALCULATIONS AND PURGE VENTILATION CALCULATIONS
-Appendix E.

ENERGY CONSERVATION (PART L) - U-VALUE CALCULATIONS AND THERMAL BRIDGING CALCULATIONS FOR CAVITY WALL INSULATION AND ATTIC INSULATION
-Appendix F.

1.0 INTRODUCTION

NOTE: The technical aspects of the specification are in documents/sections located elsewhere in Volume A.

1.0 INTRODUCTION

1.1. This document shall be read in its entirety. The titles and numbers of parts and paragraphs do not form part of, or delimit the meaning of, the document. The titles and numbers are merely provided for convenience in setting out the document as a whole. This document shall also be read in conjunction with all other works requirements documents and contract documents

1.2. This project is part of the Department of Education and Youth 'Summer Works Scheme' and comprises climate action and fabric defects works to the existing school premises and ancillary works. The existing school building will not remain “live” throughout the traditional primary school summer holiday period but will be live for normal school hours outside the traditional primary school summer holiday period.

1.3. The form of building contract shall be the current standard Dept. of Finance prepared “Short Public Works Form of Contract (PW-CF6)" published on the date 10 days before the latest date for submission of tenders (disregarding any amendments posted on that date).

1.4. The form of contract together with the various model forms and rules to be used in this project are those currently available on the Department of Finance website http://www.constructionprocurement.gov.ie/

1.5. It is intended that the Contractor to be appointed shall also be appointed as the Project Supervisor Construction Stage (PSCS) subject to completion of questionnaire in relation to, and assessment of, the competency of the contractor to act as PSCS (if not already carried out prior to tender assessment stage).

1.6. While the pricing and assessment of the PSCS appointment shall be carried out in tandem with the pricing and assessment of the Contractor appointment for the construction contract, these shall be a separate contract between the Employer and the PSCS and the Employer.

1.7 The construction contract documents are scheduled in Volumes A, B, and C.

1.8 Information documents are scheduled in the Information Pack. Please note that this information is *Background Information* and does not form part of the tender or the eventual contract.

1.9. Document Transmission. It shall be the responsibility of each Tenderer to ensure that full & complete set of Tender Documents is published, transmitted & received. The project team does not accept any responsibility howsoever arising, including but not limited to negligence in relation to the performance of IT systems and equipment for handling of any tender document or other document that provides or is meant to provide information regarding the project & the competition to Tenderers. Each tenderer shall satisfy himself that Tender Documents are complete and that no document, cited or otherwise, later to be relied upon is omitted by the project team or otherwise missing. A full set of contract documents is available for inspection by tenderers at the offices of Mary Harrington Architects, The Pines, Ballyduff East, Kilmeaden, Co. Waterford.

1.10 The Architect shall also act as the Employers Representative (hereinafter referred to as “the ER”) within the meaning of the contract.

1.11 It is a condition precedent to the award of the contract that the successful tenderer for the contract must comply with current Tax Clearances Procedures (available at www.finance.gov.ie). Please note that the Employer reserves the right not to award the contract to the lowest tenderer and the Employer also reserves the right not to award the contract at all.

2.0 PROJECT PARTICULARS

2.1. PROJECT TEAM

Client:	Board of Management, St. Mary's Primary School, Youghal Road, Dungarvan, Co. Waterford, X35 TN99. Ms. Ann-Marie Rossiter, Chairperson of the Board of Management Ms. Breda Veale, Principal of St. Mary's Primary School School Phone: 058 41346 Email: info@stmarysdungarvan.ie
Architect:	Mary Harrington Architects, Ballyduff East, Kilmeaden, Co. Waterford. Phone: 051 384847 Email: maryharrington@mharchitects.ie
Quantity Surveyor:	N/A
Mechanical & Electrical Engineer:	N/A
Project Supervisor Design Process:	Mary Harrington Architects, Ballyduff East, Kilmeaden, Co. Waterford. Phone: 051 384847 Email: maryharrington@mharchitects.ie

2.2. PROJECT & SITE DESCRIPTION

(a) SITE LAYOUT DRAWINGS: The site is described on the relevant Site Location Maps

(b) GENERAL DESCRIPTION OF SITE: The works comprise climate action and fabric defects works to the existing school premises together with all ancillary and associated works. The construction, dimensions and specification for the works are as shown on the drawings supplied with the Pricing Document and listed in Volume A. The position of the various works is as shown on the Architects Site Plan Drawings as contained in Volume A.

(c) SITE & ACCESS RESTRICTIONS: Refer to Architects Drawings, Fire Safety Documents and Preliminary Health and Safety Plans for specific restrictions and access issues to be considered during the course of the contract. Extent of proposed construction site and contractors compound is also described in the Architects Drawings, Preliminary Health and Safety Plan and on the Site Layout Plans

2.3. GENERAL DESCRIPTION OF THE WORKS

THE WORKS involve remedial works to the external building facade to resolve water ingress issues and to restore the integrity of the external facade against further water ingress and are to include external wall treatments and remedial detailing, works to roof overhangs, fascias and soffits and all associated works together with associated internal remedial and repair works to rectify the damage caused by the water ingress. Additionally, works are to include the installation of attic insulation and pumped cavity wall insulation and the supply and installation of a bike rack together with all ancillary and associated works.

The existing school buildings, where the works are being undertaken, comprise a National Primary School. Works are expected to commence mid-August 2026 with completion end-October 2026. Works are planned to commence during the traditional primary school summer holiday period but will continue during the early part of the next school year. The existing school buildings will not remain “live” throughout the traditional primary school summer holiday period (late June – late August) but will be ‘live’ for normal school hours outside the traditional primary school summer holiday period when the Contractor's works will be undertaken in the midst of a 'live' school environment, albeit subject to normal Primary School operational hours and holiday periods.

2.4 LOCATION

The working site area is located in the grounds of an existing school.
The proposed works are located at:

St. Mary’s Primary School,
Youghal Road,
Dungarvan,
Co. Waterford,
X35 TN99.

2.5. DRAWINGS

The Contract drawings and Specification will be those issued with the Tender Documentation which shall accompany this document.

2.6. REMOVAL OF RUBBISH

The appointed Contractor must remove all rubbish and debris generated by the works on a regular basis and dispose of same.

2.7. ADJACENT AND ABUTTING BUILDINGS

Adjacent and abutting buildings are self evident on visiting the site.
The Contractor shall take all precautions necessary to prevent interference to the property or it’s occupiers during the course of the works.

2.8. INSPECTION

The Contractor shall give such notices and provide such facilities, which may be required by Statutory Bodies entitled to carry out inspections or examinations of the Works.

The Contractor before covering up any work shall give the ER reasonable opportunity to inspect the work already executed.

2.9. ACCEPTANCE

The Client does not bind himself to accept the lowest or any tender and no Contractor will be remunerated for any expense incurred in making up his tender.

2.10. RESIDENTS IN THE AREA

The Contractor must ensure that his operations cause least inconvenience to residents, and damage caused to their property or public property must be made good at the Contractor’s expense.

2.11. TEMPORARY FENCING

The Contractor shall provide all temporary fencing, hoardings and signage and the like that he considers necessary for protecting the works, adjoining buildings/property and all members of the school and public and suchlike for the proper execution of the works and to the satisfaction of the Architect.

2.12. CLEANING OF THE WORKS

Remove all rubbish and superfluous material from the site with all reasonable speed from time to time. Keep the driveways passing through free from mud and leave the site, roads and adjoining grounds absolutely clear. Leave all parts of the site and premises clean and perfect upon completion to the satisfaction of the Architect.

The Contractor is to ensure that no rubbish or superfluous material enters the adjoining agricultural lands.

3.0 GENERAL CONDITIONS

3.1. MATERIALS & WORKMANSHIP

(a) MATERIALS AND GOODS as specified are to be the best of their respective kinds and those for which there is an Irish/British Standard or Code of Practice are to comply therewith and shall bear the Irish/British Standard mark or alternatively shall be certified to a National Standard of another member of the European Union which provides an equivalent guarantee of safety and suitability - certification to be by the National Standards Authority of Ireland.

(b) CURRENT STANDARDS: Generally, references to Irish, British or other National Standards or Codes of Practice do not give the year of issue or dates of amendments and the latest relevant published version including any relevant amendments published at the date of tender shall apply. Where a Standard Code of Practice has been superseded the edition current at the date of invitation to tender shall apply.

(c) CODES OF PRACTICE The contractor shall provide a copy of any relevant codes of practice for use by his site supervisory staff.

(d) SAMPLES OF MATERIALS, manufacturer's articles and executed work shall be submitted as required to the Architect for approval before incorporation into the works and articles not so approved shall be removed, if directed by the Architect. Approval of any materials or work will not relieve the contractor from responsibility for defects subsequently arising.

(e) STORAGE OF MATERIALS: All unfixed materials shall be carefully stored in accordance with the best practice and in a suitable position on site. Manufacturers or agents recommendations regarding storage, transportation, application, material compatibility, workmanship, health & safety, etc. shall be strictly observed.

(f) WORKMANSHIP

- All workmanship shall comply with current Irish / British Standard Code of Practice or equivalent standard as noted above and in accordance with B.S. 8000 - "workmanship on building sites" IS / 150 9000 / EN 29000 quality system management and in accordance with Building Regulations Technical Guidance Document Part D.
- When required working / shop drawings, calculations, documentation, certification, samples, etc. submitted by sub-contractor / specialist to the Architect for consideration and comments before any work is fabricated.
- On completion the sub-contractor must submit to the Architect / Project Manager a minimum of four copies of as built drawings, maintenance manuals, material / component guarantees; Certificates of Compliance with Building Regulations and / or relevant standards; and including design, installation and commissioning certificates where applicable.

(g) CONSTRUCTION PRODUCTS REGULATIONS 2013:

The Construction Products Regulations 2013 (CPR) supersedes the earlier Construction Products Directive (CPD) and applies to all works commenced after 1 July 2013.

The Regulations were written into Irish law through an amendment to the Building Regulations Part D (Workmanship & Materials). As this requirement is now incorporated in Part D, the new BC(A)R Design Certificates and Completion Certificates include certification of "proper materials."

Proper materials are defined as "fit for the use for which they are intended and for the conditions in which they are to be used, and includes materials which:
(a) bear a CE Marking in accordance with the provisions of the Construction Products Directive; or
(b) comply with an appropriate harmonized standard, European technical approval or national technical specification as defined in article 4(2) of the Construction Products Directive; or
(c) comply with an appropriate Irish Standard or Irish Agrément Board Certificate or with an alternative national technical specification of any State which is a contracting party to the Agreement on the European Economic Area, which provides in use an equivalent level of safety and suitability."

From July 2013, construction products that are covered by hENs, on the market in the EU must bear the CE mark and must be accompanied by a Declaration of Performance (DoP) from the manufacturer.

"In general, the CE marking will provide basic information on the manufacturer, the product itself, any third party involved in the assessment, along with the reference number of the DoP, the hEN or EAD applied, and the levels or classes of the performance declared. The CE marking will be found on the product, its label, the packaging or accompanying documents."

The requirements of the Construction Products Regulations, 2013, take precedence over all other specifications.

The Contractor is responsible for recording his check of CE marking on products, for obtaining and retaining DoPs for products and for immediately reporting any concerns to the Architect/ER and Assigned Certifier, as appropriate. Copies of documents, as noted above are required as a condition of this contract. Ancillary Certificates may also be required from the Contractor, depending on the nature of the project.

The successful tenderer and all sub-contractors shall comply in full with the requirements of the Construction Products Regulations 2013.

3.2. TRADE NAMES

(a) OR EQUIVALENT: The phrase "or equivalent" in all tender documentation and drawings shall mean, the material or product named, or a similar product of equal or better quality and performance. A review, (if any), of an equivalent material, by the ER, the Architect or Engineer is intended to be and will be deemed to be only a recognition that the Contractor has elected to use an alternative material at the Contractors sole risk. Use by the Contractor of any product not selected by name is a Contractors selection and at the Contractors risk and the ER Architect or Engineer may not necessarily review any such contractor selected material. No substitution of materials shall be accepted to which the ER objects. Where any shop, Contractors or suppliers drawings are submitted to the design team for "approval" the design team shall assume that the content of the submitted drawings corresponds in all significant aspects with the design team drawings unless any and all differences and or changes are specifically highlighted in coloured graphic and coloured text format, and an explanation as to the effect of such change, on the drawings. In this regard the design team will not be expecting, and thus will not be considering, differences and or changes, nor will the ER or, Design Team be "looking for a needle in a haystack" as regards differences or changes unless such differences and or changes are specifically brought to the attention of the Design Team for its

(b) PROPRIETARY NAMES: Where materials, appliances or fittings of special design, manufacture or description, patented or otherwise, are described by reference to the proprietary names it shall be deemed to include the term "or equivalent"

(c) WRITTEN AUTHORIZATION: In every case where, on the drawings, in the specification or in the Bill of Quantities, materials, appliances or fittings of special design, manufacture or description, patented or otherwise, are described or the names of the manufacturers or agents are given, any departure from the specified articles or material will only be permitted on the written authorisation of the Architects. If no such authorisation (which shall not be unreasonably withheld) is obtained, the contractor must supply the articles or materials specified.

(d) APPROVAL: The Design Team has taken considerable care and attention in the selection of materials and the preparation of the design and does not propose to undertake reviews of the project design as a result of a Contractor wish to change materials or design. While the Contractor is entitled to use equivalent materials, these will not be accepted where the use of such materials changes any aspect of the design or performance included in the contract documents. Where any Contractor seeks approval to use an alternative material as 'equivalent' they may be required to submit independent opinions/clarification that the material is equivalent (e.g. Agrément Certificate) and may also be required to undertake any necessary modification to other materials as a result (e.g. use of a shallower floor screed if a flooring material of deeper thickness is used). Such use of "equivalent" materials and/or consequential change as a result will be at the Contractors sole risk and expense and without any extension of time or use of the programme contingency. Please note that the ER will not consider such a request for use of or approval of 'equivalent' material to be a request for a ERs instruction

coming within the meaning of the contract in general. Approval of a material by the ER or any Engineer, if any, does not constitute specification of that material by the ER or any Engineer, it will, at most, only amount to an acknowledgement that the Contractor has selected a specific material. Such use of an “equivalent” material shall be a Contractors choice, and the Contractor shall indemnify the Employer and the Project Team against any liability, howsoever arising, as a result of the use of any such 'equivalent' material, use of equivalent materials (whether requested or not) shall be deemed to include provision of such indemnity by the Contractor. In common parlance, the project team has done its job once and has been paid to do it once only and project team does not intend to do this aspect again. Notwithstanding anything in this paragraph or elsewhere in the contract documents neither the ER nor the project team are obliged to approve any contractor submission.

(e) ONGOING COMPLIANCE: Where the Contractor selects a material for use, he shall (whether such a selection is reviewed, approved or not reviewed by the ER Architect or Engineer) keep a record of such selection and make this record available for inspection on site at all times and incorporate this record into the Safety File information. Where the Contractor notifies such a selection to the ER, Architect or Engineer he shall simultaneously certify that the selected material complies with the specification. In addition to this item-by-item compliance certification, the Contractor shall certify to the ER – at the same time as a monthly monetary claim has been submitted to the ER or QS – that the entire works as then constructed comply with the specification the works requirement and the works proposal. The ER shall not be obliged to issue any certificate for payment in the absence of such an ongoing compliance certificate from the contractor. The construction completion certificates required under section 4.0 are in addition to the monthly ongoing compliance certificate.

3.3. CONTRACTOR TO VISIT THE SITE

TENDERERS are advised to visit the site and satisfy themselves as to facilities for site access, the supply of labour and materials the district will afford, the general convenience of working, the nature of the soil, the nature, character, dimensions, level and other features of the site, all existing buildings and existing underground services, cables, etc. there on and adjoining, site security and all other things insofar as they may have any connections with or affect the full and proper execution of the works. They will be deemed to have taken all the above matters into account when tendering and no claim for any payment will be allowed in consequence of the Contractor’s failure to do this.

To make an appointment to view the school, Contractors are to contact:

Mary Harrington,
Mary Harrington Architects,
The Pines,
Ballyduff East,
Kilmeaden,
Co. Waterford
Phone: 051 384847 / 086 8940571

3.4. CONTRACT

(a) CONDITIONS OF CONTRACT: The Contractor shall execute an agreement with the Employer in the form of the **“Short Public Works Form of Contract (PW-CF6),** version published on the date 10 days before the latest date for submission of tenders (disregarding any amendments posted on that date).

The information required as specified in the Conditions of Contract, is contained in Volume B.

Copies of this form of contract are included elsewhere in this tender package or can be downloaded from http://www.constructionprocurement.gov.ie/

(b) APPLICATION OF CONDITIONS OF CONTRACT: Nothing in the Specification or the Bill of Quantities shall override, modify or affect in any way whatsoever, the application or interpretation of the clauses contained in the Conditions of Contract.

(c) INCONSISTENCIES In the event of there being an inconsistency between documents, the tenderer shall observe the order of precedence as set out in the Conditions of Contract. In the event of there being an inconsistency between figured and scaled dimensions, the figured dimensions shall prevail.

All apparent inconsistencies shall be raised with and clarified by the Employer's Representative before the Contractor orders materials or commences work.

(d) MECHANICAL AND ELECTRICAL INSTALLATIONS complete Mechanical & Electrical works are the responsibility of the successful contractor who will be responsible for all necessary design, installation, commissioning and handover and all necessary and relevant services co-ordination throughout the works. All such works are to comply in full with the specific requirements of the Department of Education and Skills Technical Guidance Documents.

(e) CONTRACT DATE, STARTING DATE AND DATE FOR SUBSTANTIAL COMPLETION
The 'Date for Substantial Completion' shall be the date arrived at after the time allowed for completing the works is measured from the Contract Date. The 'Starting Date' shall not be the basis of calculating the date for Substantial Completion.

(f) DAMAGES
Liquidated Damages' under the Conditions of Contract will be as set out in Schedule; Part 1 which is included within Volume B.

(g) LOWEST OR ANY OTHER TENDER

The Employer shall not be bound to accept the lowest or any other tender. In the event of the Employer deciding to accept a tender, the Contract shall be awarded on the basis of the 'most economically advantageous tender' to the Employer.

The MEAT criteria and the assessment application shall be the:
- as detailed and set out in the Instruction to Tenderers (ITT-W4) document accompanying this tender

Tenderers shall not be reimbursed for the costs incurred in tendering.

(h) ERRORS IN TENDERS
In the event of non-arithmetical errors being found in a tender the tenderer shall be informed of the errors and asked to formally confirm or withdraw the tender. If the tender is confirmed, a signed endorsement shall be attached to the tender stating that all rates or prices (except Preliminary Items) are to be regarded as having been reduced or increased appropriately. Where the tenderer refuses to confirm the tender, the Employer may treat the tender as being invalid.

In the event of arithmetical errors being found in a tender the tenderer shall be informed of the errors and asked to formally confirm or withdraw the tender. If the tender is confirmed the said errors will be dealt with in the following manner:

A. If there is an error in extension, the rate will be adjusted, so that the extension remains the same.

B. If there is an error in addition, the amounts added (and the rates making them up) will be adjusted pro rata to the error, so that the total remains the same. This will apply if the total of the tendered rates and prices, with value-added tax added, does not add up to the tendered Contract Sum. The Employer will decide which amounts and rates are to be adjusted. Instead of adjusting the amounts added the Employer may in its discretion adjust an adjustment item

(i) UNPRICED ITEMS
Unless otherwise stated in the tender documentation, any item left unpriced shall be deemed to be included for in the tender and the cost of the item shall be deemed to be spread across and included in the rates generally.

(j) AWARD OF CONTRACT
The Employer, on deciding to accept the most economically advantageous tender, will issue a Letter of Intent to the apparently successful bidder. The contractor must provide within 14 days of the date of the Letter of Intent a performance bond, tax clearance certificates, evidence of insurances and other relevant documents required by the tender documentation. If the contractor fails to provide the documentation required within the period specified, the employer may go to the next most

economically advantageous tender. On receipt of all documentation as specified, the Employer may issue a Letter of Acceptance, which will be binding on both parties.

(k) PENSION FUND AND SICK PAY:
The successful tenderer must be a fully paid up member of the Construction Industry pension and sick pay schemes. A tenderer asked to do so shall promptly submit contribution receipts or other evidence of membership acceptable to the Employer. Any tenderer unable to provide such evidence may be deemed to have withdrawn his tender. The contractor shall remain in membership of the schemes for the duration of the contract.

(l) PERFORMANCE BOND
Where required, the Contractor shall enter into a Bond with a surety acceptable to the Employer, should the Employer so require, to guarantee the performance of the Contract. The Bond shall be for an amount equal to 12.50% of the initial Contract Sum up to certification of substantial completion of the works and 6.25% of the initial Contract Sum for 450 days after that.

The wording of the Bond shall be as per the Model Form published by the Department of Education & Youth for use with the Public Works Contracts.

The amount included in the tender amount for the provision of the Bond shall, in the event of the Employer deciding not to proceed with the requirement for a Bond, be credited from the tender amount in the calculation of the initial contract sum.

A Performance Bond is <u>not</u> required for this project

(m) FREEDOM OF INFORMATION ACT 1997 and 2003
The Employer undertakes to use its best endeavours to hold confidential any information provided by the tenderer subject to the Employer's obligations under law, including the Freedom of Information of Act, 1997 and 2003. Should the tenderer wish that any of the information supplied by him with the tender submission should not be disclosed because of its sensitivity he should, when providing the information, identify same and specify the reasons for its sensitivity. The Employer will consult with the tenderer about this sensitive information before making a decision on any Freedom of Information request received.

If the tenderer considers that none of the information supplied is sensitive, he shall make a statement to that effect. Such information may be released in response to a Freedom of Information request.

(n) PUBLICATION OF TENDER INFORMATION
Tenderers are advised that the Employer is obliged to circulate the name and address of the Contractor awarded the work, the type of work involved and the address of the site to a nominee of the Irish Congress of Trade Unions (ICTU).

Submission of a tender shall be deemed to confirm the tenderers acceptance that he agrees to the circulation by the Employer of the above information. Any tender which is accompanied by a statement stating or implying that the tenderer does not agree to the release of the above information shall be deemed to have been qualified and may be treated as an invalid tender.

(o) CERTIFICATE OF STANDARD
All materials and goods are to be of the best quality.

All works and materials required under this Contract shall be in compliance with the requirements of this Specification and the standard referred to therein.

Products/materials shall either be certified as complying with the latest relevant Irish Standard Specifications and shall bear the Irish Standard mark or shall be certified to a national standard of another member state of the European Union which provides an equivalent guarantee of safety and suitability - certification to be by the National Standard Authority of Ireland.

(p) CURRENCY
The Contractor, at the time of tendering, must furnish the **Pricing Document fully and clearly priced and extended in the currency of the European Monetary Union (i.e. € / EUR)**

The Contractor at the time of tendering must furnish the Pricing Document fully priced in ink.

No adjustment will be made to the contract sum in respect of changes in the cost of materials, fuel or other prices due to variation in the currency exchange rate.

(q) WORKMANSHIP
All workmanship shall comply with current Irish / British Standard Code of Practice or equivalent standard as noted above and in accordance with B.S. 8000 -"workmanship on building sites" IS / 150 9000 / EN 29000 quality system management and in accordance with Building Regulations Technical Guidance Document Part D. When required working / shop drawings, calculations, documentation, certification, samples, etc. submitted by sub-contractor to the Employers Representative for consideration and comments before any work is fabricated. On completion the sub-contractor must submit to the Employers Representative / Project Manager a minimum of four copies of as built drawings, maintenance manuals, material / component guarantees; Certificates of Compliance with Building Regulations and / or relevant standards; and including design, installation and commissioning certificates where applicable.

3.5. MANAGEMENT OF THE WORKS

(a) SUPERVISION: The Contractor shall accept responsibility for co-ordination, supervision and administration of the Works, including all subcontracts and specialists. The Contractor shall arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for co-ordination of the work. The Contractor should note that while the Project Team may carry out site inspections, the design team are NOT supervising the works; supervision of the works is the sole responsibility of the Contractor alone. An audit of the Contractors records for management, supervision and quality control of the works may be undertaken periodically by the ER or other party. The contractor shall cooperate with such audits and any resulting corrective actions issued as appropriate'.

(b) MONITORING: The Contractor shall record progress on a copy of the programme kept on site. If any circumstances arise which may affect the progress of the Works, he shall put forward proposals or take other action as appropriate to minimise any delay and to recover any lost time as per Conditions of Contract.

(c) CONTRACTOR'S PROGRESS & SITE MEETINGS

- The Contractor shall submit a progress report to the Architects / Project Manager prior to each site meeting. Notwithstanding the Contractor's obligations under the Contract the report must include:
  - A progress statement by reference to the master programme for the Works.
  - Details of any matters materially affecting the regular progress of the Works.
  - Any requirements for further drawings or details or instructions to enable the ER to fulfil his obligations under the Conditions of Contract.
- The Contractor shall hold meetings with appropriate subcontractors and suppliers shortly before main site meetings to facilitate accurate reporting of progress.

3.6. HEALTH & SAFETY

(a) GENERAL REQUIREMENTS

- THE PRELIMINARY HEALTH & SAFETY PLAN (DESIGN STAGE) has been prepared by the appointed Health and Safety Project Supervisor (Design Process) in accordance with the requirements of the Safety, Health and Welfare at Work, Safety, Health and Welfare at Work (Construction) Regulations 2013 and Health and Welfare at Work (General Application) Regulations 1993, for the purpose of providing information to the Project Supervisor appointed for the construction stage.

- THE PROJECT SUPERVISOR FOR THE CONSTRUCTION STAGE will be the main contractor who is to ensure that sufficient provision is made for the Health & Safety of any person who is

affected by the works.

- WRITTEN NOTIFICATION shall be made to the Health & Safety Authority by the Project Supervisor (Construction) in accordance with Schedule 1 of Safety, Health & Welfare at Work (Construction) Regulations 1995 before commencement of the CONSTRUCTION STAGE.

  The Contractor shall be deemed to have included in his tender sum for complying with the terms of the items below:

  - Safety, Health & Welfare (General Applications) Regulations, 1993.
  - Safety, Health and Welfare at Work Act 2005 (No. 106 of 2005).
  - Safety, Health and Welfare at Work (Construction) Regulations, 2001 (SI 481/2001).
  - Safety, Health and Welfare at Work (Construction) Regulations 2006 (SI 504/2006).
  - Safety, Health and Welfare at Work (Construction) Regulations 2013 (SI 291/2013).
  - Factories Act, 1955.
  - Safety in Industry, 1980.
  - Conditions of Employment Act.
  - Safety, Health and Welfare at Work Act (General Applications Regulations) 2007.
  - and all other relevant legislation.

  The Contractor shall be deemed to have included for the preparation of Safety Statements and Health and Safety Plans and for taking all steps necessary to ensure the safety of all persons likely to be affected by the execution of the Works.

  <u>The Contractor shall submit a Safety Statement and the various documents required which shall identify hazards and risks arising during the course of the Works and specifying how it is intended to safeguard the safety, health and welfare of parties likely to be affected.</u>

  The Contractor shall comply in all respects with the requirements of the above Acts and Regulations with respect to his employees, subcontractors, visitors and other third parties.

  The safety documentation shall be updated during the course of the Works to include any further hazards, which may arise.

  Safety, Health & Welfare at Work (Construction) Regulations, 2013 (SI 291/2013)

  The tenderer is to examine the site and all the information supplied regarding the nature and extent of the proposed works, so as to be satisfied as to what is required to be done to fulfil the duties of Project Supervisor Construction Stage and also what measures are required to be taken to meet the requirements of the regulations in the execution of the works. All costs arising in respect of these matters are to be included in the tender figure. The Client will not be liable for any such costs which are reasonably foreseeable and which are not so included. It should be noted that where the Contractor or any Sub-Contractor carries out any design (as defined in the Regulations) the duties set out in Regulation 15 apply.

(b) PSCS RESOURCES

- The contractor shall make available, at the time of tender, detailed information on the resources to be allocated to discharge his duties as Project Supervisor (Construction). This information should include:
  - Details of personnel to be specifically engaged in site-based health & safety, including the number of individuals, their experience and qualifications.
  - Proposed safety management structure, which is likely to be specific to the scheme.
  - Proposals for monitoring and enforcing compliance amongst sub-contractors.
  - Proposed structure of the developed plan including broad timescales for development.
- Upon appointment of the Project Supervisor [Construction] Stage, the Safety & Health Plan shall be developed and submitted to the Project Supervisor [Design] for comment not less than 15 working days before commencement on site.

(c) DUTIES OF PROJECT SUPERVISOR - CONSTRUCTION STAGE

- SAFETY MANAGEMENT: The Project Supervisor (Construction) shall take responsibility for the general safety management and specific safety management procedures in accordance with the requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2013.
- RESPONSIBILITIES: The Project Supervisor (Construction) shall be aware that he is solely

responsible for carrying out the following duties as part of his contract works:
    - Development (before commencement of construction work) of the preliminary safety and health plan as started by project supervisor – design including:
    - Adjustments as necessary to this plan as work progresses and changes.
    - Taking account of any safety statement when developing the plan (see Section 12 of SH & W at Work Act 1989).
    - Including in and plan specific measures concerning work which falls within one or more of categories of Second Schedule in the (SH & W at Work (Construction) Regs 1995).
- Where more than one contractor is engaged on site, the Project Supervisor construction stage must prepare a Safety File and:
    - Co-ordinate implementation of general principals of prevention. First Schedule - Health, Safety and Welfare at Work (General Applications) Regulations S.I. 44 - 1993.
        - When Technical/Organisational/Operational aspects are being decided.
        - When estimating time required for completing work/work stages.
    - Co-ordinate implementation of requirements of Regulations in order that the contractors apply in a consistent manner the requirements set out therein and follow the provisions of Safety and Health Plan.
    - Co-ordinate different Contractors/Successive Contractors:
    - Organise implementation of Reg 6 of Principal Regs - information provisions in particular & Keep records of information provided to project supervisor under Reg 8 (1)e and provide Health and Safety Authority with any information records when requested.
- May appoint competent person as H & S Co-coordinator for construction stage to assist him/her in carrying out his/her duties.

Health & Safety:

The Employer shall appoint a Project Supervisor for the Design Process (P.S.D.P.)

The Employer proposes that the successful tendering Contractor will be appointed as Project Supervisor for the Construction Stage (P.S.C.S.) & execute all duties required of that role under safety & health regulations. The successful tendering Contractor shall co-sign, with the Employer, a form of Collateral Agreement appointing him to this role, when signing the building contract for the works. The Contractor shall take note of the information provided & risks identified in the Preliminary Safety & Health Plan supplied by the P.S.D.P. shall visit the site & determine access arrangements etc. The successful Contractor shall issue all due notices to statutory bodies, the Employer, Local Authority, Health & Safety Authority etc. & shall develop a site specific Safety Plan before work commences & shall prepare &, on completion, hand over to the Employer, a Safety File specific to the works undertaken. This shall include the Safety Plan prepared at the outset of the project, copies of any notifications issued to, or correspondence with, the Health & Safety Authority, “as constructed” drawings, services layouts, specification sheets, commissioning certificates & any other relevant information.

Project Supervisor for the Construction Stage

It is the intention of the Client that the firm appointed as main contractor for the construction of the works shall undertake the duties of Project Supervisor Construction Stage of the project as set out in Regulations 16, 17, 18 and 19 of the Regulations. A form of agreement setting down the terms of the agreement is contained within the Preliminary Safety and Health Plan.

The successful tenderers will subsequently be required to complete this form. The appointment of the Contractor as Project Supervisor Construction Stage is separate to and independent of the contract for the construction works.

The person providing the expertise required of a Project Supervisor for the Construction Stage may be either an employee or a consultant retained for the specific purpose. The firm shall not assign the Collateral Agreement without the Employer's written consent.

Where a tenderer is not deemed competent by the Employer to act as Project Supervisor for the Construction Stage then the tender submitted by that party shall be passed over and deemed invalid.

In the event of the Employer deciding to enter into a contract for the execution of the Works the successful firm shall enter into a contract (the 'Main Contract') using the **“Short Public Works Form of Contract (PW-CF6), version current at time of contract (hereinafter referred to as “the contract”).**

as specified elsewhere. The firm shall also enter into a Collateral Agreement to the Main Contract for the provision of the service of Project Supervisor for the Construction Stage and the performance of the duties outlined in the above mentioned Regulations in consideration of the acceptance by the Employer of the tender, or any modification thereof.

The Form of Collateral Agreement is included within the Preliminary Safety and Health Plan/form of Tender.

Preliminary Health and Safety Plan

In accordance with the Regulations, a Health and Safety Plan in a preliminary form as defined in the regulations, has been prepared for the purpose of providing information to the Project Supervisor Construction Stage. A copy of the said plan is included with these tender documents.

Safety File

Provision by the main contractor, to the PSDP, of satisfactory information for inclusion in the Safety File will be a pre-requisite to certification of Substantial Completion of the works.
This information must be provided two weeks in advance of Substantial Completion to allow it to be checked and incorporated into the Safety File. The only exceptions to be allowed in relation to this time limit will be for commissioning/test certificates which can be provided closer to the actual Substantial Completion date only if it is not possible to provide it earlier.
The extent and format of such information is to be as directed by the PSDP during the course of the contract.

A Safety File template is available for discussion and agreement of the content.

Documentation to be sourced by the PSDP directly from the Design Team is to be confirmed.

All content is to be provided in electronic (pdf) format unless agreed otherwise with the PSDP. As a minimum the content to be provided will include:

- Contact details of all Designers not being part of the Design Team.
- Designer's Assessments of Safety during Maintenance and Future Works from all Designers not being part of the Design Team.
- Construction Drawings, Specifications and Pricing Document from all Designers not being part of the Design Team.
- Safety Glazing: Main Contractor certification that all safety glazing is installed as required.
- Safety Systems (Such as hooks, safety lines, barriers, etc.): Main contractor confirmation that the works are completed as per design and test certificates.
- Sub-contractor's documentation, product literature, test certificates, etc., also to be submitted as appropriate.
- Fire Safety Works (Such as Fire stopping and cavity barriers, Fire Doors, Fire Rated Enclosures, Fire Extinguishers, etc.): Main contractor confirmation that the works are completed as per design and test certificates.
- Building Services (Such as Electrical Services Installation, Fire Alarm, Heating System, etc.): Main contractor confirmation that the works are completed and fully commissioned as per design.
- Client Training in Emergency and Safety Systems (Such as Fire Alarm, Fall Arrest System, etc.): Main contractor confirmation of Date of training, Persons giving the training, Persons receiving the training, Description of training provided.
- Client Training in General Building Services Systems (Such as Heating System, etc.): Main contractor confirmation of Date of training, Persons giving the training, Persons receiving the training, Description of training provided.
- Operation and maintenance manuals (Such as Heating System – Boiler, etc.): Operation manuals to also include recommended / required maintenance regime.
- Maintenance of the Structure (Such as Roof finish, etc.): Product literature and recommended / required maintenance regime.
- 'As-built' drawings, documentation and details

Designers not being part of the Design Team

All those with design input in relation to either the Permanent Works or the Temporary Works, who are not part of the Design Team appointed by the client, are required to submit details of their design proposals to the PSDP and the Design Team for approval in advance of their elements of the works proceeding. This requirement arises under the elements of the regulations requiring Designers to co-operate with the PSDP and requiring the PSDP to co-ordinate the activities of designers.

The main contractor is to include in his tender for all costs, resources, programming and co-ordination measures for the liaison outlined above by such designers, under his direction, as required to achieve PSDP and Design Team approval of all such elements before each proceeds.

Where such elements form part of sub-contracts, it is the Design Team's intention that this requirement be identified and allowed for in the tender process for that element. However the main contractor is to review this topic with the relevant sub-contractor in advance of any such sub-contracts being placed and satisfy himself that appropriate allowances have been made.

Submitted details for this particular project are to include design drawings, specifications etc., as follows:

Element:	Domestic:	Documentation Required:
Permanent Works:		
• General building layout, elevations, sections, external works details and specification details		
• Mechanical Installations Generally		
• Electrical Installations Generally		
• Details and method statements for connection to existing services		
• Window and Door Installation		
Temporary Works:		
• Scaffolding		
• Propping		
• Working Platforms		
• Gangways/Access Stairs/Ladders		

Any elements not highlighted above, but which are subsequently identified as having a design element are to be dealt with in similar fashion.

Temporary Works Designer and Qualified Engineer
The main contractor is to appoint a competent Temporary Works Designer to take overall design responsibility for the stability of the structure during the envisaged construction process and also to employ a suitable qualified engineer, with the requirement that both liaise with each other and with the Project Supervisors (PSDP and PSCS). All costs in relation to these appointments are to be included for in the overall tender.

Temporary Works
All Temporary Works Designers will be required to sign-off on Temporary Work.

Permanent Works
All Permanent Works Designers will be required to sign-off on Permanent Works.

The Contractor/PSCS shall hand over to the PSDP as a **minimum, 1 no. electronic (pdf) format,** of the relevant Safety File information and details, neatly bound, for delivery of same by the PSDP to the Employer on completion of the project.

The Employer will be unable to take possession of the Works ('Substantial Completion' stage) unless the Contractor/PSCS has provided all information and documentation required to allow the Employer

comply with his duties in respect of the safe operation of the premises under relevant statutory provisions. The PSCS shall deliver the complete Safety File to the Employer prior to the issue of the Substantial Completion Certificate. Drawings forming part of the Safety File shall be handed over in Lever Arch type box files and all printed documentation shall be bound into Lever Arch type files.

Notification of the Health and Safety Authority
The notification of the project to the HSA shall be the responsibility of the Project Supervisor for the Construction Stage - the Contractor.

'SAFEPASS'
The Contractor shall comply with the requirements of the construction industry's safety accreditation scheme, known as the 'Safepass' scheme.

3.7 BUILDING CONTROL (AMENDMENT) REGULATIONS 2014 (SI 9 of 2014):

The Building Control (Amendment) Regulations 2014 'Do Not Apply to this Project'

3.8. FIRE SAFETY

APPROVED FIRE SAFETY CERTIFICATE:
The Fire Safety aspect of the works will be subject to and carried out in compliance with the current fire codes and the Building Regulations. Any fire stopping required around pipes, ducts, doors or the like and/or between walls and roofs shall be of a recognized proprietary type and shall be installed by a fire specialist who shall certify that all of the fire stopping and/or fire ratings as required by the regulations has been achieved.

The Contractor shall, immediately prior to Substantial Completion, certify that the construction work carried out on the contract by him and his subcontractors has been carried out in such a way as to ensure that the integrity of the fire zones within the building has been maintained and that all fire barriers, control elements, coatings and alarm systems have been provided and installed in compliance with the relevant Standards.

All fire resistant coatings such as intumescent paints shall be clearly identified with an engraved plate identifying the designed fire rating and specifying that no paint or other decorative coatings shall be applied to the coating without the prior agreement of the person with maintenance responsibility for the building. The Employers Representative shall instruct the plates' locations.

All fire rated doorsets with non-metallic leaves shall be permanently identified in accordance with the requirements of BS 8214:1990 identifying the period of fire resistance, the manufacturer's name and address, the year of manufacture and other pertinent details. These details shall be engraved on a metal plate, fire resistant to 800 oC, which shall be fixed to the hinge stile of the door leaf near the top edge and shall be clearly legible. Every fire door (i.e. the complete fire door assembly) shall be supported by a fire test report from an accredited laboratory (see Technical Guidance Document D of the Building Regulations) which indicates that the complete assembly will meet the required performance.

3.9. GENERAL OBLIGATIONS

(a) PLANNING PERMISSION:
Is not applicable to this project.

(b) FIRE SAFETY CERTIFICATE:
Is not applicable to this project

(c) DISABILITY ACCESS CERTIFICATE:
Is not applicable to this project

(d) PART L REPORT / NZEB REQUIREMENTS:
Is not applicable to this project

(e) ELECTRICAL SUBSYSTEMS CERTIFICATION:
All electrical sub-systems shall be certified as having been carried out in compliance with the requirements of the ETCI Wiring Regulations.

Copies of the ETCI Subsystems certificates, accompanied by the relevant test results, shall be included with the ETCI Completion Certificate in the Health and Safety File for the project.

In the event of the Contractor failing to secure Subsystem certificates for all items of equipment then the Contractor shall be liable for the cost of having the systems tested, remedied as necessary and certified. The tender figure shall be deemed to include for all costs incurred by the Contractor in providing the appropriate documentation.

(f) TAX CLEARANCE CERTIFICATE
The award of the Contract will be conditional on the selected tenderer being able to produce a C2 certificate or a tax clearance certificate or an electronic tax clearance certificate. In the case of a tenderer being from outside the State, he shall be required to produce a statement of suitability from the Revenue Commissioners. A tenderer asked to produce a C2, tax clearance certificate or electronic tax clearance certificate shall be allowed ten working days to do so after which, should he have failed to do so, he may be deemed to have withdrawn his tender.

The tenderer shall be responsible for all costs incurred by him in obtaining tax-free certificates.

(g) BUILDING REGULATION COMPLIANCE
The Contractor shall certify on completion of the Works that all work carried out by him and his subcontractors is in compliance with the design and that any design work carried out by him is in compliance with the requirements of the Building Regulations.

(h) NECESSARY PRECAUTIONS
- The contractor shall take all necessary precautions to safeguard workmen, employees, the client and his representatives and prevent damage to the existing adjacent buildings which will be occupied during the course of the contract.
- The contractor shall provide all necessary barriers, hoardings, scaffolding, dust screens, etc and keep all debris well watered to prevent dust. All debris shall be removed as quickly as possible and the existing areas adjacent to the work shall be kept clean and tidy at all times.

(i) SECURITY
- The contractor shall acquaint himself fully with the nature, extent, and sequence of security arrangements required in connection with the work to be carried out. The contractor shall safeguard the site, the works, materials and plant against unauthorised entry, damage and theft and provide watching and lighting as necessary.
- Ensure that all openings and the like broken out or formed are adequately secured against trespassers and in particular children during and outside normal working hours and provide adequate protection for personnel within the completed buildings and for the extent of the new building.

(j) CONVENIENCE OF OCCUPANTS: Due consideration must be given to occupants and end users.

(k) CLEANING OF THE ROADS: All necessary measures shall be taken by the contractor to prevent spillage or deposit of clay, rubble or other debris on adjoining roads during the course of the works. Any such material which has been deposited on roads, lanes and public property adjacent to the site (as a result of the Contractor's operations) shall be thoroughly cleansed by him immediately, and as often as requested by the Engineer or his Representative. Litter etc., includes spillage from, and material carried out on the wheels of vehicles.

(l) DEMOLITION:
Safely demolish all elements as listed for demolition elsewhere in the works requirements and or as might be necessary to give effect to the works requirement (if not listed elsewhere). Dispose of all debris in a legal manner and in a legal location off-site, unless any specific element is listed for re-use, preservation or handing over to the Employers. Have particular regard to the presence, removal and disposal of asbestos (see elsewhere in these tender documents for any prepared asbestos survey).

The contractor shall prepare a C&D waste Management Plan.

(m) CONSTRUCTION AND DEMOLITION WASTE:
Construction and demolition waste shall be managed in accordance with a construction waste and demolition management plan, which shall be submitted to, and agreed in writing with, the Architect, prior to commencement of the development. This plan shall provide details of intended construction practice for the development, including noise management measures and offsite disposal of construction / demolition waste

(n) NOISE AND DUST:
During the construction phase of the development, Best Practice Means shall be employed to minimise air blown dust being emitted from the site. This shall include covering skips and slack-heaps, netting of scaffolding, daily washing down of pavements or other public areas and any other precautions necessary to prevent dust nuisances. There must be compliance with B.S. 5228 Noise Control on Construction and Open Sites.

(o) CONSTRUCTION AND DEMOLITION MANAGEMENT PLAN:
Prior to commencement of onsite development works, a Construction and Demolition Management Plan shall be submitted to the Architect for their confirmed written agreement. This plan shall provide details of intended construction and demolition practice for the development, including onsite storage arrangements, hours of working, noise management measures, off-site disposal of construction and demolition waste/material, construction traffic, construction lighting, a scheme for dust and dirt control, road cleaning of access/egress route to/from the site, vibration control, foul and surface water discharges and any other nuisance or significant interference with amenities or the environment beyond the site boundary. The daily duration of construction works shall be restricted to between 08;00 hours and 18:00 hours on Monday to Friday, 08:30 to 13:00 hours Saturday with no works permitted on Sundays and public holidays.

(p) EXPERIENCE SKILL & QUALIFICATIONS:
The contractor will assign competent personnel to fulfil the roles of:
(1) Contractors Representative (maybe referred to as the contracts manager),
(2) Health & Safety Manager/Co-Ordinator,
(3) Contractors Supervisor (maybe referred to as the foreman)
(4) Project Supervisor Construction Stage,
(5) Site Safety Officer and
(6) Building Services Co-Ordinator. (One person may fulfil more than one or all of these roles.)

The Contractor will (if so requested in writing or email by the Contracting Authority) provide evidence in the form of brief Curriculum Vitae showing that each of the above named personnel have previous experience on projects of a similar nature, size and complexity in the assigned role satisfactorily completed.
Contractor shall (if so requested in writing or email by the Contracting Authority) provide an organisation chart indicating the duty holders responsible for Health and Safety and demonstrating how responsibility for Health and Safety is allocated within the firm.
The Health and Safety Manager/Co-Ordinator and the Site Safety Officer shall hold either a Degree/diploma or other equivalent H&S training in addition to experience as Health and Safety Manager/Site Safety Officer on at least 3 satisfactorily completed building construction projects. The Contractor shall have completed 3 works of a similar nature, size and complexity within the last 7 years in a satisfactory manner in compliance with the Safety, Health and Welfare at Work Construction Regulations 2006, and will (if so requested in writing or email by the Contracting Authority) provide details of those 3 projects and the record of enforcement actions, legal proceedings accidents, fatalities or incidents for those projects and (where applicable) measures that have been put in place by the above named Contractor to address any deficiencies in H+S procedures.

3.10 ACCESS

(a) AGREEMENT WITH LOCAL AUTHORITY:
Location of access to site to be agreed by Local Authority, client and Gardai, prior to site commencement.

(b) MAKE GOOD DAMAGE:
Any damage caused by traffic to and from the site during the construction period shall be made good by the Contractor at his own expense on completion of the project. Existing roads, paving, grassed areas, etc. (unless included for change in the contract documents) outside the site boundaries must be left in the same condition as they were prior to commencement of the works. The Contractor is advised to carry out a photographic condition survey of these areas and to issue such survey to the Design Team prior to commencing his site setting up.

(c) EXISTING ROADS, PAVING, GRASSED AREAS, etc. both inside and outside the site boundaries must be left in the same condition as they were prior to commencement of the works. The contractor is advised to carry out a photographic condition survey of these areas prior to commencing his site setting up.

(d) ALL DELIVERIES to site shall be made via the approved access gate.

(e) PARKING ON SITE is strictly controlled and the contractor must ensure that all vehicles belonging to his own staff and those of sub contractors are either parked within approved areas designated off site by agreement or within the contractors hoarding line in accordance with the PSCS Health & Safety Plan.

3.11 SITE PREPARATION

(a) PROTECTION:
- All existing buildings, trees, planting, fences, gates, walls, power lines, services/utilities and other site features, (which are to remain in position during the execution of the works) from damage by site operations, and make good any damage to existing features resulting from the works.
- Remove shrubs, trees and planting only as indicated by the Architect, grub up roots and remove from site. Fill in voids left by removal of roots with hardcore or soil as appropriate to be obtained off site. Protect all planting to be retained.

(b) SITE HOARDING:
- Provide site hoarding and safety barriers as indicated on Site Layout Plans. Ensure integrity of hoarding from unauthorized access, in particular from access by children.
- Include for the removal of hoarding and safety barriers on completion.
- Provide for secure site entry gates.
- Providing proper signage to indicate flow of traffic.
- Allow for removal and re-siting of hoarding on completion of various stages of the works as required.
- The entire site (including builder’s compound) encompassing the new works is to be hoarded off from the remainder of the site.
- The hoarding to consist of secured 'Herras' type fencing c/w debris netting and suitable and appropriate safety signage to all site boundaries.

(c) SETTING OUT:
- The line, and levels of formation, side slopes, drainage, carriageways, tracks, footways, and hard shoulders shall be carefully set out, and frequently checked, care being taken to ensure that correct gradients, and cross sections are everywhere obtained.
- The finished surface of the carriageways and footways shall be formed so as to provide adequate fall to, and satisfactory run off at all surface outlets, gullies etc.
- The Contractor shall be entirely responsible for any errors in setting out regardless of whether the Architect or Engineer has checked the setting out or not.

(d) EXISTING SERVICES:
- The Contractor shall, as far as possible ascertain for himself the positions of underground services and shall take all precautions for their protection.
- He shall make good any damage to drains, sewers, mains, cables, or other property caused by his operations.
- All existing gas pipes, water pipes, electric cables, sewers, drains, and other services which do not in the opinion of the Architect require to be changed in location, shall be carefully supported, and protected from damage by the Contractor, and in the case of such damage shall be restored by him to as good condition as that in which they are found.

(e) TEMPORARY WORKS:
The Contractor shall provide, maintain and remove on completion of the works all temporary works necessary for the proper execution of the Contract and such temporary works shall be executed, at his own expense, and constructed, and maintained to the satisfaction of the Architect.

3.12 EXCAVATION:

(a) STRUCTURAL SPECIFICATION: Refer to the Structural Specification for General Excavations Work, General Fill Work, and Excavations and Fill Work for Structures & Pipelines.

(b) DRAINAGE/SURFACE WATER: See Structural Engineer's drawings & specifications for external drainage and Mechanical and Electrical Engineers drawings & specifications for internal drainage.

(c) PIPES AND SERVICES: When the contractor encounters, in the course of excavation, any water, gas, electricity or other mains, these shall be reported and dealt with as directed.

(d) TREES AND ROOTS
- Trees to be removed within the confines of the site shall be uprooted or cut down as near to ground level as is possible, cut in lengths, the roots grubbed up and all disposed of off the site of the proposed works.
- All other trees and planting shall be preserved and protected as further described.

(e) EXISTING TOPSOIL IN SITE: The Client shall retain the ownership of the soil. It is to be deposited on site in required areas with reference to landscaping and redistributed as directed by the Architect on completion of construction. Refer to section Q28.

(f) PROTECT EXISTING: Excavations for foundations in positions adjacent to existing buildings, and pathways shall be carried out in such matter that at any time these buildings, and roadways are not endangered by the excavation; all propping, shoring and methods of excavation must be discussed with the Engineers will not relieve the Contractor in any way of his responsibility to ensure the safety of the working, and the adjacent buildings.

(g) TRENCH SUPPORTS:
- The Contractor shall design, furnish, put in place, and maintain such sheeting, bracing, etc., as may be required to support the sides, and roof of the excavation, and to prevent any movement which can in any way be a safety hazard, injure the masonry, concrete or pipeline, diminish the necessary width of excavation, or otherwise injure or delay the work or endanger adjacent pavements, buildings or other structures.
- Great care must be taken in excavating service trenches etc. alongside foundations. Particular attention shall be given to all excavations and filling which extends to depths sufficient to fall within a dispersion angle of 45 degrees from the underside of any foundations or services.

(h) PIPES AND SERVICES: Where directed all temporary or disused pipes etc. in or under the permanent work, are to be filled in solid with fine concrete or grout.

3.13 ASBESTOS PRODUCTS

Where the tender documents do not provide for the presence of asbestos and the Contractor encounters any material suspected of containing it - or where asbestos is found or suspected to be present in areas not identified in the tender documents - work shall be immediately suspended in its vicinity and no other work shall be carried out which might expose either the Contractor's personnel or third parties to contact with the suspect material or of releasing it into the environment. The Employers Representative shall be informed immediately and his instructions awaited. If any of the material has been disturbed, the area shall be sealed off and the advice of the Health and Safety Authority obtained on the treatment required for personnel who may have been in contact with it.

Work on asbestos containing materials shall be carried out in accordance with the appropriate legislation and regulations and with the instructions of the Health and Safety Authority.

3.14 EXISTING SERVICES

There are existing services on and adjacent to the site. However, there is no drawing showing the full extent of existing services. All existing services must be safeguarded and protected during the contract period.

3.15 WORKING TIMES

(a) The Contractor will be permitted to work within the site boundaries between 8.00am – 6.00pm from Monday to Friday inclusive (normal working hours). Work on Saturdays by local agreement. Work on Sundays will not be permitted.

(b) All work to areas outside the site boundaries have to be carried out at time agreed with the local authority.

3.16 SEQUENCING OF WORKS / PHASING

The works will be carried in a single phase.

3.17 LABOUR

Only fully qualified and competent tradesmen, together with their labourers or helpers, shall be employed by the Contractor on the works. Claims for overtime will only be entertained in writing by the Architect.

3.18 CONTRACTOR TO SUBMIT SAMPLES OF MATERIALS

Samples of all materials, manufactured articles and workmanship shall be submitted to the Architect for provisional approval before adoption, but such approval shall not relieve the Contractor in any way from responsibility for any defects appearing subsequently.
The Architect, who shall have the power to reject all materials and workmanship, which does not correspond with the approved sample in all respects, will retain approved samples until the completion of the Contract.
Materials and manufactured articles supplied or fixed or work executed without submission and approval of samples shall be removed and the necessary re-instatements executed at the
Contractor's expense should the Architect so direct. All materials are to be new unless otherwise specified, and, if required the Contractor is to furnish evidence that the materials are of the origin, description and quality or price specified.
Samples are to be submitted to the Architect in good time to allow for inspection and testing, if necessary, without delay to the programme.

3.19 DOCUMENTS

The Contractor shall carefully examine the drawings and other tender documents and satisfy himself as to their accuracy. The Contractor shall properly execute the works whether or not shown on the drawings or described in the specification or other tender documents, provided that same may reasonably be inferred there from.
The Contractor shall carefully examine the drawings, specifications and other tender documents, check all dimensions and satisfy himself as to their accuracy and that they cover and embody the work as proposed. If any discrepancies are discovered, they must be referred to the Architect for decision.

3.20 DRAWINGS AND SPECIFICATIONS

The Architect will supply two complete sets of working drawings and two copies of specification and will also provide such further explanatory or detailed drawings, as he may consider necessary from time to time.
Detailed drawings in all cases to be worked to in preference to those of a more general character and figured dimensions are to be followed at all times.

Should the Contractor consider that an extra or additional work is included in these detail drawings, he must within seven days of their receipt by him, represent same to the Architect in writing. The Architect will then, if he thinks such representation reasonable, either revise the detail drawings or issue a Variation Order and no claims for such extra or additional work will be considered when settling up the Contractor's account unless such a signed Variation Order from the Architect can be produced. Under no circumstances must the work as set forth in the specification and shown on the drawings be varied without the Architects written instructions.

3.21 SETTING OUT

The Contractor shall accurately perform all setting out and provide all templates, rods, levels and setting out boards etc. as may be necessary for this purpose and where required maintain these for reference during progress of works. Should any error arise, it shall be corrected to the satisfaction of the Architect at the cost of the Contractor.

3.22 PREVENT TRESPASS TO ADJOINING PROPERTY

No workman employed on the work is to be allowed to trespass upon adjoining properties. If the execution of the work requires that the workmen must enter upon adjoining property, the necessary permission must be obtained by the Contractor, who is to see that these instructions are carried out. The Contractor will be required to indemnify the Client against any claims or action for damage on account of any trespass or misconduct for his employees.
All reasonable means are to be used to avoid inconveniencing adjoining owners and occupiers.

3.23 TENDER DETAILS

The Contractor whose tender is being considered for acceptance must produce a copy of the detailed make up of his tender for examination by the Design Team. This must include quantity calculations, unit rates and extensions totalling up to the Tender Amount. These details will be incorporated into the executed Contract as a Schedule of Rates.

3.24 ERRORS IN TENDERS

In the event of errors being found in a tender (either (a) arithmetical and / or (b) non- arithmetical), the tender will be informed of these and will be asked to formally confirm or withdraw their tender. If the tender is confirmed, a signed endorsement. Where the tender refuses to confirm the tender, the Employer may treat the tender as being invalid.

3.25 SCOPE OF WORKS

The Contractor's tender is as set out on the drawings and specification issued with the tender documents.

3.26 ARTEFACTS / MATERIALS FOUND ON SITE

Artefacts and items of historical significance / value which are discovered or unearthed during the Works shall be immediately reported to the Employer's Representative and will remain the property of the Employer. Building materials found on the site or salvaged items shall not be used in the works without the written approval of the Employer's Representative.

4.0 PROGRAMME & COMPLETION

4.1 Programme Period:
The period to achieve final substantial completion of the works is as set-out in the Schedule to the Volume B - Form of Tender and Schedule document.

The existing school buildings, where the works are being undertaken, comprise a National Primary School. Works are expected to commence mid-August 2026 with completion end-October 2026. Works are planned to commence during the traditional primary school summer holiday period but will continue during the early part of the next school year. The existing school buildings will not remain “live” throughout the traditional primary school summer holiday period (late June – late August) but will be ‘live’ for normal school hours outside the traditional primary school summer holiday period when the Contractor's works will be undertaken in the midst of a 'live' school environment, albeit subject to normal Primary School operational hours and holiday periods.

4.2 PROGRAMME AND MANAGEMENT PROPOSALS:
An indicative bar chart programme for the complete project shall be submitted with the Tender and shall comprise the following:

- Dates when the contractor will require and instructions, work items or any other items to be given by others.
- The order in which and times at which the contractor proposes to execute the works including details of procurement, manufacture, delivery, installation, construction, testing, commissioning and trial operation of Works Items and the sequencing and timing of inspections and dates.
- When contractors documents will be submitted to the Employer’s Representative.
- The estimate of each category of contractor’s personnel and contractor’s things expected to be on site for each period.
- Work to be carried out at the site by the employer’s personnel and others as provided in the works requirements.
- Current critical path, critical resources, floats and other flexibility.
- Details of last review made of programme logic and durations, and of the purpose of any change.
- Works specific sequencing / phasing requirements, **refer to section 4.3 below.**
- Anything else required by the Works Requirement.

The Contractor’s management proposals for the project shall be agreed with the Employer prior to the placing of the Contract, and the agreed arrangements shall be recorded in Minutes of Understanding, which shall form part of the Contract documentation.

4.3 SEQUENCING OF WORKS / PHASING:
The works will be carried in 1 no. phase.

However, it should be noted that the contractor will be required to establish his own sequence and to manage it adequately to completion, within the overall period to achieve substantial completion.

4.4 After giving notice of substantial completion but prior to the issue of any certificate of substantial completion the Contractor shall confirm in the form of an opinion (on Contractor's letterhead) that the works have been constructed in substantial compliance with the Building Regulations to include the following wording:
“I am of the opinion that the works carried out in relation to the construction contract for ..... (enter project title here) have been constructed in substantial compliance with the Building Regulations (Parts A - M)”.

4.5 In interpreting the meaning of “Substantial Completion, (SC)” as set out in the contract, the ER will require the Contractor to demonstrate that the works have been carried to such a stage that they can be taken over by the Employer for their intended purpose. Where BC(A)R applies, the Building Control Amendment Act, S.I No. 9 of 2014 BC(A)R requires that a completion certificate be included on the Statutory Register before the building can be opened, occupied or used, Substantial Completion shall not be deemed to take place until the Certificate of Compliance on Completion has been submitted and validated by the Building Control Authority and relevant particulars thereof have been included on the Register maintained under Part IV of the regulations and the building is entered on the register. Construction completion certificates, commission certificates and test results for all aspects and elements of the project will need to be co-ordinated and assembled by the main Contractor in order to demonstrate this.

- Compliance with the requirements of the Building Control Amendment Act, S.I No. 9 of 2014 BC(A)R does not apply to this project

4.6 The contractor's construction completion opinion (see 4.4 above) shall be in respect of construction in substantial compliance with the current Building Regulations and shall be in such an unequivocal format as to allow the ER to form the opinion that the works have been constructed in substantial compliance with the Building Regulations. This is in addition to the completion of the completion certificate for BCAR in SI 9 2014, where it applies, which is required in order to have the completion of the building registered with the Building Control Authority and in turn to enable the ER to issue the certificate of substantial completion. In this regard it is noted that while designers have a statutory duty to design the works in accordance with the building regulations, contractors have a separate statutory duty to construct the works in accordance with the building regulations and so it is to be expected that the contractor can offer an unequivocal opinion as to their own work. The Assigned Certifier will separately obtain ancillary design certs from designers. Refer also to the 'Schedule of Pre-Commencement and Completion Stage Certification Requirements' included in the appendices to this document.

4.7 Contractor Opinions which do not state substantial compliance with the Building Regulations will be rejected. Contractor Opinions may refer to codes of practices, various standards and the like, provided the Opinion also states substantial compliance with the Building Regulations without qualification.

4.8 Each Designer on the project will offer a standard format (i.e. RIAI or IEI) opinion on compliance of the design with the Building Regulations so it will be necessary for the Contractor to offer an opinion on all design works undertaken by him. Simple positive confirmations are more acceptable than complex (or any) exclusions.

4.9 Where the Contractor selects a material or use he shall whether such a selection is reviewed or approved or not reviewed by the ER Architect or Engineer) keep a record of such selection and make this record available for inspection on site at all times and incorporate this record into the Safety File information.

4.10 Schedule of opinions, certificates, test results, guarantees and the like, which will be necessary to be presented to the ER at least two weeks prior to the issue of any certificate of substantial completion, are listed below. This is not an exhaustive list and may be amended from time to time. The list is indicative of typical documents on various types of buildings, so it is possible that some of the below mentioned documents may not be necessary in this particular project, equally it is possible that necessary test, certificates, opinions are not listed hereunder.

Certificates:

(a) Contractors certificate that the works have been constructed subject to and in substantial compliance with the Building Regulations - see section 4.4 above.
(b) Certificate from other Designer(s) retained by the Employer that the element(s) of the works coming within the Designer(s) remit has reached a sufficient qualitative condition so as to allow the Employers Representative issue a certificate of substantial completion in accordance with clause 9.6 of the contract (note: in order to allow these other designers issue such a certificate, these other designers may need to assemble their own schedule of documents necessary from the contractor or specialists).
(c) Test and commissioning certificate(s) in relation to the smoke detection, fire alarm, emergency lighting and any other essential life safety systems, including the ETCI Completion certificate and test record sheets for the Electrical Installation, Suppliers Commissioning Certificate for the Lightning Protection System, Suppliers Commissioning Certificate for the gas Safety Detection/ Isolation system, and the "Declaration of Conformance Certificate" for any LPG Gas Installation to I.S. 820: 2010.
(d) Product certificates for the key Architectural items
(e) Product certificates for the key M+E items
(f) Product certificates for the key civil / structural items including but not exclusive to, precast concrete floor units, precast concrete kerbs, water supply pipes, valves and fittings, manhole covers and gullies, drainage pipework, geotextile, imported backfill material, structural steel, stainless steel masonry supports and cavity wall ties.
(g) Certificate for the installation and commissioning of any wastewater treatment plant and sand polishing filter.
(h) Certificate for the installation and commissioning of the electromagnetic water meter.
(i) Certificate for the installation and commissioning of the petrol interceptor
(j) Part L compliance report and BER and DEC certificates

Opinions:

(a) Contractor's opinion of compliance that the construction of the works complies with the current Building Regulations - see section 4.4 above.
(b) Designer(s) opinion(s) of compliance that the design of the works comply with the current Building Regulations (note: these opinions may issue from Designers retained by the Employer, as well as specialists who may design an entire works item (e.g. a passenger lift) or the construction design of a works item (e.g. curtain wall). The sum total of all such opinions should equate to the entire works).
(c) Contractors opinion of compliance with planning permission and or Fire Safety certificate where such consents requires the contractor to do something (e.g. construct in accordance with the grant of permission, agree a waste management plan with the Local Authority before commencement of the works, provide as-built drawings or other such contractor action).

Tests (including results):

(a) Sound testing (2 tests per set, min. 2 sets)
(b) Air infiltration (e.g. external doors, windows)
(c) Water penetration (e.g. external doors, windows)
(d) Wind resistance (e.g. external doors, windows)
(e) Weather tightness (e.g. external doors, windows)
(f) Crushing (e.g. concrete)
(g) Sterilisation (e.g. water tank and water pipes)
(h) Air pressure and water pressure testing (e.g. piped services)
(i) Electrical test results
(j) Testing requirements as outlined in the Specification for Civil and Structural Works and M+E Works and as directed by the Engineer including, concrete cube tests, strength test on concrete blocks, water pressure test on sewers, test on ducts, tests for concrete used in the manufacture of the structural precast units, watermain pressure test, sterilisation of watermain and clause 804 backfill material
(k) Testing requirements as outlined in the Specification for M+E Works and as directed by the Engineer

4.11 Should the contractor notify the ER (or any other member of the project team) of his selection of a product to meet the specification, but where that product is not referred to by name in the specification (or on the drawings), then the contractor should certify, on an item-by-item basis, that the product selected by the contractor complies with the specification and incorporate this record into the Safety File information.

4.12 It is intended that a site meeting take place every two weeks during the course of construction and the ER will host these meetings (requirements and frequency to be confirmed by the ER), minute these meetings and circulate the minutes by email. The anticipated attendances may include, but not limited to the following, the Contractors Representative, the Contractors Supervisor as necessary, the Contractors Services Coordinator, the ER, a representative from the offices of the Architect, M&E Engineer, C&S Engineer and QS. A Clerk of Works (CoW) or a Resident Engineer (RE) appointed by the Employer may also attend. The PSCS and or the PSDP may so attend. The Employer may also attend. Notwithstanding the intended frequency stated above the meetings may occur at any time notified by the ER.

The purpose of the site meeting is to review quality of work, progress, and the like. It is therefore primarily a policy and management event, it is not intended as a purely technical meeting. The Contractor should separately schedule technical meetings with his domestic and or named specialists and site management staff. Members of the project professional team may attend such meetings with specialists and/or Contractors Personnel, from time to time, given adequate notice of and agenda for, but do not undertake to attend such meetings. The contractor shall circulate the minutes of all technical meetings with his specialists to the project tem regardless of whether a project team member attended or not.

4.13 Where the Contractor wishes to seek clarification, information or the like, a period of six working days is likely to be the absolute minimum to be required by the design team to meet the above requirements, longer periods should be allowed as necessary e.g. long lead items, items which require Employer decision, etc.
Should the Contractor require specific items to be discussed, considered or resolved at site meetings, these items should be circulated to the project team at least a week prior to the site meeting.

4.14 The contract period includes for drying out of the works generally and in particular includes for drying out

of floor slabs and/or floor screeds to sufficiently low moisture content as is required by the manufacturers/suppliers of the floor covering. The Contractor will be required to measure and certify the moisture content of the floor before laying the floor covering. Should the moisture content be in excess of that allowed for in the floor covering technical data the Contractor should consider the application, at his own cost, of a proprietary liquid DPM between the floor and the floor covering. The works will not be accepted as having reached substantial completion until all floor coverings are installed in accordance with manufacturers technical data.

5.0 WORKS SPECIFICATION

Note:

This specification is intended to embrace and include material and workmanship necessary or required to complete the works with the true intent and meaning of the drawings and everything is to be done that is usual and essential for the full and perfect completion of the work and to the complete satisfaction of the Architect.

This specification is to be read in conjunction with all Architects drawings and specifications. Any dispute arising out of conflicting information in either set of documentation is to be drawn to the attention of the architect for resolution.

5.1 A33 - QUALITY STANDARDS / CONTROL

To be read with Preliminaries/General conditions.

STANDARDS OF PRODUCTS AND EXECUTIONS

110 INCOMPLETE DOCUMENTATION

1. General: Where and to the extent that products or work are not fully documented, they are to be:
   1.1. Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
   1.2. Suitable for the purposes stated or reasonably to be inferred from the project documents.
2. Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 WORKMANSHIP SKILLS

1. Operatives: Appropriately skilled and experienced for the type and quality of work.
2. Registration: With Construction Skills Certification Scheme.
3. Evidence: Operatives must produce evidence of skills/ qualifications when requested.

130 Quality of Products

1. Generally: New
2. Supply of each product: From the same source or manufacturer
3. Whole quality of each product required to complete the Works: Consistent in size, kind, quality and overall appearance
4. Tolerances: where critical, measure a sufficient quantity to determine compliance
5. Deterioration: Prevent order in suitable quantities to a programme and use in appropriate sequence

135 Quality of Execution

1. Generally: Fix, apply, install or lay products securely, accurately plumb, neatly and in alignment
2. Colour Batching: do not use different colour batches where they can be seen together
3. Dimensions: Check on-site dimensions
4. Finished work: Not defective e.g. not damaged, disfigured, dirty, faulty or out of tolerance
5. Location and fixing of products: Adjust joints open to view so they are even and regular.

140 Compliance

1. Compliance with proprietary specification: Retain on site evidence that the proprietary product specified has been supplied
2. Compliance with performance specification: Submit evidence of compliance, including test reports indicating:
   2.1. CE Mark
   2.2. Declaration of performance
   2.3. Properties tested
   2.4. Test methods and procedures
   2.5. Test results
   2.6. Identity of testing agency
   2.7. Tests dates and times
   2.8. Identities of witnesses

141 Standards

1. Irish, British and European Standards shall be the governing standards for the works. Only where expressly stated in the Architectural Specification shall other standards be applicable to the works.
2. All reference to Irish and other standards, regulations and requirements of statutory bodies shall mean the latest published editions at the time of Contract award.

142 Building Codes and Regulations

1. All materials, components, equipment and workmanship shall comply with all Local Authority Codes and Building Regulations, Irish Standards, and any other regulations applicable to the works, together with all relevant Statutory Rules, Regulations, Bye-Laws and other enforceable instruments in both the design and execution of the installation.

143 Submission to Authorities

1. Make submissions to Local Authorities as required and, in the form, prescribed in the terms of the contract
2. When required by the Statutory Authorities, submit to them any component part of the works for appraisal, testing, stamping or certifying.
3. After such component part has been satisfactorily approved, tested, stamped or certified, return the marked component or documentary evidence of its approval, as appropriate, to Site for reference purposes.
4. If the Statutory Authority rejects components, replace the component part(s) with those that are acceptable.
5. Obtain any approvals required from the Statutory Authorities.

144 Health and Safety Regulations

1. Comply with the latest Health and Safety regulations, ensuring that full consideration is given to the health and safety of operatives and building users when completing the Detailed Design, manufacturing, installing or operating and maintaining the works.
2. The Working Drawings shall only incorporate methods of manufacture, installation, maintenance and use that are safe and comply with all Health and Safety and other relevant Health and Safety regulatory requirements.
3. Provide Design Risk Assessments.

150 Inspections

1. Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
   - 1.1. Date of inspection.
   - 1.2. Part of the work inspected.
   - 1.3. Respects or characteristics which are approved.
   - 1.4. Extent and purpose of the approval.
   - 1.5. Any associated conditions.

160 Related Works

1. Details: Provides all trades with necessary details of related types of work. Before starting each new type of section of work ensure previous related work is:
   - 1.1. appropriately complete
   - 1.2. in accordance with project documents
   - 1.3. to a suitable standard
   - 1.4. in a suitable condition to receive a new work
2. Preparatory work: Ensure all necessary preparatory work has been carried out

161B Stability

Accept responsibility for the stability and structural integrity of the Works during the Contract and support as necessary. Prevent overloading: details of design loads may be obtained from the CA.

162B Existing Structures

1. Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
2. Provide and maintain during the execution of the Works all incidental shoring, strutting, needling and other supports as may be necessary to preserve the stability of existing structures on the site or adjoining, that may be endangered or affected by the Works.
3. Support existing structure as necessary during cutting of new openings or replacement of structural parts.
4. Monitor adjacent structures and immediately report excessive movement to the CA.
5. Do not remove supports until new work is strong enough to support the existing structure. Prevent overstressing of completed work when removing supports.

170 Manufacturer’s recommendations/ instructions

1. General: The use of any system such as an insulation system or window system must include all elements of that system as per the manufacturers specification and requirements
2. Changes to recommendation of instructions: : Submit Details
3. Ancillary Products and accessories: Use those supplied or recommended by main product manufacturer.
4. Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

SAMPLES/ APPROVALS

210 Samples
1. Products or Executions: Comply with all other specification requirements in respect of stated or implied characteristic either:
   1.1.to an express approval
   1.2.to match a sample expressly approved as a standard for the purpose

220 Approval of products
1. Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
2. Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
3. Complying sample: Retain in good, clean condition on site. Remove when no longer required.

230 Approval of execution
1. Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
2. Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal or proceed with affected work until compliance with requirements is confirmed.
3. Complying sample: Retain in good, clean condition on site. Remove when no longer required.

ACCURACY/ SETTING OUT GENERALLY

310 Accuracy of Instruments
1. Accuracy in measurement: Use instruments and methods described in BS 5606, Appendix A:
2. Special requirements
   2.1. Instrument …….
   2.2. Linear dimensions: 5mm
   2.3. Angular dimensions: 5mm
   2.4. Verticality: 5mm
   2.5. Levels: 5mm

360 Record Drawings
1. Site Setting out drawings: Record details of a grid lines, setting out stations, benchmarks and profiles, Retain on site throughout the contract and handover on completion

410 Services regulations
1. New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.

SUPERVISION/ INSPECTION/ DEFECTIVE WORK

510 Supervision
1. General: In addition to the constant management and supervision of the works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
2. Replacement: Give maximum possible notice before changing person in charge or site agent

550 Access for Inspection
1. Removal: Before removing scaffolding or other facilities for access, give notice of not less than five working days.

560 Tests and inspections
1. Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.
2. Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
3. Records: Submit a copy of test certificates and retain copies on site.

570 Air Permeability
1. Method: Refer to Spec

2. Requirement: Refer to Spec
3. Compliance: Submit test results.
4. Copy: To be lodged in Safety File.

610 Proposals for Rectification of Defective Products Executions

1. Proposals: Immediately any execution or product is known or appears to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution
2. Acceptability: Such proposals may be unacceptable, and contrary instructions may be issued

620 Measures to Establish Acceptability

1. General: Wherever inspection or testing shows that the work, materials or goods are not in accordance with the contract and measures (e.g. testing, opening up. experimental making goad) are taken to help in establishing whether or not the work is acceptable, such measures:
   1.1. Will be at the expense of the Contractor
   1.2. Will not be considered as grounds for extension of time

630 Quality control

1. Procedures: Establish and maintain to ensure that the Works, including the work of subcontractors, comply with specified requirements.
2. Records: Maintain full records, keep copies on site for inspection, and submit copies on request.
3. Content of records
   3.1. Identification of the element, item, batch or lot including location in the Works.
   3.2. Nature and dates of inspections, tests and approvals.
   3.3. Nature and extent of nonconforming work found.
   3.4. Details of corrective action.

710 Work Before Completion

1. General: Make good all damage consequent upon the work
2. Temporary Markings, coverings and protective wrappings: Remove unless otherwise instructed
3. Cleaning: Clean the works thoroughly in and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials
4. Cleaning materials and methods: As recommended by manufacturers of products being cleaned and must not damage or disfigure other material or construction
5. Minor faults: Touch up in the newly painted works, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
6. Moving part of new work: adjust ease and lubricate as necessary to ensure easy and efficient operations, including doors, windows, ironmongery, drawers, appliances, valves and controls

720 Security at completion

1. General: Leave the Works secure with, where appropriate, all accesses closed and locked.
2. Keys: Account for and adequately label all keys, and hand over together with an itemized schedule, retaining duplicate schedule signed as a receipt.

730 Making Good Defects

1. Remedial work: Arrange access with the Architect
2. Rectification: Give reasonable notice for access to the various parts of the Works.
3. Completion: Notify when remedial works have been completed

5.2 A90 - General Technical Requirements

1.0 GENERAL PERFORMANCE REQUIREMENTS

Adherence to the approach outlined in a Technical Guidance Document is regarded, as evidence of compliance with the requirements of the relevant part of the Building Regulations.
The contractor shall comply with technical guidance document requirements of the building regulations current at the time of the works including:

Part A - Structure
Part B - Fire Safety
Part C - Site Preparation and Resistance to Moisture
Part D - Materials and Workmanship
Part E - Sound
Part F - Ventilation
Part G - Hygiene
Part H - Drainage and Waste Water Disposal
Part J - Heat Producing Appliances
Part K - Stairways Ladders Ramps and Guards:
Part L - Conservation of Fuel and Energy - Buildings Other Than Dwellings
Part M - Access and Use

2.0 COMPLIANCE WITH DEPARTMENT OF EDUCATION & YOUTH TECHNICAL GUIDANCE DOCUMENTS

The contractor shall, where applicable, shall comply with the most current version of the Department of Education & Youth Technical Guidance Document requirements including (but not limited to) the following:

- SDG 02-05-03 – Acoustic Performance in New Primary & Post Primary School Buildings
- Energy Conservation and Mechanical and Electrical Building Services Design Note 202001 July 2020
- Guidance document for the Provision of a Wireless Network Installation in Primary Schools (1st Edition January 2017)
- Guidance document for the Provision of Wireless Network Installations in Post Primary Schools
- Fire Strategy for Schools - A Supplementary Guide for Design Teams
- TGD-002 - Mechanical & Electrical Building Services Engineering Guidelines for Primary School Buildings
- TGD-004 - Information and Communication Technology (ICT) Infrastructure Guidelines for Primary Schools
- TGD-020 - General Design Guidelines for Schools - Primary & Post-Primary (Revision 2 – November 2017)
- TGD-021 - Construction Standards for Schools - Primary & Post-Primary
- TGD-021-1 - Guidance on the specification of windows (Published March 2010)
- TGD-021-1a - Summer Works Scheme Window Replacement Primary & Post Primary Schools
- TGD–021-2 - Guidelines and Standards for Sanitary Facilities in Primary Schools (1st Edition April 2014)
- TGD 021-6-Structural Guidelines Disproportionate Collapse, Horizontal Tie, Vertical Tie and the Requirements in the Building Regulations
- TGD 021-7 Minimum Performance Standards of Roof Materials and Finishes, 1st Edition April 2018
- TGD-022 - Primary School Design Guidelines (Revision 3 - February 2013)
- Guidance on the Protection of School Building Services Systems in Cold Weather
- TGD-030 - Amendments to the M&E Building Services Guidelines (2004) TGD - 002 & ICT Infrastructure Guidelines TGD - 004 for Primary Schools (Revision 1 June 2014)
- TGD-030.1 - Guidelines on Mains Water Distribution Systems in Primary Schools (First Edition June 2014)
- TGD-033 - School Building Projects and Compliance with Part L of the Building Regulations 2017, 1st Edition February 2018

The above are available to download in their current format from: https://www.education.ie/en/School-Design/Technical-Guidance-Documents/

3.0 CE MARKING

The EU Construction Products Regulation (No. 305/2011 - CPR) requires that construction products that are covered by a harmonised European product standard or are required to conform to a European Technical Assessments should normally have a CE marking.

All products specified shall carry the appropriate CE marking as required by the EU Construction Products Regulation (No. 305/2011 - CPR). The CE marking shall include reference of the product standard and the levels or classes of performance being declared against some or all of the characteristics covered by the standard. The CE marking shall be on the product, its label, packaging or accompanying documentation. Relevant documentary evidence (i.e. an EC Declaration of Conformity, which must contain the following information: manufacturer's details (name and address, etc.); essential characteristics for the product; compliance with appropriate European standards and performance data; if relevant the identification number of the Notified Body; and a legally binding signature on behalf of the manufacturer.) shall be submitted to the ER on request and shall be incorporated into the O&M and H&S manuals upon project completion.
The CE marking shall be followed by the identification number of the body involved in the production control stage.
The CE marking shall be accompanied by the name or identifying mark of the producer, the last two digits of the year in which the marking was affixed, and where appropriate, the number of the EC certificate of conformity and, where appropriate, indications to identify the characteristics of the product on the basis of the technical specifications.

4.0 BUILDING ENERGY RATING

Where applicable, Final Building Energy Rating (BER) Certificate to be carried out by appointed contractor at their expense. Tests contractor shall provide the local authority with a Building Energy Rating of the completed building as assessed by a Sustainable Energy Authority Ireland registered assessor, registered to carry out BER assessments of the designated class of (non-domestic) building to which this specification applies; the rating shall be the NZEB standard (obtained from the provisional BER for said building). Should the building fall below the specified rating, the contractor must carry out such improvements and remedial works as to bring it in line with such at his/her own expense.
Certificate: To be lodged in building manual.
Submit: Before the date for completion stated in the contract.

5.3 INJECTED CAVITY WALL INSULATION

GENERAL

Cross-reference
General: Read with A90 General technical requirements.

PRODUCTS

The cavity wall insulation shall be Kingspan EcoBead Platinum 35, or equal and approved, with a Thermal Conductivity (W/mk) 0f 0.035, 100 mm thick, comprising of a graphite infused bonded bead expanded polystyrene (EPS) insulation, injected in to existing cavity wall construction.

The product shall be manufactured in accordance with the requirements of EN 16809-1: 2019 and under a management system certified to ISO 9001: 2015, ISO 14001: 2015, ISO 45001: 2018, ISO 50001: 2018 and ISO 37301: 2021 installed by a certified installer of such systems. All in accordance with the Kingspan EcoBead cavity wall insulation Agrément Cert, refer to Appendix B.

Agrément certified as suitable for the purpose and exposure situation.

EXECUTION

Site Survey:
A survey is to be carried out prior to installation by a trained Cavity Wall Insulation surveyor, acting on behalf of the Manufacturer/ Approved Installer who is to ascertain the suitability of the property for the Cavity Wall Insulation System.

Suitability of walls:
Check: Before and during filling of cavities.
Standard: To BS 8104 and BS 8208-1.
Defects: Report immediately.

- Remedial work: Obtain approval before starting insulation work.

Preparation

Site Preparation:
Before commencing work the installer to ensure that the property has been correctly surveyed and is suitable for insulation with the approved Cavity Wall Insulation System.

Services:
Do not use in direct contact with PVC sheathed electrical cables or hot water pipes. Electrical cables should to be enclosed in suitable conduit.

Gaps/ Openings into cavity: Seal to prevent loss of fill.
Air bricks/ grilles of untrunked vents: Remove. Seal openings into cavity.

Injection holes
Arrangement: Form injection holes neatly.

- Pattern: Regular.
- Size: Recommended by cavity fill manufacturer.

Before commencing filling of each wall: Form all holes in that wall.
Dpcs, cavity trays, flues, etc: Do not damage.
Debris: Prevent from falling into cavity.

Proprietary cavity fill
Installer: Approved and certified by the system manufacturer

Installing cavity wall insulation
Installation: Installation to be carried out in accordance with the requirements of the Certificate holders installation instructions and the NSAI Agrément Surveillance Scheme document.
Fill cavity completely.
Spillage: Remove as it occurs

Making good
Blockages: Remove from vents and refix or replace any air bricks.
Injection holes: Fill, replacing existing materials where possible.

- Finish: Close match of colour and texture with existing surface.
- Sample area: Complete the first few holes and obtain approval before completing remainder.

Flues
With no appliance: Remove blockages.

- Inspection/ testing: Give notice. Carry out a smoke test if a full inspection cannot be made.

With an appliance fitted: Remove blockages.

- Testing: Give notice. Test before and after filling cavities.

Records
General: Keep a detailed record of the installation including survey results, materials, weather conditions and unusual features.

Documentation
Copies of certificates, records, guarantees and other documents: Submit.
• Timing: On completion.

5.4 EXTRENAL RENDERING

GENERAL

Cross-reference
General: Read with A90 General technical requirements.

Note: The following external waterproof rendering system has been approved in this instance to meet particular project requirements and environmental conditions. The successful Contractor is permitted to offer alternative equal and approved systems for the approval of the ER in advance of the works commencing.

Existing Substrates:
A Parex Pre-Render Inspection was completed.
Masonry concrete substrate is suitable to receive the render system. Location of the site is suitable for application and installation of the Monogris E Siloxane system and final finish thickness will be 20mm to ensure waterproofing properties are maintained.

1. SYSTEM DESCRIPTION Parmurex + Siloxane Acrylic Reinforced Topcoat

1. Fixopierre bonding liquid. Added to the Parmurex basecoat at a rate of 500ml per 25kg bag.
2. Parmurex basecoat. Waterproofing render basecoat. Application of 20mm by machine (2no. coats). To be mesh reinforced, typically allow 50%. See below
3. TV10 Reinforcing Mesh. Alkali-resistant fibreglass flexible mesh for reinforcement of Parex hydraulic rendering systems.
4. Revlane+ Regulateur Primer. Priming liquid for regulating substrate opaque prior to application of Siloxane acrylic topcoats.
5. Revlane+ Siloxane Acrylic self-coloured topcoat. Organic fire-retardant render designed for application on the Parmurex render system.
6. Beading as per system requirements as angle beads, stop beads, movement beads & window/door frames and window cill seal beads, as detailed elsewhere.
7. All stress points, to incl. all door heads and corners of windows, to be meshed during beading stage with Parex TV10 mesh.

2. GENERAL REQUIREMENTS

Surface preparation requirements for **PAREX** renders are the same as for ordinary sand and cement renders; IS EN 1996-1-1:2005 + A1 2012 Eurocode 6 Code of practice for “External renderings” should be followed.
Only clean water should be used.
Ideally scaffolding should be independently tied to allow uninterrupted application as patch repairs can be visible. Ensure there is sufficient space (minimum of 150mm) between the inner board and the wall being rendered.
Protection must be provided when applying **PAREX** renders in rain or other inclement weather. Application should cease in temperature below 5°C or where rapid freezing is considered to be a potential threat.
Cement products should not be applied to substrates which are frost laden or which have recently been subject to prolonged rain.
Do not render onto saturated substrates as this may affect the bond strength and cause lime bloom (discolouration), salts to occur and patchiness due to uneven suction.
Local weather and site conditions must be taken into account by the applicator before any cement product is applied.
When applying in hot weather, it is advisable that work coincides with the shaded areas of the building.
During longer periods of hot and dry weather it may be appropriate and necessary to apply an even mist spray of clean water to the substrate before application and to surface finish for a couple of days afterwards subject to site and weather conditions.

3. SURFACE PREPARATION

All surfaces must be clean, suitably dry, sound and free from anything that may interfere with the adhesion of the material to be applied. Read fully and take particular note of the product data sheets and follow the surface preparation and suitability checks in full.
All paint must be removed back to the masonry background.

Where cracks are evident the application company must be satisfied these have been dealt with in the appropriate manner.
Further advice may also be included in the Substrate Application section below.

4. TEST PANEL & COLOURS

System to selected colour. Contractor to allow for the provision of 3no. 1.5m x 1.5m sample panels. Prior to commencement on site the colour of the approved product to be confirmed as a suitable match to the approved sample.

5. CONCRETE BLOCK/BRICK – medium density concrete block/brick

Where different strength blocks are being rendered over the incorporation of the **Parex TV10** reinforcement mesh will be necessary to assist with the possibilities of differential movement. The mesh must extend a minimum of 300mm over the different materials in all directions.

6. Parmurex + Siloxane Acrylic System Application

Basecoats:
Spray apply Parmurex as a onecoat and level, compact 12mm, level the surface with a straight edge, spatula or trowel flat. Lightly press the TV10 reinforcing mesh into the basecoat, taking care to overlap 100mm at each joint. When the initial basecoat is sufficiently cured, normally between 3 & 36 hours, spray apply the next basecoat at 8mm to completely integrate the reinforcing mesh in the basecoat. When the basecoat has cured sufficiently apply an “I” section to remove any high spots and float finish smooth ready to receive primer & thincoat topcoat. Leave to cure for minimum 28 days. This curing time is subject to weather conditions. In milder months it is greatly reduced.

Primer
Mix the primer carefully in the tub to obtain a homogenous paste.
Apply acrylic primer Revlane+ Regulateur using a long hair roller or brush & leave to dry for 16 hours.

Siloxane Acrylic Topcoat
To selected colour.
Mix the paste in the tub to an even consistency using a slow speed mixer.
Apply a regular coat of Revlane+ Siloxane with a stainless steel trowel levelling the thickness to that of the largest particle.
For finishing use regular, circular motions with a plastic float to obtain desired finish.
After scraping, any dust on the surface should be removed by brushing with a clean soft bristle brush.
Always stand back and examine the whole surface for blemishes.
Do not apply the Siloxane acrylic topcoat below DPC.

7. CRACK CONTROL - WINDOWS & DOORS etc.

To reduce the risk of façade cracking at high stress locations, particularly on new build construction, it is recommended that any likely stress fracture locations, for example around windows and doors, **Parex TV10** Alkaline resistant fibreglass reinforcement mesh will be installed. This material alone will not prevent cracking; it is only included as an additional precaution to well-constructed and reinforced substrate materials.
Where existing masonry has cracked, or where the abutment of two forms of masonry meet e.g. a rear concrete block extension against a brick house, it is recommended that this is first repaired/reinforced.

The **Parex TV10** mesh should not be mechanically fixed but fully embedded and bonded within the render during the initial application/key coat stage.

All beads to be PVC.

Vertical & Horizontal Movement Joint Beads - Use a heavy-duty PVC Movement Joint Bead with a flexible white/matching co-extruded synthetic rubber membrane centre. Fix to the concrete brick using Parmurex dabs at 300 mm centres. Ensure the structural expansion gap remains completely free of hard mortar or render backfill.

Base Profile / Render Stop Beads - Ultra-heavy-duty PVC Render Stop Bead (Bellcast Profile) with a down-turned water drip edge. Fixed horizontally a minimum of 150 mm above finished ground level or immediately above the physical damp-proof course (DPC) line to prevent ground-moisture bridging.

Corner / Corner Mesh Profiles - Install PVC Angle Beads integrated with a pre-bonded TV10 alkali-resistant fiberglass mesh wing. Placed at all external corners, window reveals, and door jambs, etc. to provide impact resistance and precise geometric edges.

Window & Door Frame Seals incl. window cills - Self-adhesive **PVC Aperture Sealing Beads** featuring a foam sealing strip and protective tear-off strip. Applied directly to window/door frame and window cills frames before rendering to ensure a wind-tight, waterproof elastic seal

8. MOVEMENT JOINTS

Movement joints should be introduced into the structure as recommended by the designer/block manufacture and in accordance with the guidelines offered under IS EN 1996—1-:2005 – Code of practice for use of masonry and SR 325:2013 + A1:2012 – Code of Practice for design of joints and jointing in building construction.

Movement joint beads must be applied to correspond with the building movement joints on the facade. Movement joints created solely within the render will **NOT** prevent cracking so there is no need for horizontal day joints on panels under 100sqm.

9. OTHER DESIGN CONSIDERATIONS

Gutters and down-pipes
Must be designed to ensure they keep water away from the render facades.

Flashings, overhangs, sills and copings
These should be suitably designed with sufficient overhangs and drips to avoid creating a capillary path, which may cause water to collect in a single location. Overhangs should be of sufficient design to prevent water washing or splashing on to the surface of the render as this could cause staining.

Pipes, Cable, Gas Vents and other projections
It is advisable to ensure the render is not placed directly against projecting pipes or gas vents or to bury pipes or cables within the render. For projecting pipes these must be sleeved using an appropriate material that is at least 10mm larger than the diameter of the pipe or projecting item. For gas vents or similar, these should have an appropriate sleeve or receive a stop bead neatly fitted around the vent, leaving an even 5mm gap around. In all instances an appropriate weatherproof sealant should be used to seal the gap.
For pipes and cables running up or along the wall an appropriate access duct should be installed.

Apply TV.10 Re-enforcing mesh onto the block work around the electrical cabinets prior to the application of the system.

10. SITE PRECAUTIONS

Before rendering begins, ensure the scaffolding has been positioned to provide suitable access to the whole of the facades. Avoid placing scaffold tubes close to the walls as this causes application difficulties which may result in sight lines showing when the scaffold is stripped.
Due to the nature of the render ensure that water is not allowed to splash onto the finished face particularly during the first 48 hours after application as this could cause staining particularly noticeable on strong colours. If in doubt place temporary protection to vulnerable areas.
Ensure that all guttering and temporary down-pipes are in position well before rendering commences. This is essential to avoid wet patches being formed where a concentration of water has collected from an open down-pipe hopper. Carefully remove splashes of material, in particular from glass or aluminium immediately as they may etch the surface and leave a permanent mark

13. Repairs

One coat renders can be repaired but certain skills and requirements will need to be observed dependent upon the damage that has taken place. Any damage should be reported as soon as possible as patching within 7 days can normally be achieved.
For assistance contact Parex.

14. Curing

Care must be taken to protect cement products soon after the application from rapid freezing and heavy rainfall. For other drying conditions i.e. where there is direct exposure to sunlight or drying winds, the render may require to be kept evenly damp for about 3 – 4 days by lightly spraying periodically with clean water. This process is important to ensure complete hydration of the cement and the lime can take place.

15. Site Inspection

Tradecraft/Parex will inspect prior to the first application to ensure bead depths are maintained and re-enforcing and all preparation is installed correctly. Weather conditions and substrate will also be examined on the day. Further site inspections and reports to be issued during basecoat and finishcoat stages.

16. Application of the external waterproof rendering system

Works to be undertaken only by Parex approved and registered applicators, approved by the manufacturer in the application of the external waterproof rendering system as manufacturer's product warranty for this project is required to be issued to the ER upon completion of this project.

17. Manufacturer's Warranty

Upon completion of this project the manufacturer's 10 year product warranty for this project is required to be issued to the ER.

Appendix A

MARY HARRINGTON ARCHITECTS
DESIGN RISK ASSESSMENT

Mary Harrington Architects.

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HEALTH & SAFETY DESIGN RISK ASSESSMENT

Job No.:	26-108
Client:	Board of Management, St. Mary's Primary School, Youghal Road, Dungarvan, Co. Waterford, X35 TN99.
Project	Proposed Climate Action and Fabric Defects Works at St. Mary's Primary School, Youghal Road, Dungarvan, Co. Waterford, X35 TN99.
Stage:	Sketch Scheme ☐ Tender ■ Construction ☐
Date:	21st May, 2026
Completed by:	Mary Harrington.
Reviewed by:	Mary Harrington.

1. Risks present in the design and who will be affected (at this Stage)

		Yes	No	Who will be affected (at this stage)			
				Public	Construction Worker	Maintenance Personnel	Client/End User
1.	After Build Maintenance	yes				yes	yes
2.	Asbestos		no				
3.	Biological Hazards		no				
4.	Burial under earth fall		no				
5.	Chemical Hazards		no				
6.	Collective Protection Needed	yes			yes		
7.	Compressed Air Systems/Divers		no				
8.	Confined Spaces		no				
9.	Construction site security	yes			yes		
10.	Demolitions		no				
11.	Deliveries	yes		yes	yes		yes
12.	Designed Completion Date	yes		yes	yes		yes
13.	Drowning		no				
14.	Dust	yes			yes		yes
15.	Engulfment in swampland		no				
16.	Entrance to site on busy road	yes		yes	yes		yes
17.	Existing buildings in use	yes		yes	yes		yes
18.	Explosives		no				
19.	Falling from a height	yes			yes		
20.	Falling Materials / Debris	yes			yes		
21.	Fire / Hot Works	yes			yes		yes
22.	General Cleaning / Housekeeping	yes			yes		
23.	Heavy Prefabricated Plant		no				
24.	Heavy Steel and Concrete Structures		no				
25.	Installation of Scaffolding	yes			yes		
26.	Ionising Radiation		no				
27.	Lead	yes			yes		
28.	Manual Handling	yes			yes		
29.	Noise	yes			yes		yes
30.	Overhead Services Lines	yes			yes		
31.	Plant & Equipment Maintenance	yes			yes	yes	

32.	Poor Lighting	yes			yes		
33.	Pre-cast Concrete Frame		no				
34.	Roof Access	yes		yes	yes		
35.	Slipping /Tripping Hazards	yes			yes		yes
36.	Site Traffic	yes		yes	yes	yes	yes
37.	Space/Site restrictions	yes			yes		yes
38.	Statutory Inspections	yes			yes		
39.	Underground Services		no				
40.	Underground Works		no				
41.	Undermining Existing Foundations		no				
42.	Unstable Ground		no				
43.	Window Cleaning		no				
44.	Work on or near existing Boundaries / Structures	yes			yes		yes
45.	Work on or near Fragile Roof	yes			yes	yes	yes
46.	Work on existing elect. services	yes			yes		yes
47.	Work on existing mech. services	yes			yes		yes
48.	Work on existing fire alarm services	yes			yes	yes	yes
49.	Work on existing drainage services		no				
50.	Working on the Employer's premises / outside site boundary	yes		yes	yes		yes
51.	Site entrance to use existing vehicular school entrance	yes		yes	yes		yes

2. Design action taken to reduce the specific risks (at this stage) (See Schedule Three - Principals of Prevention)		**Residual Risk Level** (where relevant)		
		Low	**Med.**	**High**
1.	The designed completion date has been set with a view to allowing the Contractor sufficient time within which to safely undertake the works.			
2.	Safety file to be prepared by the PSDP and handed over to the Client			
3.	Contractor's working area within the confines of the existing school building. Works to be carried out partially during the summer school holiday period and partially during the school academic year. Contractor's working areas to be securely fenced off c/w suitable safety signage. Access restricted to authorised personnel only. Hoarding line set so as to maintain existing emergency escape routes. All such routes are to be kept clear and clean at all times.	√		
4.	Existing school entrance and school access roadways to have shared access between School Users and Contractors. Contractor use of this entrance and access roadways to be restricted to use by the Contractor outside of normal school 'drop-off' and 'pick-up' hours. Site entrance is off the adjacent public road. Contractor will be required to submit a method statement to the Design Team for approval in advance of the works commencing. Design Team to agree same with School. This method statement to clearly outline how the Contractor proposes to manage and use this shared entrance whilst ensuring the safety of all school users and members of the public. It is planned to undertake the works partially during the school summer holidays, although the school may continue with limited usage throughout the summer period, and partially during the school academic year. Use of holiday periods are to be maximised.		√	
5.	Contractor to erect suitable warning signage to warn the public of construction entrance. In addition to the standard 100m, 200m and 300m 'construction site ahead' warning signage, the Contractor is to erect suitable additional signage/employ appropriate control measures appropriate to the assessed risks both on the public road and at points of exit from the school grounds.		√	
6.	Contractor to consult with the Architect prior to carrying out any works near existing adjacent buildings	√		
7.	Ground conditions and work areas to be surveyed by the Contractor prior to	√		

	construction			
8.	Contractor to identify all overhead lines prior to commencing site works and take all necessary precautions in compliance with the H.S.A 2019 Code of Practice for Avoiding Danger from Overhead Electricity Lines	√		
9.	Contractor to cater for dust prevention / containment measures	√		
10.	Scaffolding to be designed and erected by qualified personnel. All works to be carried out as per the Code of Practice for Access and Working Scaffolds 2008 and the HS&W at Work (Work at Height) Regulations 2006.	√		
11.	All roofworks to be undertaken in compliance with the H.S.A Code of Practice for Safety in Roofwork	√		
12.	MEWP's to be used for roof maintenance / inspections	√		
13.	PSDP to review school's asbestos register to assess any possible impact on the works. Any asbestos items found to impact upon the works to be removed by Specialist Contractor in advance of the building works commencing.	√		
14.	Where required, all underground services to be ascertained by the Contractor prior to commencing site works and take all necessary precautions in compliance with the Code of Practice for Avoiding Danger from Underground Services, 2016 (www.HSA.ie). Works to underground services are to be carried out as per the tender documents.	√		

3. Risks that the client has taken responsibility for (at this Stage)	
1.	Risks present in the design and which affect the Client / End User are noted in section 1 and are to be the responsibility of the Client / End User. In particular, the risks noted below are to be brought to the attention of the Client / End User.
2.	**Working on the Employer's premises / outside site boundary**: In advance of the works commencing, the School are to advise all School Users including staff, students, visitors and parents of the planned construction works together with the resulting access restrictions / arrangements due to the planned works.
3.	**Site entrance and access roadway to the site is along existing school entrance and school access roadway and is to have shared usage between the School Users and Contractors:** In advance of the works commencing, the School are to advise all School Users including staff, students, visitors and parents of the planned construction works together with the resulting access restrictions / arrangements due to the planned works. Contractor use of this entrance and access roadway to be restricted to use by the Contractor outside of normal school 'drop-off' and 'pick-up' hours. Contractor will be required to submit a method statement to the Design Team for approval in advance of the works commencing. Design Team to agree same with School. This method statement to clearly outline how the Contractor proposes to manage and use this shared entrance whilst ensuring the safety of all school users and members of the public. It is planned to undertake the works partially during the school summer holidays, although the school may continue with limited usage throughout the summer period, and partially during the school academic year. Use of holiday periods are to be maximised.
4.	**Work on or near existing Boundaries / Structures:** In advance of the works commencing, the School are to advise all School Users including staff, students, visitors and parents of the planned construction works together with the resulting access restrictions / arrangements due to the planned works.
5.	**Entrance to site on busy road:** In advance of the works commencing, the School are to advise all School Users including staff, students, visitors and parents of the planned construction works together with the resulting access restrictions / arrangements due to the planned works.
6.	**After Build Maintenance:** Draw up a maintenance plan for the completed works. The PSDP will handover the Safety File to the Client upon completion of the works.
7.	**Deliveries:** The client shall ensure that all deliveries to the school shall be aware of any site restrictions due to construction works.

4. Risks that contractor is to be made aware of (Inclusion in Preliminary Plan)	
1.	Risks present in the design and which affect the Contractor are noted in section 1 and are to be provided for in both the Preliminary and Construction Stage Health and Safety Plans. In particular, the risks noted below are to be provided for in the Preliminary Health and Safety Plan.
2.	**Existing Buildings in Use:** Existing adjacent buildings comprise a National School. It is planned to undertake the works partially during the school summer holidays, although the school may continue with limited usage throughout the summer period, and partially during the school academic year. Use of holiday periods are to be maximised. School to shut for the following holiday periods (dates given are approx. and to be confirmed at that time): - Summer Holidays - Summer holidays from late June, school re-opens late August 2026 The contractor is to have right of access to the site and is to carry out site set-up as per the tender drawings which provides for use of existing school vehicular entrance only and then only during specific times i.e. outside school drop-off and pick-up times. Exact time restrictions to be agreed with the ER in advance of the works commencing. This entrance and site area is to be reinstated and returned to its 'as-found' condition.
3.	**Construction Site Security:** Access to the site and all site boundaries are to be maintained secure at all times, in particular to ensure no unauthorised access by the adjacent school students and staff. Access to the site is to be controlled at all times and only authorised access is to be permitted.
4.	**Entrance to site on busy road:** The Contractor is to erect suitable signage to warn all approaching traffic of the construction site entrance at a distance of 100m, 200m and 300m either side of the site entrance. In addition to the standard 100m, 200m and 300m 'construction site ahead' warning signage, the Contractor is to erect suitable additional signage/employ appropriate control measures appropriate to the assessed risks both on the public road and at points of exit from the school grounds.
5.	**Site entrance and access roadway to the site is along existing school entrance and school access roadway and is to have shared usage between the School Users and Contractors:** Existing school entrance and school access roadways to have shared access between School Users and Contractors. Contractor use of this entrance and access roadways to be restricted to use by the Contractor outside of normal school 'drop-off' and 'pick-up' hours. Contractor will be required to submit a method statement to the Design Team for approval in advance of the works commencing. Design Team to agree same with School. This method statement to clearly outline how the Contractor proposes to manage and use this shared entrance whilst ensuring the safety of all school users and members of the public. The Contractor is to restrict all deliveries and use of the proposed shared school entrance and school access roadway during school 'drop-off' and 'pick-up' times. These times are normally 8.45 am – 9.45am and 1.45pm – 2.15pm and 2.45pm – 3.15pm. These times are indicative and, in this regard, it is the responsibility of the Contractor to liaise with the Design team and Client in advance of the works commencing and to submit a method statement outlining how the Contractor proposes to safely operate and manage his access and egress requirements to and from the site throughout the construction period. This method statement is to be agreed with the Design Team in advance of the works commencing. It is planned to undertake the works partially during the school summer holidays, although the school may continue with limited usage throughout the summer period, and partially during the school academic year. Use of holiday periods are to be maximised.
6.	**Deliveries:** The contractor will need to coordinate the deliveries & removals, the erection of scaffolding etc to avoid conflicting busy times.
7.	**Overhead Service Lines:** The Contractor is to take due care of any overhead services that cross the site and identify these. Relocation / management of these services will be required. Contractor to comply with 2019 Code of Practice for Avoiding Danger from Overhead Electricity Lines
8.	**Underground Services (where applicable):** Any existing known underground services are noted in the tender documents. The Contractor is to establish the extent of all underground services and comply with the Code of Practice for Avoiding Danger from Underground Services, 2016 (www.HSA.ie). Works to underground services are to be carried out as per the tender documents.
9.	**Falling from a Height:** Collective Protection and P.P.E. to be provided appropriate to the work at hand. All works at height are to be carried out as per the HS&W at Work (Work at Height) Regulations 2006.
10.	**Installation of Scaffolding:** All works to be carried out as per the H.S.A 2018 Code of Practice for Access and Working Scaffolds and the SH&W at Work (Work at Height) Regulations 2006.

11.	**Roofworks:** All roofworks to be undertaken in compliance with the H.S.A Code of Practice for Safety in Roofwork
12.	**General Cleaning / Housekeeping:** All goods / materials to be stored / stacked in a safe fashion. All open containers to be sealed. All waste / empty chemical containers to be correctly and safely disposed of. All work areas to be kept clean and tidy.
13.	**Working on the Employer's premises / outside site boundary:** Where works are to be undertaken outside the site boundary / on Employer's Premises the Contractor is to issue a method statement, for approval of the design team, in advance of carrying out such works. The method statement is to set-out how the Contractor proposes to carry out this work whilst ensuring the safety of all personnel, both Contractor and School, are maintained. All employees are to be familiar with the premises on which they are to work. Ensure that proper signage is provided and areas cordoned off as appropriate. The Contractor is to make his employees aware of general and specific hazards and make provisions for emergencies, first aid, etc.
14.	**Fire/ Hot Works:** Use of fire / hot works in the construction is to be minimised. Where required, works are to be undertaken by suitably trained personnel. A Hot Works permit system is to be operated, which is to outline details of the proposed works, personnel involved, specific safety precautions to be employed, specific PPE to be worn, specific fire check /fire watch procedures to be followed, etc.
15.	**Work on existing electrical / mechanical / fire alarm services:** Only suitably qualified personnel are authorised to work on such existing services. Prior approval of the design team and Client is required prior to breaking into any such existing services.
16.	**Work on or near existing Boundaries / Structures:** Access to the site and all site boundaries are to be maintained secure at all times, in particular to ensure no unauthorised access by the adjacent school students and staff. Contractor's working area to be securely fenced-off. Access restricted to authorised personnel only. Hoarding line set so as to maintain existing emergency escape routes. All such routes are to be kept clear and clean at all times.

How to fill in the Design Risk Assessment

At each Stage of the design a 'Design Risk Assessment' must be completed. This document will assist in the fulfilling of legal requirements as designers, as listed below, and will also record in writing how the risks involved in the designed project have been designed out or evaluated.

1. Risks present in the design: Mark 'Yes' or 'No' if risks are present or not in the design at this Stage. Mark who will be affected by the risks identified.
2. Design action taken to reduce the specific risks: List the steps taken to eliminate, reduce, evaluate, combat, adapt etc. (See first schedule Principals of prevention listed below) the risks present in section 1 at this Stage. Indicate the seriousness of the risk by ticking the appropriate Low, High or Medium Risk box.

3. Risks that the client has taken responsibility for: List any risks from section 1 that the client has agreed to take responsibility for at this stage. Acceptance by the client must be in writing and accompany this document.

4. Risks that contractor is to be made aware of: List any risk from section 1 that will be passed to the contractor and which they will have to consider at the Tendering Stage and Construction Stage.

Schedule Three

General Principles of Prevention

1. The avoidance of risks.
2. The evaluation of unavoidable risks.
3. The combating of risks at source.
4. The adaptation of work to the individual, especially as regards the design of places of work, the choice of work equipment and the choice of systems of work, with a view, in particular, to alleviating monotonous work and work at a predetermined work rate and to reducing the effect of this work on health.
5. The adaptation of the place of work to technical progress.
6. The replacement of dangerous articles, substances or systems of work by safe or less dangerous articles, substances or systems of work.

7. The giving of priority to collective protective measures over individual protective measures.
8. The development of an adequate preventative policy in relation to safety, health and welfare at work, which takes into account of technology, organization of work, working conditions, social factors and the influence of factors related to the working environment.
9. The giving of appropriate training and instructions to employees.

References

- Health and Safety Authority (www.HSA.ie - Homepage)
- Health and Safety Authority (Publications and Forms - Construction)
- Health and Safety Authority (Legislation)
- Safety, Health and Welfare at Work Act 2005
- Safety, Health and Welfare at Work (Construction Regulations) 2013
- Summary of Key Duties under the Procurement, Design and Site Management Requirements of the Safety Health and Welfare at Work (Construction) Regulations, 2013 (www.HSA.ie)
- Guidelines on the Procurement, Design and Management Requirements of the Safety Health and Welfare at Work (Construction) Regulations, 2013 (www.HSA.ie)
- Safety, Health and Welfare at Work (General Application) Regulations 2007
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006
- Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 - 2010
- Safety, Health and Welfare at Work (Carcinogens) Regulations 2001-2019
- Code of Practice for Avoiding Danger from Overhead Electricity Lines 2019 (www.HSA.ie)
- Code of Practice for Access and Working Scaffolds, 2018 (www.HSA.ie)
- Code of Practice for the Design and Installation of Anchors, 2017 (www.HSA.ie)
- Code of Practice for Working in Confined Spaces, 2017 (www.HSA.ie)
- Code of Practice for Avoiding Danger from Underground Services, 2016 (www.HSA.ie)
- Code of Practice for Safety in Roofwork, 2016 (www.HSA.ie)
- Construction Safety Code of Practice for Contractors with Three or Less Employees, 2008 (www.HSA.ie)
- Code of Practice for Chemical Agents Regulations, 2020 (www.HSA.ie)
- Code of Practice for Biological Agents, 2013 (Updated 2017) (www.HSA.ie)
- Mobile Elevated Work Platforms, 2017 (www.HSA.ie)
- Asbestos Information Sheet, 2013 (www.HSA.ie)
- Asbestos-containing Materials (ACMs) in Workplaces - Practical Guidelines on ACM Management and Abatement, 2013 (www.HSA.ie)
- Safety, Health and Welfare at Work (Control of Noise at Work) Regulations 2006
- Safety, Health and Welfare at Work (Control of Vibration at Work) Regulations 2006

Notes:

1. These are designer's comparative risk evaluations carried out with the aim of, as far as possible, eliminating or minimising likely risks on site. Contractors, who must deal with and control all residual risks on site, must carry out their own definitive risk assessments *ab initio* for that purpose.
2. These risk assessments have been carried out taking account of the HSA Guidance and the ACEI/ IEI/RIAI manual 'Designing for Safety in Construction' (DSC). Before reading the assessments, other parties are advised to refer to DSC and in particular to paragraphs 19 to 22 incl.
3. The assessments relate only to those aspects of the Project which, under the terms of our appointment by our client, we are responsible for designing.

Appendix B

KINGSPAN ECOBEAD CAVITY WALL INSULATION - AGRÉMENT CERT AND DECLARATION OF PERFORMANCE

IRISH AGRÉMENT BOARD
CERTIFICATE NO. 05/0226
Kingspan Century, t/a Kingspan Ecobead
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Kingspan EcoBead Cavity Wall Insulation System

Isolent de murs à double parol
Kerndämmung

NSAI Agrément (Irish Agrément Board) is designated by Government to carry out European Technical Assessments.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2019**.

PRODUCT DESCRIPTION:
This Certificate relates to the Kingspan EcoBead Cavity Wall Insulation System.

Kingspan EcoBead Cavity Wall Insulation is an expanded polystyrene material which is injected in bead form with a binding agent into masonry cavity walls.

In the opinion of NSAI, the Kingspan EcoBead Cavity Wall Insulation System, as described in this Certificate, complies with the requirements of the Building Regulations 1997 to 2019.

USE:
The product is used for the thermal insulation of new or existing cavity walls up to 12 meters in height, where both leaves are constructed of either masonry or concrete or a combination thereof, subject to the conditions contained in Part 3 of this Certificate. It also facilitates the control of surface and interstitial condensation in walls.

The product is approved for installing in masonry cavity walls for both full fill or partial fill situations when a residual cavity width of 40mm or greater exists subject to the conditions identified in Cl. 2.4.4 of this certificate.

MANUFACTURE AND MARKETING:
The product is manufactured by:

Kingspan EcoBead,
Askeaton,
Co Limerick.

Kingspan Insulation
Bree Industrial Estate,
Castleblayney
Co.Monaghan.

Tel: +353 61 604600
Fax: +353 61 604601
E-mail: mail@aerobord.ie
Website: www.kingspanaerobord.ie

Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at www.nsai.ie

1.1 ASSESSMENT

In the opinion of NSAI Agrément, Kingspan EcoBead Cavity Wall Insulation if used in accordance with this certificate, can meet or contribute to meeting the requirements of TGD Part L of the Irish Building Regulations 1997 to 2019 as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2019

REQUIREMENT:

Part B – Fire Safety

B3 & B8 – Internal fire spread (Structure)
When used in accordance with this certificate the Kingspan EcoBead cavity wall insulation system will meet the relevant requirements of TGD Part B3 & B8.

Part C – Site Preparation and Resistance to Moisture

C4 – Resistance to Weather and Ground Moisture
Kingspan EcoBead Cavity Wall Insulation can meet the relevant requirements of TGD Part C4, when installed in accordance with this Certificate.

Part D - Materials and Workmanship

D1 Kingspan EcoBead Cavity Wall Insulation used in accordance with this NSAI Agrément Certificate will meet the requirements of TGD Part D1.

D3 – Kingspan EcoBead Cavity Wall Insulation, as certified in this NSAI/Agrément Certificate, is manufactured from materials which are 'proper materials' fit for their intended use (see Part 4 of this Certificate).

Part F – Ventilation

F1 – Means of ventilation
The systems as certified can be incorporated into structures that will meet the requirements of this Regulation. (see Cl. 2.4.2 of this Certificate).

Part J – Heat Producing Appliances

J3 – Protection of Building
In the opinion of NSAI Agrément, Kingspan EcoBead Cavity Wall Insulation if used in accordance with this Certificate can meet the requirements of Part J of the Building Regulations 1997 to 2019.

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy
U value calculations may be based on a declared thermal conductivity ($\lambda_{90/90}$) of 0.035 W/(mK) for the Kingspan EcoBead 0.035 product and on a declared thermal conductivity ($\lambda_{90/90}$) of 0.033 W/(mK) for the Kingspan EcoBead 0.033 product.

These values are based on bead densities of 12 kg/m^3. Users should be aware when calculating U Values, that the density of the bead together with the density of the installed product can vary and allowance should be made for these variations when calculating U Values. Installers should provide records of bead density used together with volume of bead used in each installation in order to more accurately determine actual U Values.

Walls using Kingspan EcoBead Cavity Wall Insulation can meet the current U-value requirements in Full Fill Cavity Wall Insulation applications depending on the cavity width (see Table 1 and Cl. 4.4 of this Certificate).

2.1 PRODUCT DESCRIPTION

Kingspan EcoBead Cavity Wall Insulation consists of an expanded polystyrene material injected in bead form with a bonding agent. The bonding agent is used to provide long-term stability to the insulant.

The Kingspan EcoBead Cavity Wall Insulation System can be installed using a compressed air delivery system.

The polystyrene bead is delivered in a container and injected into the cavity with the bonding agent. The target mean density for this product installed with the bonding agent is not less than 12 kg/m^3.

2.2 MANUFACTURE

Kingspan EcoBead 0.035 is manufactured from BASF N2300 bead with a manufactured minimum dry bead density of 11.5 kg/m^3 (colour = silver/grey).

Kingspan EcoBead 0.033 is expanded from BASF P5200 bead with a manufactured minimum dry bead density of 11.5 kg/m^3 (colour = dark grey).

There are two approved bonding agents – Evode BM 1999, manufactured by Evode Ltd and Bondit manufactured and distributed by Laydex Belfast as BOND-IT EBA 02. The delivery container is labelled with the makers name and the product code together with the name - Kingspan EcoBead.

2.3 DELIVERY, STORAGE AND MARKING

The Kingspan EcoBead Cavity Wall Insulation System is delivered to site in a bulk container. The relevant delivery paperwork is marked with the NSAI Agrément identification mark incorporating the number of this Certificate and a unique batch number. The material, which has an indefinite storage life, should be kept dry.

The bonding agent is also supplied to site in containers marked with the NSAI Agrément identification mark and identified by the manufacturers Type and Batch code and incorporating the number of this Certificate.

The bonding agent is used undiluted in accordance with instructions provided. It must not be allowed to freeze and should be handled in accordance with the data sheet as outlined in the Kingspan EcoBead Installation Manual.

2.4 INSTALLATION PROCEDURE

2.4.1 Site Survey

A survey, as defined in Appendix A of the NSAI Agrément Assessment & Surveillance Scheme for Cavity Wall Insulation (CWI), is carried out prior to installation by a trained Kingspan EcoBead Cavity Wall Insulation surveyor, acting on behalf of the Manufacturer/ Approved Installer who will ascertain the suitability of the property or properties for the Kingspan EcoBead Cavity Wall Insulation System.

A complete survey report (including a borescope survey) is prepared before installation and held at the Approved Installer's offices. Particular problems are specifically identified and any reasons for rejection of the work are noted.

Quotations, tenders and invoices shall bear the NSAI Agrément identification mark incorporating the number of this Certificate and the installer's registration number.

2.4.2 Site Preparation

Before commencing work the installing operative ensures that the property has been correctly surveyed and is suitable for insulation with the Kingspan EcoBead Cavity Wall Insulation System. Any problems encountered during drilling which prevent compliance with this Certificate are referred to the Certificate Holder before proceeding.

2.4.2.1 Ventilation

All ventilation openings such as that providing combustion air or under floor ventilation and all flues in the cavity wall are checked. If adequate sleeving or other cavity closures are not present, installation must not proceed until these openings have been sleeved or otherwise modified to prevent blockage by the insulant.

When installing the Cavity Wall Insulation System, the works to be undertaken must not compromise the existing ventilation provisions in the home.

When these existing ventilation provisions do not meet the requirements of Part F of the Building Regulations, the homeowner should be informed and remedial action should be taken before the cavity wall insulation system is installed.

When retrofitting dwellings for energy efficiency ventilation must be carried out in accordance with SR54[2].

2.4.2.2 The tops of cavity walls must be closed. Cavity filling should not be carried out unless electrical cables are placed in conduits or suitably isolated from the insulation material by cavity brushes or similar method approved by the Certificate Holder.

Due care shall be taken when drilling holes in the masonry wall to prevent contact with electrical cables.

2.4.3 Approved Installers

Installation of the Kingspan EcoBead Cavity Wall Insulation System shall be carried out by Kingspan EcoBead or by their Approved Installers who:

1) Are registered with the NSAI Agrément CWI scheme.
2) Are approved by Kingspan EcoBead and NSAI Agrément to install the product.
3) Have undertaken to comply with the Kingspan EcoBead Installation Procedure.
4) All technicians and surveyors have been trained and issued with appropriate identity cards by Kingspan EcoBead. All members of each installation team must carry a card verifying this training and registration.
5) Are subject to supervision by Kingspan EcoBead, including unannounced site inspections, in accordance with the NSAI Agrément Assessment/Surveillance Scheme.

2.4.4 Procedure

The details in this certificate should not be considered a definitive set of installation instruction, but an overview of the procedures involved. Should a conflict arise between this certificate and the certificate holder's manuals, this certificate takes precedence. All requirements of the NSAI CWI Approval Scheme for Installers, including safety related issues, shall be met.

The Kingspan EcoBead Cavity Wall Insulation System is installed using a compressed air system approved by Kingspan EcoBead and notified to NSAI Agrément.

The installer provides all necessary hoses, drilling tools equipment and materials for making good the walls after the installation of the Kingspan EcoBead Cavity Wall Insulation System.

Prior to the commencement of the filling operation it is essential that the flow rates of the blown bead and adhesive are checked.

This is carried out by filling a hessian bag with dry bead for 60 seconds, the bead is weighed and weight recorded. Using the bead/flow chart supplied by Kingspan EcoBead, the correct amount of adhesive is applied to the bead to ensure adequate bonding of the product in accordance with the Kingspan EcoBead Cavity Wall Insulation Systems Manuals.

Where a semi-detached or terraced property is to be insulated, the insulation is contained by inserting a cavity barrier at the line dividing the properties. This consists of an appropriate sized nylon brush. After filling, the cavity barrier is retained in the cavity and the drill holes filled. The nylon brush can also be used to prevent the blocking of under floor vents with the blown bead where these have not been previously sleeved.

Care should be taken to ensure that drilled holes do not coincide with the intermediate suspended timber floor.

2.4.4.1 New and existing buildings without existing partial fill in cavity.

Refer to Clause 3.5 of this certificate for the definition of new and existing building. All defects, such as missing ventilation sleeves or debris in the cavity, must be rectified prior to the installation of the bead.

Holes of 22 mm – 26 mm diameter are drilled in the outer or inner leaf normally spaced approximately 600 – 650 mm horizontally apart and 200 mm above the highest ceiling level. A further series of holes 2.0 m apart is drilled at the middle height of a two storey building to ensure complete fill of the cavity space. Care should be taken to ensure that these holes do not coincide with the intermediate suspended timber floor.

A similar series of holes is drilled below windows and obstructions. A typical drilling pattern is shown in Figure 1.

2.4.4.2 New and existing buildings with existing partial fill in cavity.

Where partial fill insulation exists in the property/wall to be filled, additional factors must be examined to determine its suitability.

Each property is subject to two borescope inspections surveys, one performed by the Site Surveyor (on a minimum of two test holes per elevation) and a further more detailed survey (on **all** drill holes - See Figure 2) by the installer during the installation phase. The findings of these surveys will determine the suitability of the property to be filled. A clear minimum remaining cavity width of 40mm must exist if the wall is to be considered suitable for filling.

Note: The use of Kingspan EcoBead Cavity Wall Insulation in cavities where partial filled mineral (glass/rock) wool boards exist, has not been approved per this Certificate. See also Cl. 3.8 of this Certificate.

Anomalies may include loose, missing or incorrect positioning (not tight to the inner leaf) of the partial fill insulation. If anomalies found cannot be rectified, filling of the cavity shall not proceed. Reference shall be made to the Certificate Holders Installation Procedures manual for full details all pre-inspection, rectification and filling requirements of residual fill applications. Details of the borescope inspection surveys shall be recorded on the Site Survey Record Sheet.

In addition, individual U-value calculations are required in residual fill applications with details of calculations (including existing insulation type and thickness) to be recorded on the Site Survey Record Sheet.

Note: The Kingspan EcoBead 0.033 bead has not be assessed or approved for use in residual fill applications when the remaining cavity width to be filled is less than 50mm.

Holes of 22 mm – 26mm diameter are drilled in the outer or inner leaf (using a suitable drill equipped with a depth stop, to avoid damaging the existing partial fill insulation) normally spaced approximately 600 mm horizontally apart and 200 mm above the highest ceiling level. A further series of holes 1.2 m apart is drilled at levels one third and two thirds the height of a two storey building to ensure complete fill of the cavity space. Care should be taken to ensure that these holes do not coincide with the intermediate suspended timber floor.

A similar series of holes is drilled below windows and obstructions. A typical drilling pattern is shown in Figure 2. Care should be taken when drilling near to the services supply box, distribution points, wall mounted lights etc, to prevent damage to hidden services runs within the property.

2.4.4.3 Installation should be carried out in accordance with requirements of the Certificate holders installation instructions and the NSAI Agrément Surveillance Scheme document.

During installation the following simple checks can be made, as an aid to determining that the installation conforms to the certified method:

1) Check that the pattern of holes complies with the description given in Section 2.4 and Figure 1 or 2 of this Certificate for the type of installation undertaken.

2) Check that the injection of the material takes place at each hole, to complete the filling of the cavity space.

In the case of work undertaken on an empty cavity or for residual fill applications, additional requirements relating to the survey of the wall to be filled are set out in the Kingspan EcoBead Survey and Installation manual.

Where the apex of the gable end wall is to be insulated a series of holes is drilled along the line of the eaves approximately 600 – 650 mm apart and 200mm below the soffit line and also below any window in the gable similar to that described for other windows.

In some circumstances, access for drilling injection holes and filling with insulation may be limited by features and obstructions such as garages, carports, cladding or conservatories. Refer to the Certificate Holder for advice.

After completion of the cavity assessment and drilling plan for the building, preparation for injection into the cavity is as follows:

The product is injected into the cavity (having determined the correct bead/bonding agent ratio by test) through a flexible pipe fitted with a non-directional nozzle. The material packs to a uniform density in the cavity. Holes beneath ground-floor windows are injected first and filling then continues upwards until a complete fill has been achieved.

After injection, the wall is made good to match the existing finish as closely as possible using mortar or similar waterproofing mix. All trunked air vents are checked, e.g. those providing underfloor ventilation and combustion air for heating appliances.

In certain cases, holes of 18 mm diameter may be acceptable, subject to the approval of the Certificate holder, where narrow mortar joints prevent the use of the larger diameter drill bits. An additional flow test shall be performed in such instances.

In all cases flues are carefully checked before and after the installation by means of an appropriate test (e.g. a smoke test) to ensure they are not obstructed by the insulant and the result recorded on the Technicians safety check sheet which is then filed with the job records. Any insulant that has been blown through the top of the cavity into the loft space is removed and any points of leakage sealed.

3.0 GENERAL

3.1 The Kingspan EcoBead Cavity Wall Insulation System, when installed in accordance with this Certificate, is effective in reducing the U-value (thermal transmittance) of external masonry cavity walls, using clay or calcium silicate bricks, concrete blocks, natural stone or reconstituted stone masonry units. It is essential that such walls are designed and constructed to prevent moisture penetration in accordance with the Building Regulations.

The Kingspan EcoBead Cavity Wall Insulation System is certified for use to fill the cavity in a wall consisting of two leaves of masonry construction (as detailed in the certificate) only. It has not been approved for use on masonry cavity block (hollow block), timber or steel frame construction.

Where required, the installer shall confirm the suitability of the masonry construction with the masonry manufacturer.

3.2 Kingspan EcoBead Cavity Wall Insulation is capable of meeting or contributing to the 'U' value requirements of TGD Part L to Building Regulations 1997 to 2019, (See Table 1).

3.3 The construction details of the building where the insulation is to be installed should comply with all relevant standards (See Cl. 3.7 of this Certificate) and good building practice.

This certificate only relates to buildings which conform to the design conditions set out here, where the Certificate Holder or Registered Installer has carried out a complete assessment of the wall including a borescope survey, as set out in the Kingspan EcoBead Installation Manual and has deemed the walls suitable for filling by signing the survey sheet.

3.4 Cavity walls with the outer leaf constructed using unrendered (fair-faced) block work are not suitable for full-fill cavity wall insulation. They are therefore not approved by this Certificate.

3.5 Assessment Criteria

There are separate procedures for assessing suitability of existing and new buildings for Kingspan EcoBead Cavity Wall Insulation. For the purposes of this Agrément Certificate," existing buildings" are defined as buildings in excess of three years old. New buildings are defined as buildings up to 3 years old.

3.5.1 Assessment of Existing Buildings:-

Existing buildings should be assessed in accordance with BS 8208[3]. In addition the requirements of Kingspan EcoBead Installation Manual must be referenced during this assessment process.

This includes the mandatory use of a borescope at a number of locations on each wall to be filled, to assess the condition of the inner faces of the masonry and to ensure a clear void exists. The findings of this survey shall be recorded on the assessment survey sheet. Additional borescope inspection are required for residual fill applications (walls with existing partial fill boards). See Cl. 2.4.4.2 of this Certificate for details.

In the case of fair faced brickwork recessed mortar joints are not suitable for filling. Only tool flush joint brickwork is acceptable, subject to the following conditions:

- The minimum cavity width for existing buildings is 40 mm.
- There are no signs of dampness on the inner face of the cavity.
- Mortar joints must be in good condition and free from defects which may allow water ingress.

Consideration must also be given to the exposure of the building, but particular reference to the Assessment of exposure zones defined in Section 3.5.2.1 of this Certificate is not required.

3.5.2 Assessment of New Buildings:-

For new buildings (which may not exhibit visible evidence of exposure damage) an assessment of the Exposure Zones where the property is located, including topography factors must be performed. All restrictions identified in this section of the certificate must be applied. A Borescope inspection shall be performed as identified in Cl. 3.5.1 of this certificate. The findings of this survey shall be recorded on the assessment survey sheet. Additional borescope inspections are required for residual fill applications (walls with existing partial fill boards). See Cl. 2.4.4.2 of this Certificate for details.

3.5.2.1 Assessment of Exposure Zones

During the assessment phase of new buildings for cavity wall insulation the topography factor of the site must be taken into account in all exposure zones. The topography factor takes account of local features such as hills, cliffs, escarpments or ridges where dwellings are located, which can significantly affect the wind speed in their vicinity. It should be derived for each wind direction considered. Reference should be made *to* BS 8104[4] for guidance in this regard. Appendix C of that code makes reference to the topography factor which details the method of calculation of the wind driven rain index for exposed sites in all zones.

It is only after all relevant factors are considered and calculations carried out that a true assessment of the work content for a particular building be determined. Figure 3 identifies the two exposure zones for wind driven rain appropriate to this certificate as follows:

3.5.2.1.1 Normal Exposure

Normal exposure to wind-driven rain applies in districts where the driving rain index is less than 5m²/sec/year however; some areas may require modification to calculations in order to cater for particular individual sites where the topography of a site warrants it (see Figure 3). Appendix C of BS 8104[4] together with information provided by the Irish meteorological office should be consulted.

In **normal exposure** areas the types of outer leaf masonry finishes where the Kingspan EcoBead Cavity Wall Insulation System is suitable are as follows:

- Impervious cladding and rendered walls with a minimum cavity width of 40 mm and up to 12m in height, and
- Fair faced unrendered brickwork with tooled flush joints up to two storeys in height with a minimum cavity width of 40 mm.
- Walls must be in a good state of repair with no evidence of frost damage. Mortar joints must not show evidence of damage which would cause water ingress.

3.5.2.1.2 Severe Exposure

Severe exposure to wind-driven rain applies in districts where the driving rain index is 5m²/sec/year or greater (see Figure 3).

In **severe exposure** areas the type of outer leaf masonry finish where the Kingspan EcoBead Cavity Wall Insulation System is suitable is:

- Impervious cladding and rendered walls with a minimum cavity width of 40 mm and up to 12m in height.
- Walls must be in a good state of repair with no evidence of frost damage and no evidence of damage which would cause water ingress.

Unrendered brickwork is not suitable for full-fill cavity wall insulation in the severe exposure zones

3.5.3 Assessment of All Buildings

For both Existing and New Buildings, competent installation is critical. A complete survey of both the internal and external areas of the building (including a borescope survey) must be performed by a trained Kingspan EcoBead Cavity Wall surveyor and a report prepared and held at the Approved Installers office. Factors to consider include:

- Form of construction and site conditions
- Age of building
- Structural condition
- Size of cavity
- Exposure to wind and driven rain

Installers should be trained to recognise where high exposure and less-than-ideal construction features may cause problems.

For example, it would be inappropriate to insulate a property where poor maintenance has created areas of damp within the dwelling, before the defects have been remedied.

3.6 Filling cavities in sections of the building

In both new and existing buildings, all of the cavity space from ground level to roof or gable copings must be filled. Filling a section of the cavity is only allowed in the following situations:

1) When separately insulating semi-detached or terraced properties. Use of the type of cavity barrier defined in Section 2.4.4 of this Certificate must be employed.

2) Up to the underside of a horizontal boundary, other than the roof, where that boundary is protected by a cavity tray or similar waterproof barrier which must not be distorted or damaged by the installation process.

3) Where filling is carried out above a horizontal boundary where that boundary is protected by a cavity tray or similar waterproof barrier which must not be distorted or damaged by the installation process

4) Where the wall to be insulated is below a waterproof cladding (e.g. tile hung) and this cladding either extends up to the roof or is protected at the top by other means (e.g. window sills with adequate waterproof barrier system).

5) Where it is established that the roof void will not be an occupied space, and where the attic insulation is provided at ceiling level, filling of that section of the cavity of the gable apex (i.e. limiting the fill to at least 200mm above ceiling level insulation) may be omitted provided the top of the gable apex is adequately protected by the roof and its overhang and where the attic space is adequately ventilated.

3.7 Structures

A visual inspection of the wall shall be performed to identify any obvious defects. These defects and their root cause shall be rectified before filling with bead is performed. The advice of a building professional may be required in such instances.

The construction of walls with cavities in excess of 110 mm requires adjustments to lintels, wall ties, cavity barriers etc. It is therefore necessary that cavity walls are adequately designed in respect of structural stability; fire safety and thermal bridging in accordance with Parts A, B and L of the Building Regulations.

In new build situations where extra wall ties may have been used, the density of wall ties shall be considered when calculating the U-value of the wall.

3.8 General Design Considerations

Any defects recorded which may affect the performance of the installed insulation system must be rectified to the satisfaction of the Approved Installer before work commences.

In cavities where electric cables can come into contact with expanded polystyrene, all PVC sheathed electric cables shall be run through ducting or be sleeved in accordance with ETCI publication I.S 10101[5].

Where a flue pipe from a heating system passes horizontally through a wall which is to be insulated with Kingspan EcoBead Cavity Wall Insulation, the flue pipe shall be separated from the cavity insulation by non-combustible material in accordance with TGD Part J to the Irish Building Regulations. See Cl. 4.1.4 of this certificate for precautions to be taken where chimneys exist in the walls to be filled.

Kingspan EcoBead Cavity Wall Insulation may be used to fill the residual cavity where the wall was previously partially filled with rigid expanded polystyrene (EPS), foil faced Polyisocyanurate (PIR) or Phenolic board, as long as the above conditions for new and existing buildings are adhered to. The use of Kingspan EcoBead Cavity Wall Insulation in cavities where partial filled mineral (glass/rock) wool boards exist, has not been assessed by this certificate.

For the Kingspan EcoBead 0.035 bead, a minimum cavity width of 40 mm is necessary to ensure good flow of the bead once the adhesive is applied. Note: Kingspan EcoBead 0.033 bead has not been assessed or approved for use in residual fill applications when the remaining cavity width to be filled is less than 50mm.

Ensure the existing board is not damaged by restricting the depth of the drill bit so that it penetrates only the outer leaf of the cavity wall.

Figure 1: Typical Kingspan EcoBead Hole Drilling Pattern in a Detached Dwelling
New and existing buildings <u>without</u> existing partial fill insulation in cavity.

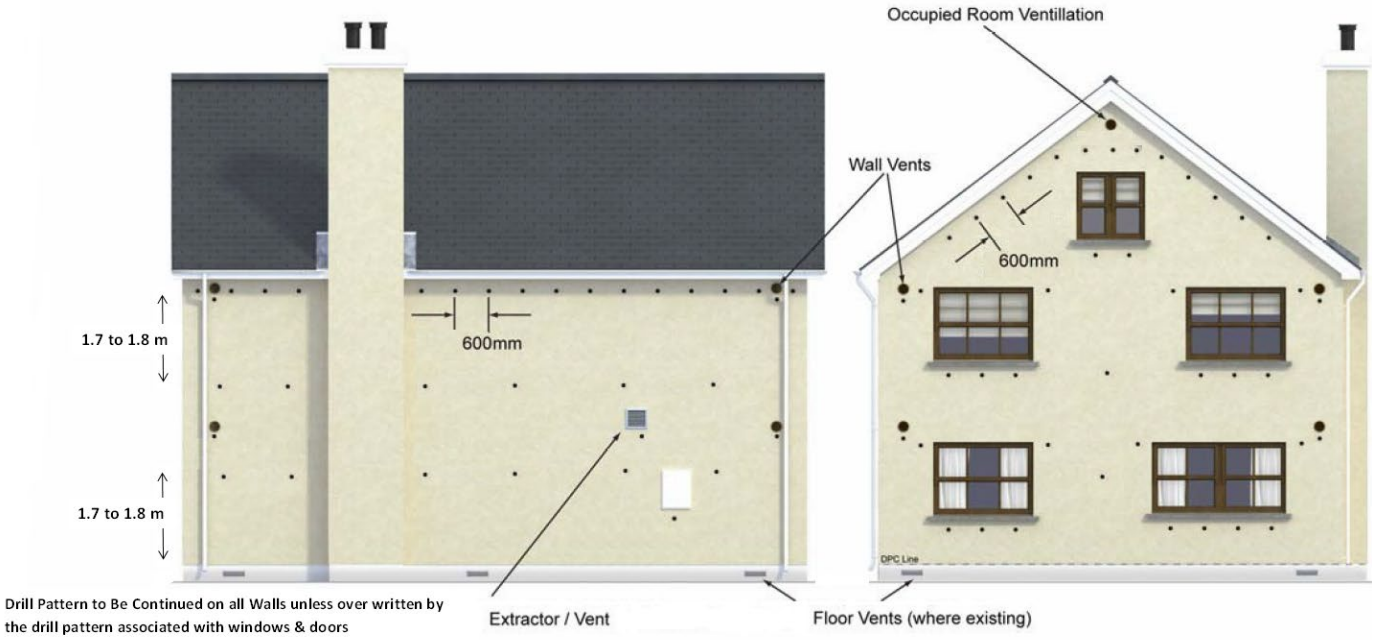


Figure 2: Typical Kingspan EcoBead Hole Drilling Pattern in a Detached Dwelling for Residual Fill Application - New and existing buildings <u>with</u> existing partial fill insulation in cavity

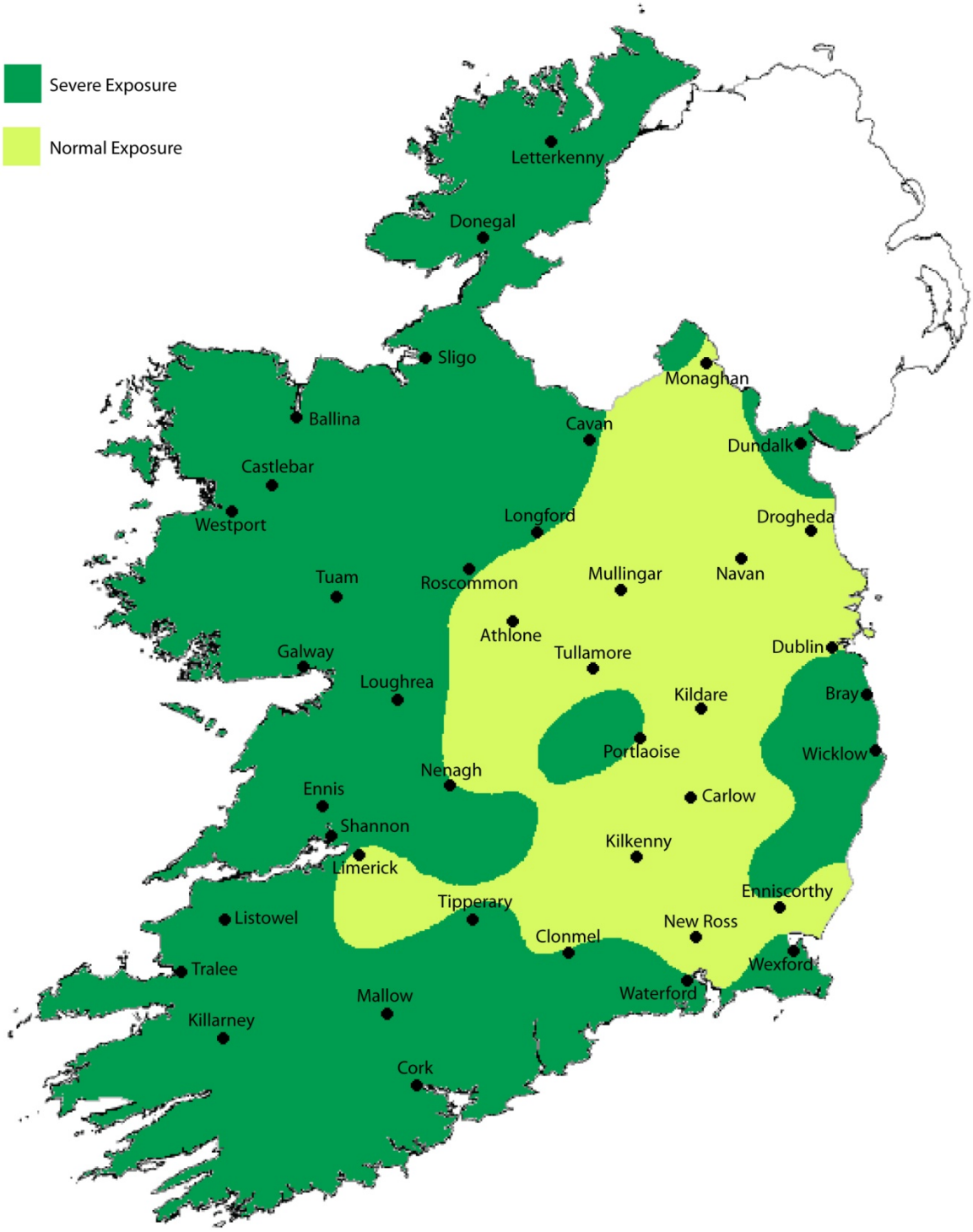


Figure 3: Driving Rain Map (Indicative only – Not to scale)

4.1 BEHAVIOUR IN FIRE

4.1.1 Although the Kingspan EcoBead 0.035 and 0.033 Cavity Wall Insulation products are considered combustible, the system will meet the relevant requirements of TGD Part B3 & B8 when used in accordance with this certificate. The directions contained in this Certificate relating to the sealing of an uncapped cavity and removing insulant present in the loft space after installation must be carefully followed.

All beads approved in this certificate contain a uniformly distributed polymeric flame retardant. The adhesives used a part of the system as describe in this certificate are water based and are not combustible.

When using this product, the requirements of the Building Regulations 1997 to 2019 relating to fire spread in cavity walls can be met in most purpose groups without the need for cavity barriers provided the walls are constructed in accordance with the following provisions of the TGD to Part B Fire, including Diagram 17:

1. The wall must consist of masonry or concrete inner and outer leaves, each at least 75 mm thick.

2. The cavity must be closed at the top of walls and any other opening.

3. In addition to the product, only the following combustible materials shall be placed in, or exposed to, the cavity:
   a) timber lintel, window or door frame, or end of timber joist
   b) pipe, conduit
   c) dpc flashing closer or wall tie
   d) domestic meter cupboard, provided that:
   - there are not more than two cupboards to a dwelling.
   - the opening in the outer leaf is not more than 800 mm by 500 mm for each cupboard, and
   - the inner leaf is not penetrated except by a fire-stopped sleeve not more than 80 mm by 80 mm.

   e) thermal insulating material
   f) in respect of purpose groups 3 – 8 the cavities are sub-divided so that the distance between cavity barriers does not exceed the dimensions given in sub-section 3.3 of the TGD to Part B

4.1.2 For buildings constructed of masonry cavity walls (as detailed in this certificate), in accordance with the Building Regulations 1997 to 2019 the product may be used in buildings of every purpose group.

4.1.3 Protection of Buildings

Combustible cavity wall insulation material should be separated from the flue in a brick or blockwork chimney and from any heating appliance by solid non-combustible material not less than 200mm thick.

Alternatively combustible material should be separated by 40mm from the outer surface of a masonry chimney.

Where a flue pipe from a heating system passes horizontally through a wall which is to be insulated with Kingspan EcoBead Cavity Wall Insulation, the flue pipe shall be separated from the cavity insulation by non-combustible material in accordance with the TGD to Part J to the Irish Building Regulations.

Particular details are given in Diagrams 2 – 8 of the TGD to Part J of the Building Regulations 1997 to 2019 regarding separation from any flue pipe or opening to a heating appliance.

For factory made insulated chimneys, separation between this product and the external surface of the chimney shall be determined in accordance with Clause 2.17, of Part J of the Building Regulations 1997 to 2019.

4.2 LIQUID WATER PENETRATION

4.2.1 Test data obtained by NSAI Agrément confirms that the masonry cavity wall built to determine the effects of water resistance incorporating the Kingspan EcoBead Cavity Wall Insulation System did not transmit water to the inner leaf.

4.2.2 The Kingspan EcoBead Cavity Wall Insulation System, when used in accordance with this Certificate, presents no significant risk of water penetration.

4.3 CONDENSATION RISK

The Kingspan EcoBead Cavity Wall Insulation System is not a water vapour barrier.

4.3.1 Internal Surface Condensation

When improving the thermal performance of the external envelope of a building through the use of Cavity Wall Insulation, designers need to consider the impact of these improvements on other untouched elements of the building. As referenced in Cl. 4.5 of this Certificate, thermally bridged sections of the envelope such as window jambs, sills, heads, internal wall and floor junctions and eaves will experience a lower level of increased thermal performance. The ability to improve these junctions can be limited due to physical restrictions on site.

As a result, best practice should be adopted in order to limit the risk of internal surface condensation which can result in dampness and mould growth.

When site limiting factors give rise to substandard levels of insulation at bridged junctions, guidance should be sought from the Certificate holder as to acceptable minimum requirements.

4.3.2 Interstitial Condensation

When a potential interstitial condensation risk is identified at design stage, a condensation risk analysis must be carried out. A transient hygrothermal (condensation) risk analysis in accordance with I.S. EN 15026[7] can be used to predict one dimensional transient heat and moisture transfer in multi-layer building envelope components subjected to non steady climate conditions on either side.

When a problem is identified, the design shall be modified as appropriate to reduce the risk of interstitial condensation to acceptable levels.

Alternatively, a steady state condensation risk analysis to I.S EN 13788[6] must be performed at a minimum.

Further guidance may be obtained from BS5250[1].

4.4 THERMAL INSULATION

U-value calculations may be based on a declared thermal conductivity ($\lambda_{90/90}$) of 0.035 W/(mK) for the Kingspan EcoBead 0.035 product and on a declared thermal conductivity ($\lambda_{90/90}$) of 0.033 W/(mK) for the Kingspan EcoBead 0.033 product.

U-values for external walls can be obtained in typical cavity wall constructions as indicated in Table 1.

Where the calculated wall U-value does not meet the relevant requirement of the Building Regulations, additional energy improvements measures will be required to meet the backstop elemental U-values outlined in TGD Part L to the Irish Building Regulations.

4.5 LIMITING THERMAL BRIDGING

The linear thermal transmittance "Ψ" (Psi) describes the additional heat loss associated with junctions and around openings. The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between elements and openings.

The requirements of TGD Part L, Appendix D applies to all thermal bridges. Further details on applicable junctions should be sought from an NSAI registered Thermal Modeller.

It is recommended that continuity of the blown bead insulation be maintained to limit the instances of thermal bridging, to maintain internal surface temperatures at sufficiently high levels in order to minimise the risk of surface condensation and mould growth.

4.6 DURABILITY

The Kingspan EcoBead Cavity Wall Insulation System is rot-proof, water repellent and durable. When installed in accordance with this certificate it is sufficiently stable to prevent settlement and will remain effective as an insulant for the life of the building.

Should it ever become necessary for whatever reason, to remove the material from the cavity void, Kingspan EcoBead Cavity Wall Insulation can be evacuated from the cavity void. The advice of the Certificate Holder should be sought in all such instances.

4.7 MAINTENANCE

As the product is confined within the wall cavity and has suitable durability (See Cl. 4.6 of this certificate), maintenance is not required.

4.8 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING

- Efficiency of fill in clear and residual cavities using the specified equipment and drilling pattern.
- Density of factory manufacture bead.
- Water resistance of filled cavity.
- Thermal conductivity.

4.9 OTHER INVESTIGATIONS

- Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on structural stability and durability were assessed. The absence of chloro-fluorocarbon gases 'CFCs' was established by test.
- The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- Site visits were conducted to assess the practicability of installation.
- Driving rain resistance was assessed.
- A condensation risk analysis of the system was performed.

Table 1: External Masonry Walls – Estimated U Values W/(m²K)[1]													
Cavity fill	λ W/(m.K)	**Rendered Cavity Wall - Type I**											
		Unventilated Cavity (mm)											
		40	50	60	70	80	90	100	110	120[2]	130[2]	140[2]	150[2]
		U-value (W/m²K)											
Kingspan EcoBead 0.035	0.035	0.65	0.55	0.48	0.42	0.37	0.34	0.31	0.28	0.26	0.24	0.23	0.21
Kingspan EcoBead 0.033	0.033	0.62[3]	0.53	0.45	0.40	0.36	0.32	0.29	0.27	0.25	0.23	0.22	0.20
		Brick Cavity Wall - Type II											
Kingspan EcoBead 0.035	0.035	0.64	0.54	0.47	0.41	0.37	0.33	0.30	0.28	0.26	0.24	0.23	0.21
Kingspan EcoBead 0.033	0.033	0.61[3]	0.51	0.45	0.39	0.35	0.32	0.29	0.27	0.25	0.23	0.21	0.20

Wall Type I - 19mm external render on 100/100/100 block cavity wall (100mm clear cavity) with 12.5mm internal plasterboard
Wall Type II - 102.5mm external brick, 100 clear cavity, 100 block inner leaf with 12.5mm internal plasterboard.
(Internal plasterboard – dabbed or mechanically fixed without air gap or insulation).

U-value calculations for **residual filling of *partial fill cavity walls*** are dependent on the thickness and type of existing insulation and the width of the residual cavity. Individual U-value calculations are required in all such instances with details of calculations (including existing insulation type and thickness) to be recorded on the Site Survey Record Sheet.

Specialist advice should be sought for cavity widths in excess of 150mm.

[1] The above values represent the most optimistic values achievable for the wall constructions shown filled with the Kingspan cavity wall insulation systems. The thermal conductivity and consequent U values quoted will be affected by adhesive use and the installed density of the product. Excessive use of adhesive and installed densities of less than12kg/m³ are unlikely to meet the above quoted U values.

[2] The construction of walls with cavities in excess of 110mm wide requires adjustments to lintels, wall ties, cavity barriers, etc. It is therefore necessary that cavity walls are adequately designed in respect of structural stability and fire safety in accordance with Parts A and B of the Building Regulations. For Table 1 it is assumed that cavity walls containing full-fill bonded bead will be constructed in accordance with the requirements of the Building Regulations, 1997 to 2019.

[3] Kingspan EcoBead 0.033 bead has not be assessed or approved for use in residual fill applications when the remaining cavity width to be filled is less than 50mm.

5.1 National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from latest date of revision so long as:

(a) the specification of the product is unchanged.

(b) the Building Regulations 1997 to 2019 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.

(c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.

(d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.

(e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

(f) the registration and/or surveillance fees due to NSAI Agrément are paid.

5.2 The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

(a) the absence or presence of patent rights subsisting in the product/process; or

(b) the legal right of the Certificate holder to market, install or maintain the product/process; or

(c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

NSAI Agrément

This Certificate No. **05/0226** is accordingly granted by the NSAI to **Kingspan EcoBead** on behalf of NSAI Agrément.

Date of Issue: **August 2005**

Signed

Seán Balfe
Director of NSAI Agrément

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsai.ie

Revisions:
February 2014: To add additional information and other general changes.
September 2015: To make general text changes.
22nd December 2020: General revisions.
03rd June 2021 : General revisions.

Bibliography

[1] BS 5250:2011+A1:2016, *Code of practice for the control of condensation in buildings.*

[2] SR54: 2014 & A1:2019, *Code of Practice for the energy efficient retrofit of dwellings*.

[3] BS 8208: Part 1:1985, *Guide for the assessment of suitability of external cavity walls, for filling with thermal insulants – Existing traditional cavity construction*.

[4] BS 8104:1992, *Code of practice for assessing exposure of walls to wind driven rain*.

[5] I.S 10101: 2020: *National Rules for Electrical Installations.*

[6] I.S EN ISO 13788:2012: *Hygrothermal performance of building components and building elements - Internal surface temperature to avoid critical surface humidity and interstitial condensation – Calculation Methods.*

[7] I.S. EN 15026: 2007, *Hygrothermal performance of building components and building elements - Assessment of moisture transfer by numerical simulation.*

[8] DoHPLG Acceptable Construction Details (ACD's): 2011.

[9] I.S. EN ISO 6946: 2017: *Building Components and Building Elements - Thermal Resistance and Thermal Transmittance - Calculation Method.*

[10] BRE report BR443 (2019): *Conventions for U-value Calculations.*

[11] I.S EN 13163: 2012: *Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products – Specification.*

[12] I.S EN 13501-1: 2018: *Fire classification of construction products and building elements- Part 1: Classification using data from reaction to fire tests.*

[13] I.S. EN 13172: 2012: *Thermal insulation products - Evaluation of conformity.*

Appendix C

ROCKWOOL ROLL AND TWIN ROLL ATTIC INSULATION - DECLARATION OF PERFORMANCE

1.	Unique identification code of the product-type	RWUK-CE-0002-04_english
2.	Intended use of the construction product as foreseen by the manufacturer, in accordance with the applicable harmonised technical specification	Thermal insulation for buildings (ThIB)
3.	Name, registered trade name or registered trade mark and contact address of the manufacturer, as required pursuant to Article 11(5) of regulation (EU) No 305/2011	ROCKWOOL® Limited Pencoed, Bridgend, CF35 6NY, UK
4.	Name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2) of regulation (EU) No 305/2011	ROCKWOOL® FRANCE S.A.S. 111 rue du Château des Rentiers, 75013 Paris, France. dop.eu@rockwool.com
5.	Applicable System or Systems of Assessment and Verification of Constancy of Performance (AVCP)	SYSTEM 1 for uses subject to regulations on reaction to fire SYSTEM 3 for all other intended uses
6.	Harmonised Standard reference number	EN 13162:2012+A1:2015
7.	Notified Body identification number	0751
8.	Declared Performances	Please refer to the table below (NPD – No Performance Determined)

Essential Characteristics	Requirement clauses in this European Standard	Level and/or classes	Declared value
Thermal resistance	4.2.1 Thermal resistance and thermal conductivity	Declared R_D and/or λ_D	λ_D : 0.044 W/Mk
	4.2.3 Thickness	Declared d or tolerance class T	T1
Reaction to fire Euroclass characteristics	4.2.6 Reaction to fire	Euroclasses	A1
Durability of reaction to fire against heat, weathering, ageing/degradation	4.2.7 Durability characteristics [a)]	Euroclasses	[a)]
Durability of thermal resistance against heat, weathering, ageing/degradation	4.2.1 Thermal resistance and thermal conductivity	Declared R_D and λ_D	[b)]
	4.2.7 Durability characteristics	DS(70,-) or DS(23,90) or DS(70,90) [c)]	NPD
Compressive strength	4.3.3 Compressive stress or compressive strength	Declared CS Level	NPD
	4.3.5 Point load	Declared PL	NPD
Tensile/Flexural strength	4.3.4 Tensile strength perpendicular to faces [d)]	Declared TR Level	NPD
Durability of compressive strength against ageing/degradation	4.3.6 Compressive creep	Declared CC	NPD
Water permeability	4.3.7.1 Short term water absorption	Declared WS	NPD
	4.3.7.2 Long term water absorption	Declared WL(P)	NPD
Water vapour permeability	4.3.8 Water vapour transmission	Declared MU or Z	MU1
Impact noise transmission index (for floors)	4.3.9 Dynamic stiffness	Declared SD	NPD
	4.3.10.2 Thickness, d_L	Declared d_L and T Class	NPD
	4.3.10.4 Compressibility c	Declared CP	NPD
	4.3.12 Air flow resistivity	Declared AF_r	NPD
Acoustic absorption index	4.3.11 Sound absorption	Declared AP and AW	NPD
Direct airborne sound insulation index	4.3.12 Air flow resistivity	Declared AF_r	NPD
Release of dangerous substances to the indoor environment	4.3.13 Release of dangerous substances [e)]		[e)]
Continuous glowing combustion	4.3.15 Continuous glowing combustion [e)]		[e)]

[a)] No change in reaction to fire properties for mineral wool products. The fire performance of mineral wool does not deteriorate with time. The Euroclass classification of the product is related to the organic content, which cannot increase with time.

[b)] Thermal conductivity of mineral wool products does not change with time, experience has shown the fibre structure to be stable and the porosity contains no other gases than atmospheric air.

[c)] For dimensional stability thickness only.

[d)] This characteristic also covers handling and installation.

[e)] European test methods are under development.

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Maxim Vasiliev
Technical Director

At Bridgend on 16th July 2021

Appendix D

SIKA SILOXANE (TOP COAT) AND PARAMUREX (BASE COATS) EXTERNAL RENDERING SYSTEM
- DECLARATION OF PERFORMANCE

Declaration of Performance
No 20F

1 **Unique identification code of the product type:** REVLANE SILOXANÉ TG 1.6

2 **Intended use:** render based on organic binder for external use

3 **Manufacturer:** PAREXGROUP SA
19, place de la Résistance – CS 50053 – 92445 Issy-les-Moulineaux – France
www.parexlanko.com

4 **Authorized representative:** N/A

5 **System/s of assessment and verification of constancy of performance:**
- system 3 for reaction-to-fire characteristic
- system 4 for other characteristics

6 **Harmonized standard:** EN 15824:2017

7 **Declared Performances:** see table below; a non-determined performance is noted 'NPD'.

Essential characteristic	Performance
Water vapour permeability	V2
Water absorption	W3
Adhesion	≥ 0.3 MPa
Durability	Not relevant
Thermal conductivity	NPD
Reaction to fire	A2-s1, d0
Dangerous substances	See SDS

The performance of the product identified above is in conformity with the set of declared performances.

In compliance with Regulation (UE) No 305/2011, this declaration of performance is issued under the sole responsibility of the manufacturer mentioned above.

At Issy-les-Moulineaux, on 15 June 2021, signed for and on behalf of the manufacturer by:

Bertrand Ruot, Product Engineer

Pascal Malafosse, General Manager

PAREXLANKO est une marque du groupe **Sika**
PAREXGROUP S.A | 19 place de la Résistance | CS 50053 | 92445 Issy-les-Moulineaux cedex - France
Tel. +33 (0)1 41 17 20 00 | www.parexlanko.com

Declaration of Performance
N°153020

1 **Unique identification code of the product type:**
PARMUREX

2 **Intended use:**
One-coat rendering mortar for external use (OC)

3 **Manufacturer :** PAREXGROUP SA - 19 place de la résistance - CS 50053 - 92445 Issy les Moulineaux
www.parexlanko.com

4 **Authorized representative**: not applicable

5 **System of assessment and verification of constancy performance:** system 4

6 **Harmonized standard :** EN 998-1 : 2016

7 **Declared Performance :**

Essential characteristics	Performance
Reaction to fire	A1
Water absorption	Wc 2
Compressive strength	CS IV
Water vapour permeability	≤ 25
Durability (against freeze/thaw)	
Adhesion after weathering cycles	≥ 0,2 N/mm² - FP :B
Water permeability after weathering cycles	≤ 1ml/cm² après 48h
Thermal conductivity	NPD
Dangerous substances	See SDS

The performance of the product identified above is in conformity with the declared performance.

In compliance with regulation (UE) N° 305/2011, this declaration of performance is issued under the sole responsibility of the manufacturer mentioned above.

Signed for and on behalf of the manufacturer by: Guillaume Latil, director general
Issy-les-Moulineaux, 16.06.2017

Appendix E

VENTILATION (PART F)

MINIMUM EQUIVALENT AREA OF BACKGROUND VENTILATION (mm2) CALCULATIONS AND PURGE VENTILATION CALCULATIONS

EQUIVALENT AREA OF BACKGROUND VENTILATOR

ROOM NAME:	FLOOR AREA:	CALCULATIONS: MIN. EQUIVALENT AREA OF BACKGROUND VENTILATOR (mm²) - FLOOR AREA OVER 10m² - 700mm²/m² FLOOR AREA	NO. OF VENTS REQUIRED:
STAGE & GP ROOM	282m²	282m² x 700mm²/m² = 197.4m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 23 vents required
STAFF ROOM	38m²	38m² x 700mm²/m² = 26.6m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 2 vents required
LEARNING SUPPORT	47m²	47m² x 700mm²/m² = 32.9m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required
5TH CLASS	47m²	47m² x 700mm²/m² = 32.9m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required
PREP ROOM	26m²	26m² x 700mm²/m² = 18.2m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 2 vents required
3RD CLASS	60m²	60m² x 700mm²/m² = 42m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 5 vents required
6TH CLASS	43m²	43m² x 700mm²/m² = 30.1m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required
4TH CLASS	47m²	47m² x 700mm²/m² = 32.9m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required
2ND CLASS	47m²	47m² x 700mm²/m² = 32.9m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required
LIBRARY	93m²	93m² x 700mm²/m² = 65.1m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 7 vents required
COMPUTER ROOM	43m²	43m² x 700mm²/m² = 30.1m² / 8,500mm² (Rytons AAC125HPWH Super Acoustic Controllable Wall Vents Equivalent area)	= 4 vents required

PURGE VENTILATION

ROOM NAME:	FLOOR AREA:	TOTAL OPENING SECTION:	CALCULATIONS: PURGE VENTILATION - 1/20th OF THE FLOOR AREA	REQUIRED PURGE VENTILATION:
STAGE & GP ROOM	282m²	10.14m²	282m² / 20 = 1/20th	= 14m²
STAFF ROOM	38m²	4.20m²	4.20m² / 20 = 1/20th	= 0.21m²
LEARNING SUPPORT	47m²	1.38m²	1.38m² / 20 = 1/20th	= 0.07m²
5TH CLASS	47m²	1.38m²	1.38m² / 20 = 1/20th	= 0.07m²
PREP ROOM	26m²	0m²	0m² / 20 = 1/20th	= 0m² THERE ARE NO WINDOWS TO THIS ROOM AND NO NEW WINDOWS ARE TO BE INSTALLED WITHIN THIS PROJECT
3RD CLASS	60m²	5.16m²	5.16m² / 20 = 1/20th	= 0.26m²
6TH CLASS	43m²	2.30m²	2.30m² / 20 = 1/20th	= 0.12m²
4TH CLASS	47m²	1.38m²	1.38m² / 20 = 1/20th	= 0.07m²
2ND CLASS	47m²	1.38m²	1.38m² / 20 = 1/20th	= 0.07m²
LIBRARY	93m²	3.35m²	3.35m² / 20 = 1/20th	= 0.17m²
COMPUTER ROOM	43m²	2.30m²	2.30m² / 20 = 1/20th	= 0.12m²

Appendix F

ENERGY CONSERVATION (PART L)

U-VALUE CALCULATIONS AND THERMAL BRIDGING CALCULATIONS FOR CAVITY WALL INSULATION AND ATTIC INSULATION

Energy conservation (part L) - U-value Calculations for elemental U-values as Per TGD Part L

Applies to Material Alterations (W/m^2K)

Table 5	Maximum elemental U-value (W/m^2K)[1, 2,6] for Material Alterations or Material Change of Use	
Column 1 Fabric Elements	Column 2 Area-weighted Average Elemental U-value (Um)	Column 3 Average Elemental U-value – individual element or section of element
Roofs Pitched roof - Insulation at ceiling - Insulation on slope Flat roof	 0.16 0.25 0.25	0.35
Walls Cavity walls[4] Other walls	 0.55 0.35	0.6
Ground floors[3]	0.45[5]	
Other exposed floors[3]	0.25	0.6
External doors, windows and rooflights and curtain walling	1.40	3.0

Notes.
1. *The U-value includes the effect of unheated voids or other spaces.*
2. *For material alterations, the U-values relate to the new works.*
3. *For insulation of ground floors and exposed floors incorporating underfloor heating, see paragraph 2.1.2.2.*
4. *This only applies in the case of a wall suitable for the installation of cavity insulation. Where this is not the case it should be treated as for "other walls".*
5. *This U-value only applies where floors are being replaced.*
6. *For buildings of architectural or historical interests or permeable traditional construction, refer to paragaragh 0.6.*

Note: There are no air tightness measures being undertaken on this project.

All U-value Calculations and Thermal Bridging Calculations are below for Cavity Wall Insulation and Attic Insulation measures.

U- Value Calculations:

External Wall – Existing (without the additional Kingspan Eco Bead platinum 35 Cavity Wall Insulation or Sika External Render system being applied)

U-Value Calculator

Thermal transmittance (U-value) according to BS EN ISO 6946:2017

username / email | password | Login

Register Account | Password Reset

Walls Material Menu

Project Address

St. Mary's PS,
Youghal,
Dungarvan,
Co. Waterford.

Project Reference

26-108 - Existing Cavity Wall Constructi

Building Use

Commercia

Build Type

Refurbishmen

Element Type: External Wall

Max U-Value $U = {}^{1}/_{RT} =$ **0.30** W/m^2K

Material *Select from the Materials Menu above & edit as required or enter your own custom values.*	Conductivity W/mK	Percent %	Thickness mm	Resistance m^2K/W	
		100			ADD DEL
Internal Surface (Rsi)				0.1300	EDIT
Blockwork Medium	0.3400	100	215	0.6324	MENU
Unventilated airspace, normal (high) emissivity	0.1800	100	50	0.1800	MENU
Bricks medium	0.7700	100	100	0.1299	MENU
External Surface (Rse)				0.0400	EDIT

** denotes a custom material and/or values entered by the user and cannot be verified as to it's accuracy.

Total thickness:		365.0	mm (actual)
Total resistance:	$RT = Rsi+R+Rse =$	1.112	m^2K/W
U-Value (uncorrected):	$U = {}^{1}/_{RT} =$	0.899	W/m^2K
Total ΔU:	0.010		
U-Value (corrected):	$U = {}^{1}/_{RT} + \Delta U =$	**0.909**	W/m^2K

Recalculate

External Wall – Proposed (with the additional Kingspan Eco Bead platinum 35 Cavity Wall Insulation or Sika External Render system being applied)

U-Value Calculator

Thermal transmittance (U-value) according to BS EN ISO 6946:2017

username / email | password | Login

Register Account | Password Reset

Walls Material Menu

Project Address

St. Mary's PS,
Youghal,
Dungarvan,
Co. Waterford.

Project Reference

26-108 - Proposed Cavity Wall Constructi

Building Use

Commercia

Build Type

Refurbishmen

Element Type: External Wall

Max U-Value $U = {}^{1}/_{RT} =$ **0.30** W/m^2K

Material *Select from the Materials Menu above & edit as required or enter your own custom values.*	Conductivity W/mK	Percent %	Thickness mm	Resistance m^2K/W	
		100			ADD DEL
Internal Surface (Rsi)	.			0.1300	EDIT
Blockwork Medium	0.3400	100	215	0.6324	MENU
Expanded polystyrene HD	0.0350	100	50	1.4286	MENU
Bricks medium	0.7700	100	100	0.1299	MENU
Plaster, dense	0.5700	100	22	0.0386	MENU
External Surface (Rse)				0.0400	EDIT

** denotes a custom material and/or values entered by the user and cannot be verified as to it's accuracy.

Total thickness:		387.0	mm (actual)
Total resistance:	$RT = Rsi+R+Rse =$	2.400	m^2K/W
U-Value (uncorrected):	$U = {}^{1}/_{RT} =$	0.417	W/m^2K
Total ΔU:	0.010		
U-Value (corrected):	$U = {}^{1}/_{RT} + \Delta U =$	**0.427**	W/m^2K

Recalculate

Note: The Maximum elemental U-value (w/m2K) for Material Alterations – Individual element or section of element as TGD Part L to be achieved is 0.6W/m2K.

The U-value to be achieved with the installation of new 100mm thick Kingspan Eco Bead platinum 35 and new Sika Rendering System 22mm thick will achieve a U-value of 0.427W/m2K.

Ceiling – Existing (without the additional Rockwool Roll Out insultation above or between the joists in the attic with a total depth of 400mm being applied)

U-Value Calculator

Thermal transmittance (U-value) according to BS EN ISO 6946:2017

username / email | password | Login

Register Account | Password Reset

Roof Material Menu

Project Address

St. Mary's PS,
Youghal,
Dungarvan,
Co. Waterford.

Project Reference

26-108 - Attic - Existing

Building Use

Commercial

Build Type

Refurbishment

Element Type: Pitched Roof (cold)

Max U-Value $U = {}^{1}/_{RT} =$ **0.18** W/m^2K

Material *Select from the Materials Menu above & edit as required or enter your own custom values.*	Conductivity W/mK	Percent %	Thickness mm	Resistance m^2K/W	
		100			ADD DEL
Internal Surface (Rsi)	.			0.1000	EDIT
Plaster, lightweight	0.1800	100	15	0.0833	MENU
Glass fibre/Wool quilt **	0.044	100	100	2.2727	MENU
External Surface (Rse)				0.0400	EDIT

** denotes a custom material and/or values entered by the user and cannot be verified as to it's accuracy.

Total thickness:		115.0	mm (actual)
Total resistance:	$RT = Rsi+R+Rse =$	2.496	m^2K/W
U-Value (uncorrected):	$U = {}^{1}/_{RT} =$	0.401	W/m^2K
Total ΔU:	0.010		
U-Value (corrected):	$U = {}^{1}/_{RT} + \Delta U =$	**0.411**	W/m^2K

Recalculate

Ceiling – Proposed (with the additional Rockwool Roll Out insultation above or between the joists in the attic with a total depth of 400mm being applied)

U-Value Calculator

Thermal transmittance (U-value) according to BS EN ISO 6946:2017

username / email | password | Login

Register Account | Password Reset

Roof Material Menu

Project Address

St. Mary's PS,
Youghal,
Dungarvan,
Co. Waterford.

Project Reference

26-108 - Attic - Proposed

Building Use

Commercial

Build Type

Refurbishment

Element Type: Pitched Roof (cold)

Max U-Value $U = {}^{1}/_{RT} =$ **0.18** W/m^2K

Material *Select from the Materials Menu above & edit as required or enter your own custom values.*	Conductivity W/mK	Percent %	Thickness mm	Resistance m^2K/W	
		100			ADD DEL
Internal Surface (Rsi)	.			0.1000	EDIT
Plaster, lightweight	0.1800	100	15	0.0833	MENU
Glass fibre/Wool quilt **	0.044	100	400	9.0909	MENU
External Surface (Rse)				0.0400	EDIT

** denotes a custom material and/or values entered by the user and cannot be verified as to it's accuracy.

Total thickness:		415.0	mm (actual)
Total resistance:	$RT = Rsi+R+Rse =$	9.314	m^2K/W
U-Value (uncorrected):	$U = {}^{1}/_{RT} =$	0.107	W/m^2K
Total ΔU:	0.010		
U-Value (corrected):	$U = {}^{1}/_{RT} + \Delta U =$	**0.117**	W/m^2K

Recalculate

Note: The Maximum elemental U-value (w/m2K) for Material Alterations – Individual element or section of element as TGD Part L to be achieved is 0.0.35W/m2K.

The U-value to be achieved with the installation of new 400mm thick Rockwool roll out Attic insulation will achieve a U-value of 0.117W/m2K.

(1) WALLS: INSULATION IN CAVITY

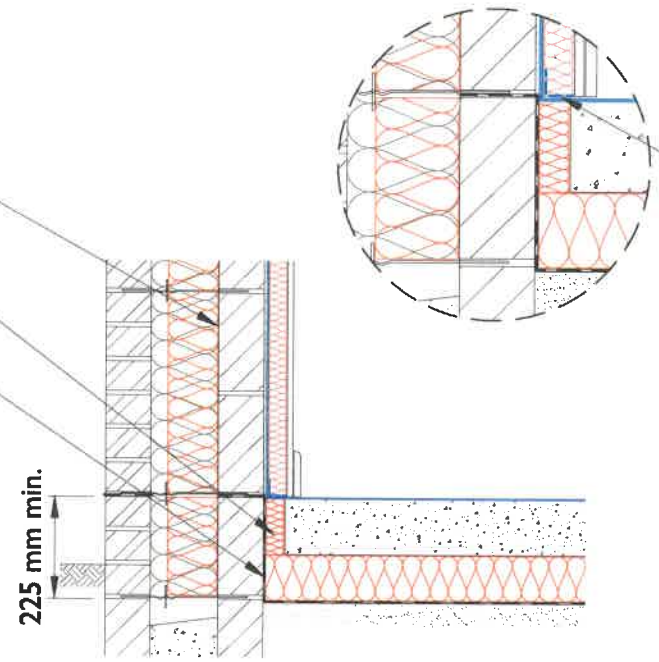
Ground Floor - Insulation Below Slab

DETAIL 1.02a, 2021

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

- ☑ Ensure partial fill insulation is secured firmly against inner leaf of cavity wall
- ☑ Install perimeter insulation with a minimum R-value of 1.0 m²K/W
- ☑ Floor insulation to tightly abut blockwork wall
- ☑ Ensure wall insulation is installed at least 225 mm below top of floor



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- ☑ Seal between wall and floor air barriers with suitable air tightness tape or a flexible sealant
- ☑ Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant

Complying with checklist will help achieve design air permeability

GENERAL NOTES

The wall insulation installed below the wall DPC must be fit for purpose with regards to water absorption

Refer to Technical Guidance Document Part C for details on radon protection

* Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

AIR BARRIER - OPTIONS

OPTION
(TICK ONE)

- ☐ Masonry inner leaf with wet-finish plaster, or
- ☐ Masonry inner leaf with scratch coat, and finished with plasterboard, or
- ☐ Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- ☐ Airtightness membrane and tapes

(1) WALLS: INSULATION IN CAVITY

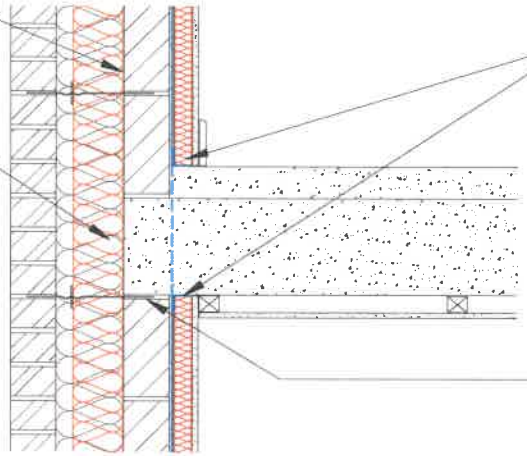
Concrete Intermediate Floor Within a Dwelling

DETAIL 1.04, 2021

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

- ☑ Ensure partial fill insulation is secured firmly against inner leaf of cavity wall
- ☑ Continue cavity wall insulation across floor abutment zone.



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- ☑ Seal between the wall air barrier and the top and underside of the floor slab with suitable airtightness tape or a flexible sealant. (Dotted blue line is notional, to depict the air barrier continuity through floor zone)
- ☑ Ensure continuous mortar bed between floor slab and top of blockwork wall
- ☑ Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant

Complying with checklist will help achieve design air permeability

GENERAL NOTES

* Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

AIR BARRIER - OPTIONS

OPTION
(TICK ONE)

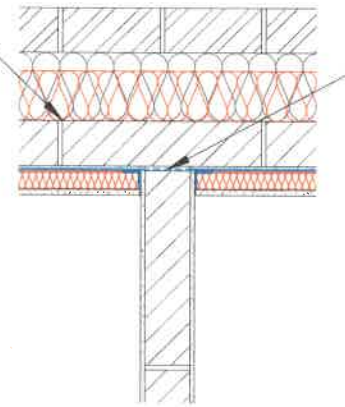
- ☐ Masonry inner leaf with wet-finish plaster, or
- ☐ Masonry inner leaf with scratch coat, and finished with plasterboard, or
- ☐ Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- ☐ Airtightness membrane and tapes

(1) WALLS: INSULATION IN CAVITY | **Masonry Partition Wall** | *DETAIL 1.07, 2021*

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

- [x] Ensure partial fill insulation is secured firmly against inner leaf of cavity wall
- [x] Continue cavity wall insulation across abutment zone



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- [x] Seal between air barrier on external wall and the blockwork, to the partition wall with suitable airtightness tape. (Dotted blue line is notional, to depict air barrier continuity through partition, depending on whether partition toothed into external wall or braced with ties)
- [x] Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant

Complying with checklist will help achieve design air permeability

GENERAL NOTES

Read this detail in conjunction with detail G.02, Blockwork Partition Head

*Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

AIR BARRIER - OPTIONS

OPTION
(TICK ONE)

- [ ] Masonry inner leaf with wet-finish plaster, or
- [ ] Masonry inner leaf with scratch coat, and finished with plasterboard, or
- [ ] Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- [ ] Airtightness membrane and tapes

(1) WALLS: INSULATION IN CAVITY

Eaves - Ventilated Attic

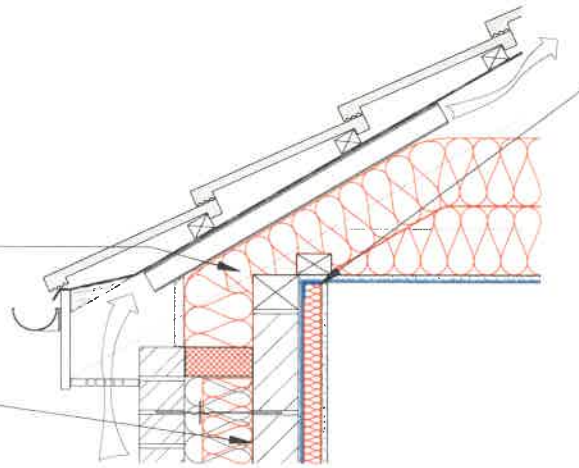
DETAIL 1.10, 2021

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

- ☑ Ensure continuity of insulation throughout junction
- ☑ Ensure full depth of insulation between and over joists abuts eaves insulation
- ☑ Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a minimum R-value across the insulation thickness of 3.00 m^2K/W
- ☑ Ensure partial fill insulation is secured firmly against inner leaf of cavity wall.

Note: Detail is indicative for thermal purposes. Where continuity of insulation is maintained throughout the junction, alternative structural design may be used.



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- ☑ Fix ceiling first and seal between ceiling and masonry wall air barriers with plaster, suitable airtightness tape or flexible sealant
- ☑ Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant
- ☑ Bed wall plate on continuous mortar bed

Complying with checklist will help achieve design air permeability

GENERAL NOTES

Thermal performance of junction can be improved by incorporating an eaves wind barrier (plywood, OSB, softboard or other suitable material) shown dotted

Use of over joist insulation eliminates the cold bridge caused by the joist

Use a proprietary eaves ventilator to ensure ventilation in accordance with Technical Guidance Document F. Installation of the eaves ventilator must not prevent free water drainage below the tiling battens

Refer to Technical Guidance Document B and Supplementary Guidance to TGD B for guidance on cavity barriers and fire protection of structures

Read this detail in conjunction with detail 1.15, Roof at Attic Floor Level

*Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

AIR BARRIER - OPTIONS

OPTION
(TICK ONE)

- ☐ Masonry inner leaf with wet-finish plaster, or
- ☐ Masonry inner leaf with scratch coat, and finished with plasterboard, or
- ☐ Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- ☐ Airtightness membrane and tapes

(1) WALLS: INSULATION IN CAVITY

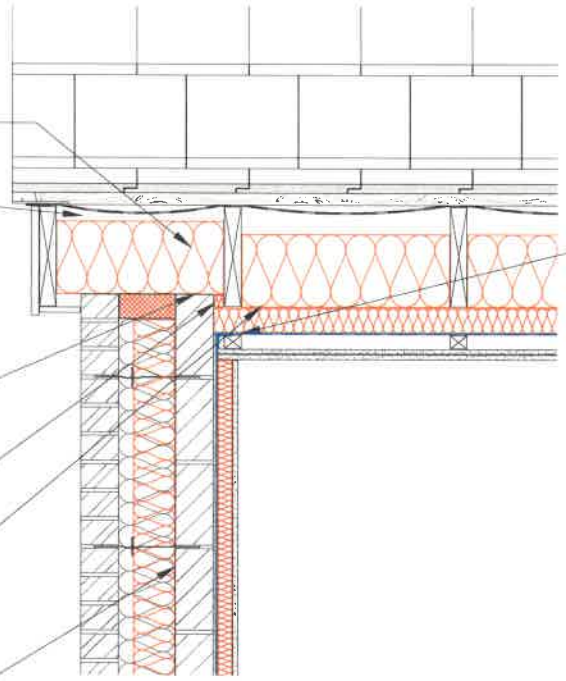
Gable - Insulation Between and Under Rafters - Ventilated Rafter Void

DETAIL 1.17, 2021

THERMAL PERFORMANCE

CHECKLIST (TICK ALL)

- ☑ Fit insulation over top of wall within gable ladder with a minimum R-value across the thickness of 4.35 m²K/W
- ☑ Maintain 50mm ventilated void above insulation
- ☑ Ensure insulation continuity throughout junction
- ☑ Ensure top of wall is levelled with mortar to correct pitch, and that wall insulation is taken up level with wall top
- ☑ Pack gap between rafter and wall with compressible insulation
- ☑ Ensure insulation is installed tightly between rafters and is in contact with under rafter insulation
- ☑ Ensure partial fill insulation is secured firmly against inner leaf of cavity wall



AIR BARRIER - CONTINUITY

CHECKLIST (TICK ALL)

- ☑ Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant
- ☑ Seal between ceiling and masonry wall air barriers with plaster, suitable airtightness tape or flexible sealant

*Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

Complying with checklist will help achieve design air permeability

GENERAL NOTES

Use a proprietary eaves ventilator to ensure ventilation in accordance with Technical Guidance Document F. Installation of the eaves ventilator must not prevent free water drainage below the tiling battens

An effective vapour control layer, which may serve as an air barrier, should be provided on the warm side of the insulation in accordance with Appendix B of Technical Guidance Document L

Use of under rafter insulation eliminates the cold bridge caused by the rafter

Refer to Technical Guidance Document B and Supplementary Guidance to TGD B for guidance on cavity barriers and fire protection of structures

Read this detail in conjunction with details 1.12, Eaves - Ventilated Rafter Void, or 1.13, Eaves - Ventilated Rafter Void - Pitched Ceiling, as appropriate

AIR BARRIER - OPTIONS

OPTION (TICK ONE)

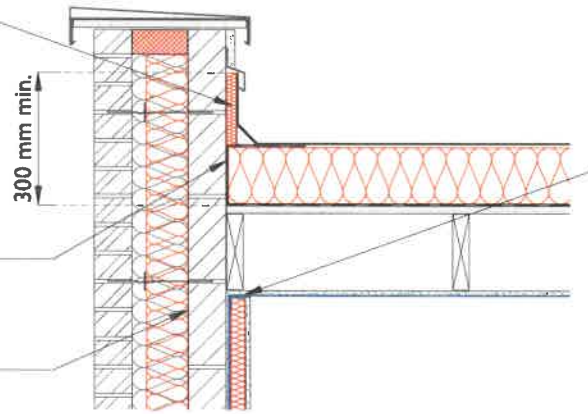
- ☐ Masonry inner leaf with wet-finish plaster, or
- ☐ Masonry inner leaf with scratch coat, and finished with plasterboard, or
- ☐ Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- ☐ Airtightness membrane and tapes

(1) WALLS: INSULATION IN CAVITY **Flat Roof - Parapet** *DETAIL 1.20, 2021*

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

- ☑ Insulation upstand having a minimum R-value of 1.10 m²K/W (in heat flow direction perpendicular to wall surface) around parapet
- ☑ 300 mm minimum between top of insulation upstand and bottom of horizontal roof insulation
- ☑ Ensure roof insulation tightly abuts inner face of parapet wall
- ☑ Ensure partial fill insulation is secured firmly against inner leaf of cavity wall



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- ☑ Seal all penetrations through air barrier with suitable air tightness tape, grommets or flexible sealant
- ☑ Fix ceiling first and seal between ceiling and masonry wall air barriers with plaster, suitable airtightness tape or flexible sealant

* Air tightness upgrade works not included as not part of DoEY's scope of works or project budget.

Complying with checklist will help achieve design air permeability

GENERAL NOTES

BS 5250:2011 + A1:2016 provides for a high performance vapour barrier to be laid above the deck, turned up at perimeter of the insulation and sealed to weathering membrane

An effective vapour control layer, which may serve as an air barrier, should be provided on the warm side of the insulation in accordance with Appendix B of Technical Guidance Document L

Refer to Technical Guidance Document B and Supplementary Guidance to TGD B for guidance on cavity barriers and fire protection of structures

AIR BARRIER - OPTIONS

OPTION
(TICK ONE)

- ☐ Masonry inner leaf with wet-finish plaster, or
- ☐ Masonry inner leaf with scratch coat, and finished with plasterboard, or
- ☐ Insulated plasterboard system sealed to achieve appropriate air tightness, bedded on dabs and mechanically fixed, with continuous ribbon of adhesive around all openings, along top and bottom of wall and at internal and external corners, or
- ☐ Airtightness membrane and tapes