



VOC Protection Validation Plan
Persimmon Homes
Former Burgess Factory
Brookfield Road
Burbage
LE10 2LL

Prepared By	Michael Corban
Checked By	Michael Corban
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1. INTRODUCTION

1.1 Purpose

MEC Environmental Ltd (MEC) are to be appointed by Persimmon Homes to carry out independent validation and integrity testing to the installation of the VOC protection measures on the site. This plan sets out the requirements and procedures that would be adopted by MEC and others in respect of fulfilling the obligations under the terms of our appointment (see Appendix 2).

1.2 Limitations

This plan is limited to setting out the procedures that (MEC) would adopt under its appointment as Validators for the VOC Membrane Installation as well as highlighting good practises for installing VOC barriers. This plan does not in itself constitute verification that the membrane has been installed in accordance with this document. A separate validation report would be issued by (MEC) upon successful completion of the installation, furthermore (MEC) have not carried out any design work in respect of the VOC protection measures prescribed for this site and therefore no professional liability will be extended in respect of the VOC protection design. Where there is a waterproofing element to any work MEC Environmental's work shall be limited to determining its suitability for VOC/VOC only, no liability/warranty is offered or implied for the waterproofing element which should be checked by a CSSW qualified surveyor.

This validation plan and its contents should not be used for any purpose other than that for which it was prepared and provided. Should the Client require to pass copies of the report to other parties for information only, the whole of the plan should be so copied, however the report should not be relied upon by any third party and no warranty shall be extended or implied to any third party, unless expressly agreed in writing by MEC Environmental.

All requests to visit site to carry out an inspection/testing must be made in writing not less than 5 working days prior to the required inspection day. MEC Environmental Ltd cannot accept any responsibility for delays should the above not notice not be given. It is the responsibility of the client to organise all visits to ensure that the required frequency of inspections to each unit is achieved.

1.3 Scope of Work

To inspect the installation of the VOC protection system in line with the guidance contained in **CIRIA C 735 "Good practise on the testing and verification of protection systems for buildings against hazardous ground gasees"** and/or ensure that the design "by others" is correctly installed.

Produce a report detailing sufficient lines of evidence that the protection measures prescribed have been successfully installed in order to discharge the relevant planning consent only.

MEC Environmental are not responsible for any warranties for the system proposed or installed. The sole purpose of the works carried under this plan are to assist the client in gaining discharge of the relevant planning conditions, any changes to our final report requested by any third party other than the local authority regulator or warranty provider are completely at our discretion and will be chargeable at a rate of £500.00 per re-issue of report, no changes that compromise the independence of MEC Environmental's inspection and report will entertained.

Where the client has employed a third party environmental consultancy to check this element of the work then they should furnish MEC Environmental with a copy of their detailed validation plan so that we can provide a separate quote for any extra work that maybe required.

2. Site Classification & VOC Protection System

We have been advised that the site has VOC contamination, MEC Environmental have not classified the site and this information has been relied upon in good faith from Persimmon Homes

The proposed protection measures consists of:

- a) Floor Slab ☐
- b) Full Cover of VOC resistant membrane, verified in accordance with CIRIA C735. ☒
- c) Venting System or Pressure Relief System ☒

MEC Environmental have not carried out any work in respect of the suitability of the system or materials proposed for the building and it is critical that any protection measures are agreed with the regulators prior to work commencing. Our inspections will be based on the Juta Titanflex system unless otherwise advised in writing. The above assumes that regulatory approval for the products have been agreed and no liability will be accepted by MEC should this subsequently found not to be the case.

3. Earthworks

3.1 Subgrade Preparation

The Earthworks Contractor will be responsible for preparing the substrate.

The VOC Membrane Installer should prior to installing the VOC protection system satisfy himself that:

- Is suitable to lay the membrane on.

4. Installation

4.1 Installer Qualifications

Is the Installation Contractor Appropriately Qualified? - Yes ☒ No ☐

Qualifications/Trade Associations

Installer: OMEGA LININGS

Supervisor to hold NVQ Level 2 Gas Membranes Installations

4.2 Weather Conditions

VOC membrane placement shall not take place in an area of ponded water, or during excessive winds.

The recommended maximum and minimum installation temperatures quoted on material manufacturers data sheets should be adhered to at all times. Special attention should be given to bitumen and butyl type self-adhesive products (tape jointing or detailing work) as in most cases these will have the lowest installation temperature range.

Placement of the VOC membrane should not take place in any event when the temperature is below zero degrees, as this will present a health and safety risk to site personnel, in these conditions the VOC membrane surface will become too dangerous to walk on.

When laying the VOC membrane it is beneficial to proceed in the direction of (with) the prevailing winds. This decision must be made during installation, in accordance with varying environmental conditions. In any event, the Installer will be fully responsible for the decisions made regarding placement procedures.

4.3 Damage

During the installation the installer will carry out as part of their CQA a visual inspection to examine the VOC membrane and details (pipe penetrations, stanchions etc), after placement and jointing, for damage. Damaged areas, will be repaired in accordance with the procedures described in Section 6.

As a minimum, the installer will ensure that:

- The membrane is placed in such a manner that it has not been, or is unlikely to be, damaged; and
- Any tears, punctures, holes, thin spots, gouges, and protuberances etc., repaired according to procedures described in Section 6.

4.4 Validators Qualifications

The consultant appointed to produce the final validation report shall be accredited as part of the CL:AIRE Gas Protection Verification Competent Person Scheme and must hold the S.G.V.P. accreditation,.

All inspections must be carried out by qualified validation surveyor, which is defined as follows:

- 1) NVQ Level 2 "VOC Membrane Installations" and/or
- 2) NVQ Level 4 "VOC Protection Verification"

5 Inspection/Testing Schedule – Annex 1 Ciria C735

5.1 Risk Assessments as per Section 3 (CiriaC735)

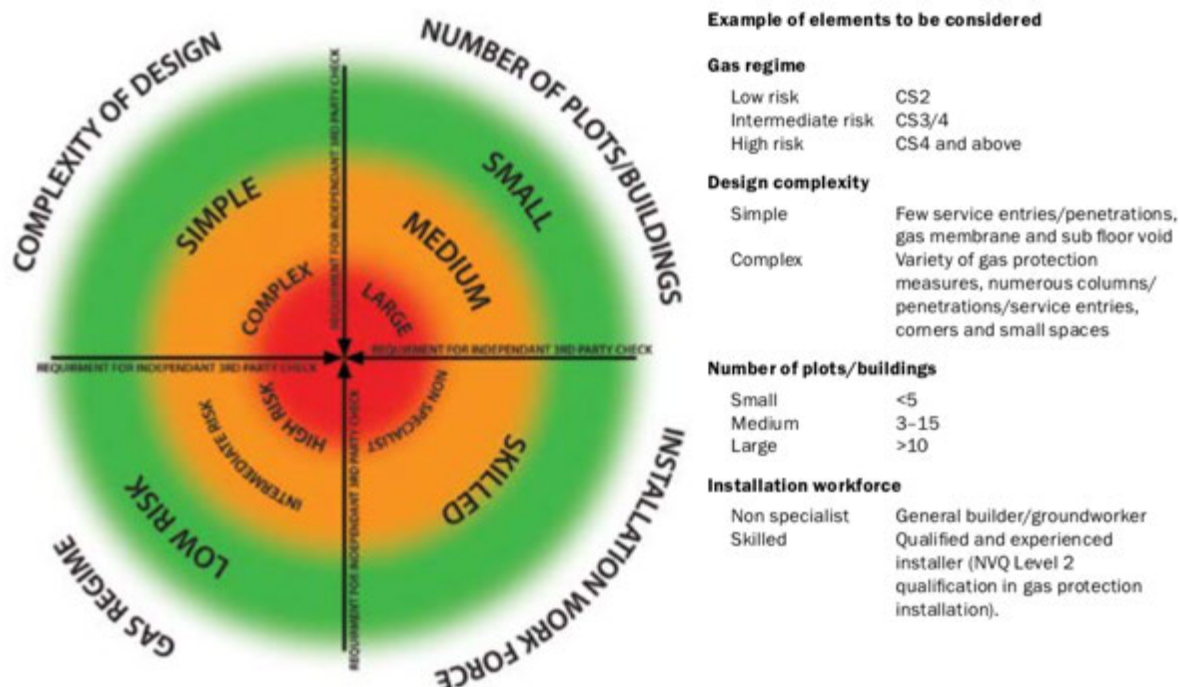


Figure 3.1 Illustration of factors to be taken into account in determining the scope and level of independence in the verification of gas protection systems in buildings

VOC Regime: Hydrocarbon protection (High Risk)

Installer : Sk ed ☒ Non-Spec a st ☐

Complexity : S mp e ☒ Comp ex ☐

Number of Buildings: Sma < 5 ☐ Med um 3-15 ☐ Large >10 ☒

Overall Rating: High Risk

5.2 Inspection Method & Frequency

The validation surveyor will inspect the depth of the void below ALL properties and confirm that there is a minimum depth of 150mm clear void and also confirm on each inspection the number of air inlets and outlets (air bricks).

The Validation Surveyor WILL visually inspect the installation of 100% of the VOC barrier and 100% of all detailing work shall be subject to air lance or probe testing to ASTM D4437.

Detailing work is defined as any part of the installation that includes a joint and includes but is not limited to: pipes, stanchions, corners, field seams, masonry walls abutments, wind braces, and all self adhesive bitumen products.

6 Defects and Repair

6.1 Identification

The VOC membrane will be inspected as per section 5 by the Validation Surveyor for identification of defects, protruding and penetrating objects, lack of subgrade support, continuity, overheating, holes, blisters, undispersed raw materials, scratches and gouges, and any sign of contamination by foreign matter. To facilitate the examination the VOC membrane surface will be kept clean by the Installer (or as agreed at the Preconstruction Meeting).

6.2 Evaluation

In areas that fail the independent inspection, the Validation Surveyor will inform the Installer who will then repair this. Work will not proceed with any materials which will cover locations that have been repaired until the Validation Consultant has passed the subsequent repair, the number of repairs will be recorded and presented in the validation report.

6.3 Repair Procedures

Any portion of the VOC membrane exhibiting a flaw, or failing a visual inspection or non-destructive test, will be repaired. The final decision as to the appropriate repair procedure will be agreed upon between the Validation Surveyor and the Installer.

The procedures available include:

- Self-adhesive patching, used to repair all penetrating holes, tears, undispersed raw materials, and contamination by foreign matter;

In addition, the following provisions will be satisfied:

- All surfaces must be clean, free of all particulate matter, and dry at the time of the repair;
- The repair procedures, materials, and techniques will be approved in advance of the specific

- repair by the Validation Consultant;
- Patches and will extend at least 100 mm beyond the edge of the defect

6.4 Verification of Repairs

Each repair identified by MEC will be re-inspected using the methods described in Section 5 or another approved method. Repairs passing re-inspection will be considered acceptable. .

7. Validation Report

A separate validation reports will be produced by MEC Environmental Ltd on completion of the installation and submitted to the client, the report will take the format of MEC Environmental Ltd's standard VOC membrane validation report and will contain the following information as a minimum.

- Reference/Name of Job
- Scope of Work Undertaken (as per this document)
- Inspection Survey Sheets for all site visits
- Records of any repairs and apparent failures
- Photographic Evidence of the Installation

The above plan meets the requirements of CIRIA C735 , this plan should be agreed with the regulator, the main contractor's client and/or other insurance providers prior to work commencing on site, the implementation of this plan is entirely at the clients risk if said agreements have not been agreed at the time of installations and/or inspections with the regulator and insurance providers prior to any installations taking place.

It is the responsibility of the client to ensure that MEC are booked for inspections at the appropriate time and that the works to be inspected have not been covered with any material that will impede our inspections. Failure to adhere to the 100% inspection regime detailed in this plan is entirely at the risk of the client and no liability will be accepted by MEC should regulatory approval not be granted on this basis.

Signed:



Date: 24/05/23

Print Name: Michael Corban, S.G.P.V.

Position: Director

Signed on behalf of MEC Environmental Ltd