Contractor and Builder Air Tightness & Vapour Control Training

Airtightness and vapour control are crucial when creating a low energy or Passive House building. Achieving and installing stringent levels of airtightness may feel daunting, but this training series will guide contractors and builders on both theoretical and practical training for both domestic and commercial projects. The benefits of airtightness and vapour control are substantial and numerous, including reduced energy consumption, improved levels of comfort and a healthy environment for occupants when combined with effective ventilation and importantly structural durability. We spend around 90% of our time indoors and most building failures are caused by moisture related issues, the need for active moisture management, lifetime building durability and a healthy living environment become more crucial than ever.

During these four sessions, you will learn what airtightness is (and isn't), why it matters, the causes and effects of poor moisture management and current vs. future airtightness standards.

The training series highlights the importance of a collaborative approach on site and for a change in attitude to interpret airtightness designs and construct buildings that are more durable, healthy, and fit for the future.

You will also see lots of practical installations and engagement offering help and advice on all those details you previously considered might be tricky and how they can easily be solved with just a little forethought, knowledge and the right products and tools.

You will receive industry leading training from highly experienced technical professionals with the opportunity to engage throughout.

The training will be delivered over four sessions.

Session 1 – An Introduction to Airtightness & Moisture Management

1st October 2025 – 9.00am – 11.00am

9.00am – 10.20am - Trainer - Neil Turner, UK Technical Manager, Ecological Building Systems

Basics

Starting with the airtightness basics and theory, addressing the pros and cons of different commonly used materials on site. We'll interpret the "Red Line" rule to define the air barrier and the need for diligent attention to detail and co-operation between all trades on site.

Airtightness and vapour control go hand in hand, so we'll be looking at moisture levels on site, the movement of moisture vapour through various materials and the associated consequences caused by this moisture. We also examine how choosing fit-for-purpose materials is essential in ensuring durable, sustainable buildings and a healthy comfortable living environment is achieved.

The learning outcomes of this session;

- What is airtightness? What is windtightness? What's the difference?
- Why does it matter?
- How is airtightness designed from the outset?
- Moisture management to avoid structural damage and damp.
- How to 'Build Tight & Ventilate Right.'
- Airtightness standards from the legal minimum to the best.
- Best practice techniques – appointing an Airtightness Champion.
- Consequences of a lack of airtightness and common failure areas.

10.20am – 10.30am Break

10.30am – 11.00am - Trainer - Diane Hubbard, Green Footsteps

Utilising her vast experience as an airtightness tester and thermographer for Part L, Passivhaus and Refurbishment Projects, Diane will base her presentation around her experience of working with contractors and the issues and questions that commonly arise.

The second part of the first session will cover;

- What is an airtightness test
- Explaining the numbers Q50/N50
- When to test
- Preparing for a test
- Leak detection

Session 2 – Airtightness – It's all in the detail – Solutions, Build Types & Critical Junctions

8th October 2025 – 9.00am – 11.00am

9.00am – 09.50am – Trainer - Dave Judd, Technical Specification Advisor, Ecological Building Systems

Session 1:

- Timber Frame with Airtight Board
- Timber Frame with Airtight Membrane

09.50am – 10.00am – Break

10.00am – 10.45am - Trainer - Ilias Igoumenidis, Technical Support Engineer, Ecological Building Systems

Session 2:

- CLT Structure with Membranes/Tapes
- Masonry

In both sessions, we will be focusing on the airtightness solutions available and concentrating on the detailing for achieving airtightness in specific junctions for both new build and retrofit, referencing Timber Frame, Masonry and CLT build types. Preparation on site; common tools and bespoke solutions along with site practices, will all be explored.

The 3 core elements we will be detailing in each session will be;

- **Main airtight layers**
  - Membrane
  - Wet Plaster
  - Liquid Membrane
  - Airtight Boards
  - Floor slab/screed
- **Windows and Doors**
  - Attic Hatches
- **Service Penetrations**
  - Flues
  - Cables
  - Sockets
  - Downlighters
- **Structural Connections**
  - Wall to floor
  - Wall to Ceiling
  - Roof Sealing

- Floor Sealing
- Intermediate floor
- Suspended Timber Floor

10.45am – 11.00am – Questions and Answers.

Session 3 - Airtightness specification drawings - the process from a contractor's perspective

15th October 2025 – 9.00am – 11.30am

9.00am – 10.00am - Trainers - Niall Crosson – Group Technical Director Ecological Building Systems, Joe Fitzgerald – Technical Specification Manager

There will be a recap on the red line rule for the air barrier line and how to define and review it. Also taking a brief look at wind tightness, how it's defined, and looking at the blue line rule. In the first part of this session, we will demonstrate how drawings are marked for 3 common building types and the strategies to adopt for sealing; CLT, Timber Frame and Masonry. Define the air barrier line and all the connections, how they are made, what the air barrier is and how it connects to the different components.

10.00 – 10.10 Break

10.10 – 11.00 – Breakout rooms for delegates to assess and mark drawings for either Block, Timber Frame or CLT.

Facilitators - Joe Fitzgerald – Technical Specification Manager; Neil Turner – UK Technical Manager, Dave Judd – Technical Specification Advisor, Ilias Igoumenidis – Technical Support Engineer, Gregg Peel – Technical Specification Advisor

In the second part of this third session, delegates can choose a Breakout room with a build type, Block, Timber Frame, or CLT and look at elevation drawings with examples of different junctions and mark them up live. An experienced technical mentor will work along side each group to facilitate the process and discussion.

At the end of this session, each breakout group will come back to the main group to summarise their drawings and give feedback on their airtightness conclusions and solutions.

This session will show why an Airtightness Champion is key to success. Showing that communication and coordination to interpret drawings and create an airtightness strategy on site among different construction disciplines is key.

11.00am – 11.30am – Review and discussion of Breakout Room Drawings and conclusions.

Session 4 – Airtightness Putting Theory into Practice

22nd October 2025 – 9.00am – 11.30am

9.00am – 10.30am - Trainers – Ilias Igoumenidis, Technical Support Engineer and Dave Judd Technical Specification Advisor

The focus for the last session in the airtightness series will be on practical applications. Our trainers will take delegates through practical installation videos, showing tips, how to apply and the right solutions for each junction.

We will also focus on some of the challenges and include;

- Common Mistakes and how to overcome them.
- Intermediate airtightness testing.
- Weather and site conditions and preparation of substrates.
- Site cleanliness
- Co-ordination and communication on site, between trades
- Sequencing and planning.

10.30 – 10.40 – Break

10.40 – 11.30 – Practical Case Study - Trainer - External speaker – Alex Burn of 4Site Engineering and Construction