

Guidance on suitable photographic evidence of retrofitted CWI

This document is intended to provide guidance on collecting suitable photographic evidence to demonstrate that the first time central heating (FTCH) cavity wall pre-condition has been met. It should be read in conjunction with paragraphs 4.90 – 4.114 of the ECO3 Guidance: Delivery.¹

Photographic evidence of CWI should only be used where PAS 2019 Retrofit Coordinator sign-off, a valid EPC, insulation guarantee, or other documentation is not available.

1. Requirements for Photographic Evidence

Where photographic evidence is being used to demonstrate that a property has had CWI installed and that the cavity wall FTCH pre-condition has been met, photos of the drill patterns (as outlined in points 1 and 2 below) must be provided. To provide additional assurance, photos of the areas outlined in points 3 and 4 can be used as supplementary evidence alongside these. Further information on these points can be found in section 3 – ‘Key indicators of retrofit CWI’.

To verify that they were taken at the given property, **all photos must be geotagged and dated**, with these shown as a ‘watermark’ across the photo.

1. Evidence of standard drill pattern around windows, doors, waste pipes or vents.

- Initially assess for the presence of drill holes two to three courses of brick below a window.
- Photos must show multiple drill holes. Where well-matched mortar has obscured the holes, additional close-up photos should be provided.
- The drill holes should be clearly marked by either pointing to them in the photo or annotating the photograph afterwards.
- Photos must be provided of all elevations to show that the property has been fully treated.
- *Figure 1* below shows examples of wider shots with additional close-ups, and *Figure 2* shows a standard drill pattern on a rendered property.

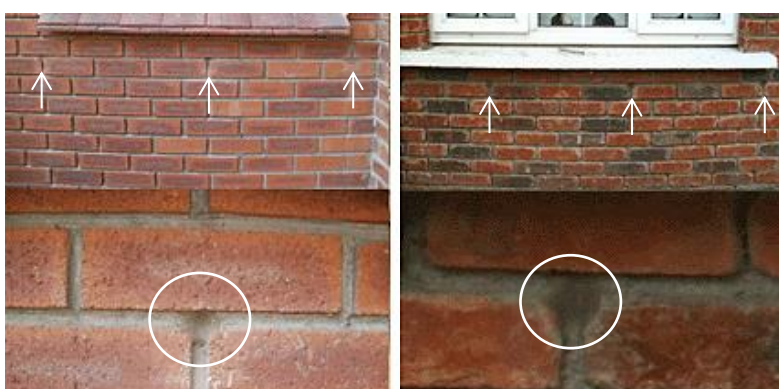


Figure 1: Evidence of multiple drill holes with additional close-ups



Figure 2: Drill pattern on rendered property

¹ <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-delivery>

2. Evidence of drill pattern on corners for Lance systems.

- Photos must be provided showing evidence of larger (27-40mm) drill holes on all elevations where a lance has been inserted.
- As above, wider photos of property and close-up photos must be taken where holes are difficult to see from wider shots.
- Figure 3 shows an example of suitable photographic evidence of a lance installation drill hole.



Figure 3 – Evidence of drill hole used for lance installation of CWI

3. Evidence of drill holes used to install cavity wall brush on party wall line

Cavity brushes can be used to ensure that insulation material does not spill into the cavity of a neighbouring property. If a cavity brush has been installed, it may be possible to see evidence of this on the party wall line.

There will usually be a drill hole at the top of the cavity wall, with a second hole drilled at the damp proof course (DPC) level. It is common practice to drill two adjacent holes to create a larger hole in order to locate the chain used to install the brush.

- Photos of cavity brush drill holes may be provided to supplement evidence of insulation drill holes outlined in points 1 and 2.
- Photos must show evidence of large drill holes at the top and/or bottom of the party wall line between properties.
- Figure 4 shows an example of cavity brush drill holes prior to being filled with mortar.



Figure 4 - Evidence of drill holes used for installation of cavity brush

4. Evidence of Cavity Wall Insulation visible from loft space

Where there is access to the loft space, the presence of CWI can be identified by viewing the cavity from above.

- Photos that clearly show insulation material (ie beads, fibre, or foam) visible from the loft space may be provided to supplement evidence of insulation drill holes outlined in points 1 and 2.
- Figure 5 shows an example of photographic evidence of insulation material visible from the loft space.



Figure 5 – Evidence of insulation material visible from the loft space

2. Background

Cavity wall insulation is used to reduce heat loss through a cavity wall by filling the air space with material that inhibits heat transfer. This immobilises the air within the cavity (air is still the actual insulator), preventing convection, and can substantially reduce space heating costs.

Cavity wall insulation is retrofitted by injecting insulation (in the form of blown fibre, expanded polystyrene beads, or foam) under high pressure through holes drilled in the wall in a predetermined pattern. Once the cavity has been fully insulated the holes are filled with mortar. Drill holes can be difficult to spot if the mortar used to seal them is a good match, especially as the contrast tends to fade as the mortar weathers. This is demonstrated in the image to the right of a rendered cavity wall with a well-covered drill hole.



3. Key indicators of retrofit CWI

Standard drill holes

The drill holes for cavity wall insulation differ, but are approximately 18-25mm in diameter. The holes are drilled into the mortar joints, and are located at the base of the mortar joint between the bricks, as shown in *Figure 6* below.



Figure 6: Position and size of standard drill hole

The holes are aligned in a specific predetermined pattern. Typically there is a high concentration of drill holes around windows and doors (see *Figure 7* below). Drilling patterns are determined by the product manufacturer and/or product certification body.

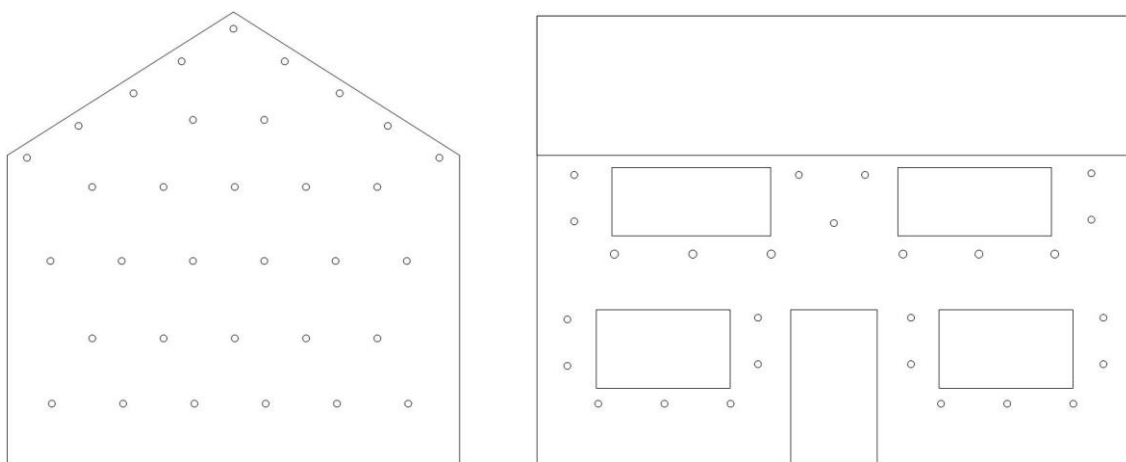


Figure 7: Typical drill pattern

Waste pipes and vents passing through a cavity can obstruct insulation and result in void areas. As such, drill holes can also be located under waste pipes and vents. These additional holes help fill the voids these types of obstruction can create.

Lance installation drill holes

In some cases, it may not be possible or suitable to use a standard drilling pattern, for example if an extension has been added to the property. In such cases, the cavity can be filled from the side, using a lance installation technique.

If this technique has been used, the drill holes can be found on the corners of elevations and will typically be between 27mm-40mm in diameter.

Other considerations

It should be noted that properties with an injected damp proof course (DPC) can be mistaken for CWI injection holes. These are typically only at the first to fifth courses of brick above ground level, and can be drilled directly through bricks or mortar joints. CWI drill holes are typically found above this level, and will only be drilled through the mortar joints, unless the property is fully rendered.

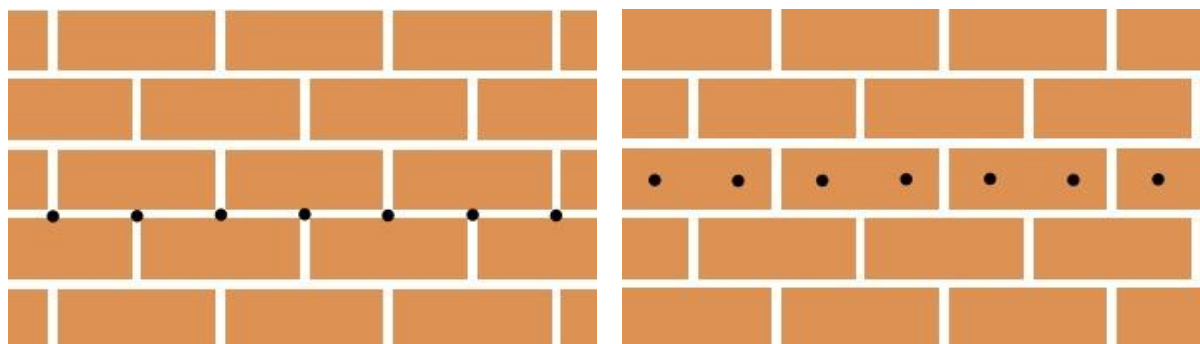


Figure 8: Example of damp proof course drill patterns

In some cases, there may also be evidence of drill holes used to replace damaged wall ties. These are drilled directly through the brick, and not through the mortar joints.