

Building Compliance
Design & Testing

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ON-SITE

Air Leakage Testing

Methods to achieve air tightness

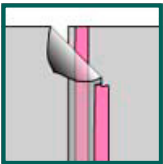


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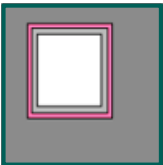
Methods to achieve air tightness



Air barriers must be impermeable to air, continuous, durable and accessible. Internal air barriers need to be airtight; external air barriers need to be wind-tight. Air barriers can be vapour open but require careful specification of adjoining construction and insulation materials. Having made the building airtight, mechanical ventilation is essential.



Laps in membranes should be rigorously sealed. Run a layer of double sided tape between the membranes at the overlap and run a tape over the leading edge of the outer sheet. Ensure that laps are positioned over a supporting area e.g. studs that can be battened for added security. Special wind and airtight membranes are available complete with adhesives, adhesive tapes and service penetration seals.



When installing/reinstalling a window/door frame, ensure that the gaps around the frame are sealed. Gunned in compatible sealant is suitable for small joints, not forgetting joint cleaning and priming to ensure a good bond. Where the openings are larger use a pre-compressed flexible expanding foam strip. Ensure that the airtight membrane meets and overlaps the seal to maintain the airtight layer overall. Do not use foaming gap-filling adhesives, they shrink and break the seal after the tests are complete.



Use compatible gunned in sealant to seal joints between door/window frames and the surrounding wall externally. Internally, apply sealant to gaps between the wall reveals/window boards and the window/door units.





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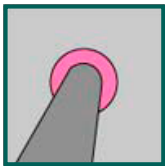
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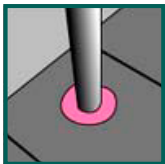
Draught strip existing windows and external doors. (Do not draught strip to kitchens and bathrooms unless extract ventilation is provided.) Use synthetic rubber or elastomeric tubular seals. Use brush seals with sash windows.



Draught strip the loft hatch. Ironmongery should be specified to ensure seals are compressed. Check that the hatch is thermally insulated as well as the rest of the ceiling.



Seal holes around services passing through the external wall including water, drainage, gas pipes, boiler flues and electrical cables. (Ensure that the sealant around boiler flues is heat resistant)



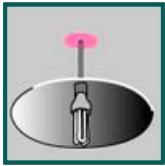
Seal holes around service pipes passing through suspended timber floors.



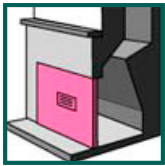


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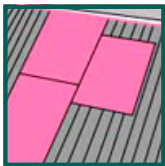
Seal holes around light fittings and pull cords in the ceiling. If the light fitting is not airtight then install an airtight box over the light fitting in the ceiling void. Choose airtight light fittings.



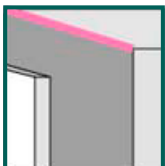
Block up redundant fireplaces and insert vent. Cap the chimney. Make sure the blocking up material is thermally insulating to reduce excessive heat losses.



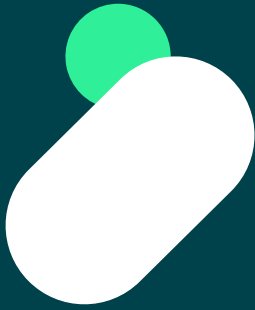
Drylining is notoriously air leaky, consider parge coating the wall for airtightness before drylining. When drylining directly to an external wall, apply a continuous perimeter of adhesive. Ensure the joints between boards are sealed.



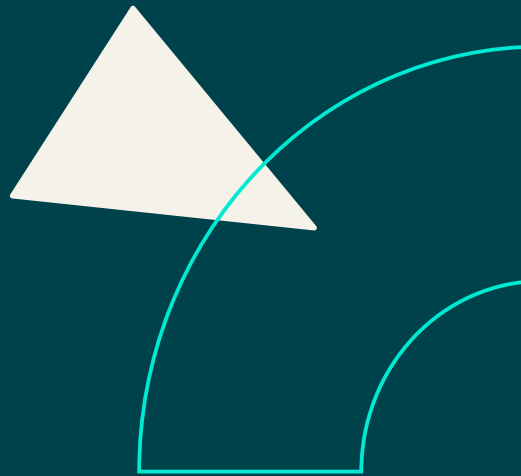
Lay room-conditioned hardboard over existing square-edged floor boards. Seal the perimeter.



Seal the joint between the ceiling and the external wall. Seal the joint between drylining and skirting board.



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