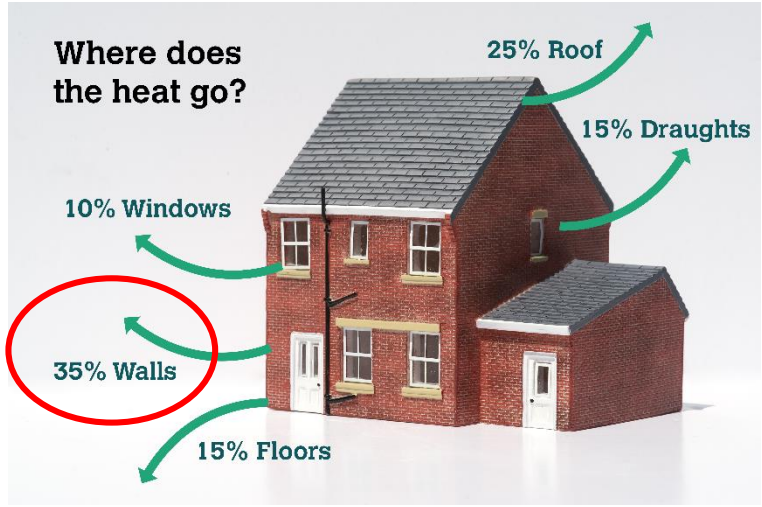
Energy efficiency measures – Cavity wall insulation

Scope

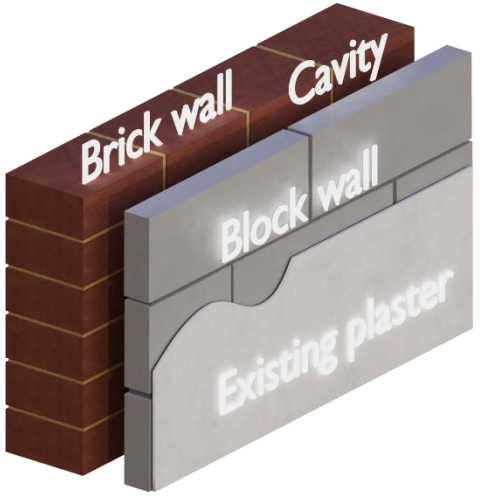
- This training module is aimed at **HomeWorks** registered tradespeople who are acting as Low Carbon Ambassadors (LCAs) to provide basic energy efficiency advice to homeowners
- It is one in a series of training modules aimed at LCAs:
  - Introduction to domestic retrofit
  - What is **HomeWorks**?
  - Understanding an EPC (Energy Performance Certificate)
  - Energy efficiency measures (EEMs):
    - Low/no cost measures
    - Loft insulation
    - Draught-proofing
    - **Cavity wall insulation**
    - Solid wall insulation
    - Replacement windows
    - Boiler replacement

EEMs – Cavity wall insulation - Learning outcomes

- The learning outcomes of this training module are to summarise:
  - The approach for identifying cavity walls
  - The typical installation costs and energy savings as well as other benefits
  - The barriers to installing cavity wall insulation and how to solve them
  - The associated risks and how these can be managed



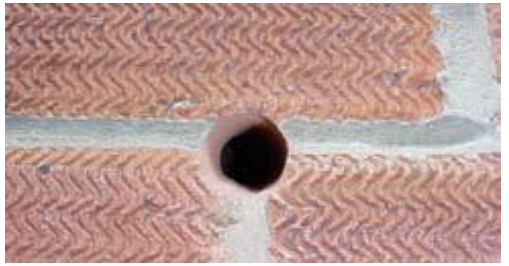
Cavity wall insulation - Description



- Houses built after 1930s usually have cavity walls; prior to this solid walls dominated – covered in module ***Solid Wall Insulation***

- Those built from 1980s generally had insulation installed in cavity but there may be scope to insulate houses built earlier

- Insulation is injected into cavity through holes drilled in mortar joints of outside wall - typical insulation materials are mineral wool and polystyrene beads



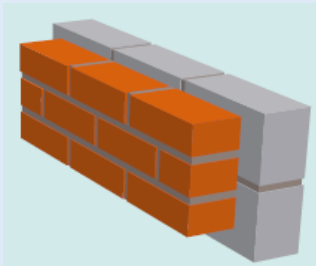
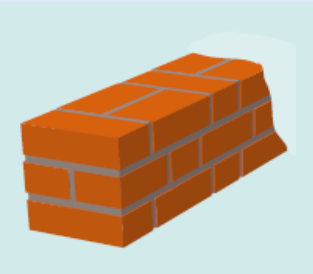
- Installers should be registered with one of these organisations:
  - National Insulation Association (NIA)
  - Cavity Insulation Guarantee Agency (CIGA)
  - British Board of Agrément (BBA)

  and signed up to code of professional practice

- Installation guaranteed for 25 years by CIGA, or through independent insurance-backed guarantee

Cavity wall insulation – Identifying suitable walls

- House age only provides indication, but there are other tests:

Brick pattern	Cavity walls have even pattern where bricks are laid length-ways Solid brick walls have alternating pattern with some bricks laid across wall	 
Wall width	Cavity is typically 50-60mm wide (but can be wider) so overall width of cavity wall is typically 250mm Solid brick walls generally only 220mm wide, although stone walls generally thicker	
Cement patches	If cavity walls have had insulation injected, cement patches covering injection holes might be visible	
EPC	EPC indicates what wall types present and also if they have been insulated already	See module ***Understanding an EPC***

See https://www.simpleenergyadvice.org.uk/pages/checking-for-cavity-walls for further information

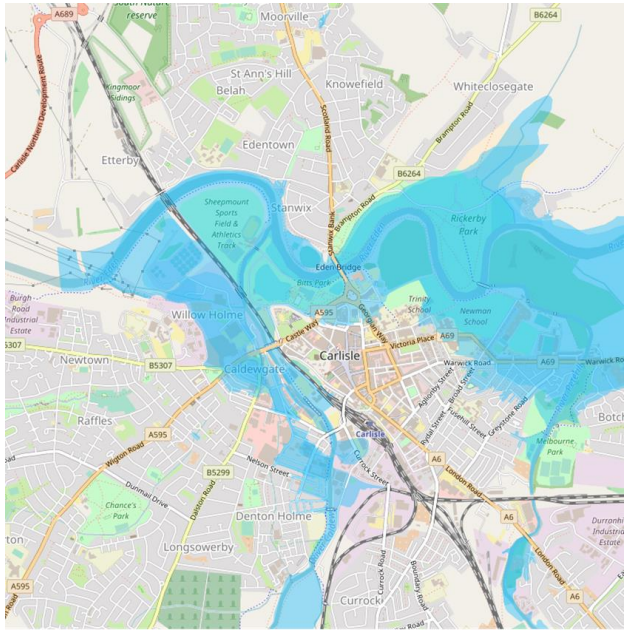
Cavity wall insulation – Identifying suitable walls (continued)

- Not all houses are suitable for cavity wall insulation, this includes those constructed with:
  - timber or steel frame
  - concrete panels

- Even if house has unfilled cavity walls, it may not be suitable for insulation if:
  - Cavities less than 50mm wide, or there is rubble in cavity
  - Brick or block work is in poor condition
  - House is in driving rain location, or there is risk of flooding

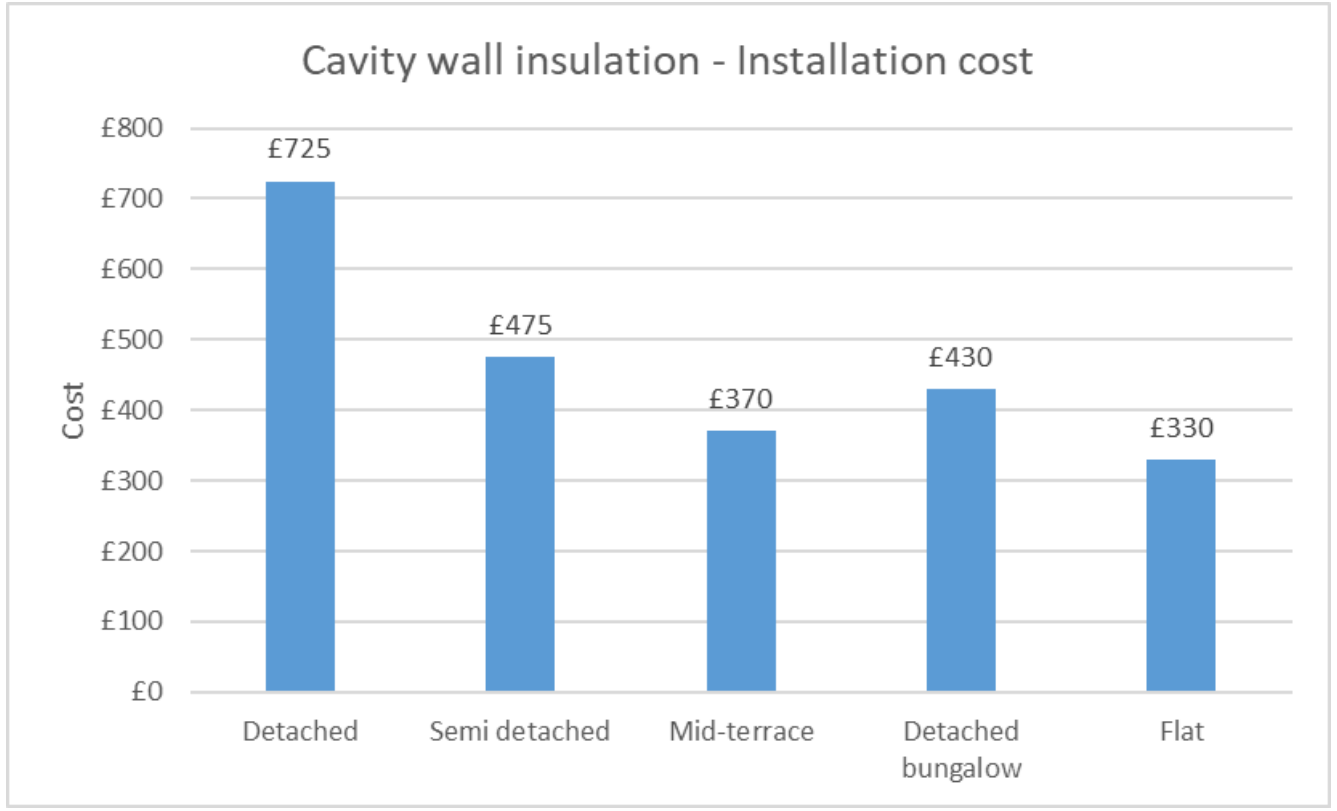
- However, it might be possible to use polyurethane foam

- Registered cavity wall insulation installer will need to undertake survey



Cavity wall insulation – Typical installation cost

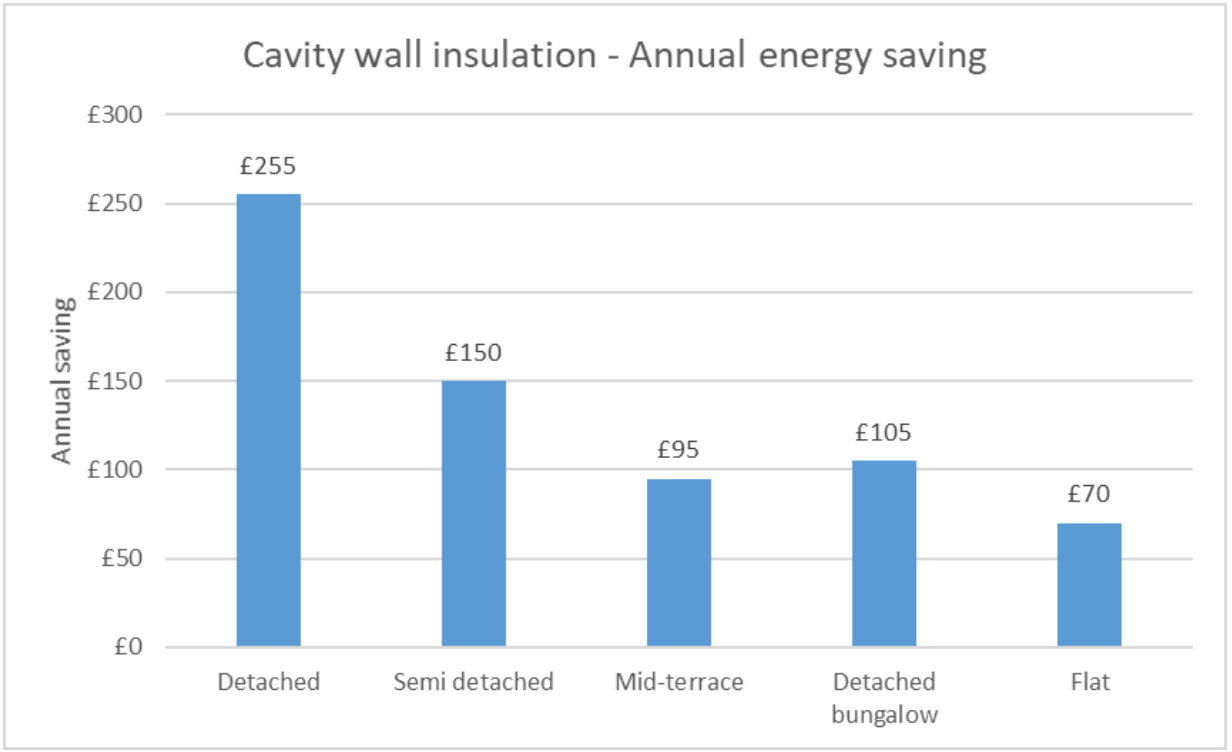
- Graph shows costs to insulate walls in five key house types:

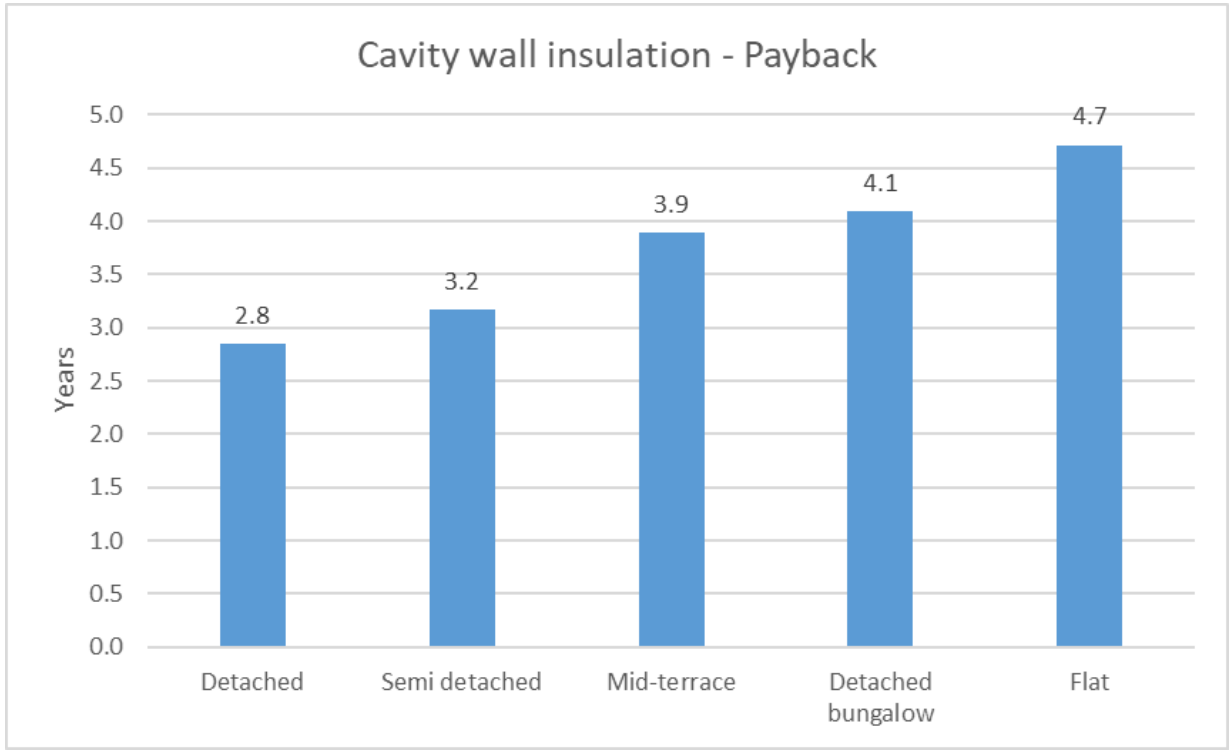


Figures taken from Energy Saving Trust (EST)

Cavity wall insulation – Annual energy saving

- The graphs show the annual energy saving and payback from cavity wall insulation in the five key house types

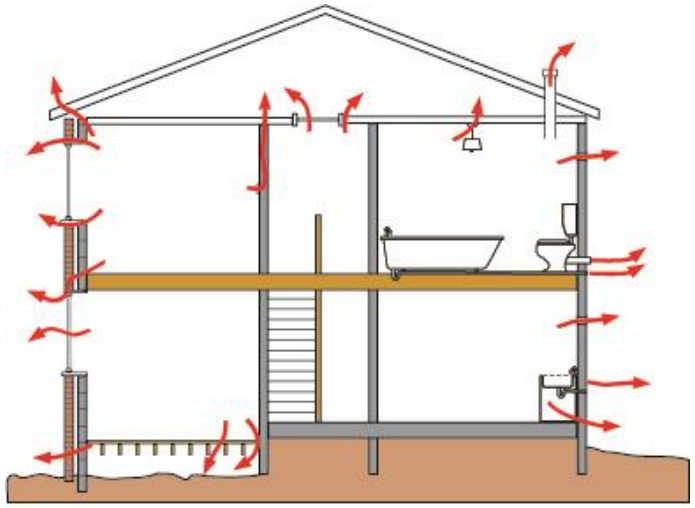


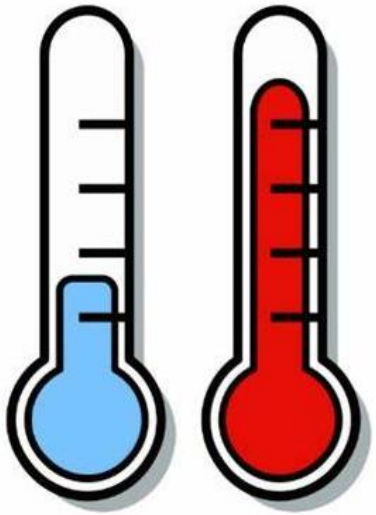


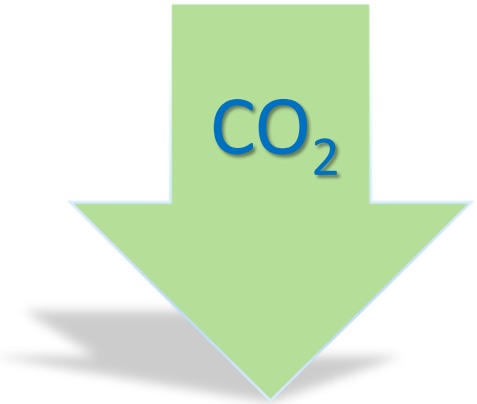
Figures taken from Energy Saving Trust (EST)

Cavity wall insulation – Other benefits

- Reduced carbon dioxide emissions
- Improved thermal comfort
- Reduced draughts







Cavity wall insulation – Barriers to installation

Barrier	Solution
Cost of cavity wall insulation	• Undertake work at same time as other home improvements • Insulate in stages • Highlight rapid payback
Suitability of walls	• Professional survey undertaken before installation • Polyurethane foam used for narrow and uneven cavities
Disruption during installation	Residents can remain in dwelling - installer largely works outside property
Problems with faulty cavity wall insulation	• Majority of work completed to good standard • Installer should inspect and rectify • Contact guarantee provider • Contact Trading Standards

Cavity wall insulation – Associated risks

Blocked air vents

- Sleeve air ventilators that cross cavity, or seal if obsolete

Insulation fills cavities in adjacent properties

- Install cavity barriers

Moisture and damp

- Diagnose and rectify existing damp problems
- Undertake comprehensive survey to determine suitability for cavity wall insulation

- These risks and others will be identified and managed by the Retrofit Coordinator as part of PAS 2035

Cavity wall insulation – Further information

- Further information on cavity wall insulation can be found on the Energy Saving Trust (EST) website at: https://energysavingtrust.org.uk/home-insulation/cavity-wall

- Registered installers of cavity wall insulation can be found on the Simple Energy Advice (SEA) website: https://www.simpleenergyadvice.org.uk/installer-search/B