

Insulation and Home Improvements

IH 1/v2

Footsteps Energy Champions

INSULATION

Acknowledgement:

These cards are based Centre for Sustainable Energy and Energy Saving Trust resources and draw on John Newson (Balsall Heath One Planet) and Footstep' members experience

Estimates of costs and benefits updated in Oct 2022 come from
<https://energysavingtrust.org.uk/energy-at-home/reducing-home-heat-loss/>



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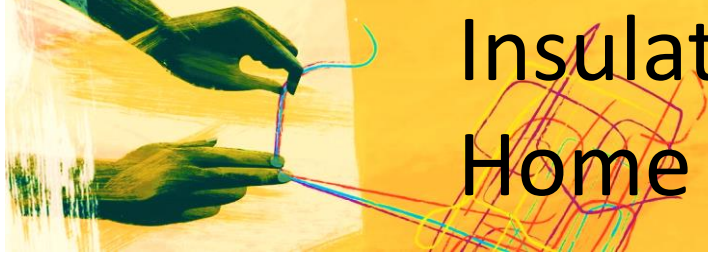
See www.footstepsenergychamps.org.uk/ for sources, acknowledgements and to download cards



SUGGESTIONS and TIPS

Paying Energy Bills

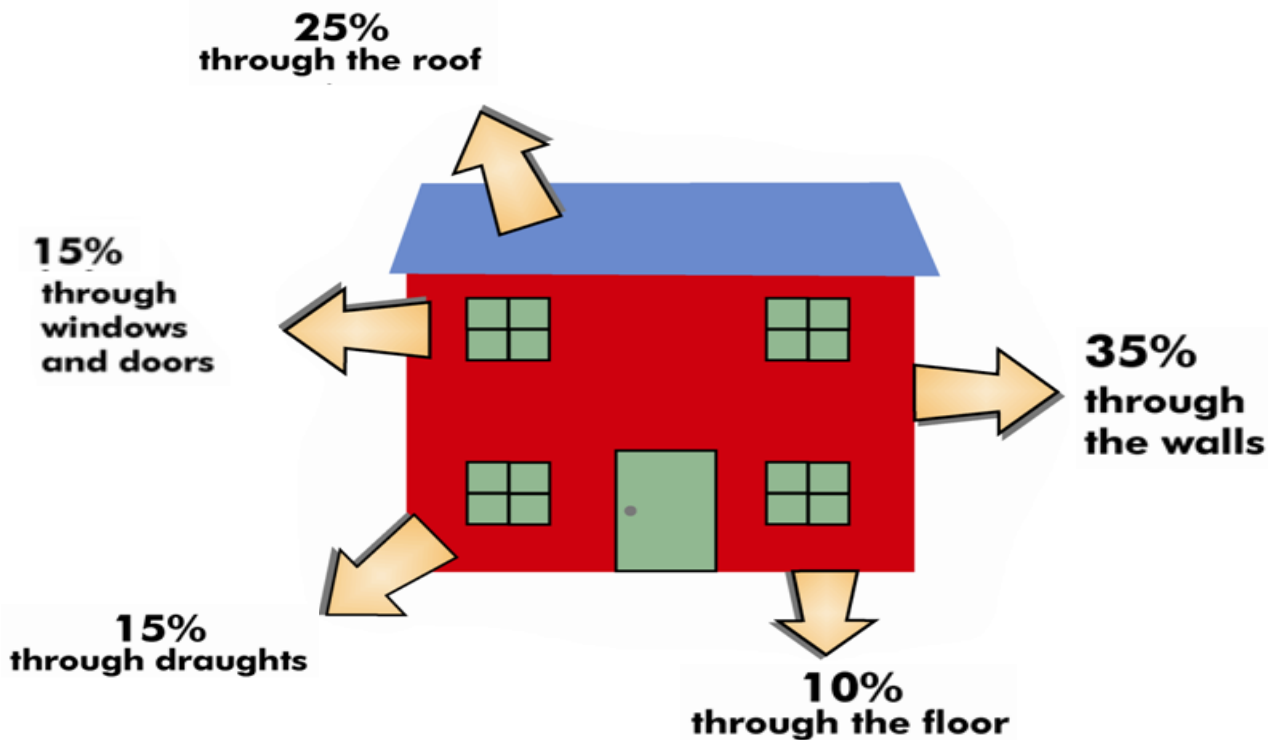
- An **Important Aspect** of the Insulation topic area is described on the **front**
- The **Suggestions and Tips** on the **back** identify initial steps that can be taken
- If you have internet access, Footsteps recommends that you visit the **Energy Saving Trust, Citizens Advice Bureau, Centre for Sustainable Energy** for further information



Insulation and Home Improvements

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Heat Loss from a Home



Keeping warm involves stopping heat escaping and then using as little fuel as possible to produce the heat



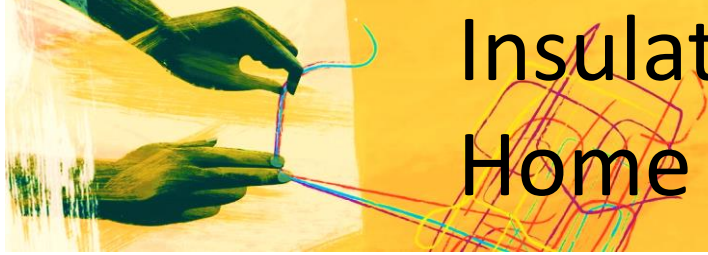
SUGGESTIONS and TIPS

Low cost



High cost

Loft insulation	Cavity wall insulation	Floor insulation	Solid wall insulation
270 mm of loft insulation recommended	Blowing insulating material into cavity inside walls - Homes built after 1930's	Suspended under timber or over concrete floors	Clad exterior or interior of home – for older homes
£440 for semi (cheaper if DIY)	£760 for semi	£1,600 - £2,900	External: £12,000 Internal: £5,500-£8,500 (about £540 a year saving)
£640/year average saving	£315/year average savings	£110/year average savings	£540/year average savings
Free or part funded available	Free or part funded available	Not usually funded through schemes	Internal is disruptive – good to do when rendering/plastering/redoing electrics Free or part funded available

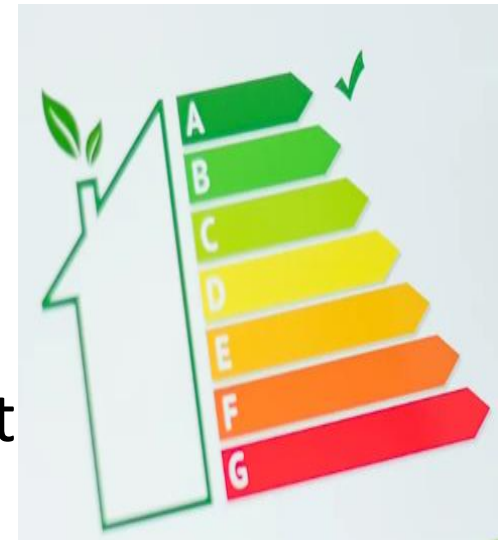


Insulation and Home Improvements

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Energy Performance Certificates

- Energy Performance Certificates or EPCs tell you how energy efficient a building is and give it a rating from A, very efficient, to G, very inefficient.
- EPC tells you how costly it will be to heat and light your home (based on energy costs at the time EPC was done), what its carbon dioxide emissions are, and what can be done to reduce energy use.

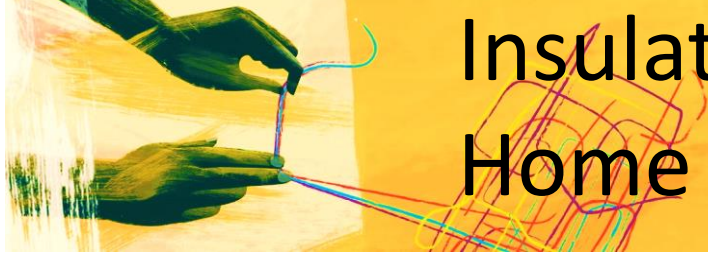




SUGGESTIONS and TIPS

Energy Performance Certificates

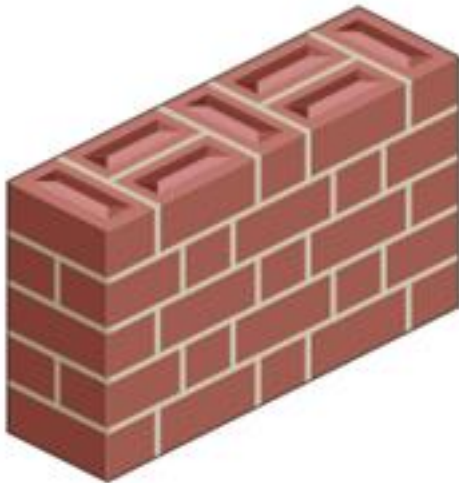
1. Look for your EPC online <https://www.gov.uk/find-energy-certificate>
2. Obtain an EPC if your house does not have one
3. Read its recommendations for measures to improve your home and its EPC rating
4. Discuss them with the landlord, if you do not own the property. A good EPC rating will help to rent or sell the property in future.
5. www.gov.uk/improve-energy-efficiency suggests energy saving improvements using the home's EPC



Insulation and Home Improvements

IH 4/v2

Walls and heat loss



Solid wall

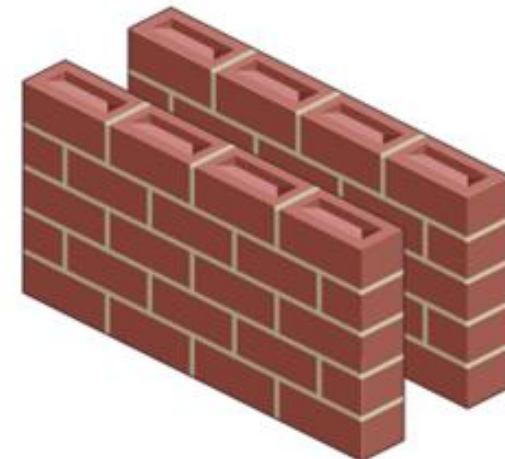
Typical in pre 1930 properties.

'Thick-thin' brick pattern

Cavity wall

Typical in since 1930s

Even brick pattern





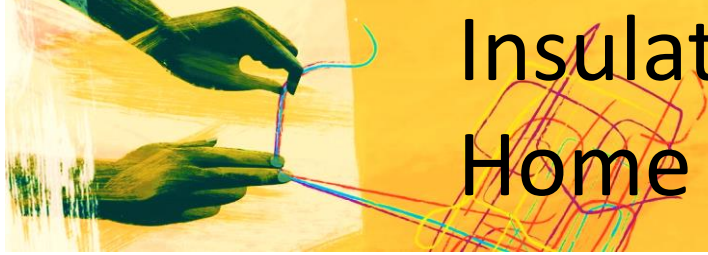
SUGGESTIONS and TIPS

Walls and heat loss

Walls

- Uninsulated walls account for 35% of heat loss
- Uninsulated solid walls are only about 22 cm thick.
- Cavity walls are about 27cm thick. If the cavity has been filled, there will be circles of mortar marking the drill holes.
- Both kinds of insulation may be eligible for grants





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Cavity wall insulation

- Involves blowing mineral wool, insulation beads or foam into cavity between walls
- Average 3-bed gas-heated semi can save **£315**/year
- Your annual savings should cover the installation cost in three years or less

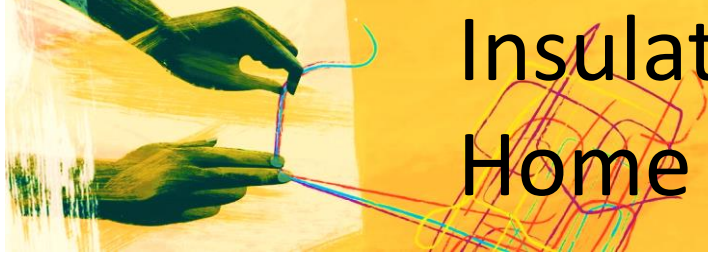




SUGGESTIONS and TIPS

Cavity wall insulation

- Find an installer who has CIGA Warranty
ciga.co.uk/registered-installers
- Cost **about £1000 for a semi**. Grants may be available for the work and your installer should know about them
- Installers should inspect walls with a camera before filling



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Solid walls; external or internal insulation

- External insulation of solid walls is the most effective, but there may be a lot of fixtures to move **Cost around £12,000.**
- Internal insulation. **Cost around £8,5000.**
- Savings **~£540 per year for a 3 bed semi**
- Breathability of the wall must be considered, so as to not seal in moisture!
- **Measures may be eligible for grant**



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SUGGESTIONS and TIPS

Walls; internal insulation

- Internal insulation or 'dry lining' can be done DIY and one room at a time. Start with the main living room. **Importance to get advice from an architect to avoid condensation problems.**
- **Will require plastering, redecorating and resitting radiators and electrics.**
- Do not insulate walls that adjoin another room or another house.





Insulation and Home Improvements

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Loft and Floor insulation

- Warm air rises so check whether you have enough loft insulation-- 270mm (about 11") recommended.
- **Loft insulation** may be eligible for a grant



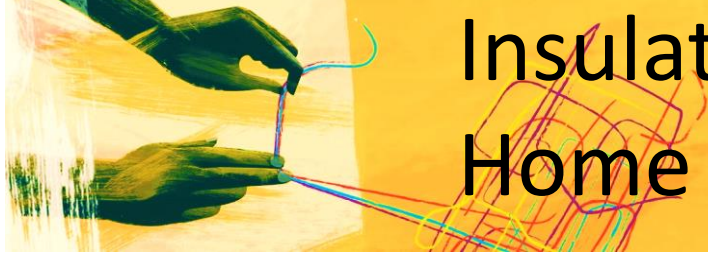


SUGGESTIONS and TIPS

Lofts and floors

- Loft insulation can be added as 270 mm thickness blanket on the floor of the loft
- **Avoid foil backed insulation unless space constraints make it essential. If using, speak to your architect and planning authority to find the most suitable thickness.**
- Solid floors can have insulation layer added on top, but the doors will have to change
- Floor boards can be lifted, to add insulation below them (<https://www.greenbuildingstore.co.uk/?s=suspended+floor> and <https://energysavingtrust.org.uk/advice/floor-insulation/>)
- **Carpet underlay is cheap and has some effect**

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Double glazing

- Reduces heat loss, condensation and noise
- New units can be plastic or wood
- A set of A-rated windows for a semi-detached house will typically cost around £7,500.
- Replacing single with double glazing in a semi could save £195 a year



See more detailed advice at <https://energysavingtrust.org.uk/advice/windows-and-doors/>



SUGGESTIONS and TIPS

Double
glazing

- Choose a colour that goes with rest of the house
- Design to match other houses in the street
- Consider ventilation, especially kitchen and bathroom
- Can have opaque glass for privacy
- May be eligible for a grant



Insulation and Home Improvements

IH 9/v2

Solar panels

- Photovoltaic panels PV generate clean electricity from sunlight (mostly in summer)
- Feeds power to your electric appliances
- Any surplus is exported to **the national grid**
- Cost to install about **£5,500**
- **Years to recover cost: about 11.**

Cost and payback time from <https://www.which.co.uk/reviews/solar-panels/article/solar-panels/is-solar-pv-a-good-investment-alzWf7E3P0dO#how-long-do-solar-panels-take-to-pay-for-themselves>

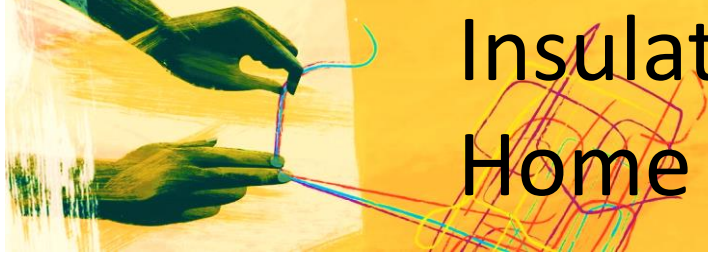
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SUGGESTIONS and TIPS

Solar Panels

- A pitched roof, facing generally south, is best
- Panels must not be shaded by trees
- Adding battery storage will allow the daytime generation to be used in the evening
- Installer must be MCS accredited find one at <https://mcscertified.com/find-an-installer/>



Insulation and Home Improvements

IH 10/v2

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SUGGESTIONS and TIPS

**Please email feedback and comments on the flash
cards to**

hello@footstepsenergychamps.org.uk

**Register to become part of the Footsteps energy
champion network at**

<https://footstepsenergychamps.org.uk/>