

# Cavity Wall Insulation Technical Survey

# Tools you will need

- Tape measure
- Drill (power drill, corded)
- Masonry bit – 11mm
- Grabber
- Borescope
- Straight piece of metal ('hooked')
- Digital camera
- Pen & paper
- Umbrella
- Loft ladders
- Torch

# Insulation Survey Process

## **EXTERNAL**

- Measure Cavity Depth on every elevation
- Scope each elevation using a borescope
- Measure property dimensions
- Take pictures of all elevations
- Assess any issues or problems and make notes (issues sheet)
- Make diagrams of all elevations (including plan)
- Assess access requirements & resolve any issues
- Record additional cavity access requirements
- Count and record size and position of air vents
- Identify and record how many “brushes” will be required
- Complete Risk Assessment including assessing hazards.

# Insulation Survey Process

## **INTERNAL**

- Assess heating type e.g. gas, electric or solid
- Note property details e.g. construction, age, number of bedrooms etc
- Obtain kW rating of Gas fire/s
- Obtain names of energy provider/s (for gas and electric)
- Assess whether any damp is present
- Obtain customer details e.g. name, address etc.
- Obtain signatures and relevant consents, including signed disclaimer.
- Book the job in by calling Mark Group with the customer present.

# Cavity Depth

It is essential to measure cavity depth accurately as this will determine whether the property can be treated as a HTT narrow property or not.

Cavity depth can ONLY be assessed properly and accurately by drilling.

How?

- Drill through mortar joint on each elevation.
- Ensure you only drill into the cavity NOT beyond. Stop drilling once you hit the cavity.
- Use straight piece of metal to measure cavity depth by touching inner skin and marking where outer skin ends.
- Measure total depth of external skin and cavity using tape measure.
- Measure brick depth at corner of two elevations nearest to drill hole.
- Minus the brick depth from the total depth.
- The result is the depth of the cavity.
- If rendered, stop drilling as soon as you hit brick and measure as normal, or use the 'hook' method on the piece of metal.

# Cavity Depth

Record the depth of the cavity on the Survey sheet for that elevation.

On your diagrams of the property, record the location of the drill hole with a T/h sign.

Mark Group only require one drill hole per elevation to measure the depth of the cavity.

CIGA require 3 drill holes per elevation.

Fill the hole again using silicon sealant or a suitable filler after determining depth.

# Scope each elevation

- CIGA requires the use of a borescope to look inside the cavity at 3 different points on each cavity.
- Mark Group requires one scope/test hole. Use the same one you used to measure cavity depth.
- A borescope is a method used to inspect the inside of the cavity using a small camera.

# Scope each elevation

You are looking to identify the following:

- Whether the property is already insulated.
- The presence of wall ties that are clogged with concrete, mortar etc.
- Large uninsulateable areas e.g. presence of rubble or other blockages.
- Presence and location of DPC and its state of repair.
- Areas of cavity where the DPC is below ground.
- Inform Mark Group which elevations you have scoped when you call to book it in.



# Make Diagrams

It is important to make neat diagrams of all elevations.

These can be used to show:

- Property dimensions
  - Areas that require attention
  - Notes and additional information.
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- Using the survey report form, draw diagrams of all elevations using a pen and neat hand.
  - Make sure the correct elevations are drawn in the correct boxes on the Survey sheet.
  - Clearly mark all doors and windows on each elevation.
  - Clearly mark all conservatories and extensions or other noteworthy aspects of the property.
  - Draw gable ends and other elevations that show their proportional size.
  - Add property dimensions later.
  - Draw a 'plan' view of the property in the relevant box on the Survey sheet.

# Measure Property Dimensions

- When measuring you are looking to assess:  
Total square metres of insulateable area i.e.  
the cavity square metres.  
Ground floor area in square metres.  
Height of elevations where additional access  
will be required (i.e. 3 storey ladders or  
scaffolding).

# Measure Property Dimensions

How?

- By observation, estimate the square metres of each window/door and record.
- Calculate the total square metres of any other “outages” and record.
- Add up the total of all outages and doors/windows and record on the Survey sheet on the 2<sup>nd</sup> line of the top box.
- Assume height of house is 5.0 metres for a traditional house or if more use a laser measure.
- Record the height of each elevation on the Survey sheet.
- Use a tape measure to measure the length of the base of that elevation. Record this on your diagram on the Survey sheet.
- Calculate the total square metres of that elevation using the measurements for the base and height.
- Subtract the total square metres of the outages recorded on line 2.
- Record the total square metres of the cavity on line 1.
- Repeat for every elevation.
- Measure conservatory or extension width and height and mark on the Survey sheet.

# Measure Property Dimensions

Assume the following for outages:

Doors =  $2\text{m}^2$

French/Patio Doors = 3 to  $5\text{m}^2$  (measure to assess)

Bay windows = 3 to  $5\text{m}^2$  (measure to assess)

Other windows = 1 to  $3\text{m}^2$  (measure to assess)

NOTE: When adding totals – round to the nearest  $\text{m}^2$ .

# Floor Area

Measure the total perimeter of the property and record these dimensions on your plan on the Survey sheet.

Calculate the Floor Area i.e. the area of the downstairs and record.

Then calculate Total Living Area by adding the area of any other additional floors, including loft if it is living space.

# Property Dimension Rule

Remember the rule that you must be able to insulate at least 66% of the property for it to be viable for insulation.

For a property with  $150\text{m}^2$  of total wall area, that is  $100\text{m}^2$ .

For a property with  $100\text{m}^2$  of total wall area, that is  $66\text{m}^2$ .

# Take Pictures of All Elevations

- As part of the survey you are required to take a digital picture of each elevation.
- This should show *all* of the elevation (not just part of it).
- Also, you are required to take pictures of any issues you highlight on the issues sheet or risk assessment.
- Digital photos should be taken home, printed off and attached to each survey.
- Do not forget to take photos of elevations – tick the relevant box on your survey sheet when done as a reminder.

# Assess any Issues

- You are responsible for assessing any potential issues or problems with the installation.
- These should be highlighted on the Issues Sheet (rear of Risk Assessment).
- As stated, “*For each property elevation identify all issues, including but not limited to: ....(see list)*”
- Other things to identify include distance to party walls for access; instructions given to the customer; things the customer tells you etc.
- You are required to sign this as the TSA (Technical Sales Advisor).
- If there are no issues, write “No Issues”.



# Access

- As part of the survey, you must determine whether there is sufficient access to complete the job.
- Remember a height:access ratio of 1:4 is required.
- Other access issues include where there are impeding bushes, sheds or trees.
- Also access above conservatories, extensions and sloping roofs must be assessed (see next slide).
- Fitters will put ladders on decking as long as it is stable.
- Try and find appropriate ways to work round access issues.
- Look at the following examples and assess the access issues.

# Additional Access Requirements

- There are several Additional Access tools provided by the Mark Group. They are intended to make access possible.
- If they are required, they must be marked clearly on the Survey Sheet.
- They include:
  - Roof Access System
  - Roof Access System with Extension
  - 3 Storey Ladders
  - Crawling Boards
  - Cavity Ladders for Loft
  - Additional pipes

# Roof Access System

- This is used for access above sloping roofs and conservatories.
- Please note the following:
  - The structure *must* be weight bearing i.e. the weight of the system plus the man with tools
  - Must *not* be above glass conservatory roofs unless it has a glass safety kite mark.
  - Must have supporting beams/roof panels of greater than 1 metre in width.
  - Must allow the bottom part of the ladder to rest against the structure.

# Roof Access System



# Roof Access System Extension

These simply allow access further along the roof structure.

You can attach extension pieces behind the 'cradle' which extend the ladder over the roof.

This gives additional access.



# 3 Storey Ladders

- Used to access heights up to (but not over) 7.5 metres.
- That is usually 3 storeys.
- Access at the base must be at least 1.875 metres (1:4 ratio preserved).
- Must be able to harness ladders to the wall suitably.

# Air Vents

- It is important that all air vents on the property are identified and marked on the diagrams with a cross.
- You should also count up the number of different air vents and record the totals
- Air vent sizes are:
  - 9 x 3
  - 9 x 6
  - 9 x 9

# Crawling Boards

- These are used to stand on flat-roof structures e.g. garage roofs or flat-roof extensions.
- They are not just boards. Some have a steel scaffold frame which makes them very heavy.
- The flat roof must be able to support the boards and the weight of a man.
- *Not* for use with car ports or corrugated roofs.





# Single Skin Areas & Solid Wall

- You are required to say the location of any single skin areas on the property.
- Mark the location of these areas on your diagrams
- Also, you must say whether any solid walls exist.
- Mark the location of these areas on your diagrams.

# Brushing off

Brushing off is a method by which the surveyor can identify areas of a property that do not require insulation.

Brushing off is the process by which fitters insert “brushes” (actually chains) into the cavity to prevent insulation travelling to other areas.

You are required to identify and record how many brushes are required for each property you survey.

# Brushing off

New guidance means that you cannot “brush off” parts of an elevation.

You can only brush off complete elevations.

This is to prevent the presence of “warm” and “cold” spots on elevations that can lead to an increase in condensation.

Identify the presence of “brushed-off” areas on the Survey sheet by shading with diagonal lines.

# Risk Assessment

- Mark Group require a Risk Assessment to be completed for every survey.
- If overhead phone lines exist, or power cables, this means the risk is a medium.
- Anything that requires customer action makes it medium risk.
- Any other “yes” conditions make it a medium risk.
- Record the risk category on the front of the survey sheet too.
- Failure to complete a risk assessment means your survey will not be processed.

# Property details

Obtain the following information for each house:

- Construction type e.g. brick, stone, rendered
- Type e.g. semi-detached, bungalow, end terrace, mid terrace, detached
- Age of property (see other slides)
- Heating type e.g. gas, solid fuel, electric
- Boiler type e.g. manufacturer and model number
- Energy provider details
- Customer details
- Signed disclaimer
- If any gas fires

# Disclaimer

- You must complete the disclaimer for any surveys that require further customer action.
- The customer must sign *and* initial where you have ticked.
- You must record what instructions were given to the customer.
- Failure to complete a disclaimer means your survey will *not* be processed.

# Damp

- You must ask the customer if there is any damp in the property.
- Ask to see the damp.
- If there is evidence of damp then inform the customer it cannot be insulated for CWI.
- Walk away from the job!

# Gas Fires

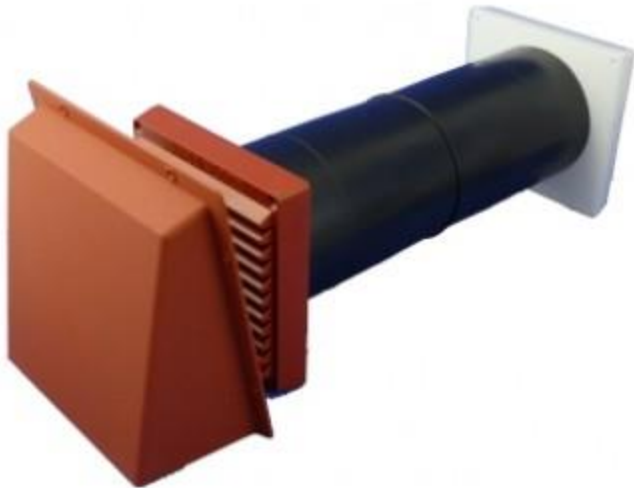
You must assess and identify all gas fires in the house

- Note the Make and Model
- Identify whether they are 7kw input rating or less
- Use the plate in the fire OR
- List provided
- If 7.1kw or greater, then require a core vent.



# Safety Vents

- By law, if the gas fire has a heat input kW rating of 7.1kW or more, a safety must be fitted in the property.
- Mark Group will fit the first vent for free. Remaining vents cost £50 each.



# Open Fuel Fires

- Open fuel fires no longer require a safety vent.
- Wood burning stoves do require a safety vent too if above a certain kW rating.

# Internal Drilling

- It is important that any internal drilling is highlighted on the Survey form.
- It must also be signed for on the Disclaimer.
- Internal drilling is normally required in porches, conservatories or extensions.
- It allows the cavity above to be insulated continuously with that below.
- If the old external wall has been knocked through and a RSJ placed above (i.e. cavity closed off) then internal drilling is not required.

# Internal Drilling

- Would internal drilling be required for the following properties?

# Common Access Issues

- Flat-roof garages
- Conservatories
- Car ports
- Porches
- Bay windows
- Narrow passageways
- Height restrictions
- Steps
- Extensions
- Sloping roofs

# Booking Jobs In

- You must call the Mark Group and book a job in with the customer present.
- Give your Surveyor Id
- The Estimate Number and other information.
- The customer *must* speak to the Mark Group representative.
- Once a date has been agreed, write it on the survey sheet AND record the job number under the Reference No. section.
- If you don't do this, you will not get paid by us. We need a job reference number too.
- If no dates are available, write "HEES Down" in the notes section.

# Booking Jobs In

- The number to call to book jobs in is:

**020 347 63169**

Any questions?