



www.surecav.co.uk Tel: 01963 34660



SureCav®25

Just a 25mm profile...
but with added value!

The new SureCav®25 cavity backing system

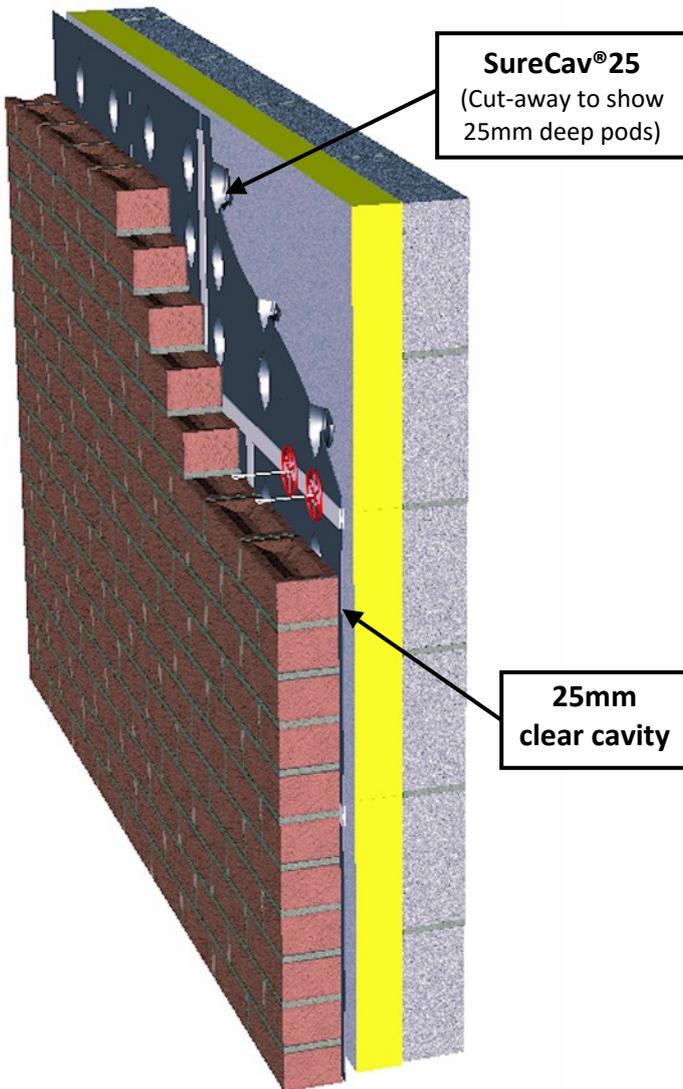


Illustration shows an overall cavity of 100mm, comprising 25mm clear cavity with SureCav®25 and 75mm insulation giving 0.18 W/m²K. (Standard 50/50 cavity is 0.24 W/m²K)

- Using the original external dimensions of the property, SureCav®25 will create around 1.25% extra floor space in the dwelling, rising to 6% additional space in some cases. Consider this, with a 1.25% gain this is equivalent to the floor space of 1 extra house on an 80 house site!
- Alternatively, SureCav®25 makes more space in the cavity for insulation, making it possible to achieve a U-value of 0.18 W/m²K within a 100mm overall cavity
- Removes the need for a backing block when building with natural/random stone
- Guarantees a consistent clean, mortar-free and moisture-free 25mm clear cavity
- BBA approved 25mm free cavity in very severe exposure zones with SureCav®25 instead of required 75mm (NHBC) or 50mm (LABC)
- 100% recycled polypropylene
- Durable and remains effective for the life of the building
- SureCav®25 will significantly reduce labour and material costs with a faster, cleaner build
- Ensures no water penetration from wind driven rain
- SureCav is now being used by architects, builders and developers nationwide!

Brick builds: Lower the U-Value with SureCav®25!

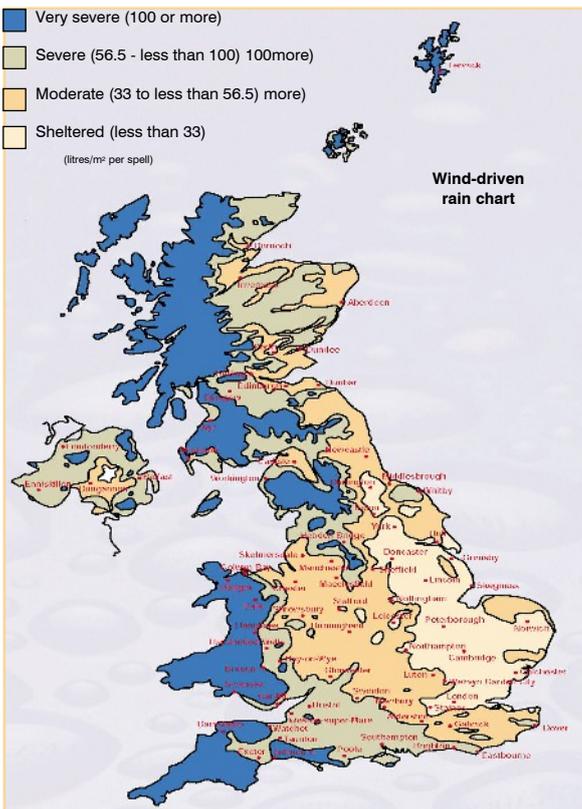
Where heat conservation is the prime concern, by maintaining the original internal and external dimensions of the property, SureCav®25 will release an additional 25mm that can be used for extra insulation in the cavity. Using the example below in the chart, 0.15 W/m²K can be achieved by increasing the insulation to 100mm,

- Immediate benefits:**
- Lower the U-Value and still maintain an overall 100mm cavity with 25mm SureCav®25 and 75mm insulation
 - Guaranteed clean and moisture free 25mm clear cavity
 - Fully BBA certified

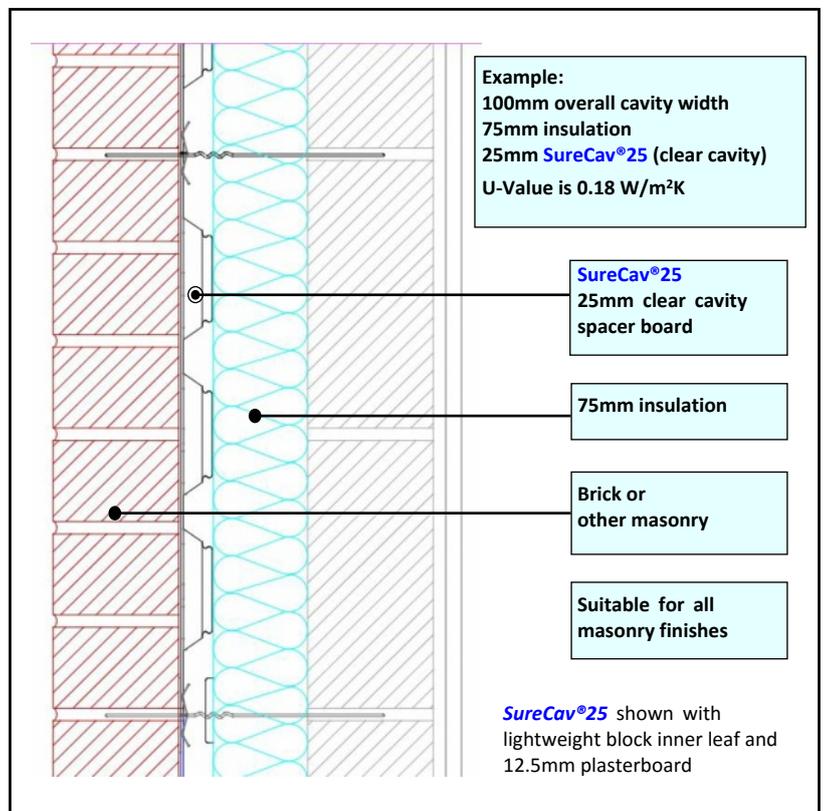
Insulation Options using SureCav®25			
Brick or stone outer leaf - lightweight block inner leaf (0.15) plus 3mm skim on 12mm plasterboard			
Overall cavity width (mm)	Insulation (mm)	Clear cavity with SureCav®25 mm)	U-Value (W/m²K)
75	50	25	0.24
100	75	25	0.18
125	100	25	0.15
145	120	25	0.14

In England and Wales, for areas up to severe exposure to wind driven rain., NHBC current requirements require a 50mm residual cavity when using partial cavity fill in fair-faced masonry cavity walls. This increases to 75mm cavities in very severe exposure zones. Full details of cavity widths are given in NHBC Standards Chapter 6.1 'External masonry walls'.

In the first two examples on the next page, we will examine the special situation where the NHBC demand 75mm free cavities in the parts of the country that experience very severe weather conditions, as seen on the map below. The UK is divided into 4 regions and the blue areas denote these very severe weather zones that experience 100 or more litres/m² per spell.

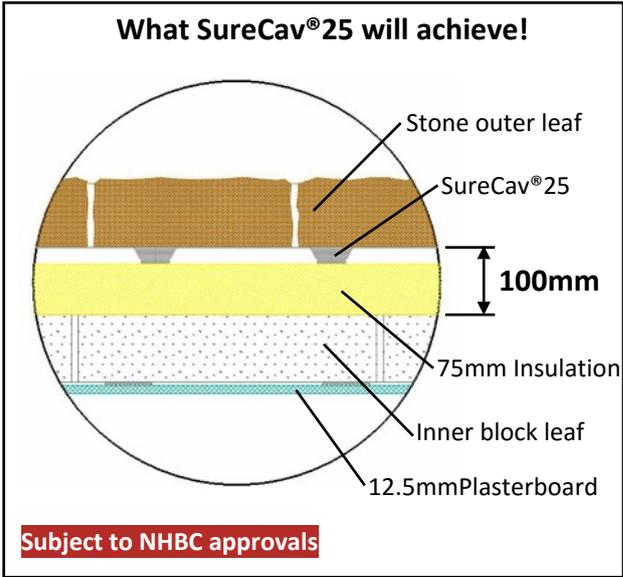
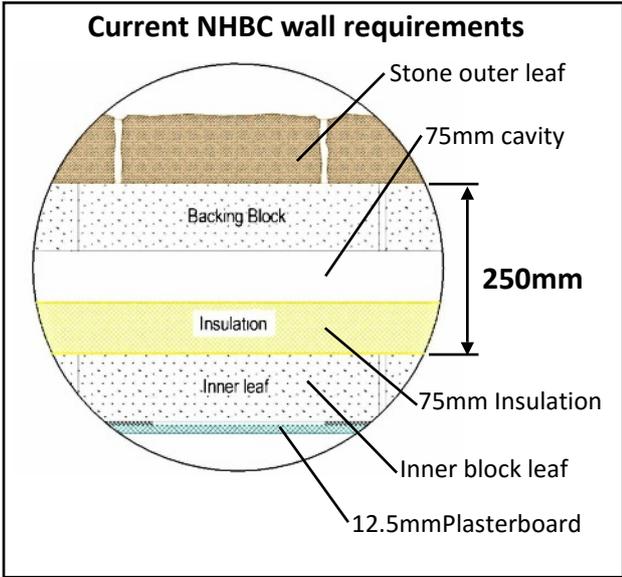


SureCav®25 + Brick Outer leaf = Perfect Match



Building on the success of SureCav®50, the “wall” of plastic, formed by the SureCav®25 panels not only provides an excellent surface for the construction of the outer masonry leaf but shields the cavity and inner leaf from water ingress. The unique shape of the SureCav®25 pods directs any moisture to the outside leaf, thus protecting the fabric of the building with a 25mm clear cavity, instead of the usual 50mm currently used as standard building practice. The barrier formed by the panels, locked together by the joining strips, will protect the structure in even the most exposed weather conditions.

**Example 1: Designed to achieve a U-value of 0.18 W/m²K with a random stone outer leaf
Weather: Very severe exposure zone**



Standard NHBC construction:

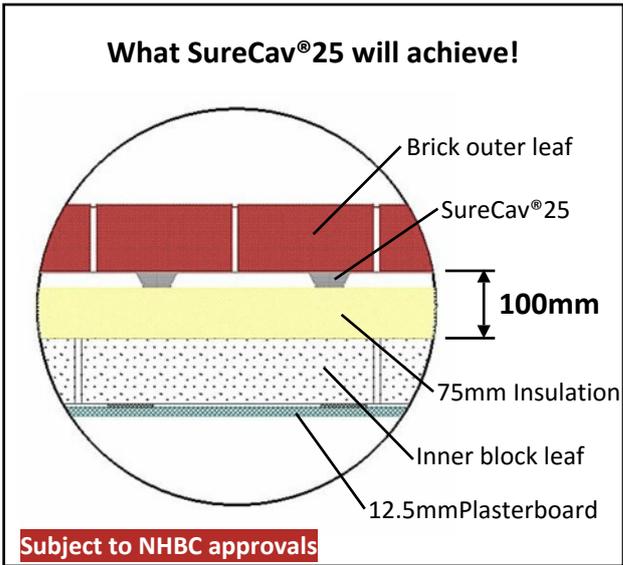
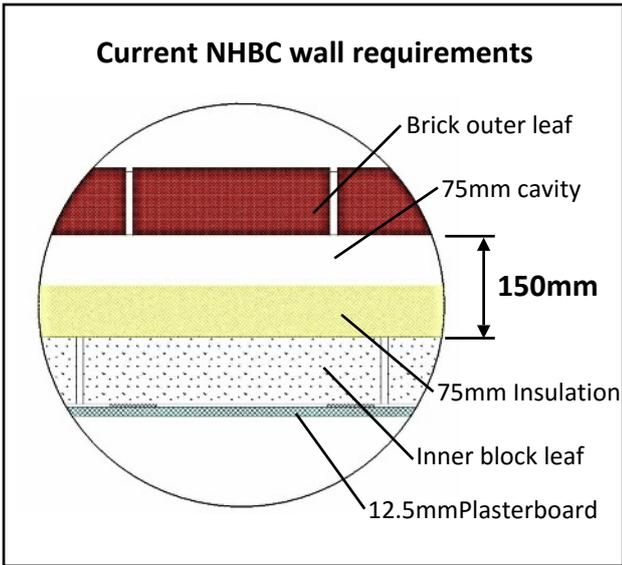
- Stone outer leaf
- Backing block (100mm)
- 150mm overall cavity width
- 75mm clear cavity (very severe weather zone)

With SureCav®25:

- No backing block (saves 100mm)
- Free cavity of only 25mm
- 100mm overall cavity width
- U-Value of 0.18 W/m²K

Conclusion: SureCav®25 will reduce the overall wall width requirement by 150mm
(removal of backing block and reduction of clear cavity to 25mm)

**Example 2: NHBC requirements to achieve 0.18 W/m²K with brick outer leaf
Weather: Very severe exposure zone**



Standard NHBC construction:

- Brick outer leaf
- 150mm overall cavity width
- 75mm clear cavity (very severe weather zone)

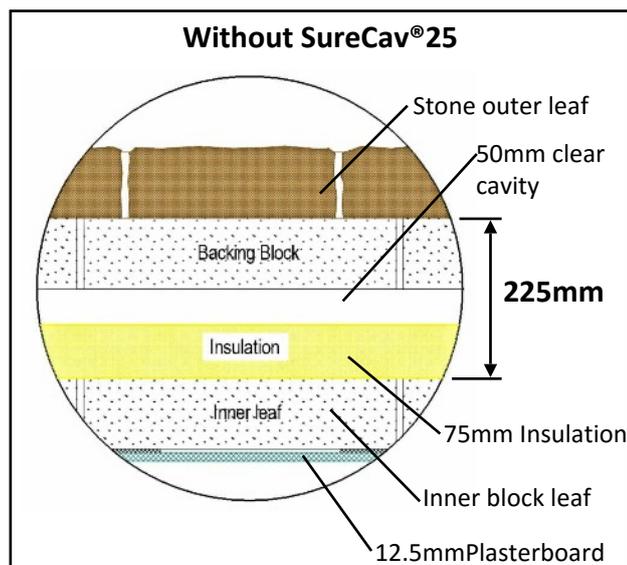
With SureCav®25:

- Free cavity of only 25mm
- 100mm overall cavity width
- U-Value of 0.18 W/m²K

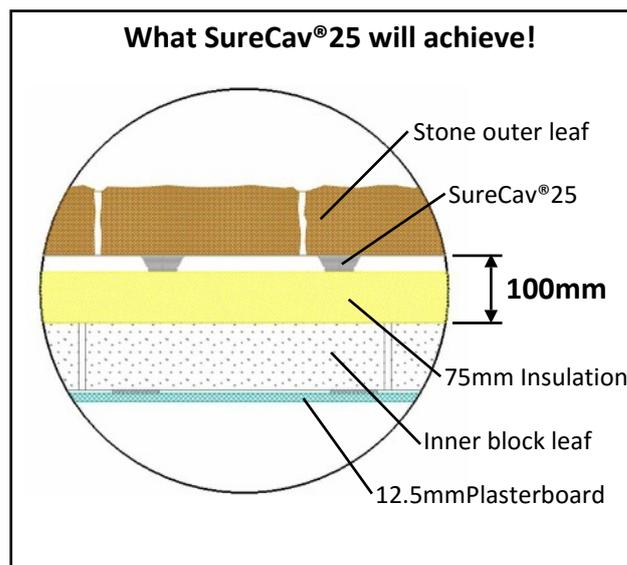
Conclusion: SureCav®25 will reduce the overall wall width requirement by 50mm
(reduction of clear cavity to 25mm)

Example 3: LABC requirements to achieve 0.18 W/m²K with random stone outer leaf**Weather: Very severe exposure zone**

(Local Authority Building Control (LABC) are currently allowing 50mm clear cavities in very severe exposure zones)

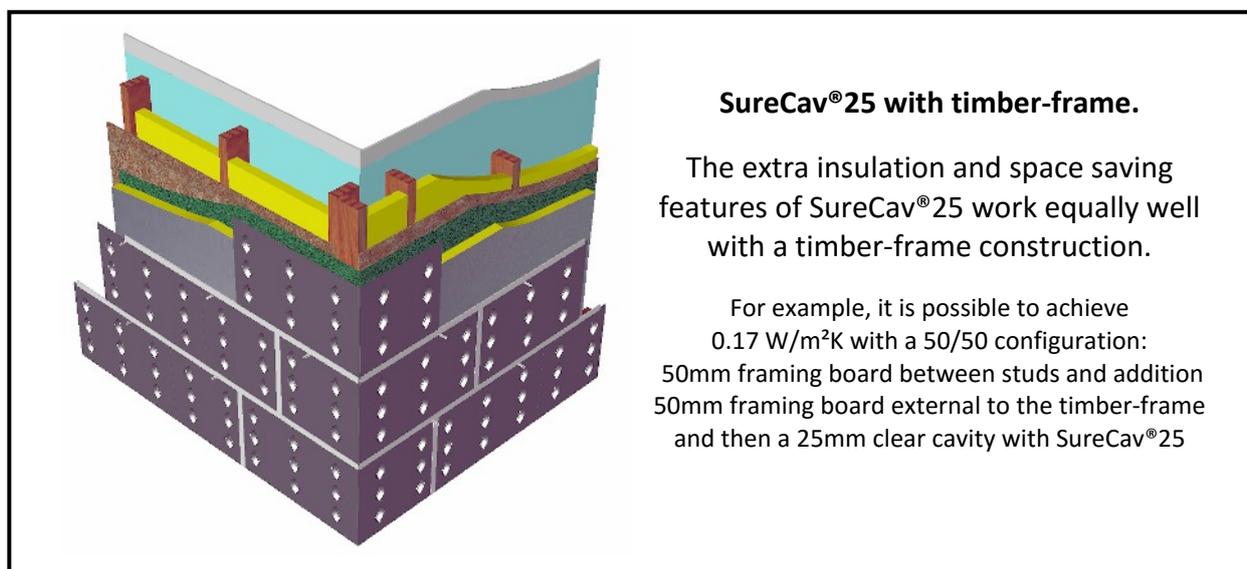
**Standard LABC construction:**

- Backing block (100mm)
- Stone outer leaf
- 125mm overall cavity width
- 50mm clear cavity (very severe weather zone)

**With SureCav®25:**

- Free cavity of only 25mm
- 100mm overall cavity width
- **U-Value of 0.18 W/m²K**

Conclusion: SureCav®25 will reduce the overall wall width requirement by 125mm
(removal of backing block and reduction of clear cavity to 25mm)

**SureCav Limited**

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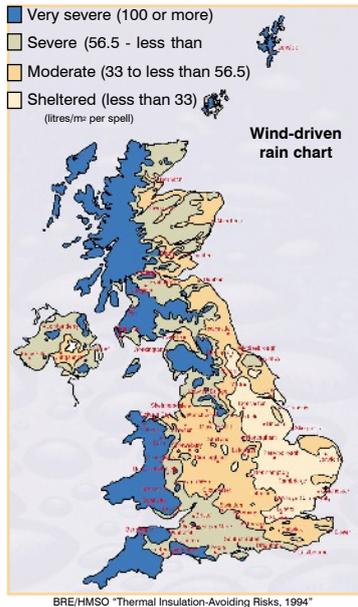
PROTECT THE WALLS

SureCav® protects buildings from wind driven rain, one of the most common sources of moisture affecting buildings in the United Kingdom

Announcing the forthcoming release of SureCav®25!

Due at the end of 2015

The trend being experienced towards wetter weather in the UK means consideration has to be given to protecting the building envelope against water penetration, especially in high exposure zones. SureCav®25 is designed to provide an excellent barrier, protecting from wind driven rain even in the severest of weather conditions.



Building on the success of SureCav®50, the "wall" of plastic, formed by the SureCav®25 panels not only provides an excellent surface for the construction of the outer masonry leaf but shields the cavity and inner leaf from water ingress. The unique shape of the SureCav®25 pods directs any moisture to the outside leaf, thus protecting the fabric of the building with a 25mm clear cavity, instead of the usual 75mm required by NHBC in very severe exposure zones. The barrier formed by the panels, locked together by the joining strips, will protect the structure in even the most exposed weather conditions.

Guarantee clean and moisture free cavities with SureCav®25!

Consistent clear cavity. The SureCav®25 cavity backing system is used to form a consistent clear cavity width in new masonry or timber frame constructed cavity walls of domestic and non domestic buildings and is fully BBA certified. It is our experience that a clear section of the cavity should always be present in the construction of the walls. The 25mm air gap between the outer layer of masonry and the insulation, coupled with the moisture beating design of the SureCav®25 panels, will prevent any water penetration. The SureCav®25 panels will also hold the insulation in place, adding to its effectiveness in preventing heat loss.

Fixing: Wall ties are used, as standard, vertically every 450mm mortar course. Helical ties are most useful where additional support is required between courses and can be fixed through the flat face of the sheet. For timber frame, it is recommended that sealing washers are screwed into the back of the pods, with or without additional timber frame ties to hold the system in place prior to the construction of the outer masonry leaf.

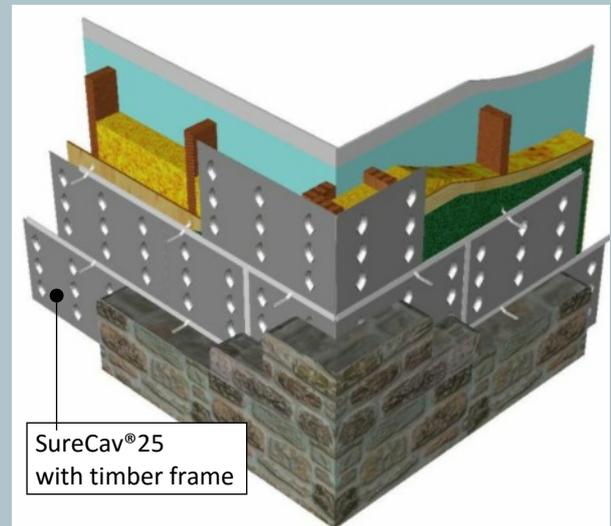
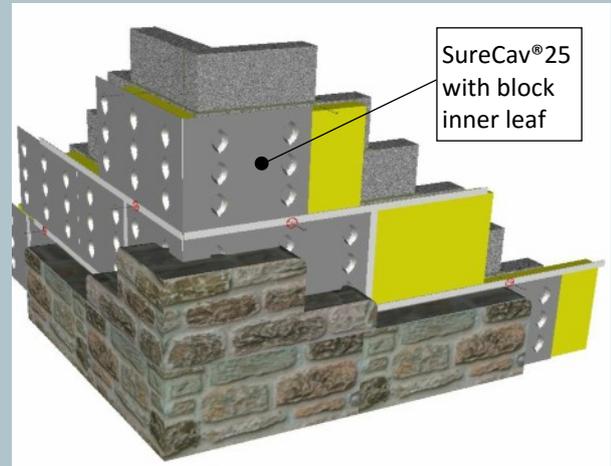
Discover a better way of cavity wall construction!

The best of both worlds!

More space in the cavity for insulation

plus

25mm clear cavities in all exposure zones!



Semi-dry stone walling on SureCav® cavity backing board

SureCav®25 Properties:

Panel size is 1200 x 450 x 25 (mm)

Integral fold line for forming corners

Suitable for all exposure zones

**CAVITY WALL PROTECTION
BY DESIGN...**



INSULATE THE WALLS

Now drive down "U" values! **SureCav®25** allows for more room in the cavity for insulation, thus enhancing the thermal performance of the wall

Experience the Future of Cavity Wall Construction!

All the properties of SureCav®50 you've come to rely on... but now just 25mm deep, with a guaranteed 25mm clean and moisture free clear cavity

Example: 125mm overall cavity width, comprising 100mm board insulation and a 25mm clear cavity using SureCav®25, can achieve 'U' values as low as 0.15 W/m²K.

Announcing the forthcoming release of SureCav®25!

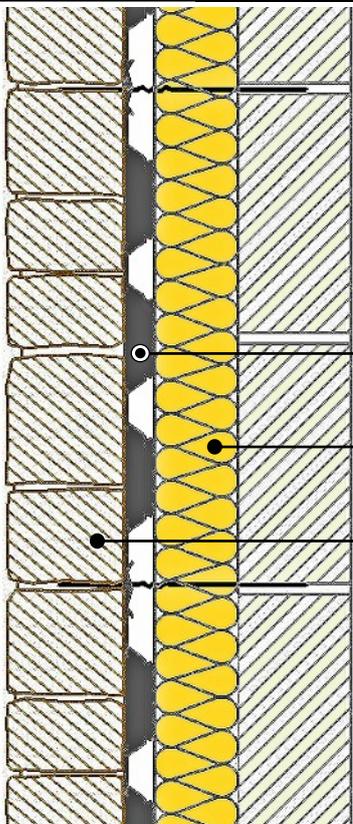
Due at the end of 2015

Insulation Options using SureCav®25

Brick or stone outer leaf - lightweight block inner leaf (0.15)
plus 3mm skim on 12mm plasterboard

Overall cavity (mm)	Insulation* (mm)	Clear cavity with SureCav®25 (mm)	"U" Value (W/m²K)
75	50	25	0.24
100	75	25	0.18
125	100	25	0.15
145	120	25	0.14

* Kingspan Kooltherm K8 Cavity Board



Example:
100mm overall cavity width
75mm insulation
25mm SureCav®25 (clear cavity)
"U" value as low as 0.18 W/m²K

SureCav®25
25mm cavity board

75mm insulation

Natural stone or
other masonry

Suitable for all
masonry finishes

SureCav®25 shown
with block inner leaf

The best of both worlds!

More space in the cavity for insulation

plus

25mm clear cavities in all exposure zones!



The new SureCav®25
cavity backing board

SureCav®25 is a moulded, 100% recycled, polypropylene panel with spacer protrusions, forming a 25mm clear cavity and providing the perfect backing board for the stone, slate, brick and flint outer leaf. It is fully BBA certificated. This cavity protection system ensures clean and moisture free cavities with either timber frame or traditional construction.

Instead of ending up as a landfill or incineration material, SureCav Limited have manufactured an essential building product that shows care for the environment. SureCav®25 comes out on top in reducing the Embodied CO2 (ECO2) footprint in new buildings, compared to using a concrete backing block.

SureCav®25

25mm clear cavity in any exposure zone	✓
Clean and moisture free cavities	✓
Suitable for all masonry finishes	✓
Protects from wind driven rain	✓
100% recycled polypropylene	✓
Shields the cavity from water ingress	✓
More room for insulation	✓
No backing block - wall width reduced	✓
Lowers "U" values with extra insulation	✓
BBA approved certificate 04/4154	✓
Unique pod shape for moisture protection	✓
Incorporated fold line for corners	✓
Ideal for standard construction or timber frame	✓

CAVITY WALL PROTECTION
BY DESIGN...



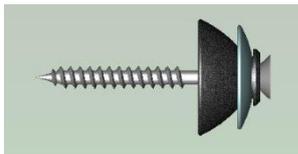


SureCav®25

BBA Cert. No. 04/4154

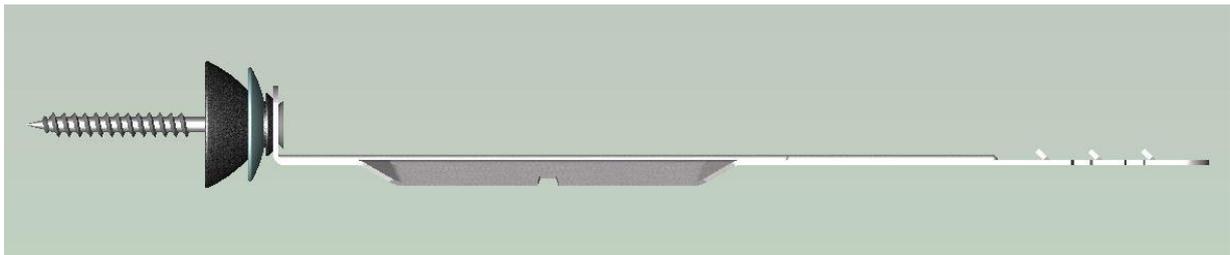
1. How does SureCav®25 work?

SureCav®25 is designed to work in exactly the same way as the larger SureCav®50 has for the last 10 years in preventing moisture from entering the cavity by forming a wall of plastic. SureCav®25 has all the same properties but just 25mm deep. The panels are designed to be the backing surface for the outer masonry leaf.



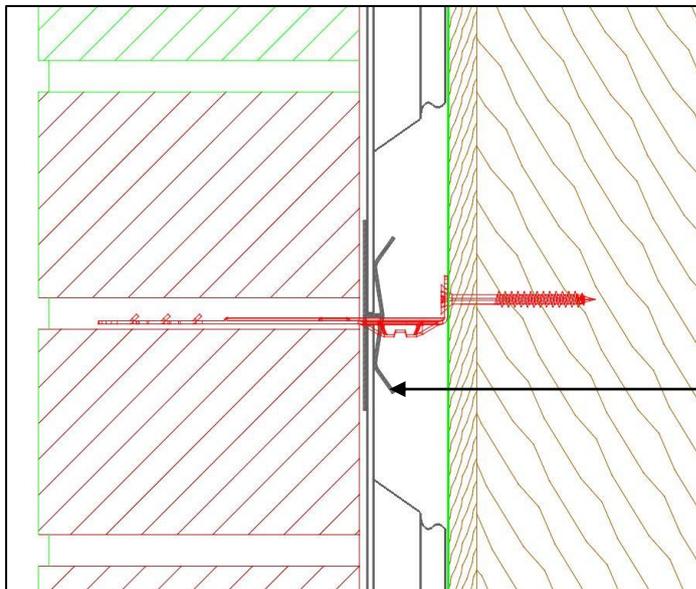
With timber frame construction, SureCav®25 can be screwed to the frame surface in its entirety through the pods using the SureCav®25 washer fixings before the outer leaf is constructed. This

will allow for extra wall ties to be added if required for random stonework to any of the 15 pods in the sheet, protecting the timber frame from inclement weather.



On traditional build, helical ties can be used, but not through the pods.

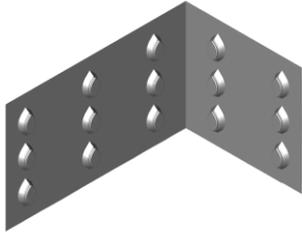
The joining strips fit tightly and are designed to properly close the gap between each sheet. When fitting the long horizontal joining strip, trim it up to the wall tie and then continue with the off-cut, ensuring it is located right up against the tie as in the picture below.



Cut the joining strip tightly either side of the tie, as shown in the picture above, to prevent moisture penetrating the cavity.

2. How are the corners formed?

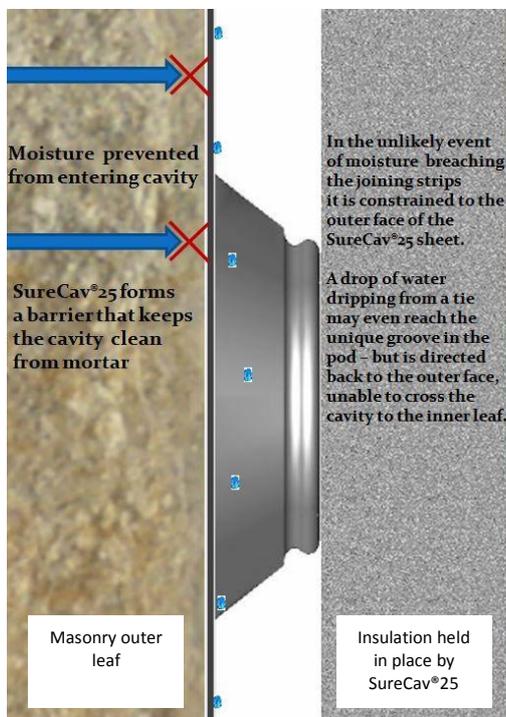
The corners are formed by bending the SureCav®25 sheet along a fold line. This feature, an integral part of each sheet, allows it to become a corner panel as required whilst maintaining its integrity and rigidity for the construction of the main faces.



Absolute protection is thus assured in this critical area of the construction. Because the fold line is offset in the sheet, the panels can be reversed, allowing the joints to be staggered, thus improving the rigidity of the system.



3. What happens if moisture gets through the joining strips?



The SureCav®25 pods are specially designed to ensure that any moisture in the cavity space is constrained the face of the SureCav sheet, preventing it from reaching the inner leaf.

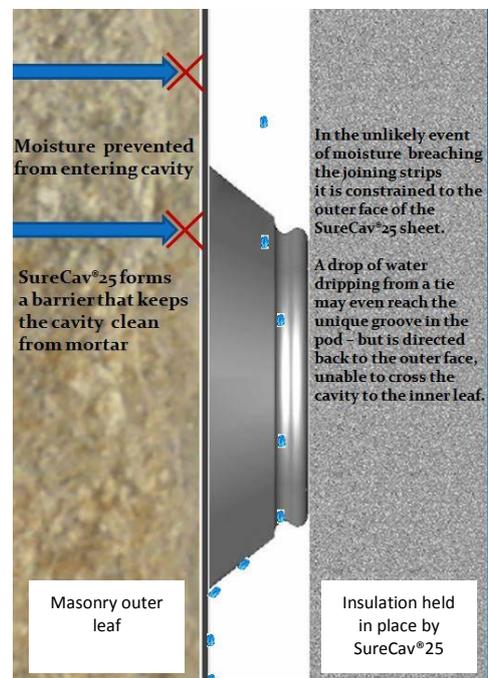
In the diagram on the left, drops of water are shown reaching the SureCav®25 pod. Unable to breach the cavity, the shape of the pod directs the flow of the moisture back to the face of the panel.

In the diagram on the right, moisture can be seen dripping from a wall tie. On reaching the SureCav®25 pod the moisture is channelled along

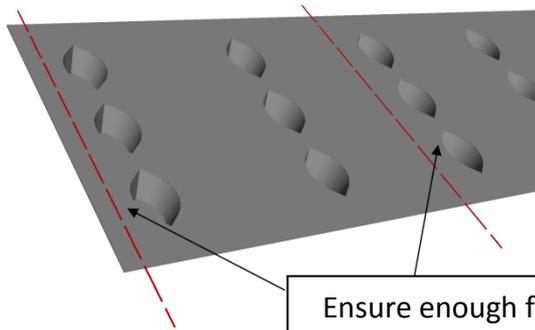
the groove and back to the face of the Surecav panel.

By maintaining a constant 25mm airflow, moisture is also allowed to evaporate and be carried out of the cavity through the required air vents.

Furthermore, because the SureCav®25 panels form a complete barrier during the construction of the outer masonry leaf, there is no possibility of any mortar contaminating the wall ties. Standard building practice dictates that in the event of the inner wall being built up after a section of the SureCav®25 panels have been installed, it is essential that a mortar protection board is temporarily placed over the cavity to prevent contamination.

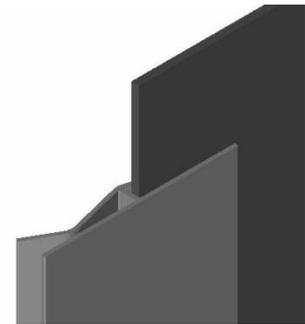


4. How should the SureCav®25 panels be cut?



Ensure enough flat area for the joining strip

Cut the panels with tin snips or a saw, or score the panel and then bend it back on itself and the unit will snap off. Make sure that the cut edges are free from swarf before fitting the joining strips.



Install the flat face of the joining strip facing outwards to give maximum width for the mortar bed.

All cuts should be made vertical or horizontal to enable the joining strips to connect without any gaps. The 900mm joining strips are to be used for the horizontal joints. Fit the long joining strips up to wall ties as described above. The 400mm joining strips are designed to exactly fit the vertical joints of the SureCav panel.

Those qualified to install the insulation already give attention to ensure that the insulation joints all mate and there are no voids that can result in cold spots.

The installation of the SureCav®25 panels will equally be undertaken with careful attention to maintaining the purpose of the SureCav System, to provide an impervious backing surface that prevents the ingress of moisture and protects the integrity of the cavity.

We note that the NHBC has previously allowed one home to be constructed with a 25mm residual cavity width (Alreflex by Thermal Economics) being used. This was unsuccessful! Alreflex is a 3 or 6mm silver foil bubble wrap and will not form a mortar and moisture barrier nor protect the cavity when constructing the external leaf of the house.

Surecav®25 however, forms a permanent mortar and moisture barrier leaving a guaranteed clean and vented 25mm cavity protecting the integrity of the building. When insulation is installed, the whole system is designed to allow SureCav®25 to enhance the thermal effectiveness of the insulation by holding it firmly to the inner leaf.



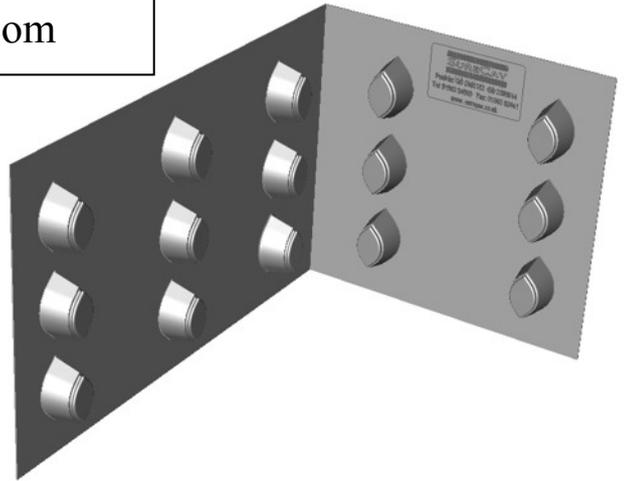
Mortar cannot enter the cavity during the construction of the outer masonry leaf, thus maintaining a 25mm environment that is moisture free and free from mortar contamination.

Benefits of SureCav®25

- More room for insulation if required
- Made from 100% recycled plastic
- Cheaper than concrete backing blocks
- Protects from wind driven rain
- Guaranteed clean and moisture free cavities
- Forms a wall of plastic to stop water penetration
- Allows a 25mm cavity in high exposure zones
- Suitable for brick, stone and all other masonry finishes
- Full BBA approval 04/4154

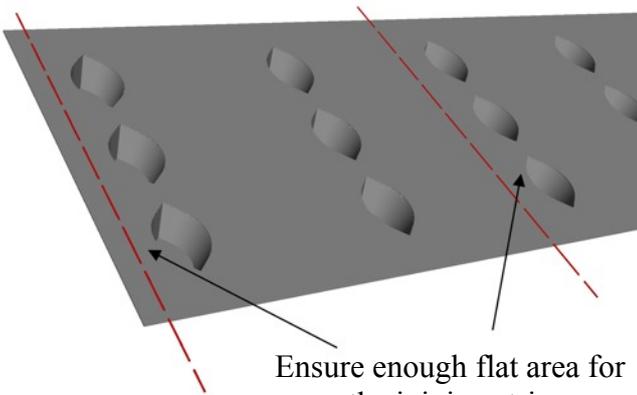
1. Recommendation for starting corners

Locate the bending line on the sheet and fully bend the sheet back onto its flat face. Now bend the sheet the other way until the pods are touching. Repeat this a couple of times until the sheet stays in the required position. Also, the sheet can be bent to suit corners that are not 90° such as some conservatory walls etc.



2. When cutting will intersect the pods

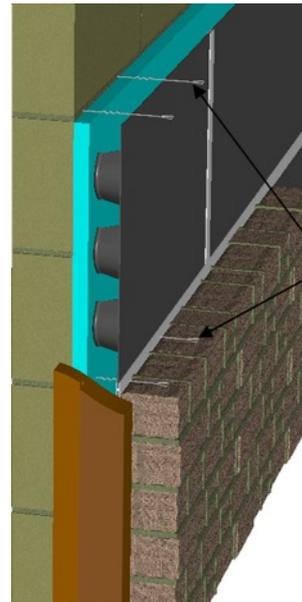
Use two cuts or cut off the end of the sheet. Allow enough flat sheet to take the joining strip.



Ensure enough flat area for the joining strip

3. Wall ties adjacent to window and door frames

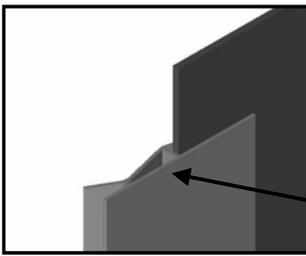
Additional wall ties at 450mm vertical Centres within 225mm of all openings are recommended (as below)



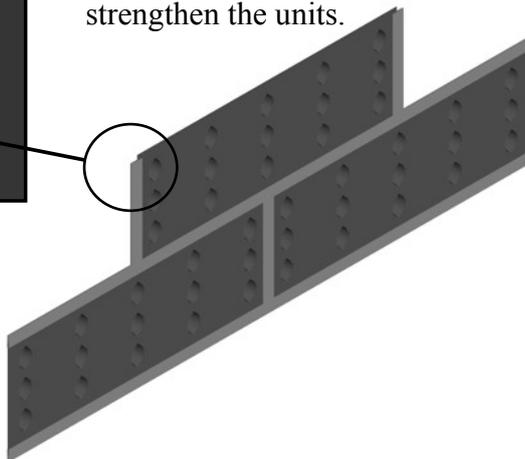
Additional wall ties maximum 225mm from structural openings

4. Stagger the panels

Stagger the vertical joints as this will strengthen the units.

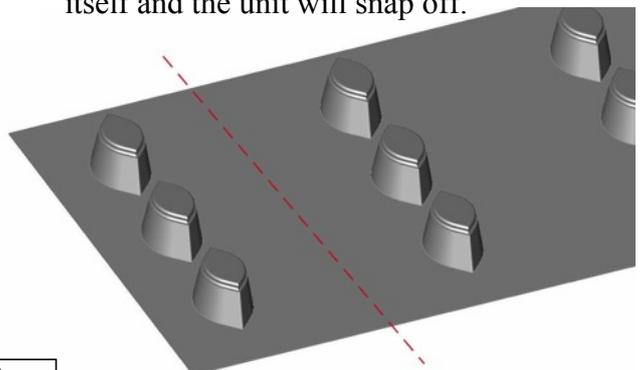


Install with the flat face of the joining strip outwards to give maximum width for mortar bed.



5. Cutting and trimming panels

Cut the panels with tin snips or a saw, or score the panel and then bend it back on itself and the unit will snap off.

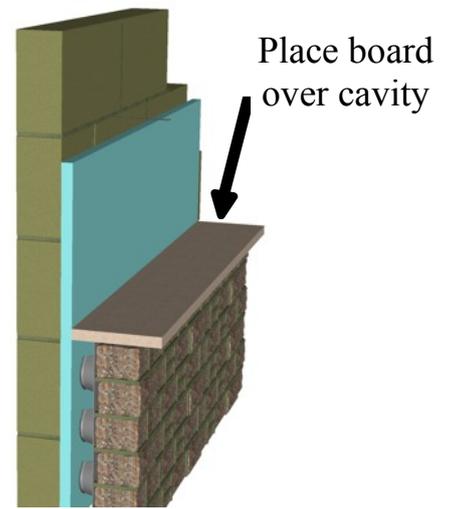


6. Important note about joining strips

The 900mm joining strips are to be used for the horizontal joints. Cut a long joining strip up to a wall tie and use the off-cut to start the next section. The 400mm joining strips are designed to exactly fit the vertical joints of the SureCav panel.

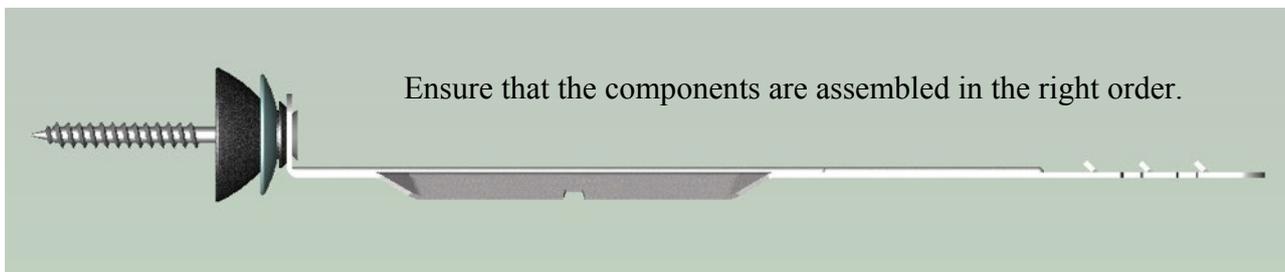
7. Keeping the cavity space clean

When building up the internal wall, ALWAYS ensure that a cavity board or length of timber is used to cover the cavity. It is **essential** that the cavity is kept free from mortar during construction.

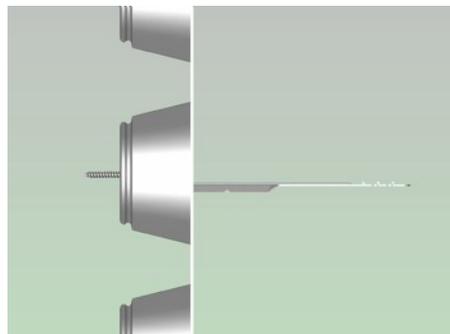
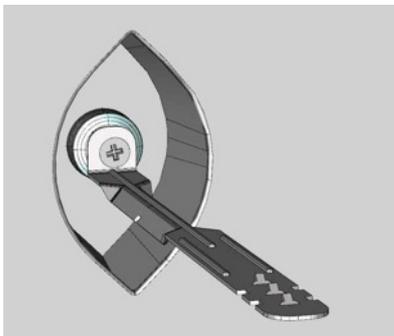


8. Fixing a timber frame tie through the back of a SureCav pod

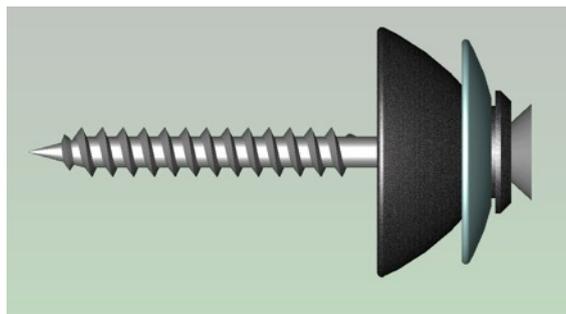
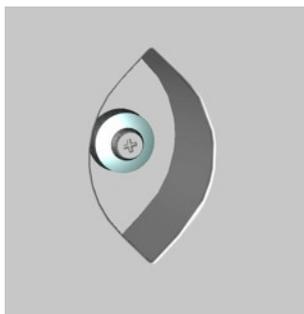
Sealing washers can be purchased directly from SureCav Ltd.
See our web site for details



Looking into the open pod the fixings should look as shown below.



If additional fixings are required and ties are not needed then just fix the Surecav panel through the back of the pod using a screw and sealing washer.

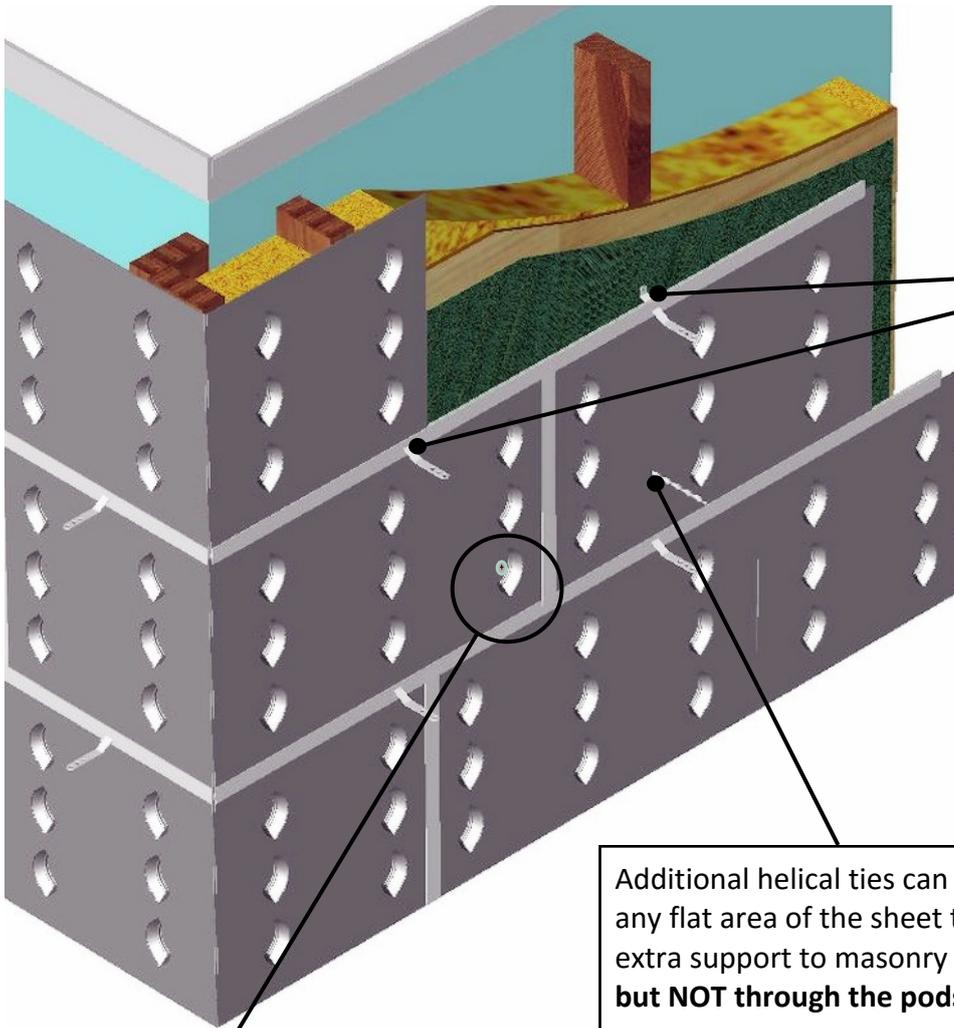


For more instructions using SureCav visit www.surecav.com

SureCav Ltd. Tel: 01963 34660

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Installation Procedures With Timber-Frame



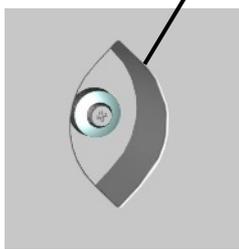
Align all the ties with the main timber-frame studding.

Ties are placed every 450mm vertically, to coincide with the SureCav joints.

Cut the horizontal joining strip to fit up to the tie and then continue the joint using the off-cut.

If you need extra ties for random stonework, screw the tie into the back of the SureCav pod using the special seal washer.

Additional helical ties can be used in any flat area of the sheet to provide extra support to masonry as necessary, **but NOT through the pods.**



Special seal-washers* can be screwed through the pods to fix the whole system to the timber-frame sheathing, enabling the whole building to be clad prior to the start of building the external leaf.

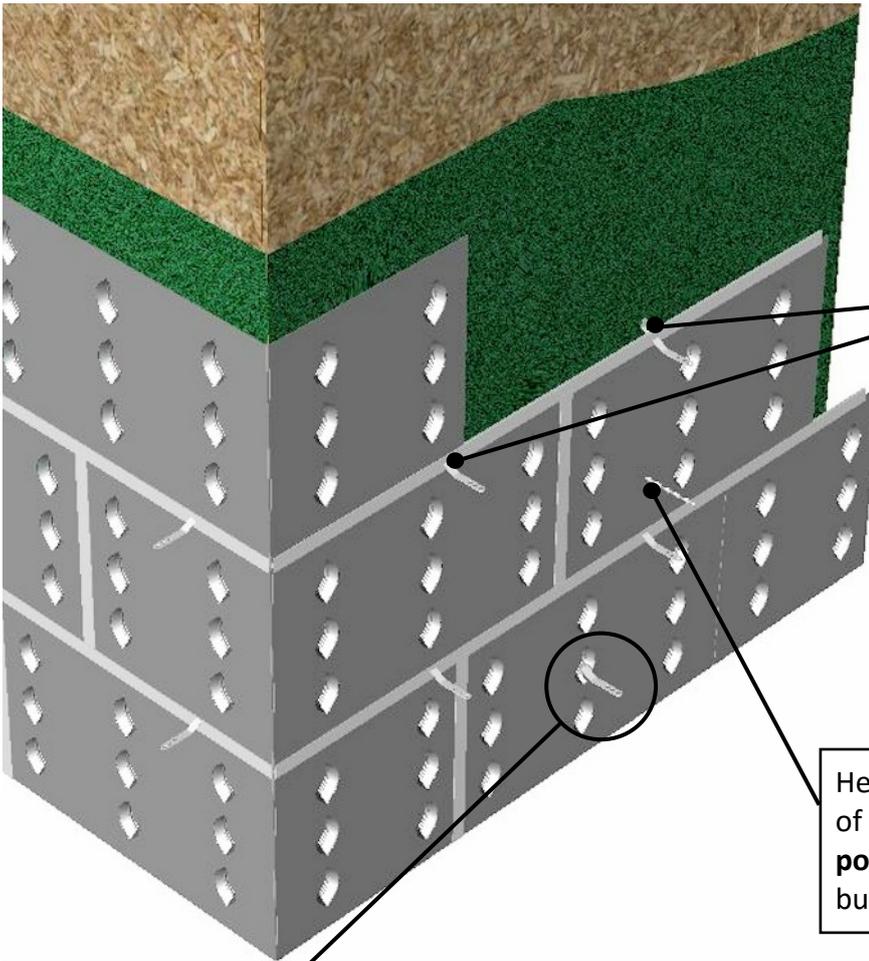
Additional masonry support ties can also be fixed through the pods using the seal washers (see overleaf for illustration).

Notes:

1. It is recommended that the joints of the SureCav panels are staggered to add strength to the system.
2. Do not cut the panels through the pods. If a cut coincides with the pods then simply shorten the length and insert a new SureCav section using the vertical joining strips.
3. It is recommended that an additional wall tie is included within 225mm of an opening on each board course level to satisfy structural requirements. This procedure will prevent slots having to be made in the SureCav sheet on each course of block-work when building away from a doorway or window reveal.

* Seal-washers can be purchased from SureCav Limited

Installation Procedures With SIP Panels

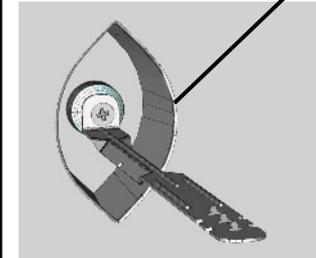


SIP panels do not have main support timbers so the tie can be placed in any suitable position along the length of the SureCav panel.

Ties are placed every 450mm vertically, to coincide with the SureCav joints.

Cut the horizontal joining strip to fit up to the tie and then continue the other side of the tie using the off-cut.

Helical ties can be used in any flat area of the sheet, **but NOT through the pods**. This is especially useful when building with random stonework.



Additional ties can be fixed through any of the pods using special seal washers.*

The seal-washers, used without the tie, can be screwed through the pods to fix the whole system to the SIP sheathing, enabling the whole building to be clad prior to the start of building the external leaf.

Ties shown for illustrative purposes only. Use stainless steel ties approved by LABC

Notes:

1. Stainless steel wall ties can be directly attached to the OSB/3 face of the panel using stainless-steel screw fasteners.
2. It is recommended that the joints of the SureCav panels are staggered to add strength to the system.
3. Do not cut the panels through the pods. If a cut coincides with the pods then simply shorten the length and insert a new SureCav section using the vertical joining strips.
4. It is recommended that an additional wall tie is included within 225mm of an opening on each board course level to satisfy structural requirements. This procedure will prevent slots having to be made in the SureCav sheet on each course of block-work when building away from a doorway or window reveal.

* Seal-washers can be purchased from SureCav Limited



For more information visit www.surecav.co.uk or phone 01963 34660

SureCav® is a registered trademark of SureCav Limited

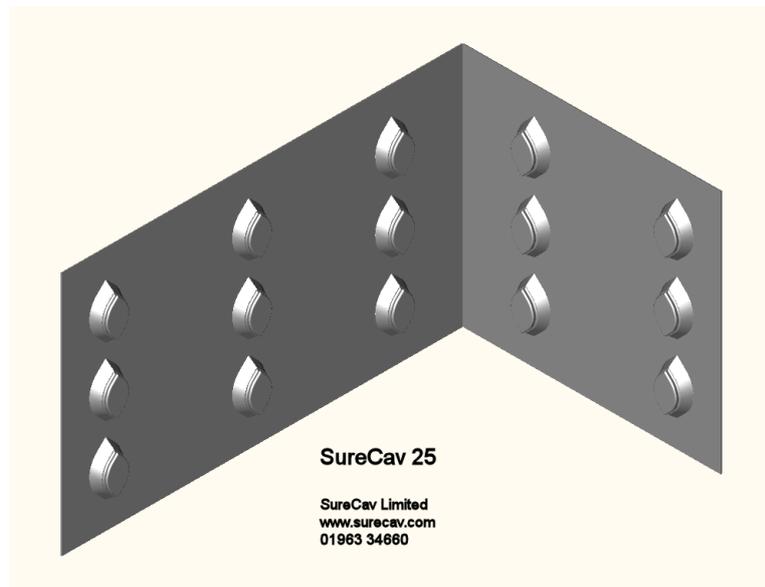


See other side



SureCav[®] 25

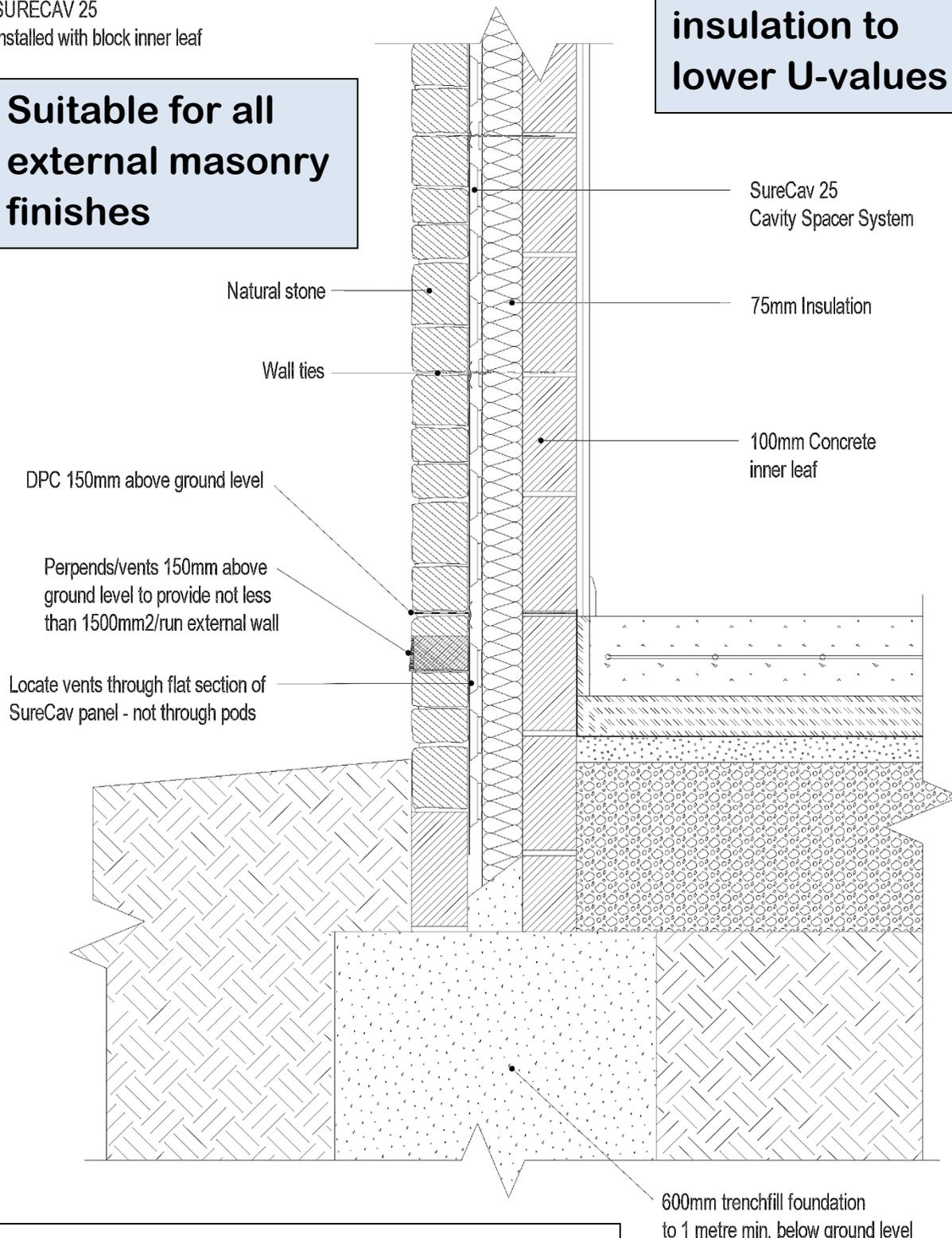
The Future of Cavity Wall Construction



SURECAV 25
Installed with block inner leaf

**Suitable for all
external masonry
finishes**

**Choose 75mm
insulation to
lower U-values**



Example 1

Installation of SureCav 25 with:
100mm concrete block inner leaf
75mm insulation
Natural stone outer leaf
100mm total cavity width

SURECAV 25
Installed with timber frame structure

Guaranteed air flow with a 25mm cavity

Excellent backing board for natural stone!

SureCav 25 Cavity Spacer System

Natural stone

Timber frame ties

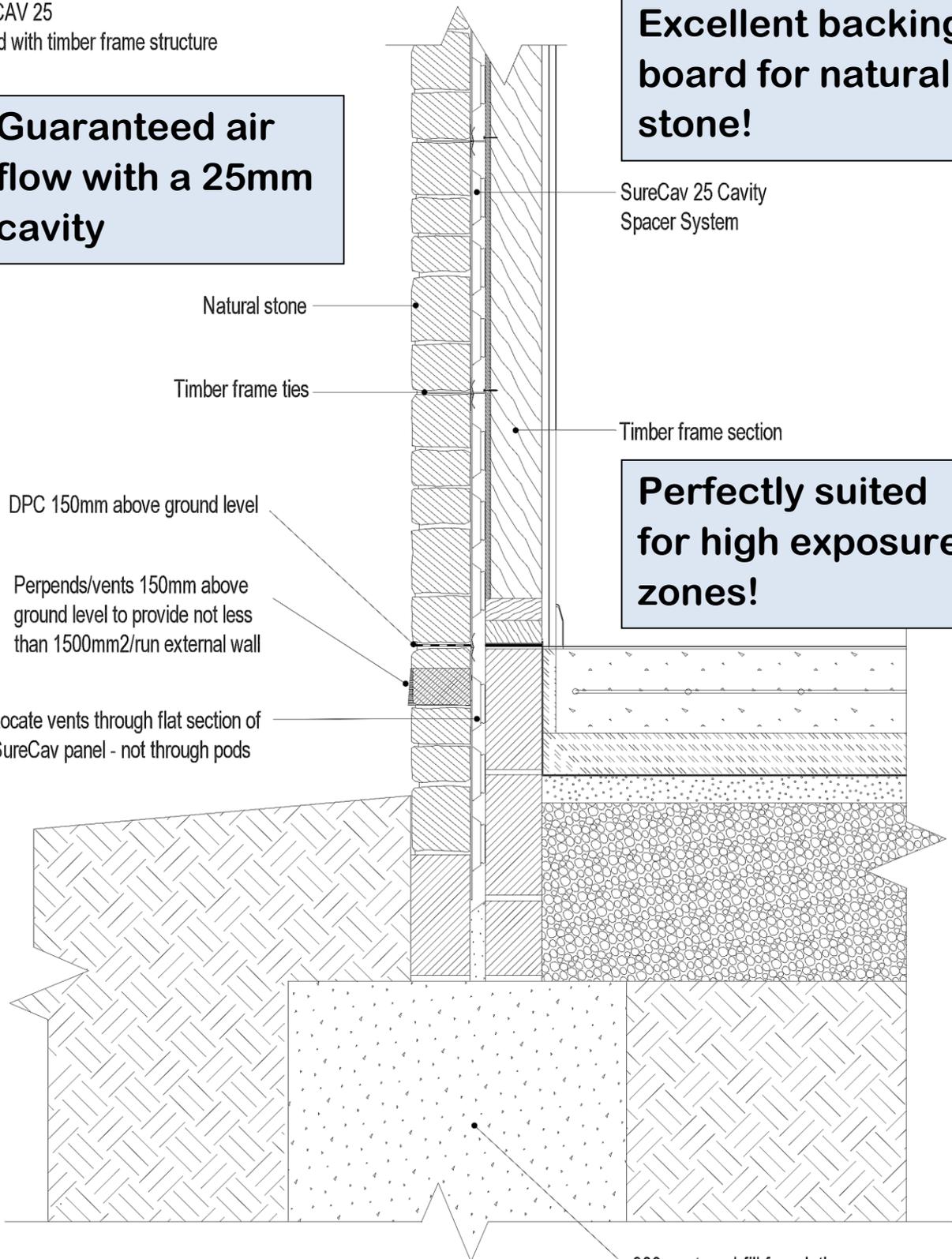
Timber frame section

DPC 150mm above ground level

Perpend/vents 150mm above ground level to provide not less than 1500mm²/run external wall

Locate vents through flat section of SureCav panel - not through pods

Perfectly suited for high exposure zones!



Example 2

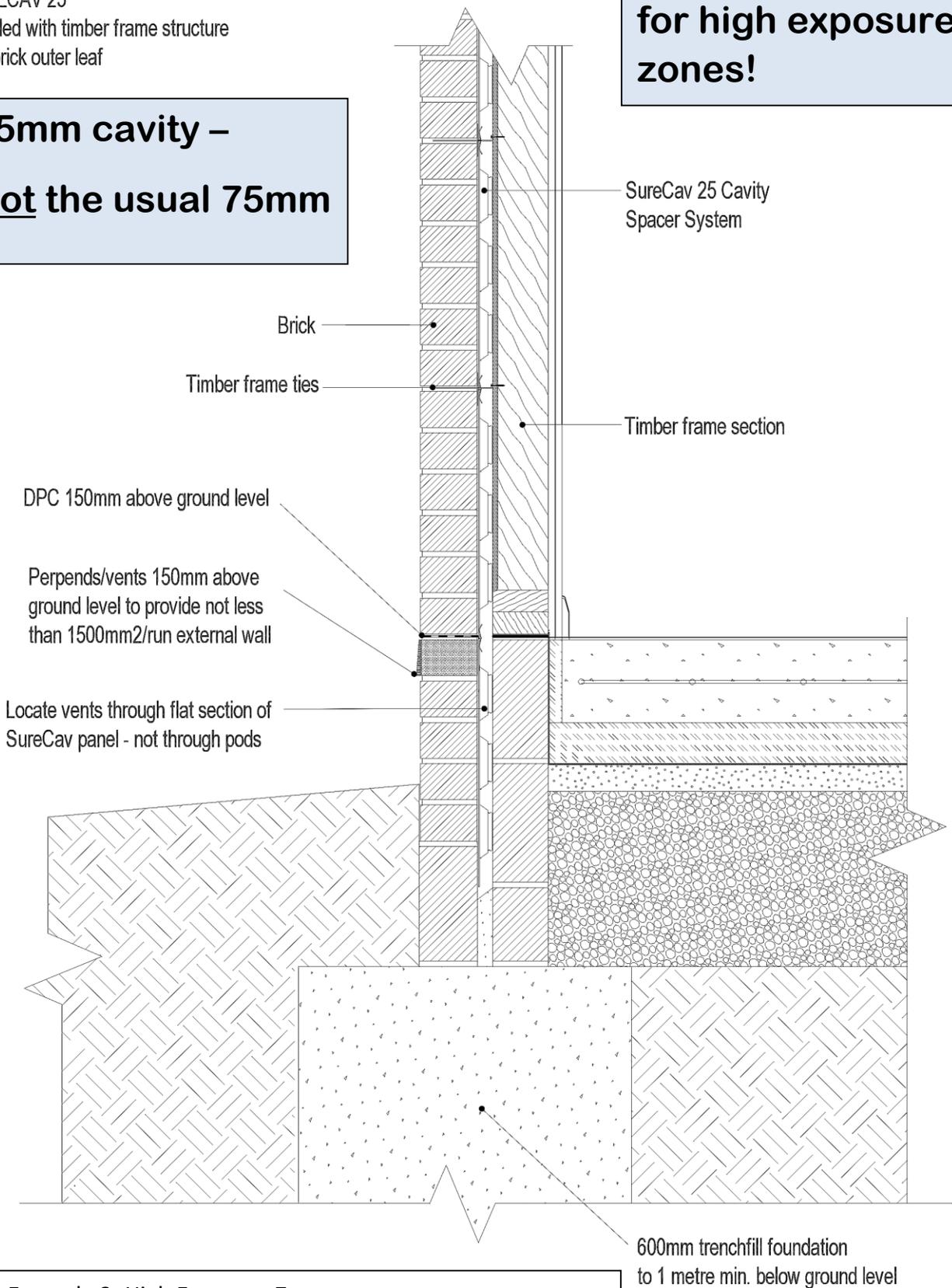
Installation of SureCav 25 with:
Timber frame inner leaf
Natural stone outer leaf
25mm total cavity width!

600mm trenchfill foundation
to 1 metre min. below ground level

SURECAV 25
Installed with timber frame structure
and brick outer leaf

**Perfectly suited
for high exposure
zones!**

**25mm cavity –
Not the usual 75mm**



Example 3: High Exposure Zone

Installation of SureCav 25 with:
Timber frame inner leaf
Brick outer leaf
25mm total cavity width!