

SURECAV®



SURECAV25
SURECAV50

SureCav Design Manual

Architectural & design handbook
Installation best practice

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Thank you for your interest in using SureCav as the superior method for constructing cavities with all types of masonry external finishes.

Welcome to SureCav
from Charlie Ayers MD



THE SEARCH FOR BETTER WAY TO SHUTTER THE CAVITY

The idea for SureCav came in the winter of 2000 when I was building a large 3,500 sq ft. timber frame bungalow with an outside skin of natural stone. To make a saving on the contract the client had decided to forgo the use of a concrete backing-block and use timber shutters to support the stonework.

With the timber-frame constructed, we moved on to site to begin the stone work, setting timber shutters of plywood at a height of 450mm (wall-tie height). With shutters set around the timber frame the masons started work. By this time it was late morning. By mid-afternoon the 450mm course had been built, no more stone could be laid and the shutters could not be struck as the mortar was still not set, day over! Similarly, the next day, shutters were struck, ties fitted, shutters reset and stonework continued. As this process continued I realised we were losing a day in every three setting shutters. Another thing was that as the shutters were struck green mortar was falling into and contaminating the cavity and more time was wasted cleaning this up. There had to be an easier way to do this!

THE SOLUTION - A VERSATILE CAVITY SPACER SYSTEM

SureCav was dreamt-up in my kitchen and started off as soft-drink bottle-necks stuck to a piece of cardboard. After many weeks of thinking 'do I do this or not!' I found a plastics manufacturer who made several design prototypes that I had in mind. We finally came up with the shape of the SureCav pod, which sends moisture to the outside of the wall protecting the cavity from moisture and mortar contamination. The 'Wall of Plastic' came into existence!

Originally vacuum formed, SureCav is now made by injection moulding from 100% re-cycled polypropylene. SureCav50, forming a 50mm cavity has been used successfully throughout the country since 2004 when we first got our BBA Certificate 04/4154.

We have now introduced SureCav25 forming a 25mm cavity, built to the high standards of SureCav50 with the same specification. SureCav25 makes more room for insulation in the cavity and is the key to achieving lower U-Values whilst guaranteeing a clean moisture and mortar free cavity in all exposure zones. Check the details in this handbook and see for yourself why the SureCav spacer system is the 'Sure way forward' to improved building quality!

As I always say, *"It's not just because I designed SureCav that I am selling the system. After all, if someone else had designed it, I would buy it..."*

Well I would - because it works!"



Product Description

Cavity Protection System

Quick Facts

- Environmentally friendly
- Maintains integrity of building envelope
- Suitable for any external masonry leaf

Reasons to choose SureCav for your construction project

SureCav is a polypropylene panel that sits in the cavity and allows a stone, slate, brick or flint outer skin to be built without the need of an additional block leaf.

NEW: SureCav25 forms a 25mm residual cavity, accepted by LABC!

Environmentally friendly:

- Made from 100% fully recycled plastic
- Light weight easy to transport - 100 times lighter than 100mm concrete backing blocks
- Incorporates a new fold line that makes it easy to construct corners
- Will save you money, guarantee clean and moisture free cavities and create up to 6% extra internal floor space with narrower footings, when original external dimensions used
- It significantly reduces labour and material costs and gives a faster cleaner build
- SureCav guarantees absolute integrity of the cavity by providing clean moisture free cavities that also stop water penetration from wind driven rain
- It is durable and remains effective for the life of the building



Gone are the days when builders had to use concrete blocks or even a messy system of temporary shuttering or plywood that often weakened the wall when removed, as well as allowing mortar to fill the cavity.

Construction materials

The SureCav Cavity Wall Spacer System is designed for use in new, external cavity wall construction. The system ensures a minimum residual cavity width of 25mm when using natural or reconstituted stone outer leaf in conjunction with:

- Conventional masonry inner leaf, with or without partial fill cavity wall insulation (masonry includes clay, calcium silicate, concrete and stone units)
- Timber-frame, SIPS or ICF inner leaf or Steel Frame construction

The system may also be used with conventional clay and calcium silicate brick and concrete block outer leaves. The system can be used in any exposure zone in buildings with a 25mm cavity instead of the usually required 50mm or 75mm.

Testimonial

"SureCav is a fantastic product and as we said in the CPD it has very much become standard detail for stonework within the office. Perhaps now with knowledge of the further advantages of waterproofing and stability it may become more widely specified for other cavity wall types also. Many thanks for all your help and we hope that our support of your product will continue to push SureCav as a recognised standard for cavity wall construction within the industry."

Louisa Meek CSA architects B.A. (Hons) Architectural Assistant

Quick Facts

Ensures a consistent 25mm clear-cavity

Cavity protected from mortar and moisture

Helps to drive down U-Values

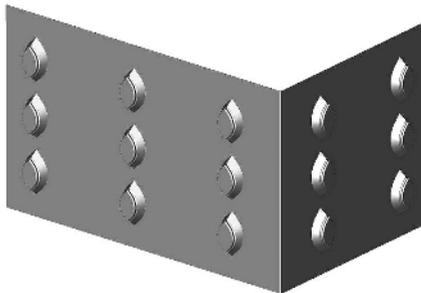
SureCav25 Features

Designed to protect

SureCav25 - the lightweight cavity-spacer system

Outstanding features that benefit the protection of the fabric of the building and site management:

- Removes the need for a concrete block backing wall when building with stone or flint. SureCav25 is a lightweight alternative that is easy to transport and move around the site and will give you a cheaper, quicker build.
- Ensures a consistent 25mm clear residual cavity. The cavity air space has been an essential feature of buildings for decades and has proved its worth in helping to protect the fabric of the building. SureCav25 upholds this proven 'clear-cavity' approach.
- Provides a protected cavity environment that remains free from mortar, completely removing the risk from contaminated wall-ties and the dangers of moisture bridging the cavity.
- Forms a complete barrier, preventing moisture from penetrating the outer leaf and protecting from wind-driven rain in all exposure zones (BBA 04/4154)
- Features a unique groove that, in the unlikely event of moisture breaching the cavity, will direct it back to the outer face, to be drained through weep vents. (See illustration)



In the event of moisture breaching the outer masonry leaf, it is constrained by the outer face of the SureCav25 sheet.

A drop of water, dripping from a tie, may even reach the unique groove in the SureCav pod - but is redirected by the shape of the pod back to the face of SureCav - unable to cross the cavity to the inner leaf.

Insulation

- Allows for an additional 25mm insulation in a 100mm overall cavity that helps to drive down U-Values. 75mm of insulation in a 100mm overall cavity can achieve 0.18 W/m²K

***SureCav25 is a new approach to modern construction, saving time energy and money.
Include it in your design brief!***

Building Examples

Meet the needs of modern construction

Quick Facts

- Revolutionary new cavity-wall technology
- Full BBA certificate
- Accepted by NHBC and LABC

SureCav25! Order online NOW or through all builders merchants!

All the properties of SureCav50 you've come to rely on, but now just 25mm deep, with a guaranteed 25mm mortar and moisture-free clear cavity space!

Example:
100mm overall cavity width
75mm insulation
25mm SureCav25 (clear cavity)
U-Value as low as 0.18 W/m²K

SureCav25
25mm panel forming a 25mm clear cavity

75mm insulation

Brick or other masonry

Suitable for all masonry finishes

SureCav25 shown with block inner leaf

SureCav25 will help to drive down U-Values by creating more room in the cavity for insulation, thereby enhancing the thermal performance of the wall.

Example:
SureCav25 with timber-frame in a 75mm overall Cavity (25mm SureCav25 clear cavity plus 50mm insulation)

50/50 insulation option with timber-frame could achieve a U-Value of 0.17 W/m²K

If there is no insulation in the cavity, fix SureCav directly against the breather-membrane of the timber-frame

Example:
SureCav50 (Cut-away to show 50mm pods)

SureCav50
Illustration shows an overall cavity of 100mm, comprising 50mm clear cavity and 50mm insulation giving a U-Value of 0.24 W/m²K.

With SureCav25 and 75mm insulation in a 100mm overall cavity, a U-Value of 0.18 W/m²K can be achieved

50mm clear-cavity and no need for any backing blocks

Example:
Use SureCav25 with your chosen Render System

SureCav25 Cavity Spacer

With SureCav25 behind the render-board, a 25mm cavity is created that provides a moisture barrier to protect the timber-frame. Fix the SureCav25 panels in place by screwing through the pods using special seal washers to ensure moisture protection

Use insulation render boards or cement fibre boards, following the manufacturers standard fixing instructions

Choose your preferred render system

Insulation Options using SureCav25

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 SureCav25 (mm)	U-Value (W/m ² K)
75	50	25	0.24
100	75	25	0.18
125	100	25	0.15
145	120	25	0.14

Quick Facts

- Lightweight
- Easy to Handle
- Environmentally friendly

Cavity Spacer System

SureCav25 & SureCav50
Cuts construction costs

Numerous benefits achieved using SureCav25 & SureCav50



Avoids building an additional block construction wall which could require up to 40 tonnes of blocks, as shown on the left.



The equivalent wall area of SureCav panels, that would require 40 tonnes of 100mm concrete blocks, will easily fit into a pick-up, as shown above.

Our drive to help the environment

Over 675 tonnes of 100% recycled plastic has been used to manufacture SureCav25 and SureCav50, replacing the equivalent of 2.7 million concrete blocks. That's the equivalent of 50,000 tonnes of concrete that would take 2,500 lorry loads to deliver. The equivalent for SureCav, in weight, would take just 77 loads!

SureCav halves the cost!

By choosing SureCav you could be saving up to half the cost of building with a block wall to support the stonework. Also, don't forget that the time saved in using SureCav results in a faster build, estimated to be at least 10 working days on an average 4 bedroom house.

SURECAV SAVES TIME, SPACE, EFFORT AND MONEY!

See www.surecav.co.uk for more information



SureCav is much more **Environmentally Friendly**, producing half the CO₂ in manufacture, weight for weight, than concrete blocks.

- Injection moulded, **100% recycled polypropylene**
- Much **lighter**, saves space and is easier to move on site
- Ensures the cavity remains completely **clean and dry**
- Ensures no water penetration from wind driven rain
- Provided the option to increase the internal floor space by up to 6%, **adding value** to the project
- Footings are 100mm narrower meaning there is **less excavated material** to dispose of and less concrete in the foundations
- When fixed, SureCav holds the insulation against the inner leaf to guarantee that it works to its **full efficiency**

Testimonial

"The speed of build, easy storage and handling make SureCav an ideal system. We have found this especially to be the case where storage and working space on site is at a premium."

**Ray Holmes, Site Agent,
Hopkins Developments,
Wincanton, Somerset.**

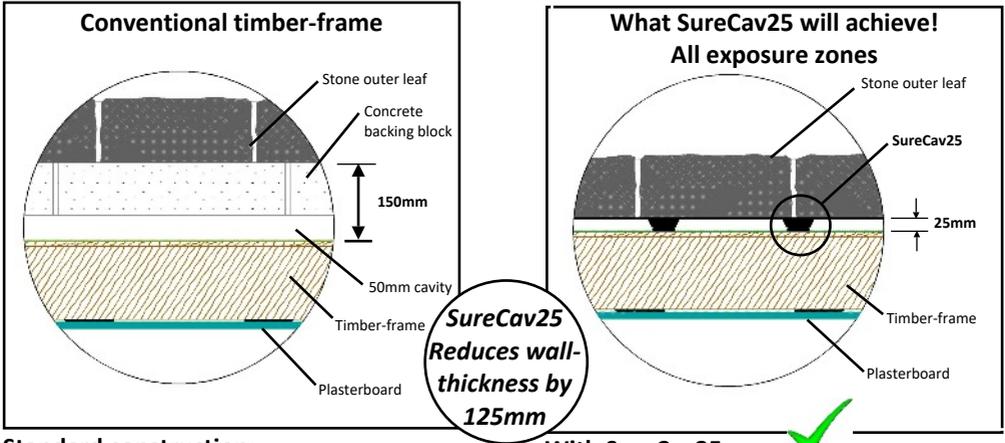
Reduce Wall Thickness

BBA approved in all exposure zones
Protected 25mm clear cavity

Quick Facts

- SureCav25 greatly reduces wall width
- Option to increase insulation thickness
- Saves time and money

Example: Designed to safeguard the integrity of the cavity in timber-frame construction



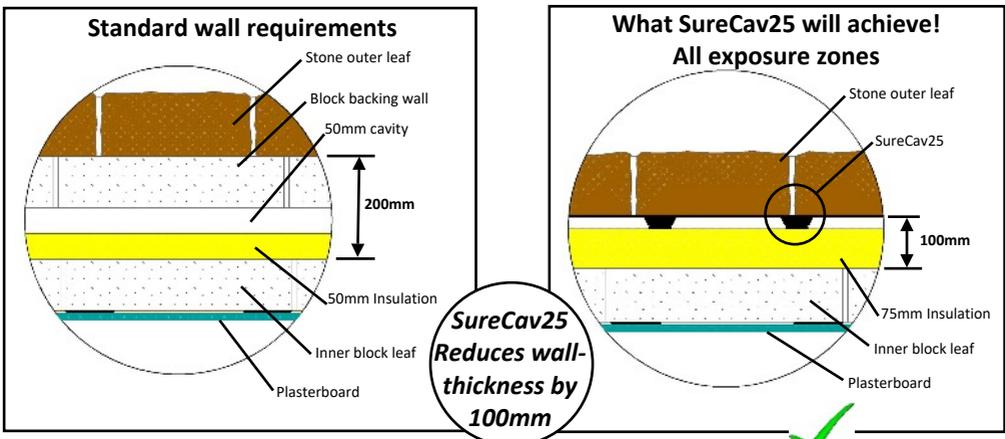
Standard construction:

Stone outer leaf; Backing block (100mm); 150mm overall cavity width' (All exposure zones)

With SureCav25:

No backing block (saves 100mm); Clear cavity of only 25mm, permitted by LABC

Example: Designed to achieve a U-value of 0.18 W/m²K with a random stone outer leaf



Standard construction:

Stone outer leaf; Backing block (100mm); 150mm overall cavity width; 50mm clear cavity. (All exposure zones)

With SureCav25:

More insulation in a 100mm cavity!
100mm less overall cavity width!
U-Value as low as 0.18 W/m²K

Quick Facts

- Increases floor space
- Permitted 25mm clear cavities
- Option to add more insulation

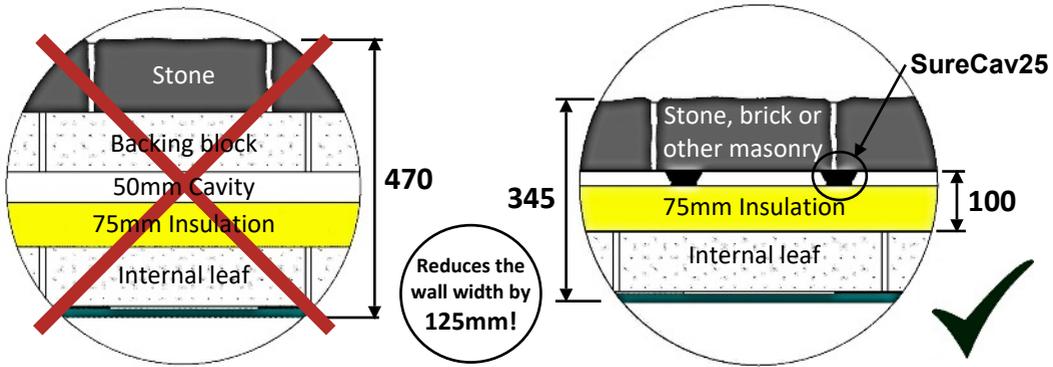
Construction Methods

Reducing the wall width

Why build the old way like this?

When you can accomplish

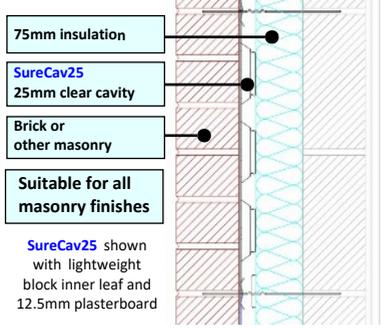
THIS with SureCav25!



A reduction in wall thickness of 25mm will increase the internal dimensions of the property by 50mm in each direction and result in an average of 1.25% increased floor space over two storeys. Already an additional 5% floor space will have been gained by removing the need for 100mm 0.18 w/m²K concrete backing blocks. This can rise to upwards of 6% or more additional floor-space in cases where random stone is used in very severe weather zones. **Consider this: with just a 1.25% gain, this is equivalent to the floor space of 1 extra house on an 80 house site!**

Brick builds: Lower the U-Value with the help of SureCav25!

Example:
 100mm overall cavity width
 75mm insulation
 25mm SureCav25 (clear cavity)
 U-Value is 0.18 W/m²K



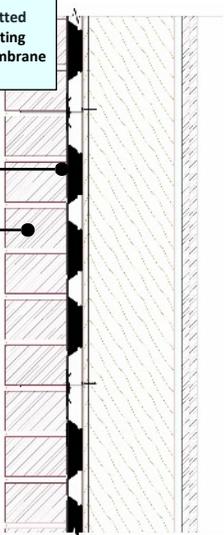
SureCav25 provides a clean, consistent, mortar and moisture-free, BBA approved 25mm clear cavity in up to very severe exposure zones.

SureCav25 will significantly reduce labour and material costs with a faster, cleaner build and is durable, remaining effective for the life of the building, ensuring no water penetration from wind driven rain.

Example: 25mm SureCav25 permitted (clear cavity) directly fitting against the breather membrane of the timber-frame

SureCav25 25mm clear cavity
 Brick or other masonry
 Suitable for all masonry finishes

SureCav25 shown with a timber-frame construction, double-skinned plasterboard and brick outer leaf

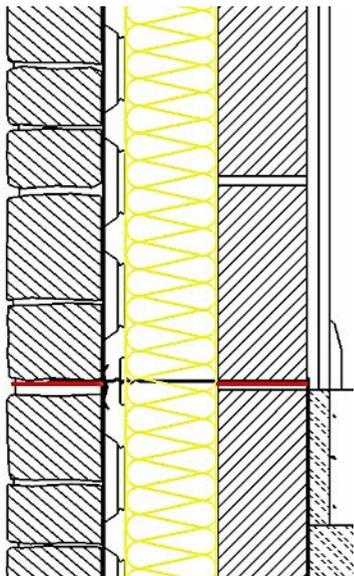


Damp Proof Course

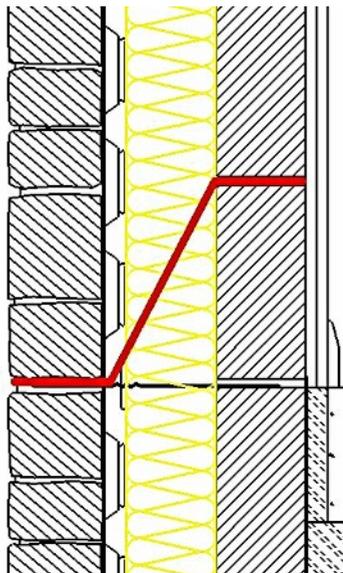
Standard and Preformed DPC

Quick Facts

- Install DPC 150mm min. above ground level
- Trim the SureCav panels to the tray
- Suitable for site-made or custom tray



Standard DPC



DPC or custom tray

General Notes:

1. Standard DPC installed 150mm min. above ground level.
2. SureCav panels can also be fitted below DPC if required for support for the construction of the stone, flint or other masonry.
3. Trim the SureCav panels horizontally to meet the DPC Tray and continue the sheet the other side of the tray.
4. Install weep/air vents as required by local authority.
5. Wall-ties should meet standards approval by local authority, structural engineer and/or architect.



Quick Facts

- Helps to prevent mould and mildew
- BBA approved for any exposure zone
- Completely waterproof envelope

Wind-Driven Rain

BBA approval in all exposure zones

Damage from moisture affecting buildings

One of the greatest threats to the integrity of the building structure come from water ingress, one of the most common sources of moisture affecting buildings in the United Kingdom. Damage from the build-up of moisture results in mould, mildew and condensation on windows and in the loft space. Additionally, where there is a moisture problem in the wall cavity, damage readily occurs to the insulation and wall ties, also affecting wall plates, the timber frame itself and installed joinery. Preventing this from occurring is obviously a priority in the minds of all designers and builders interested in quality construction.



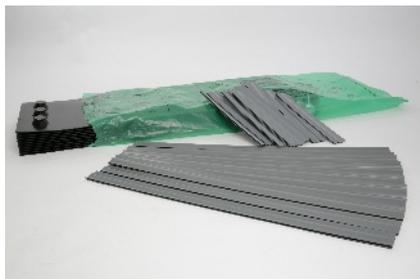
The incidence of wind-driven rain is likely to be more prevalent in properties closer to the western coast of Britain and any increase in moisture giving rise to wall saturation will require a managed construction. The increased affect of wind driven rain will be particularly relevant where external walls do not have a suitable cavity or rain screen.

SureCav - the solution

SureCav25 and SureCav50 will prevent any water ingress from wind driven rain when:

- Building external walls with any recognised material
- A moisture and mortar-free 25mm or 50mm residual cavity will be maintained that will be easily ventilated
- Insulation is held in places at all times, enabling it to work to its full efficiency

SureCav comes in packs of 10 and includes all the joining strips you will need. Order special seal-washers if building with timber-frame.



SureCav25

Ensures no water penetration from wind-driven rain with a 25mm cavity instead of the usual 50mm or even 75mm

required in high 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.



Steel Frame Construction

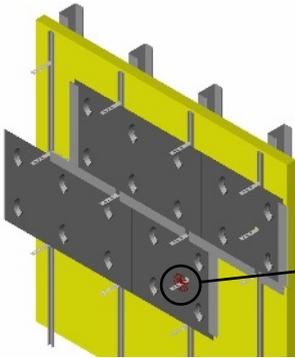
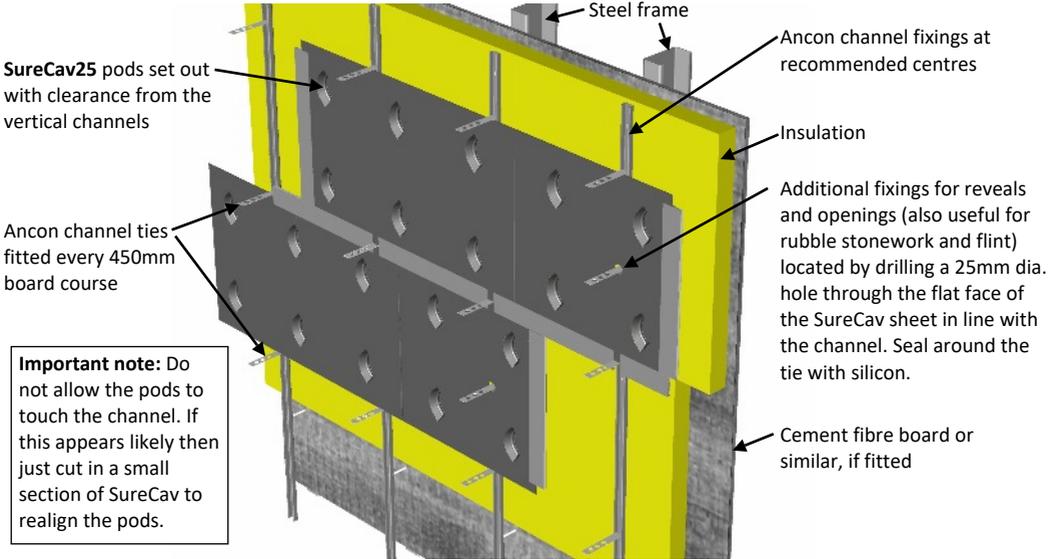
Channel fixing and tie suggestions

Quick Facts

Ensures a consistent 25mm clear-cavity

Suitable for all exterior masonry finishes

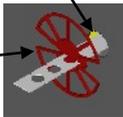
Steel frame channel-system / insulation options



Steel-frame system.
50mm board insulation.
Ancon or similar channel fixing.
SureCav25 forming a 25mm residual cavity.

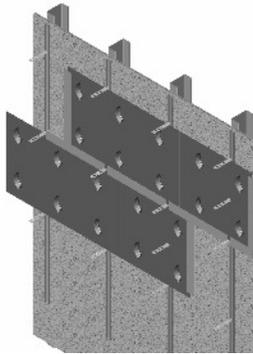
For additional fixings:

Cut a small hole in line with the channel, in the flat face of the SureCav25 panel only, and insert the tie.

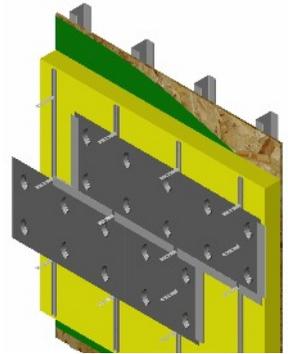


Seal the hole with silicon on the back of a wall tie clip.

This procedure will be useful when building with flint or rubble stone.



Steel-frame system.
Cement fibre-board or similar.
Ancon or similar channel fixing.
SureCav25 forming a 25mm residual cavity.



Steel-frame system.
Sheathing & breather membrane (if specified).
100mm board insulation.
Ancon or similar channel fixing.
SureCav25 forming a 25mm residual cavity.

Visit www.surecav.co.uk for more information

Ordering online, CAD details and construction drawings, FAQs, installation instructions, news items, cost comparisons, instructional videos and much more!

Quick Facts

- Additional fixings through pods only
- Use special seal-washer
- Insert plugs at least 50mm into block

Additional Fixings - Flint

Flint outer leaf

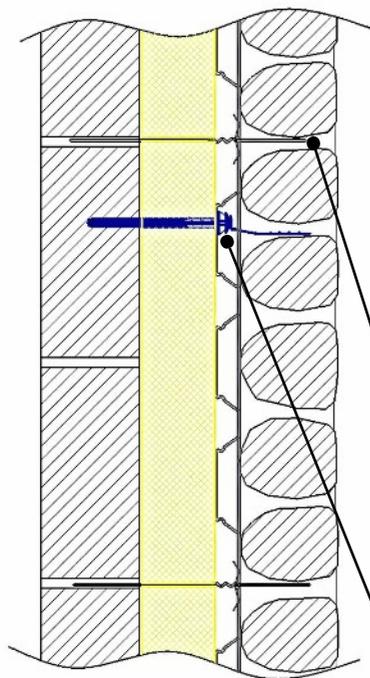
Fixing additional frame-ties when using flint or rubble stone

Fix additional frame-ties, as required, into blockwork by drilling and plugging through the pod only.

Always use a SureCav seal-washer to ensure that the fixing is correctly protected from moisture penetration.

Ensure the plug is fixed at least 50mm into the blockwork and is long enough to suit the thickness of insulation.

Standard wall-ties are fitted each board course, 450mm vertically.



Standard tie

Additional tie through the pod using special seal-washer

**Testimonial**

I have been personally really impressed with the overall SureCav system and have happily shown some of your prospective customers around my site at Langton Matravers, Dorset, where we are using it on a house with semi-dry stone walling designed by Western Design Architects. The biggest advantage, of course, is that you can increase the overall floor area by using SureCav. I can see this completely doing away with outdated backing block design. My opinion is that SureCav is the way forward and is a great product and great solution.

Daniel Cox, Matrod Frampton Site Agent

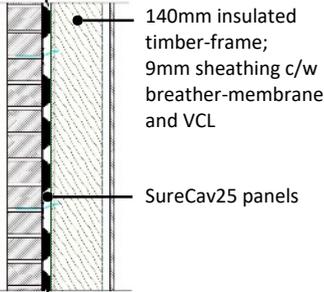
Typical installation

Suggestions for Block and Timber-Frame

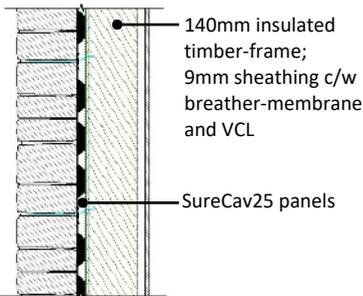
Quick Facts

- Traditional block inner leaf
- Timber-frame options with or without insulation in the cavity

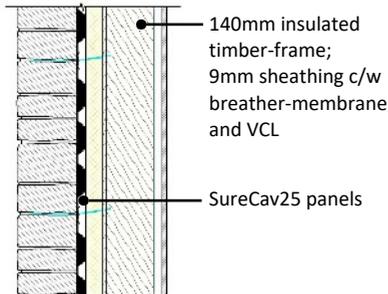
Timber-frame suggestions



SureCav25 with brick outer leaf installed against breather-membrane

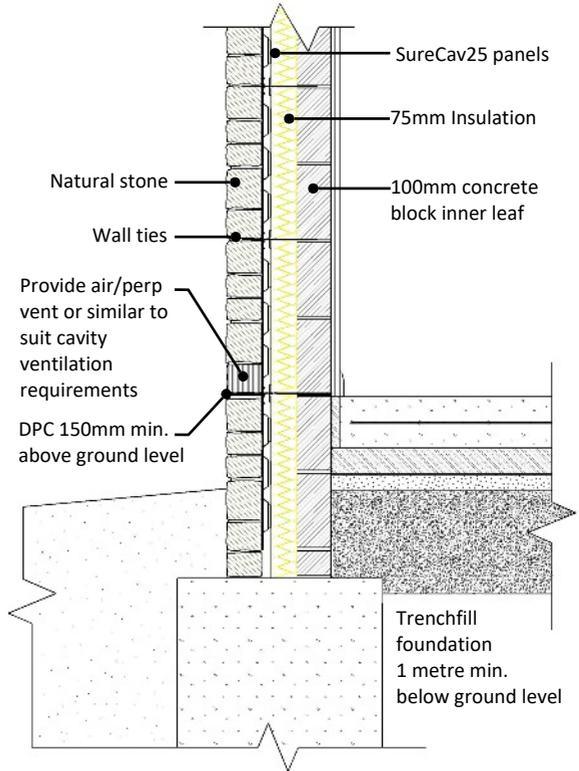


SureCav25 with natural stone outer leaf installed against breather-membrane



Designers are now adding insulation in the cavity to lower U-Values

Traditional construction with stone and block inner leaf



SureCav installation instructions

- Construct the inner leaf in the usual way, setting the wall ties in the blockwork or support studs of the timber-frame, each 450mm vertically.
- Trim the joining strip up to the tie and continue with the off-cut the other side. To avoid piercing the panels when building next to doorways and openings, double up the ties within 225mm of the opening, each board-course vertically.
- Ensure that all perp vents have a corresponding vent made through the SureCav panel to allow proper cavity ventilation.
- Always select wall-ties of the correct length and consistent with local authority regulations.

Suitable for block, timber-frame, SIPS, ICF and steel frame inner leaf and all types of masonry external finishes.

Quick Facts

- Protection for property upgrades
- Enables more insulation options
- Overcomes the problem of porous masonry

Render Systems

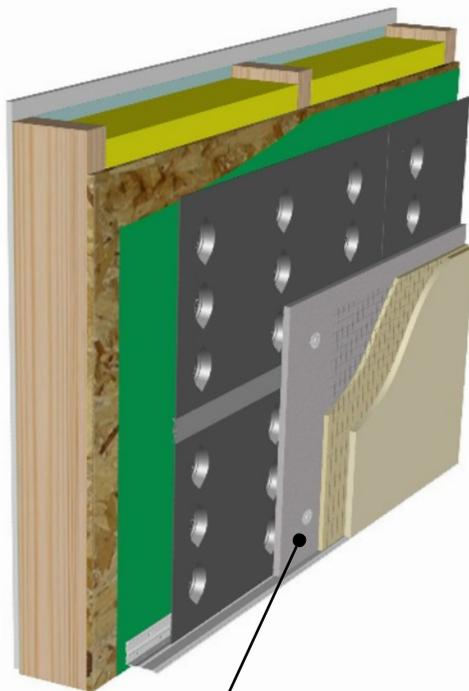
Upgrade older stock housing
Enhance timber-frame

Fresh external appearance

SureCav25 provides an excellent opportunity to upgrade to external face of older building stock or provide a protective moisture barrier behind the render system on timber-frame dwellings.

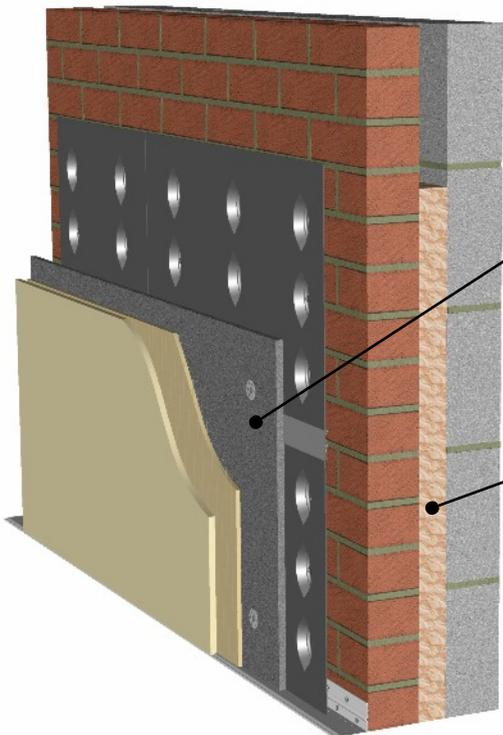
The unique features of SureCav25 form a barrier to wind-driven rain and will further protect the fabric of the building. A vented, SureCav25 cavity will be able to 'breathe' and evaporate the moisture, avoiding the problems of interstitial condensation.

With the installation of a unique SureCav25 airspace over the top of a degraded wall surface it is now possible to build a new decorative, waterproof rendered surface.



Use insulation render boards or cement fibre boards, following the manufacturers standard fixing instructions. Complete the upgrade with your preferred render system.

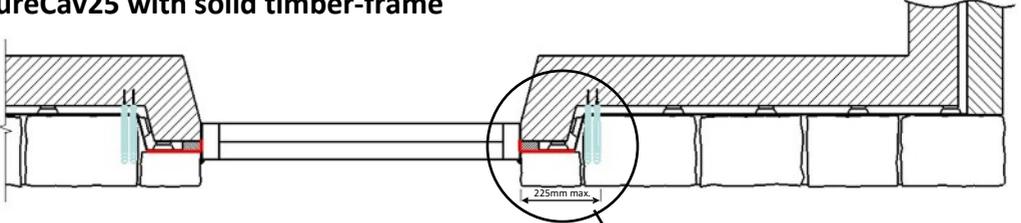
The unique design of SureCav25 forms a barrier to wind-driven rain and will further protect the fabric of the building. This allows the original cavity to be filled yet still ensure a barrier to prevent moisture from crossing older deteriorating ties.



SureCav25 is made from 100% recycled polypropylene that is durable and will last the lifetime of the building.

Quick Facts

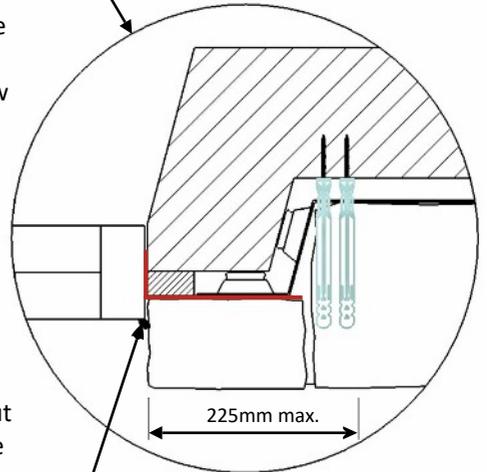
- Wrap vertical DPC around batten or closer, then across the face of the SureCav panel
- Use an additional tie within 225mm of the opening

Vertical DPC
Window and Door Reveals
Solid timber-frame detail
SureCav25 with solid timber-frame**Vertical DPC**

The vertical DPC should be wrapped around the cavity batten or closer, then across the outside face of the SureCav panel. Ensure the additional frame-tie is fixed within 225mm of the opening (see below regarding additional wall-ties). The solid timber-frame allows the ties to be fixed in any position.

Cavity batten

Trim the SureCav sheet up to, or overlapping the cavity batten by 10mm or so, if desired. The trimmed sheet can be fixed to the cavity batten, but it is not essential. The SureCav joining strip must be trimmed to meet the cavity batten to ensure the overlapping part of the sheet does not interfere with the external masonry.



Silicon in corners

Addition wall ties

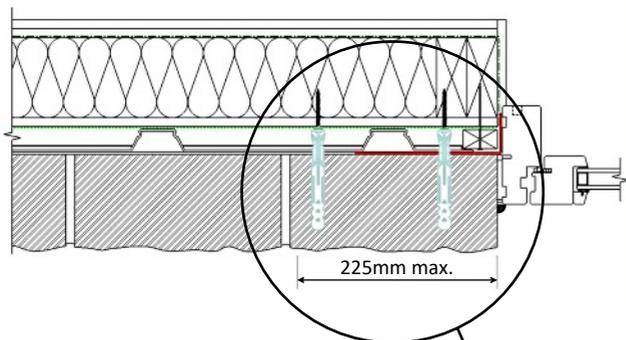
This procedure will prevent slots having to be made in the SureCav sheet on each course of block-work when building away from a doorway or window reveal.

It is recommended that an additional wall-tie is included within 225mm of the opening on each board coarse level to satisfy the structural requirements.

The ties should then be fitted every 450mm vertically coinciding with the joint in the SureCav sheet.

Quick Facts

- Wrap the DPC around the cavity batten and then around the face of the SureCav panel
- Seal door/window frame with silicon

Vertical DPC-RevealsProcedure for reveals
Timber-frame detail**SureCav25 and timber-frame construction****Cavity batten**

Trim the SureCav sheet up to, or overlapping the cavity batten by 10mm or so, if desired. The trimmed sheet can be fixed to the cavity batten, but it is not essential. The SureCav joining strip must be trimmed to meet the cavity batten to ensure the overlapping part of the sheet does not interfere with the external masonry.

Addition wall-ties

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.

It is recommended that an additional wall tie is included within 225mm of the opening on each board course level to satisfy the structural requirements.

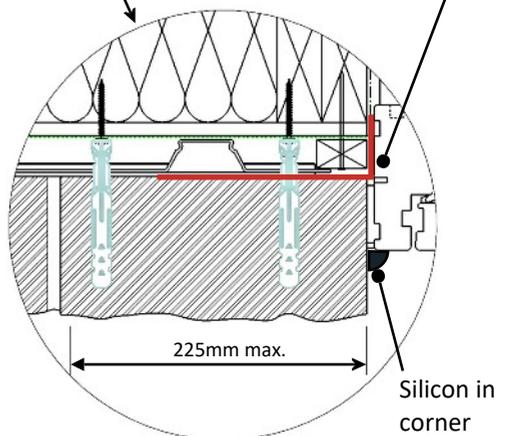
The ties should then be fitted every 450mm vertically coinciding with the joint in the SureCav sheet.

Vertical DPC

Wrap the vertical DPC around the cavity batten or closer and then across the face of the SureCav panel as shown below. This will enhance the protection against moisture ingress where the SureCav system ends at the reveal or opening. Cut a small slot in the DPC for the frame-tie. Always make sure that the joint between the door/window frame and the masonry is sealed with silicon.

Note: The timber-frame tie should be screwed into the structural members of the timber-frame wherever possible.

Wrap the vertical DPC around the batten and in front of the SureCav panel. Cut a small slot in the vertical DPC for fitting the frame-tie.



Silicon in corner

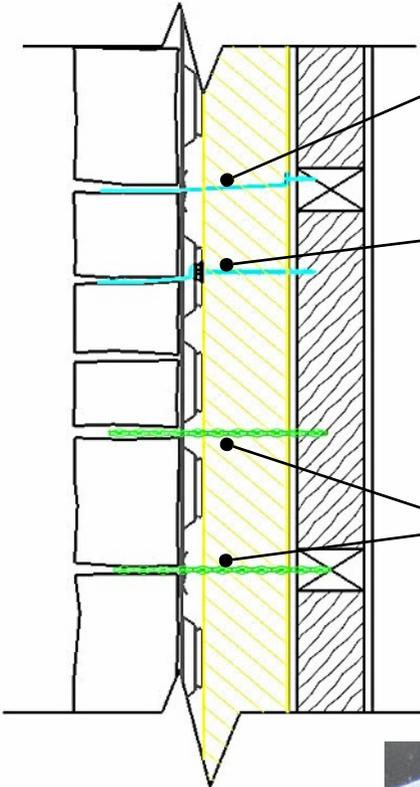
Quick Facts

- Fix helical ties through the flat face only
- Drill pilot hole in face of SureCav panel
- Hammer helical tie into timber-frame

Additional Fixings -Stone

Timber-frame ties
Helical Ties

Provide additional wall-ties for extra support - various fixing options



Standard frame-ties are fitted each board course, 450mm vertically and into the main stud supports of the timber-frame.

Fix additional frame ties, as required, by drilling and plugging **ONLY** through the pod. Always use a SureCav seal washer to seal the hole in the pod. Ensure the plug is fixed at lead 50mm into timber-frame and is long enough to suit the thickness of insulation.

Helical ties can be inserted where additional support is needed in any place through the **FLAT** surface of the SureCav sheet only. This is especially useful when building with rubble stone or flint.

Fitting helical ties

Drill a pilot hole through the flat face **ONLY** of the SureCav panel.

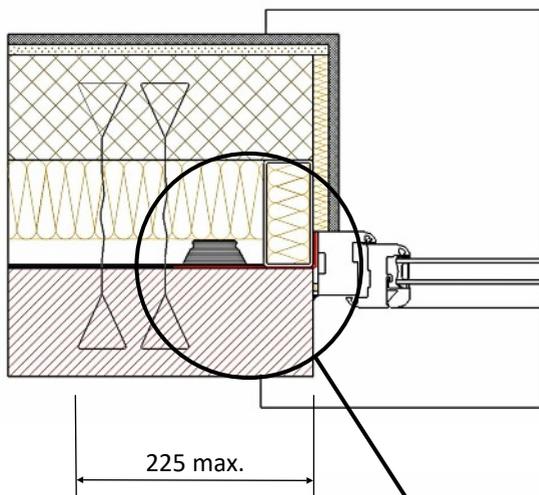
Drive the helical tie into the timber-frame with the fixing tool.

For conventional block-work, where additional fixings are required when using rubble stone or flint, first drill and plug the block before driving in the helical tie.



Quick Facts

- Fit the vertical DPC in front of the SureCav
- Wrap the DPC around closer or batten
- Seal frame with silicon sealant

Vertical DPC - Closers**Window and Door Reveals****SureCav25 with 75mm insulation in an overall 100mm cavity****Vertical DPC**

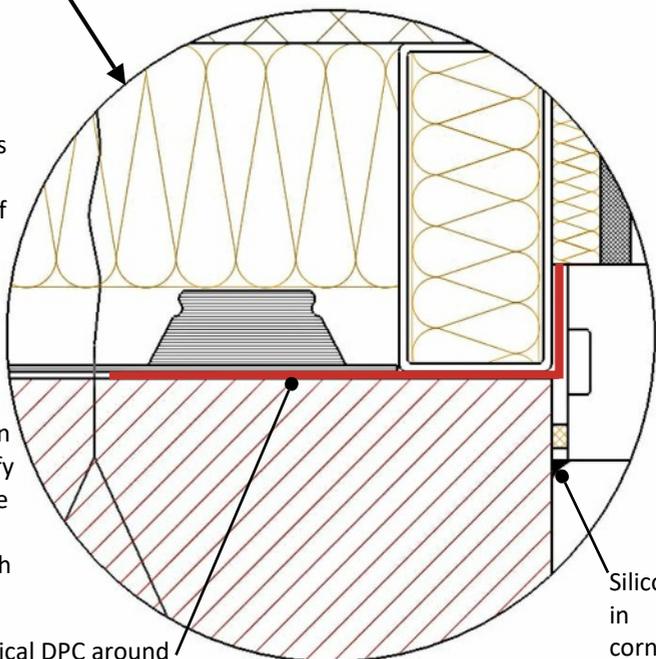
It is important that the vertical DPC is fitted in front of the SureCav panel by at least 100mm and also allowed to wrap around the closer or batten.

When the door or window frame is in place then the interface between the wall and the frame should be sealed with silicon sealant .

Addition wall ties

This procedure will prevent slots having to be made in the SureCav sheet on each course of blockwork when building away from a doorway or window reveal.

It is recommended that an additional wall-tie is included within 225mm of the opening on each board course level to satisfy the structural requirements. The ties should then be fitted every 450mm vertically coinciding with the joint in the SureCav sheet.



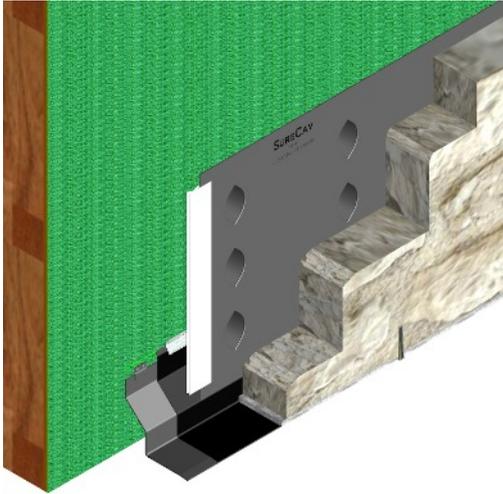
Fit 100mm minimum vertical DPC around the reveal, in front of the SureCav panel.

Lintels - Timber-Frame

Fitting DPC/custom tray

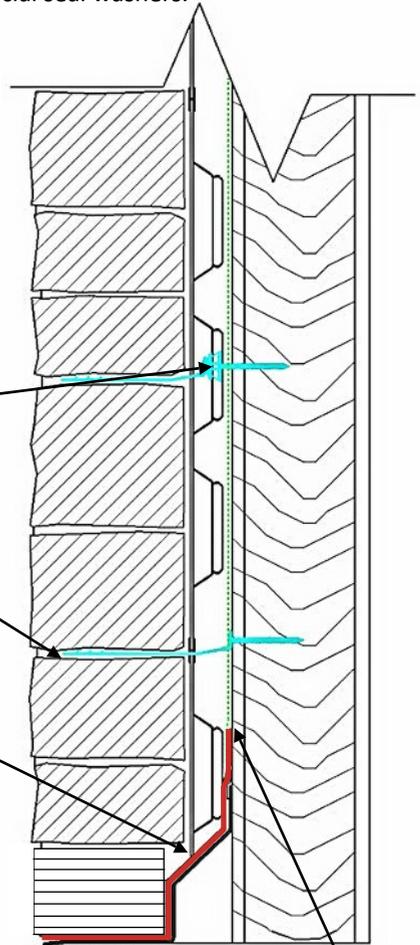
Quick Facts

- Trim the SureCav panel to the tray
- Tuck DPC under the breather membrane
- Seal breather membrane with duct tape



DPC/custom tray with timber-frame

SureCav25 trimmed to meet the DPC/tray and screwed directly to the timber frame using the special seal washers.



Use special seal washers to fix the SureCav through the pods.

Fit standard timber-frame ties through the horizontal SureCav joining strip each board course 450mm vertically.

Trim SureCav to meet DPC/tray

Tuck DPC/tray under the membrane and seal with duct tape

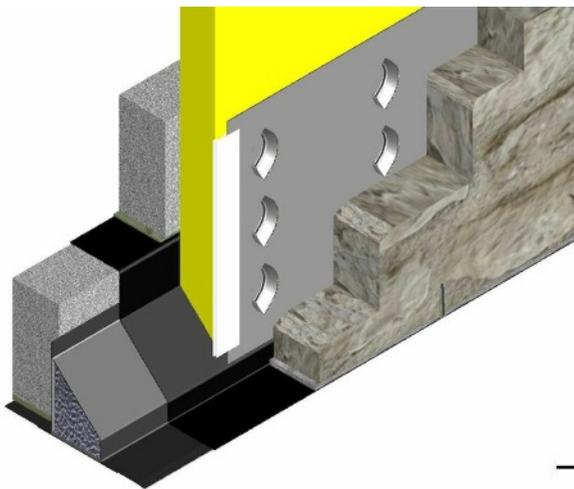
- Trim the SureCav panels horizontally to fit over the top of the lintel
- Fit the DPC membrane or custom-made tray over the timber-frame lintel
- Tuck the top end of the DPC/tray under the timber-frame breather membrane and seal with duct tape.
- Weep vents to be fitted as required by local authority.

Quick Facts

- Fit DPC or custom tray over lintel
- Trim the SureCav panel to meet the DPC
- Install weep vents as required

Lintels -Block Inner Leaf

Conventional block inner leaf
Trimming to tray

Trimming SureCav to meet a lintel

Internal block-leaf with 75mm
insulation and SureCav25

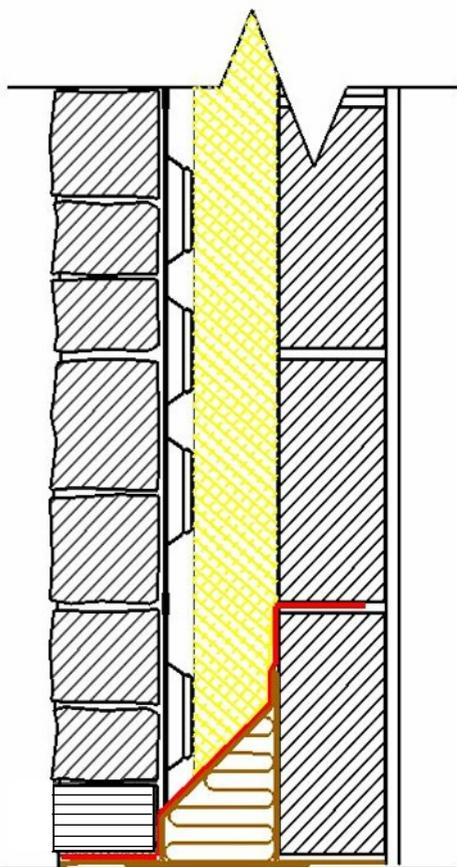
1. Fit the DPC membrane or custom-made tray to the lintel as shown.
2. Trim the insulation to the tray.
3. Cut the SureCav sheet horizontally to suit the inner block-leaf coursework, trimming it to meet the tray.
4. Fit weep vents along the lintel as required by the local authority building control.

Testimonial

"Charlie, all the semi-dry stone walling is on SureCav. Brilliant idea you had! The stone is Cotswold Stone, 150mm on bed, laid semi-dry to conceal the mortar. We wanted it to look like random walling without regular, level, coursing. The walling craftsmen were able to achieve this random effect with SureCav."

David Lees, Director.

Lees Munday Architects, Guildford, Surrey



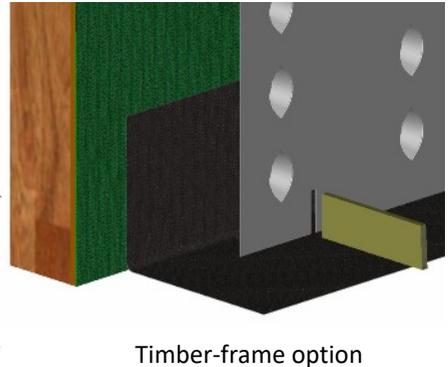
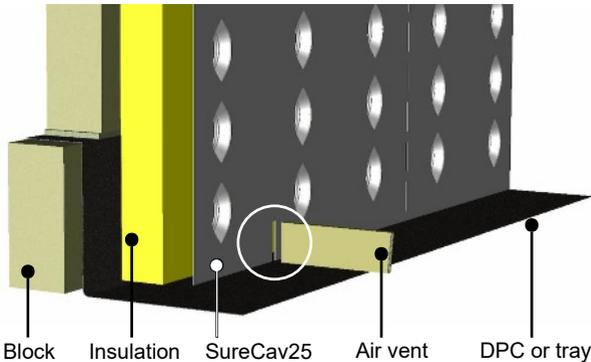
Air Vents

Perp Vents

Quick Facts

- Cut a slot in the SureCav panel for the vent
- Ensure the slot is of adequate size
- Adhere to regulations on venting cavity

1. Installing a Cavity Wall Vent In Traditional Construction (As required by Building Control)



Cut a slot in the SureCav sheet 10mm wide and 65mm high to match the profile of the ventilator.

If the intended slot (as shown in the white circle above) does not coincide with the edge of the SureCav sheet then simply drill a 10mm diameter hole at the top and bottom and cut the material away.

Compliance

The Building (Scotland) Regulations 2004

Vent wall cavities with a masonry outer leaf by installing ventilators with at least 300mm² free opening area at 1.2m maximum centres. (If required)

NHBC Standards

The cavity ventilation should conform to the requirements of the timber frame manufacturer.



Drill the 10mm holes, as shown above, to match your ventilator and then cut out the material between them to produce the slot needed for the vent.

SureCav recommend **Cavity Trays** for all your ventilation requirements. The Type W may be used to provide the balanced air conditions demanded within the cavity in traditional construction. Cavity Trays Ltd., Yeovil  www.cavitytrays.com

Parapets

Cavity closer Ventilation

Quick Facts

- Cut ventilation slot on flat face only
- Trim SureCav to closer and DPC supports

Install SureCav25 in a gable end parapet with pitched roof

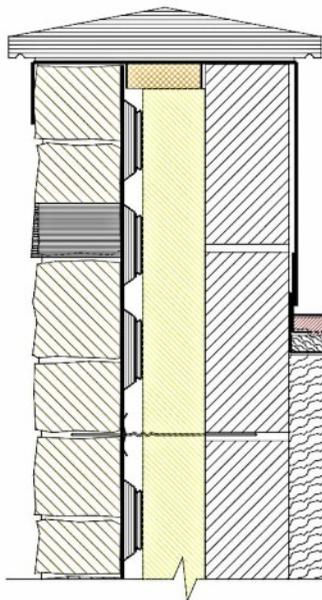


Slot cut in flat part of panel for cavity ventilator

Cavity vent

Trim the SureCav[®] panel to the cavity closer. Install air vents in the outer leaf, ensuring the vent is cut through the flat area of the SureCav panel and not through the pod.

The parapet up-stand shown in this illustration lends itself to the use of an S type soaker or custom lead soaker made up on site.



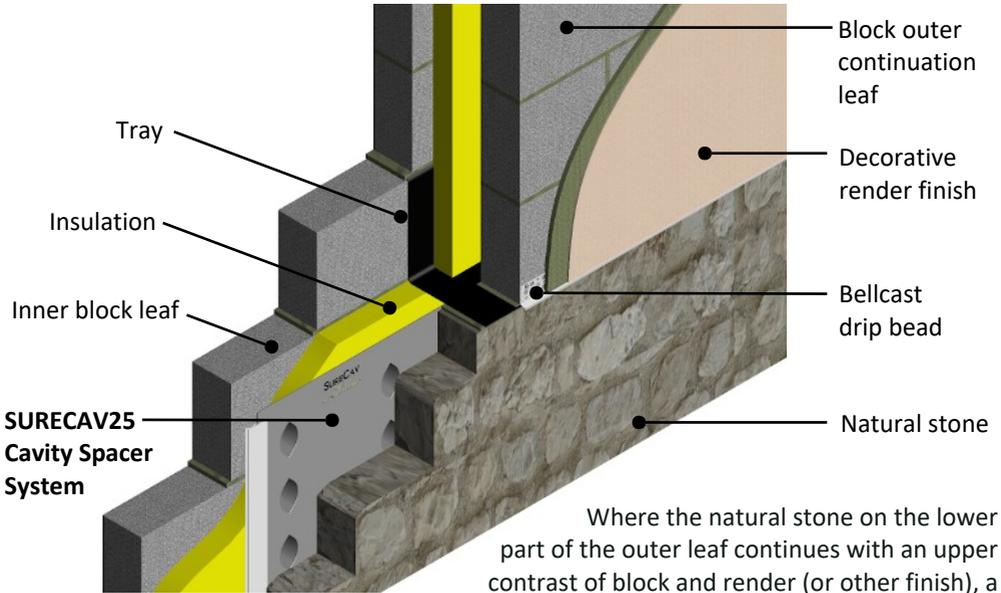
Stone To Render

Install tray at continuation

Quick Facts

- Fit the SureCav panel up to the tray
- Drain/vent above the tray as normal

Install cavity tray at natural stone/block render continuation to outer leaf



Where the natural stone on the lower part of the outer leaf continues with an upper contrast of block and render (or other finish), a cavity tray should be installed at the head of the natural stone. Trim the SureCav sheet to the tray in the usual way.

Testimonial

We are a small design and build company living and working in the Yorkshire Dales National Park where the use of random limestone is obligatory and planning consent for extensions etc. is difficult to obtain and usually granted only for very small projects. I had already specified SureCav on building regulations applications after the product had been recommended to me by the Local Authority Building Inspector and was interested to try it on my own extension.

I found the product to be perfect for creating a random limestone facade which abuts the traditional rubble filled construction seamlessly yet overcomes the inherent problems of water ingress through the limestone fissures. Additionally the reduction in depth of wall gives space for appropriate levels of insulation whilst achieving maximum internal space.

I will continue to specify the product as the benefits far outweigh the costs and it is a breeze to install.

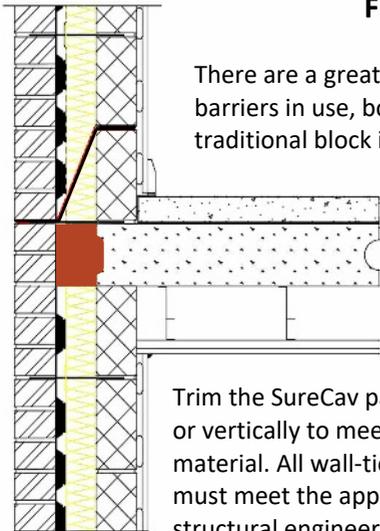
Jonathan Athay, JMA Design, North Yorkshire (www.jmadesign.co.uk)

Quick Facts

- Trim the SureCav panel to the fire stop
- Do not damage the fire-stop material
- Check local building regulations

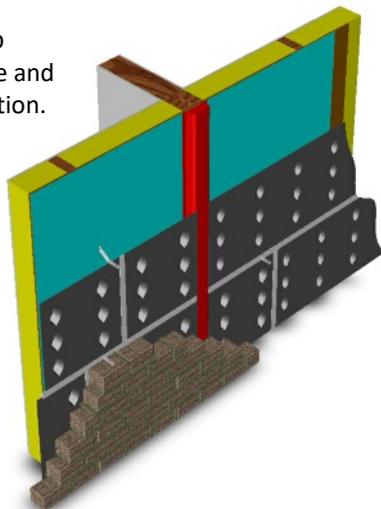
Cavity Fire Barriers

Fire stop details

Fitting SureCav25 with a Cavity Fire-Stop Barrier

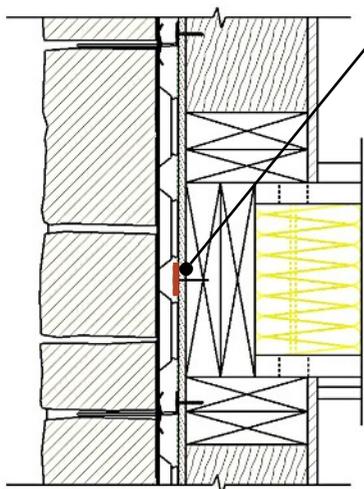
There are a great variety of fire-stop barriers in use, both in timber-frame and traditional block inner leaf construction.

Trim the SureCav panel horizontally or vertically to meet the fire-stop material. All wall-ties and fire-stops must meet the approval of the structural engineer/Building Control



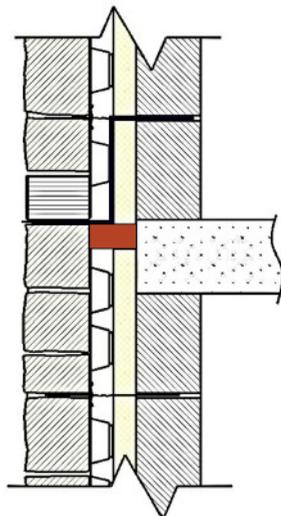
The intumescent barrier shown below must be placed so as not to interfere with the SureCav pods, either horizontally or vertically, depending on the protection required.

If there is a problem with the pods touching the fire barrier then just shorten a length of SureCav and insert another section to keep a clearance for the intumescent strip (as illustrated below, approx. 4mm deep to allow a continuous air flow in the cavity in normal conditions).



Intumescent fire-stop for 25mm cavities

Always check carefully the specific requirements from your designer and regulations from your Local Building Control for your construction project.



Cavity Trays

Stepped tray with bridging piece

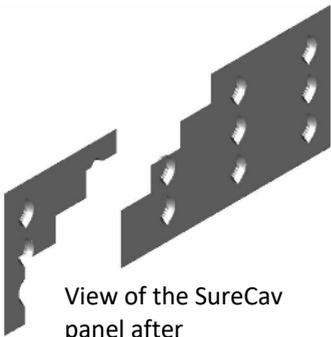
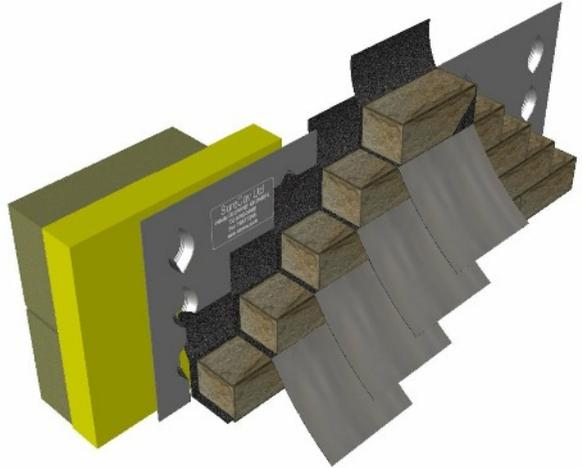
Quick Facts

- Trim the SureCav to the bridging pieces
- Cut can go through the pods if necessary
- Do not impede the bridging pieces

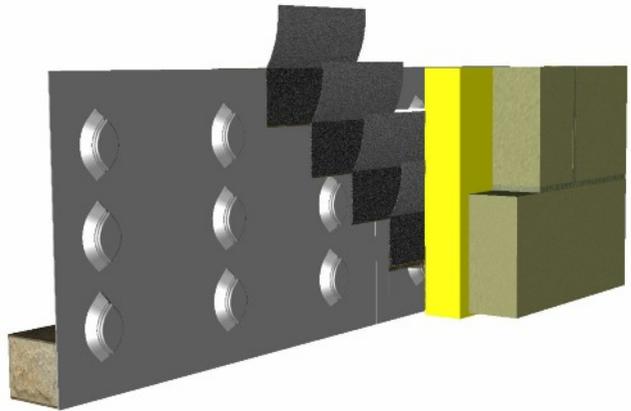
Fitting SureCav around bridging pieces of stepped tray

To maintain maximum support to the external masonry, it is important that the SureCav panels are trimmed as close as possible to the trays. At the same time, make sure that the cavity bridging pieces are not impeded by the SureCav panels.

It may be necessary to cut through one or more of the pods, but this will not impair the properties of the SureCav system.



View of the SureCav panel after trimming to the stepped trays



Rear view showing how the SureCav panels have been trimmed up to and around the stepped trays and bridging pieces.

It is acceptable practice for the cut to intersect one or more of the pods if necessary when trimming to the trays.

Quick Facts

- Protect the timber-frame ahead of masons
- Wall ties fixed wherever needed
- Weatherproof “wall of plastic”

Wall Protection

Pre-clad the timber-frame

**Testimonial**

“SureCav is a very good way of achieving this effect (very high quality dry stone effect, random walling in Purbeck Stone) without the need for all of the additional foundations, and loss of floor space in the building associated with a block-work backing to the external masonry. This saves time, space and money plus it gives the additional layer of weather protection provided by the SureCav sheets.”

We are very pleased with the high quality stonework. SureCav makes it easier to achieve the effect we want.

Phil Easton, Founding Director at Western Design Architects

Pre-clad wall with SureCav25

SureCav25 has been fixed to the entire timber-frame through the insulation ahead of the stone masons. In this project, helical ties will be fixed through the flat face of the SureCav25 panels (not through the pods) at appropriate intervals, conforming with local building standards.



Natural stone

SureCav25

100mm insulation

Solid timber-frame

Quality Control

Remedials & Repairs
Good site practice

Quick Facts

- Install DPC and water-seals correctly
- Repair any holes in the SureCav face
- Avoid pockets where moisture can collect

Ensuring good workmanship at all times by careful site supervision



EPDM seals around windows.

The EPDM seal material has been wrongly overlapped and could allow moisture to collect behind the seal.

Care must be taken to carefully seal with silicon all overlaps. As shown here, there is an untidy gap that has been left and should be remedied before continuing with the outer masonry leaf. It is good practice to overlap the EPDM in such a way that moisture can never be allowed to collect in pockets or run down behind the seal material. Give special attention to the vertical joints and intersections with sills and lintels.



If a small hole is discovered in the SureCav Panel, it can be easily remedied by applying a double layer of duct tape over the hole. For larger areas, it may be necessary to cut out a section of SureCav and insert a new piece.

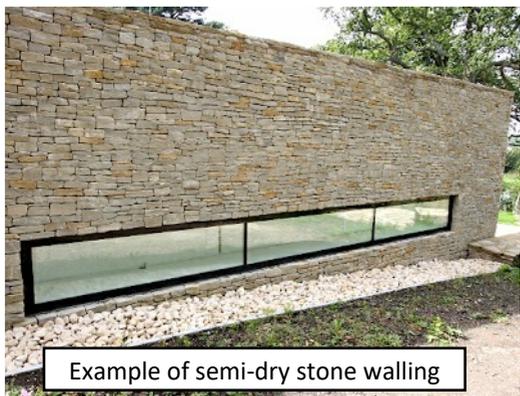
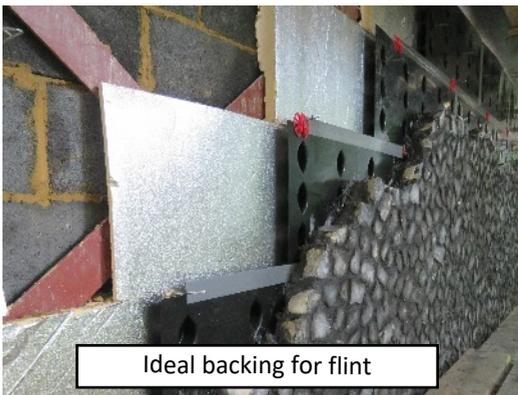
In the photo on the right, a section of the SureCav panel had to be cut away to avoid a supporting scaffold pole. The easiest way to resolve this, once to pole is removed, is to cut out the damaged section, insert new joining strips and a new SureCav panel section.



Quick Facts

- Additional fixings for flint outer leaf
- SureCav25 with DPC in place
- Perfect for non - 90° corners

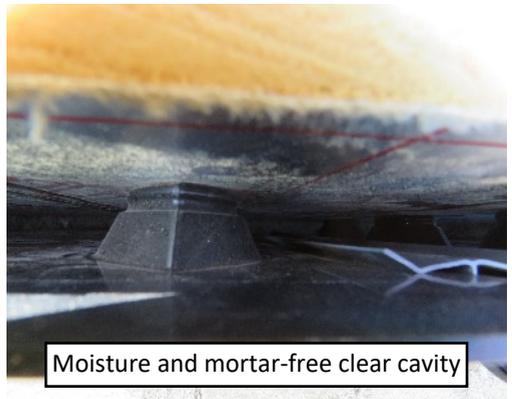
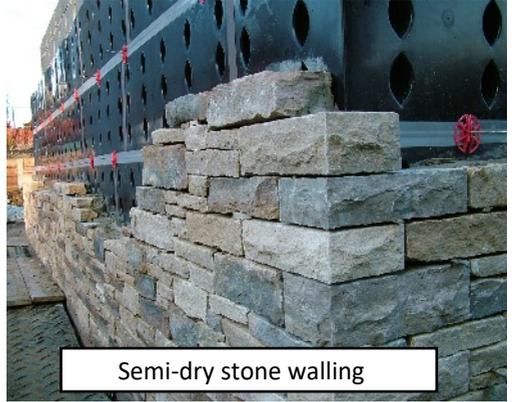
SureCav Site Examples



SureCav Site Examples

Quick Facts

- Suitable for all masonry finishes
- Ideal for semi-dry stonework
- Moisture and mortar-free environment



Quick Facts

- Fix entire system ahead of the masons
- Trim SureCav to cavity tray
- Cavity ventilation installed

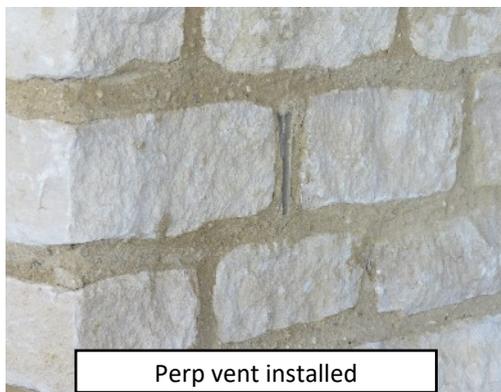
SureCav Site Examples

Order online at www.surecav.co.uk



The screenshot shows the SureCav website interface. At the top, the logo reads "SURECAV NEW TECHNOLOGY IN CAVITY WALL CONSTRUCTION". Navigation links include HOME, ABOUT US, BUY NOW, SURECAV TECHNICAL, WHAT'S NEW, TESTIMONIALS, GALLERIES, and CONTACT US. Contact information shows two phone numbers: 01963 34660 and 01963 32441, along with a "View basket" icon. A "Quick order form" is overlaid on the right, featuring two product selection buttons: "SURECAV25" (selected) and "SURECAV50". Below these are input fields for "External wall area" with a sub-label "total area m2", and "Washers" with a sub-label "total area m2". A blue "BUY NOW" button is positioned at the bottom of the form. The background of the website shows a modern building with stone cladding and large glass windows.

Visit SureCav online at www.surecav.co.uk



Contact Us

For all your SureCav requirements!

01963 34660

www.surecav.co.uk

The logo for SureCav Limited, featuring the word "SURECAV" in a bold, black, sans-serif font. The letters are set against a white background that is framed by a dark blue border. The border consists of horizontal bars above and below the text, and vertical bars between the letters.

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