Cavity Trays

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Conservatory Construction and Building Regulations

During rainfall the outside skin of masonry gradually becomes saturated

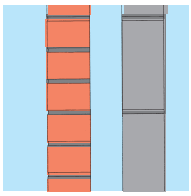


fig.1

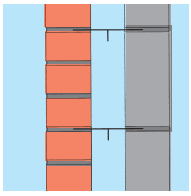


fig.2

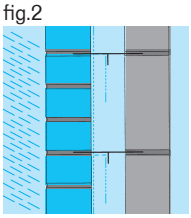


fig.3

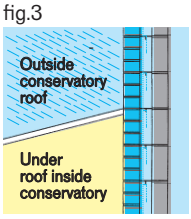


fig.4

Most properties constructed during the past 100 years are constructed with cavity walls. A cavity wall consists of two skins of masonry (fig.1). The inside skin is commonly of blockwork whilst the outside skin might be of brick, block or stone. It might also be of a rendered finish. The two skins do not touch one another but rise vertically maintaining a gap or 'cavity'.

At regular intervals for stability, the two skins are tied together with wall ties (fig.2). Such ties are designed to promote structural cohesion between the two skins. Ties are always shaped or twisted rather than being plain and flat. The reason for this is clear when heavy rainfall is experienced.

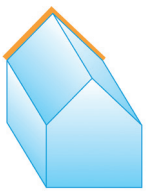
During rainfall the outside skin of masonry gradually becomes saturated. When this happens the penetrating rain commences gravitating downward within the outside masonry skin (fig.3). It also runs down the inside face of the outside skin. Penetrating water additionally has a tendency to travel across the ties towards the inside skin. That is the reason why every wall tie is shaped, moulded or twisted within its' length to prevent water using each tie as a bridge to reach the inside skin. Instead the water is forced to drip off before reaching far across the cavity. Thus the inside skin is kept dry and free from dampness.

When a property is extended with a conservatory, the outside skin of the cavity wall becomes an inside skin below the new roof level. Wet and dampness can continue to gravitate and affect the wall (fig.4), unless steps are taken are taken to prevent it. The insertion of appropriate preformed cavity trays will stop the wet and dampness and the conservatory will stay dry.

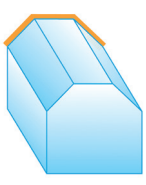
Ask the householder for whom the conservatory is being constructed, their intended use:

1. Will the conservatory be used as an extension of the living space?
2. Will the conservatory be furnished in any way?
3. Is the access to the conservatory from the existing property to be opened up in any way or a doorway removed so the conservatory is open linked to the existing living accommodation?
4. Does the conservatory have glazed areas, roof areas or dimensions that do not fall within the permitted parameters? (see note)
5. Is the property to be extended an NHBC registered property and the conservatory subject to the NHBC directive?
6. Will the conservatory be connected to the central heating system?

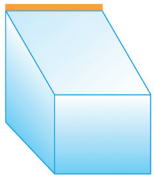
If the answer to any of the above questions is 'Yes', it is probable trays will be required as the structure can be classified as an extension.



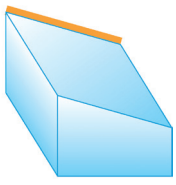
Type X (sloping) trays required to each slope.



Type X (sloping) trays required to both sides. Type E (horizontal) trays required in centre.



Type E (horizontal) trays are required.



Type X (sloping) trays required.

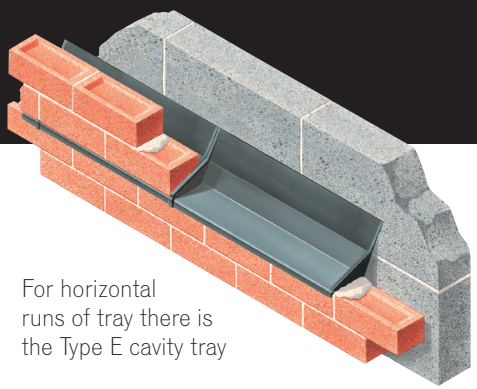
The Building Regulations stipulate wet must be prevented from affecting those parts of a structure that must be kept dry. Thus the use of cavity trays is an accepted procedure in most styles of extension construction. There are two styles of cavity tray...

Type X for roofs running at an angle (sloping) where they abut the existing property wall.

Type E for roofs that are horizontal where they abut the existing property wall.

Type E Cavitrays

for horizontal roof abutments



For horizontal runs of tray there is the Type E cavity tray

The Type E is a self-contained unit approximately the length of two bricks - 450mm long. It is inserted into a masonry course just above where the conservatory roof abuts the existing masonry. Insertion commences at one end and continues tray by tray until the run is complete. Each Type E cavity tray has an end upstand at both ends. These upstands coincide with the end of the brick or whatever masonry is present- in other words, in the perp joint. Where the end upstands of two trays are in the same perp joint, they link together to form a positive union. Thus a horizontal run really consists of a number of self-contained units.

At the back of each cavity tray is an adjustable cavity upstand. This takes up the cavity width encountered, promoting compatibility at all times. Water collected within each tray is discharged out of the wall through a caviweep.

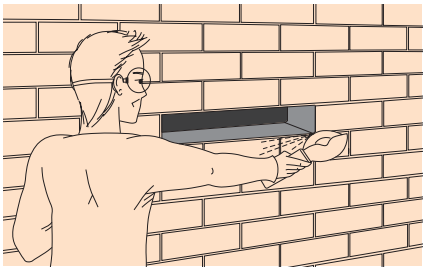
If your requirement includes corners or angles, there are preformed trays to suit. Thus every installation can adequately protect against water and damp penetration.

How to measure and install trays at a horizontal abutment...

How many trays do I require?

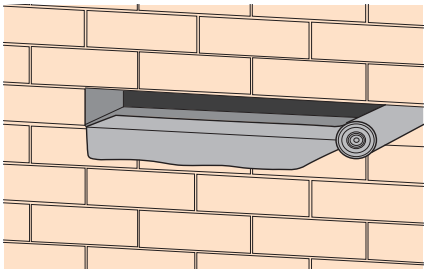
- Simply measure the dimension where the conservatory abuts the masonry.
- In horizontal situations, trays are progressively inserted commencing on the left side and working to the right.
- It is always preferable to slightly over-run the length than vice-versa. (See bottom drawing)
- If an internal or external angle is required, calculate exactly where the angle starts and finishes. Measure the straight runs from the end of the angle.
- Start by removing three bricks from the wall.
- If your wall is not brick but stonework or similar, create an opening of the equivalent length (675mm).
- One Type E cavitray is inserted together with the flashing for dressing over the glazing bar upstand.
- The flashing and the tray are bedded on mortar.
- Two bricks (or the equivalent) are replaced in to the wall, bedded on mortar within the tray.
- At the same time a caviweep-vent is incorporated in the middle perp.
- Two more bricks are taken out, again creating a three brick (675mm) opening.
- The flashing is extended and a second tray inserted, repeating the previous procedures.
- An integral end upstand U clip joins the two trays.
- Brick back into the tray following the previous procedures.
- There are now two adjoining but completely self-contained cavitrays.
- This method is continued until the required run is completed.
- At all times follow our instruction regarding safe working that accompanies all deliveries.

Step 1



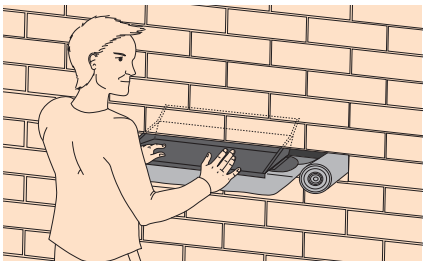
Starting from the left side, cut out three bricks.

Step 2



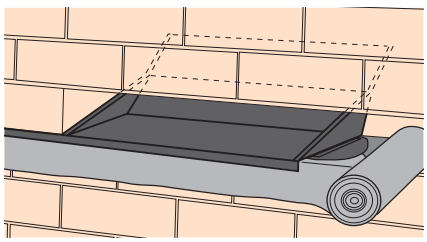
A flashing turned 25mm into the wall is bedded on mortar.

Step 3

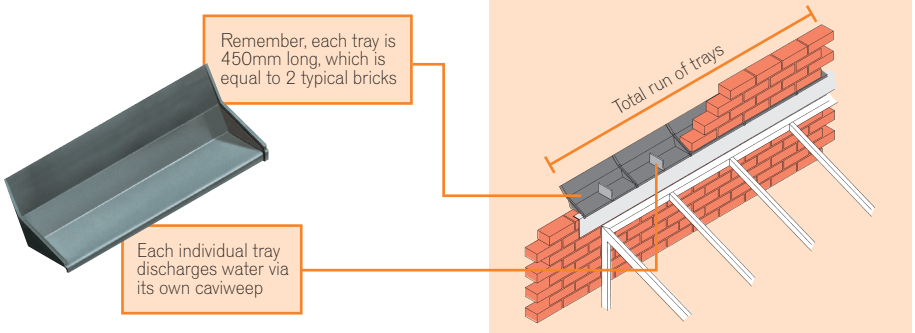


First tray is then inserted into position, bedded on mortar. Two bricks are then mortar bedded and wedged in position in the tray. A caviweep is fitted in the centre perp.

Step 4

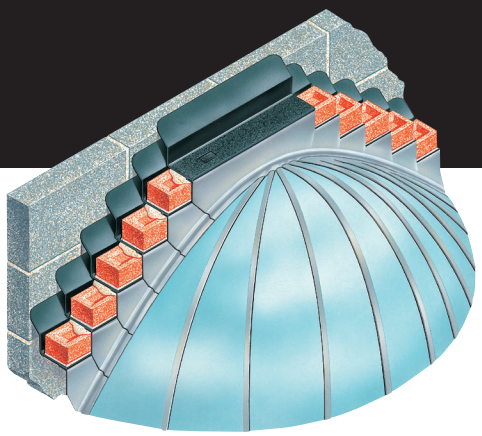


Take out another two bricks so you again have a three brick working space. Repeat the previous procedure until the run is completed.



Type X Cavitrays

for sloping roof abutments

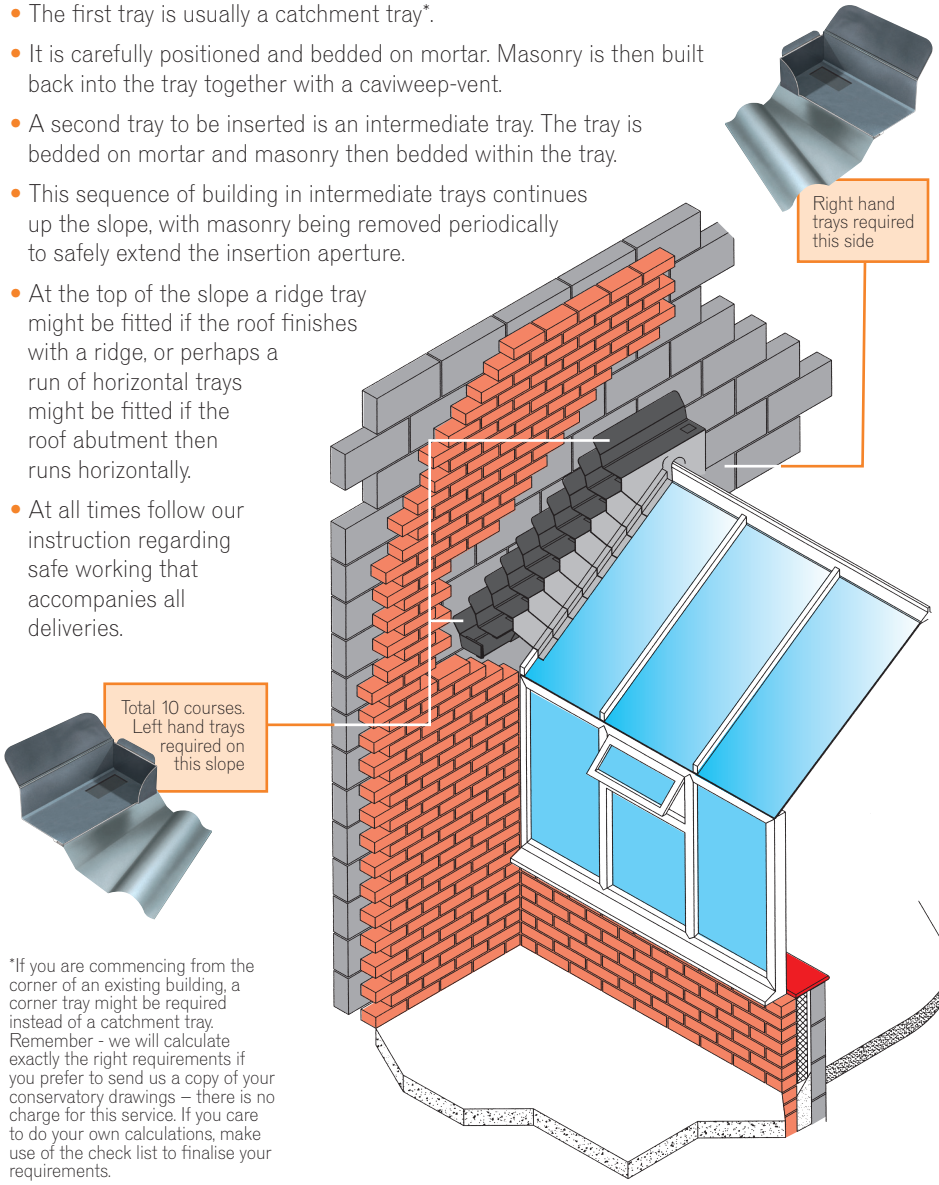


The Type X cavity tray is installed in a similar manner to the previous tray, but in courses following the slope of the conservatory roof. The cavity width adjustability and compatibility also applies to the Type X. Attached to the front of each tray is a lead flashing, already shaped to suit the angle of the roof. It provides a malleable flashing medium to dress over the upstand of the abutment glazing bar, positioned against the masonry skin.

How to measure and install trays to follow a sloping roof abutment...

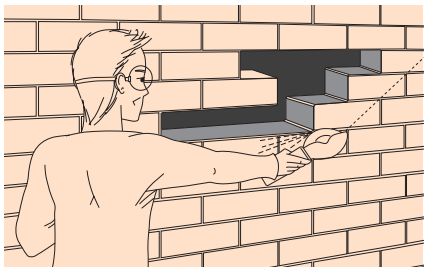
How many trays do I require?

- Calculate the requirements for each slope separately.
- A tray is required in each course, so you might prefer to simply count vertically the number of courses from the bottom of the slope to the top – the example below has 10 courses. (Alternatively, measure the vertical rise and divide by the course height dimension)
- Cut out sufficient masonry at the bottom of the slope to insert the first three trays.
- The first tray is usually a catchment tray*.
- It is carefully positioned and bedded on mortar. Masonry is then built back into the tray together with a caviweep-vent.
- A second tray to be inserted is an intermediate tray. The tray is bedded on mortar and masonry then bedded within the tray.
- This sequence of building in intermediate trays continues up the slope, with masonry being removed periodically to safely extend the insertion aperture.
- At the top of the slope a ridge tray might be fitted if the roof finishes with a ridge, or perhaps a run of horizontal trays might be fitted if the roof abutment then runs horizontally.
- At all times follow our instruction regarding safe working that accompanies all deliveries.



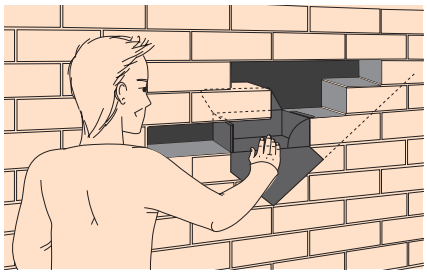
*If you are commencing from the corner of an existing building, a corner tray might be required instead of a catchment tray. Remember - we will calculate exactly the right requirements if you prefer to send us a copy of your conservatory drawings – there is no charge for this service. If you care to do your own calculations, make use of the check list to finalise your requirements.

Step 1



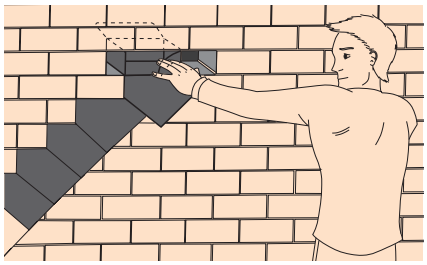
Cut out masonry at the bottom of the slope.

Step 2



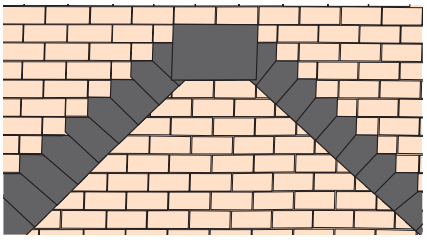
The first tray is a catchment or corner tray. Bed on mortar in the lowest appropriate course. Slide the tray to the left or right, until the corner is 75mm above the finished roof line.

Step 3



Build-in the next tray on the next course. Remember trays and masonry must always be bedded in mortar. Slide the tray to the left or right, until the corner is 75mm off the finished roof-line. Repeat this operation for all trays up the slope.

Step 4



Trays should be laid regularly as above. Any cut bricks will be hidden from view when the lead flashings are dressed. The last tray is the ridge tray that straddles the top of the runs.

Cavity Trays Check List

Use this check list to ensure you use the correct trays for the job

- ☐ Is the wall against which the conservatory is being attached a cavity wall?
- ☐ Is it standard brickwork?
- ☐ If not brickwork, please provide details (stonework – rendered wall - blockwork etc)
- ☐ Type E trays require a caviweep-vent in every tray to discharge collected water.
- ☐ What is the pitch (angle) of the roof of the conservatory, where it abuts the wall?
- ☐ Type X trays are supplied with the lead flashing already attached. The flashing is available in two lengths - short and long. Short flashings are 75mm at their shortest end, which is sufficient to flash a typical glazing bar abutment upstand. Alternatively, long flashings are 225mm and provide the installer with greater flexibility. Long flashings can be trimmed off on site to suit the installer's individual needs.
- ☐ Remember to calculate each slope separately, allowing for left hand trays or right hand trays to suit.
- ☐ Catchment trays require a caviweep-vent to discharge collected water.

The rule of thumb: If the proposed conservatory is to be used as an extension of the living space, it is probable the insertion of cavity trays to keep the inside of the structure free of dampness will be required to comply with the current Building Regulations.

Alternatively, if the proposed use is definitely not as an extension of the living space, then the fitting of cavity trays is not technically necessary but remains optional. (Even in such circumstances some conservatory specialists often still install trays, as part of their full integrity package).

Note: A "conservatory" is usually defined as having at least 75% of the roof area and at least 50% of the wall area of a translucent nature. It will be unheated and single storey with a floor area of less than 30 square metres. The glazing must comply with Part N of the regulations.

If the conservatory does not comply with this requirement, it can be reclassified as an extension subject to the usual Building Regulation requirements. The NHBC directive is in addition to the above interpretation and the NHBC will provide guidance.

Tray Type	Number	Colour
Type E horizontal 450mm long 		
Type E Universal Internal Angle 		
Type E Universal External Angle 		
Type W Caviweep-vent 		terracotta
		grey
		beige
		black
		white
		translucent
Type X catchment left hand 		
Type X catchment right hand 		
Type X intermediate tray left hand 		
Type X intermediate tray right hand 		
Ridge tray 		
Type X Universal Internal Angle 		
Type X Universal External Angle 		

Helpdesk at your service

We supply conservatory packs to leading conservatory manufacturers. These contain exactly the right materials based on popular conservatory sizes. We can also advise you what is required for your proposed conservatory.

Whether you have a standard design or bespoke design, you may use our free advisory service. Upon receipt of your elevation and conservatory drawings we will calculate exactly what is required, and return your drawings accompanied with a schedule and price.

We may also be contacted by e-mail.

Cavity Trays

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