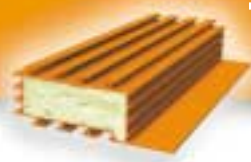


ThermAbate™

The cavity closer

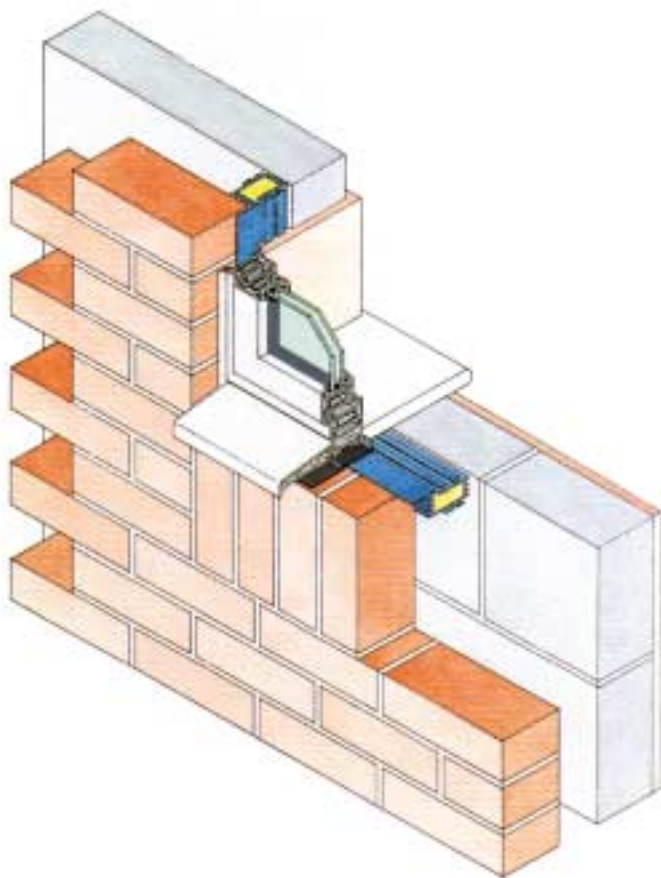




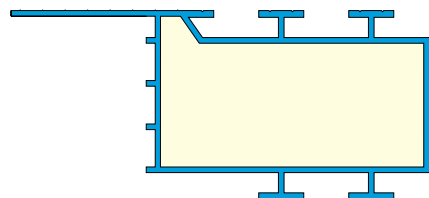
Insulated Cavity Closer

Thermabate provides a simple and efficient method of closing cavities around openings in masonry walls. The insulating foam core prevents thermal bridging, while the PVC-U box section forms a positive damp proof barrier and key for the direct application of plaster. It effectively prevents condensation, pattern staining and mould growth frequently associated with traditional methods of closing cavities.

Thermabate obviates the need for cut bricks or blocks to close cavities and avoids problems encountered when supporting traditional dpc's and insulation boards during construction.

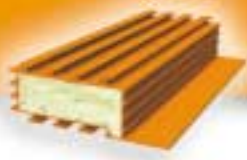


Thermabate is a PVC-U extrusion with a CFC/HCFC-free insulating core. It is manufactured in six sizes, each colour coded for instant identification. Joining clips extend the range further by allowing the Thermabate sections to be joined. Thermabate ensures a more positive detail around openings and offers a time saving profile when built in. It is suitable for use with timber, metal or plastic window frames and can also be supplied to order in curved sections.



Benefits

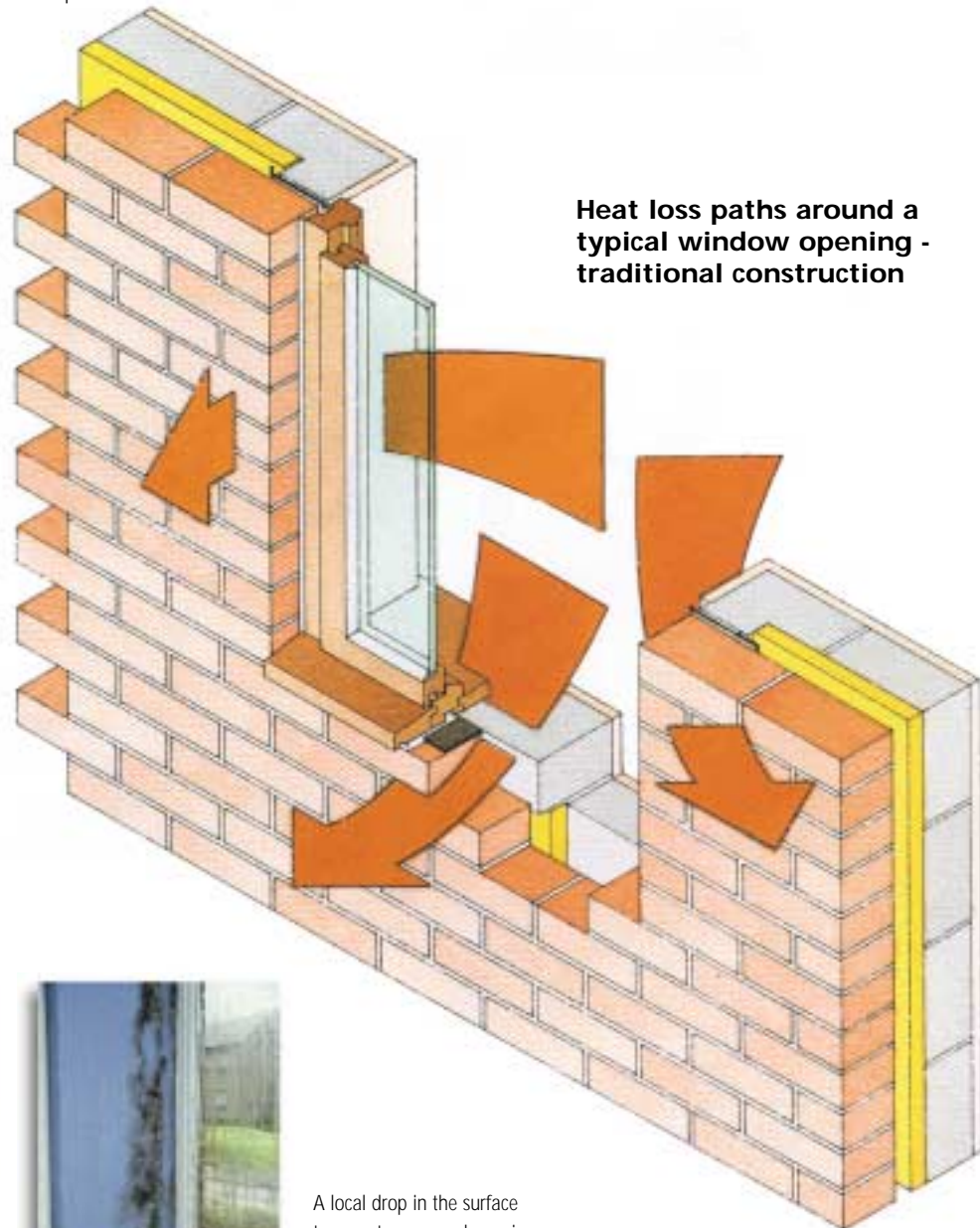
- Continuous Insulation**
Maintains a continuous insulated cavity closer around window and door openings.
- Simplified Construction**
Avoids the need for cut bricks, blocks or special reveal blocks.
- Reduced Heat Loss**
Avoids thermal bridging.
- Weather Resistant**
Forms an integral dpc.
- Controlled Hygrothermal Behaviour**
Prevents condensation, pattern staining and mould growth.
- Flexible Use**
Can either be built in with frames or used to pre-form openings when frames are fitted later.
- Simplicity**
One basic section satisfies all requirements.
- Easy Use**
Easily cut to size and built in by bricklayers, saving time compared with traditional methods.
- Approved Performance**
Thermabate can be used to comply with both Approved Documents L1 and L2 (2002) and the Technical Standards (Scotland) 6th Amendment 2001.
- BBA**
Agrément Certificate No. 91/2648 approved since 1984.
- Fire**
Tested to British Standard 476: part 20: 1987



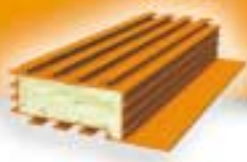
Thermal Bridging - The Problem

Thermal bridging occurs at openings in external walls when the cavities are closed with materials of poor insulating performance.

Such thermal bridging produces problems of condensation, pattern staining and mould growth at the reveals of these openings. Prolonged exposure to condensation will lead to the deterioration of plaster and paintwork.



A local drop in the surface temperature around openings, or "Thermal Bridging", is likely to give rise to unsightly mould growth and damage to reveal finishes.



Specifier Services

The Technical Department of RMC Specialist Products is readily available for comprehensive technical and specification advice on Thermabate products and applications.

Tel: 01924 362081
Fax: 01924 290126
email: thermabate@rmc.co.uk

- Technical advice on all aspects of the design and installation of Thermabate
- Regulation update on the latest statutory requirements and recommendations
- Thermal insulation calculations
- Comprehensive Specification advice

Delivery and handling

Thermabate is supplied from RMC Specialist Products through distributors and merchants. Care must be taken when storing to prevent distortion of the sections. Thermabate should not be exposed to excessive heat.



CPD Technical Seminar

The RIBA Providers Network have assessed and approved our seminar on The Avoidance of Thermal Bridging Around Openings in External Walls. The presentation includes a study of cavity closers and the regulations surrounding their use. We also examine the problem of thermal bridging and practical issues relating to site use. Contact us for further details.



NBS Specification

Thermabate is included on the NBS Plus specification service. Contact us for further details, or visit our web site at www.thermabate.co.uk

Basic Specification

Preliminaries Item

Insulated Cavity Closer - rigid box section one piece PVC-U extrusion with mortar fins, T flange keys for direct plaster application, projecting fixing flange and fully bonded CFC and HCFC free insulation foam core with K value - 0.025 W/mK. Thermabate (BBA Certificate No. 91/2648) from RMC Specialist Products, Waldorf Way, Denby Dale Road, Wakefield, WF2 8DH. Tel: 01924 362081 / Fax: 01924 290126

Measured work

Closing cavities # vertically / horizontally with Thermabate *50 Brown, fixing to # frame / masonry and building in, all in accordance with manufacturers instructions.

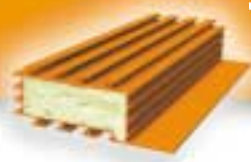
(NB: if required separate reference needs to be made to any optional accessory items.)

* Insert reference and colour for appropriate cavity widths
Delete as appropriate

RMC Specialist Products reserve the right to alter or amend the specification of their products without notice as their policy is one of constant improvement.

The information contained in this technical manual is believed to be correct at the date of publication. Whilst the company will endeavour to keep its publications up to date, readers will appreciate that between updates there may be pertinent changes in the law, or other developments affecting the accuracy of the information contained in this publication.

The applications in this technical manual do not necessarily represent an exhaustive list of applications for Thermabate. RMC Specialist Products does not accept responsibility for the consequences of using Thermabate in applications different from those described in this technical manual. Advice should be sought, from our Technical Department where such different applications are contemplated, or where the extent of any listed application is in doubt. RMC Specialist Products – formerly known as RMC Panel Products Limited.



RMC Thermabate On The Internet

The new interactive Thermabate website is now online. Its fully searchable pages include everything you need to know about Thermabate with a variety of useful downloadable files.

The RMC Group website has all the latest news and information regarding the whole RMC Group with useful links to many other RMC company websites.



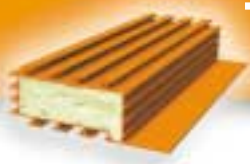
RMC Specialist Products
www.thermabate.co.uk



RMC UK
www.rmc.co.uk



RMC Group
www.rmc-group.com



Closure Methods - Traditional

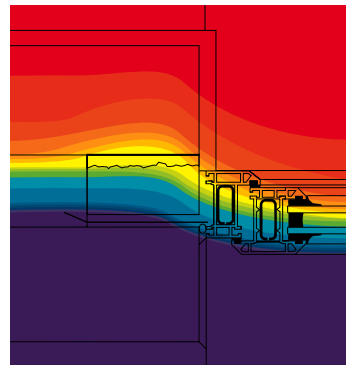
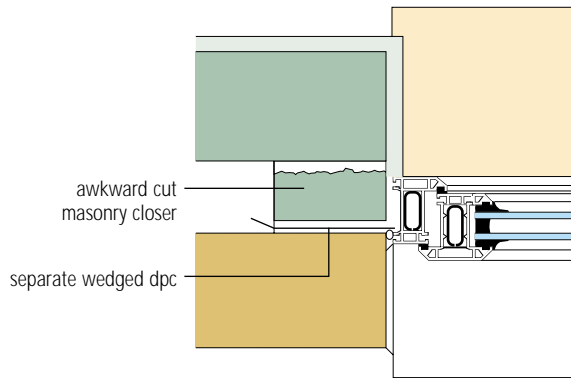
The Problems

The traditional method of closing cavities at wall openings with brickwork and blockwork may result in thermal bridging.

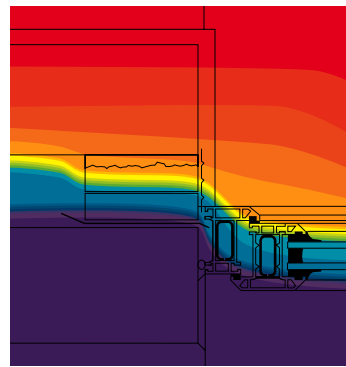
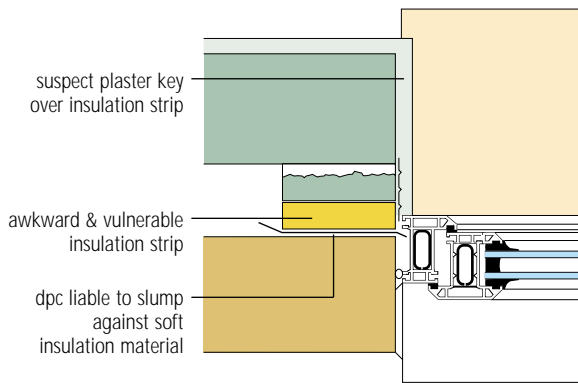
The illustrations on this page highlight the problems encountered with traditional constructions which either do not

comply with, or will cause practical difficulties for compliance with 2002 revision of Approved Documents L1 and L2 of the Building Regulations.

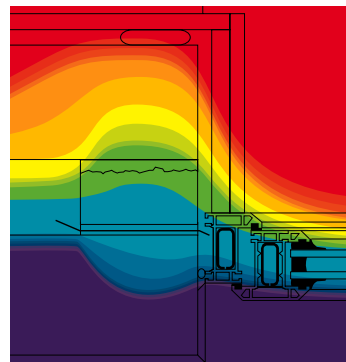
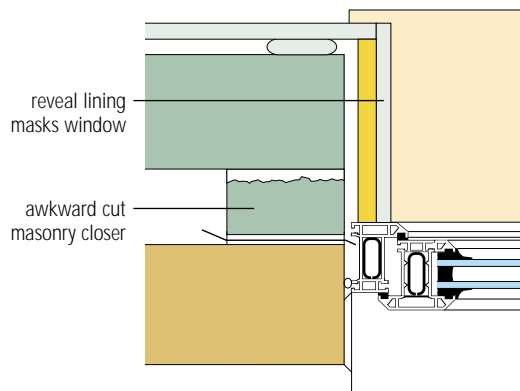
The thermographic illustrations alongside each detail show the temperature gradient through the wall, highlighting the risks of each method of construction.



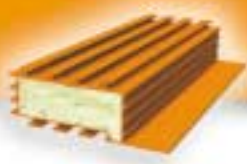
Blockwork Closer



Strip of Insulation



Insulated Lining

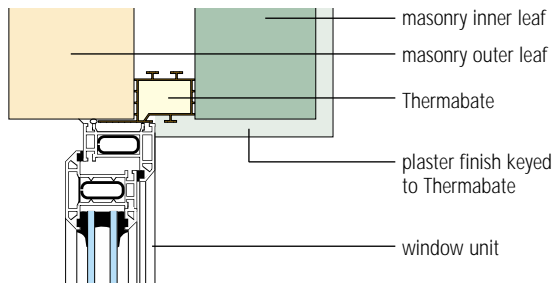


Closure Methods - Use of Thermabate

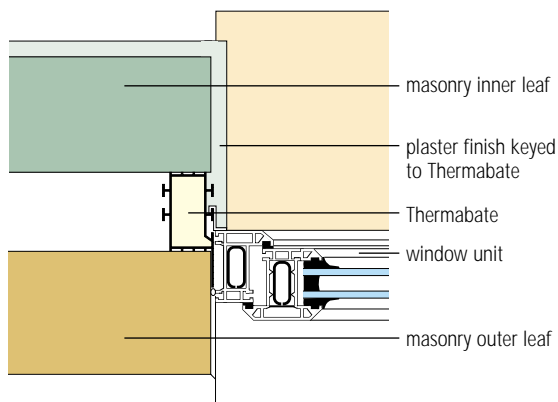
The One Piece Solution

Thermabate provides a clean, simple and efficient solution to thermal bridging at wall openings. It insulates and closes the cavity, thus eliminating the need for cut blocks, bricks or special reveal blocks. Thermabate also avoids the need for separate strips of insulation or the need for internal insulated linings that partially mask the frame.

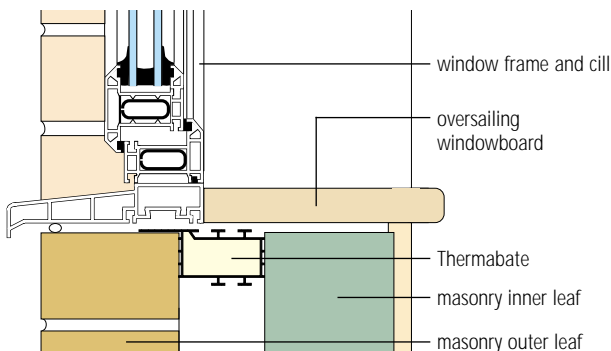
With virtually no restriction in frame position, Thermabate allows the designer much greater versatility in positioning window and door frames within the depth of the reveal.



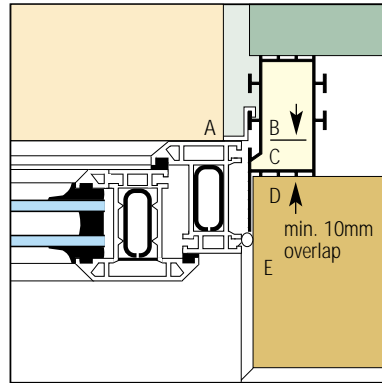
Thermabate at Head



Thermabate at Reveal



Thermabate at Cill



Thermal Bridge Risk Calculation

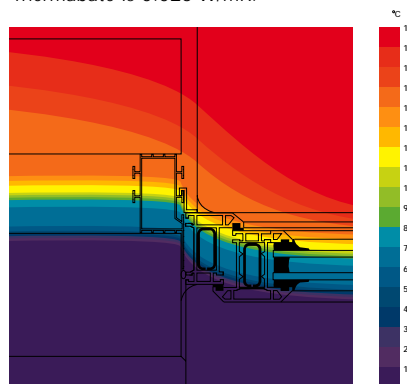
A minimum thermal resistance path of 0.45m² K/W is required by the Robust Details publication in order to gain compliance with Approved Documents Part L1 and Part L2. Part J of the Technical Standards (Scotland) 2001 calculates the combined thermal resistance of the materials in the heat loss path at the back of a window frame (Shown as A, B, C, D and E in diagram). A thermal resistance of 0.45m² K/W or more is deemed to satisfy the thermal bridging requirement in part J.

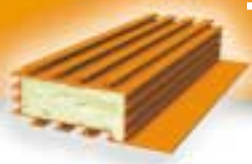
The table below illustrates the calculation method in appendix D to Part J of the Technical Standards 2001. The calculations show that an overlap of only 10mm is needed between the window frame and Thermabate to meet a minimum thermal resistance of 0.45m² K/W. This overlap can, of course, be greater than 10mm to suit individual design requirements.

Path segments	Length (m)	Conductivity (W/mK)	R (m ² K/W)
AB	0.013	0.160	0.081
BC	0.007	0.025	0.280
CD	0.003	0.160	0.019
DE	0.059	0.840	0.070
Resistance of thermal bridge path			= 0.450

Thermal Conductivity

The thermal conductivity ('K' or 'λ') value of the foam core or Thermabate is 0.025 W/mK.

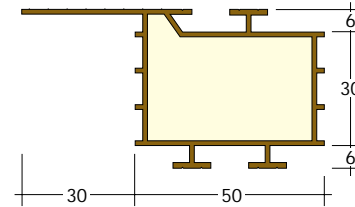
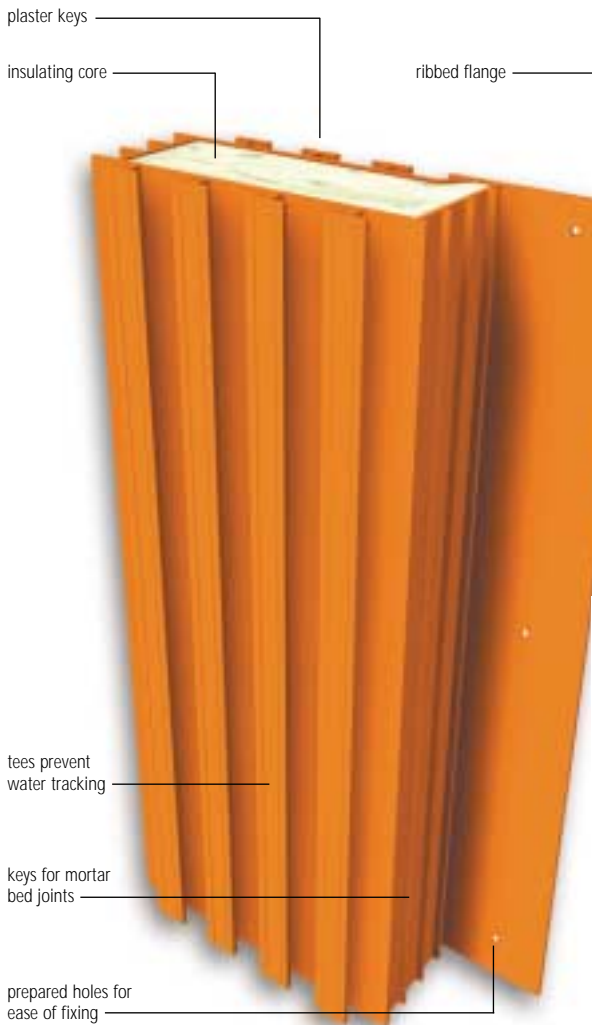




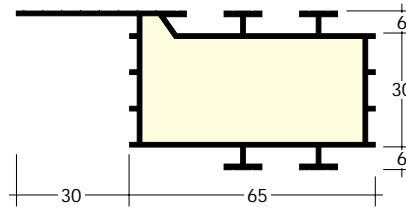
Product Range Details

Sections

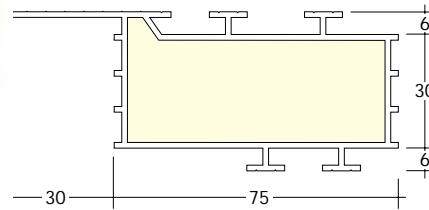
Thermabate insulated cavity closers are supplied in six basic sizes to suit cavities 50-110mm wide. They are colour coded for ease of identification. Wider cavities can be closed by using the jointing clip to link two sections together.



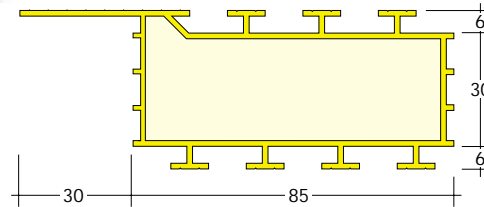
Thermabate 50 (brown)
for cavities 50-60mm wide



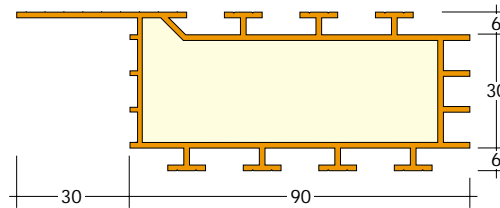
Thermabate 65 (black)
for cavities 65-74mm wide



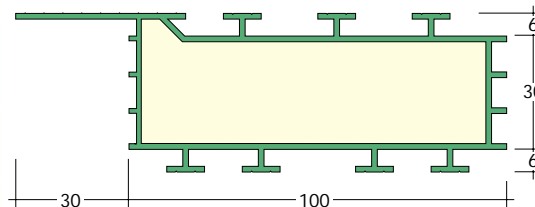
Thermabate 75 (white)
for cavities 75-84mm wide



Thermabate 85 (yellow)
for cavities 85-94mm wide

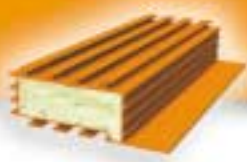


Thermabate 90 (orange)
for cavities 90-99mm wide



Thermabate 100 (green)
for cavities 100-110mm wide

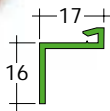




Product Range Details

Accessories

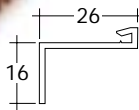
Thermabate is complemented by a full range of accessories to maximise the efficiency and scope for variable design options. Clip sections are supplied in 1 metre lengths and are colour coded.



Standard flange clip

For use as a weathercheck, for fixing closer profiles to window frame (and for retaining partial fill insulation batts in the cavity).

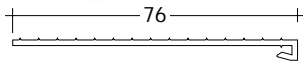
Colour: green



Reveal Clip

This aids construction of check reveals and gives added protection to the frame.

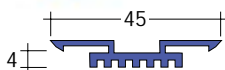
Colour: white



Flange Extension Clip

This clips over Thermabate to extend the width of the fixing flange. It enables positive fixing of frame over suspect masonry.

Colour: white



Jointing Clip

This connects two Thermabate sections for use in cavities greater than 110mm wide.

Colour: blue



Profile bracket

These brackets have been developed to enable Thermabate rigid box sections to be formed into a profile. This is built in as the work proceeds and creates a pre-formed opening into which window frames can be fitted later.

The brackets are made of strong, re-usable polypropylene and supplied in packed sets of four.

Colour: black



Optional wall fixing tie

The tie is an optional/additional fixing and is particularly useful for wider cavities and/or in using Thermabate to form openings.

The tie is designed with different angled ends which slot securely between the tee flanges at the "back" of the Thermabate section and keys fully into the mortar bed joint of either masonry skin.

They are moulded PVC-U supplied in packs of 150.

Colour: white



Thermabate curved sections

Thermabate can be factory formed to any specified radius for bullseye windows, curved heads, etc.



Application

Typical Details

The details shown on these pages are drawn to a recognised scale and are intended only to give basic guidance for specifiers and users of Thermabate.

We are happy to advise on individual design submissions.

A RIBACAD disk is available for users of CAD systems or the files can be downloaded from our website at www.thermabate.co.uk.

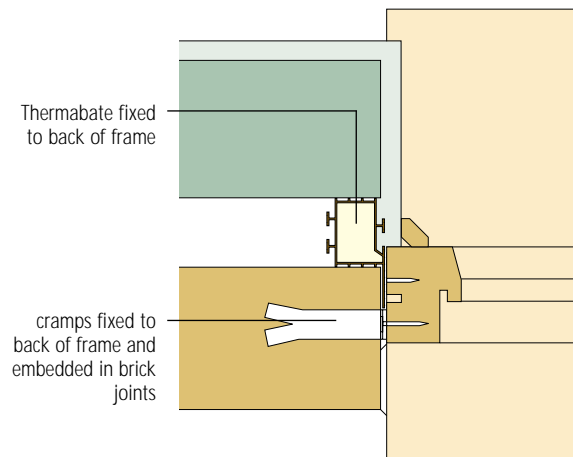
Versatility

Thermabate sections are available for all cavity widths. They can be used with any combination of materials for the wall construction in conjunction with timber, PVC-U and metal window and door frames with virtually no restriction in frame position.

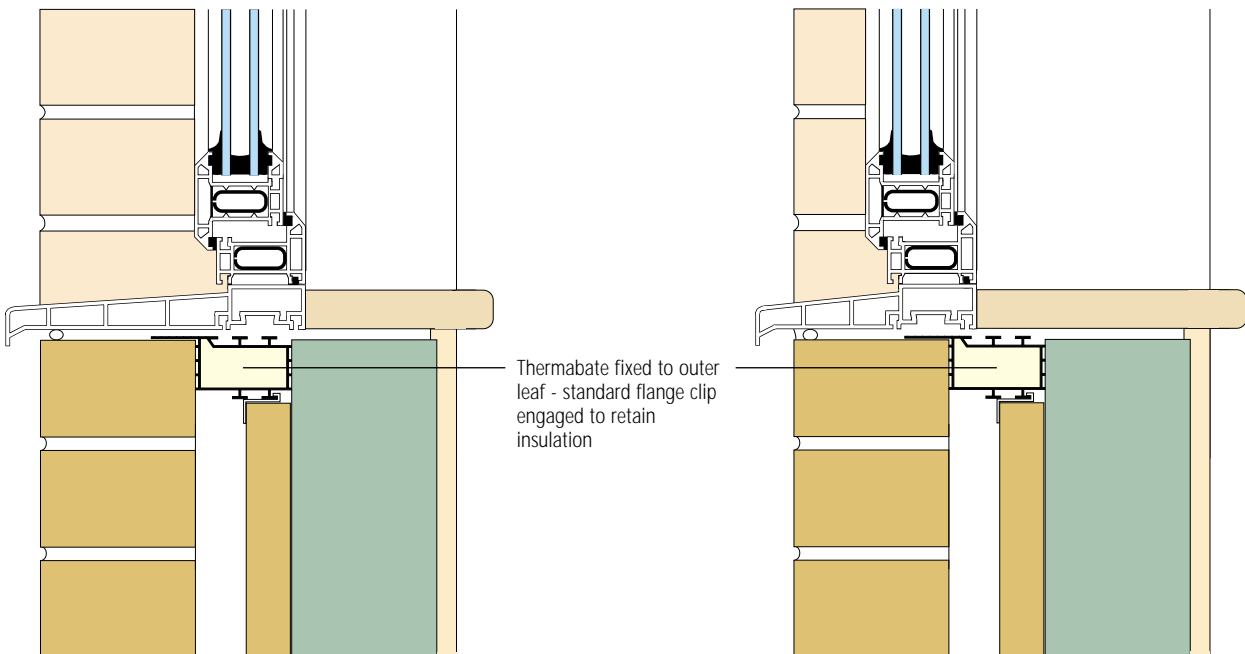
During construction, Thermabate is built in either:

- (i) attached to the frames, or
- (ii) to form the openings where frames are fitted later.

An infinite variety of constructions can be formed with the use of the simple Thermabate section. The following details illustrate the design flexibility of Thermabate.



Timber frame built in



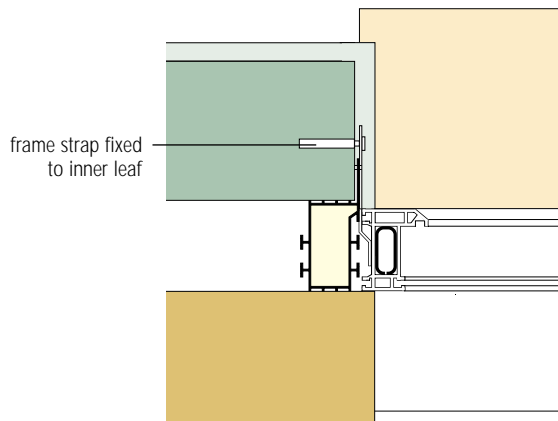
Use at Cill

Use at Cill



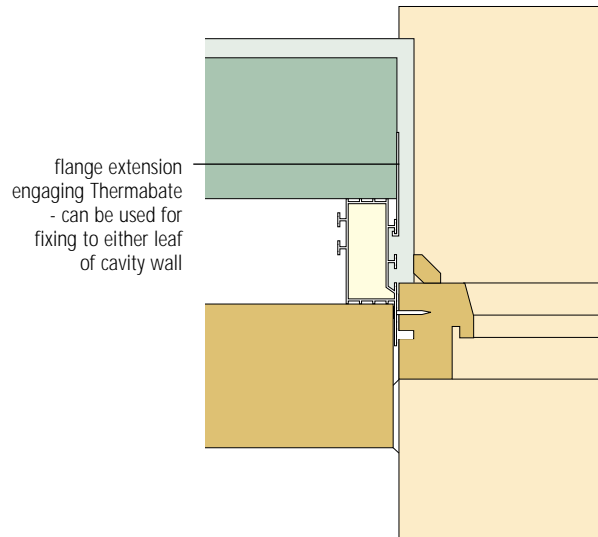
Application

SCALE 1:5



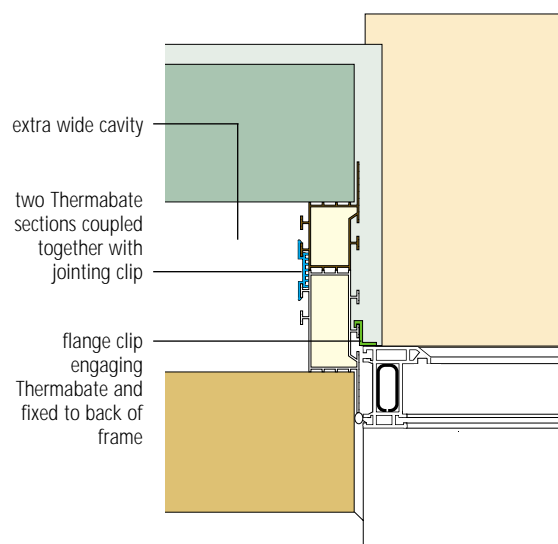
frame strap fixed to inner leaf

PVC-U frame fitted later



flange extension engaging Thermabate - can be used for fixing to either leaf of cavity wall

Use of optional flange extension

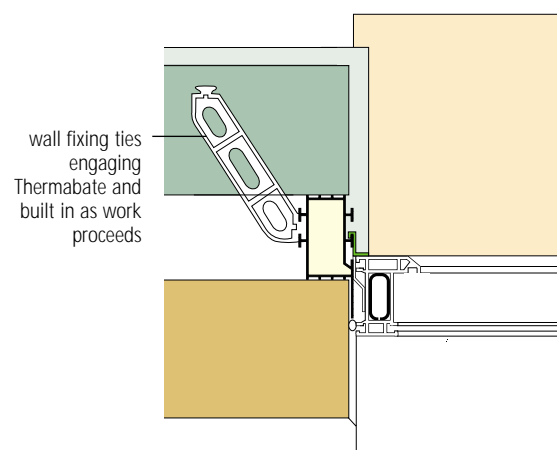


extra wide cavity

two Thermabate sections coupled together with jointing clip

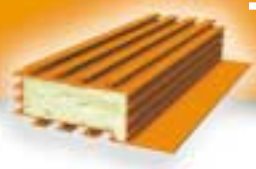
flange clip engaging Thermabate and fixed to back of frame

Use of jointing clip in wide cavity



wall fixing ties engaging Thermabate and built in as work proceeds

Use of optional wall fixing tie



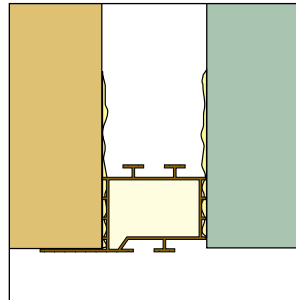
Installation

Preparation - General

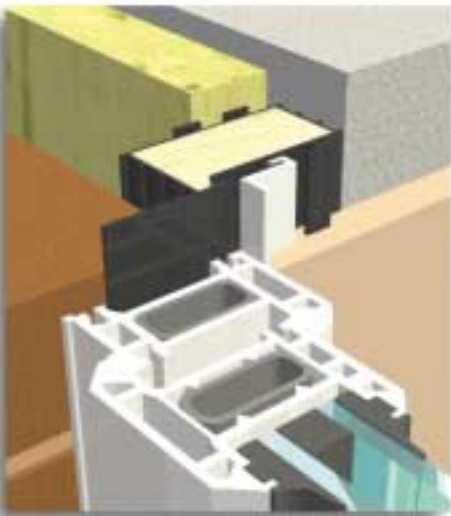
Thermabate is simply cut to length with a fine-toothed saw and fixed to the frame or masonry through the holes provided in the fixing flange.

Selecting a section and deciding "which way round"

The width of cavity to be closed will decide the type of section, or combination of sections to be used. Thermabate is normally fixed with its flange against the outer leaf as shown. The section can be "reversed" to enable frames to be set further back into reveals, especially if a checked reveal is required.



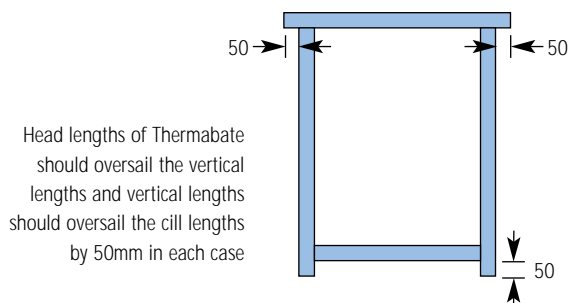
Mortar from masonry bed joints keys into the fins at each end of the Thermabate profile.



Thermabate with fixing flange set on outer leaf



Thermabate "reversed" for use in check reveal detail

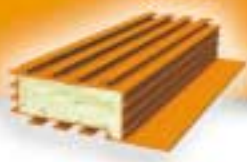


Cutting Process

For the cill, cut Thermabate precisely to the frame width. For the jambs, the sections should overhang the bottom of the cill Thermabate by 50mm. Cut off the fixing flange as necessary to allow fitting of Thermabate into the cavity below the frame. If used at the head of the frame, cut Thermabate to extend 50mm beyond each vertical jamb section.

Use of butt joints

Thermabate sections can be butt jointed but should be limited to not more than one joint per frame side. To facilitate alignment, machine-cut ends should be butted in a preference to those cut on site. A joint strip will enable abutting sections to be connected and aligned when Thermabate is built in on its own. The use of adhesive aluminium foil around a joint will prevent water tracking.



Installation

Use to form openings

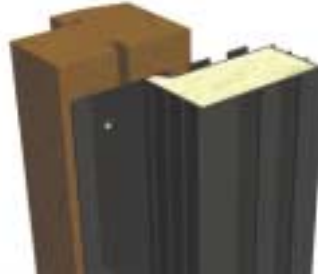
Thermabate sections enable the bricklayer to form accurate openings so that frames can be fitted later. Profile brackets can be used to facilitate this.

Use with profile brackets

Cut the Thermabate sections to the appropriate lengths. Set them out on a level surface, and securely fix a profile bracket in each corner. Note that if an insulated lintel is to be used, the top section of Thermabate (alternatively a length of timber) is fixed temporarily until the opening is formed. Fit timber cross bracings to the brackets as necessary. Check the diagonal dimensions to ensure the frame is square. Set and prop the Thermabate "profile" vertically ready for building in.

Use with built-in frames

Fix Thermabate to timber frame with appropriate nails or screws. Use self-tapping screws for PVC-U or metal frames. Set and prop frame in vertical position and build in using cramps.



Thermabate can be pre-fixed to the back of the frame with appropriate fixings. The ribbed flange of Thermabate has pre-drilled locating holes.

Strong reusable profile brackets allow Thermabate to be used as an alternative to temporary timber templates for forming openings in walls where frames are fitted at a later stage.

Set and prop the frame in the vertical position and build-in. Thermabate assists bricklaying efficiency and provides a "positive" detail at the reveals.



On larger openings additional bracings may be used horizontally and/or vertically for extra rigidity.

After building in and securing the Thermabate sections, unscrew the profile brackets, and remove ready for re-use. When fixing the window follow the frame fixing procedure:

- Offer up frame;
- Wedge frame in position;
- Secure frame in position to masonry;
- Use standard flange clips to fix the frame to the Thermabate section.

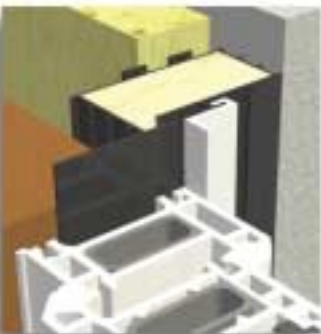


Wall built up around Thermabate

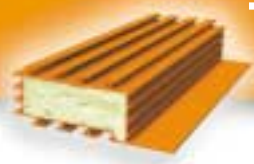
Use in window/door replacement and refurbishment procedure

Cut out and clear away any masonry that closes the cavity. Insert/wedge the Thermabate section into the clear cavity and secure with appropriate fixings.

Offer up the window/door frame, secure to the masonry and use standard flange clips to fix the frame to the Thermabate section.



Thermabate in position with standard flange clip engaged behind PVC-U window frame.



Installation

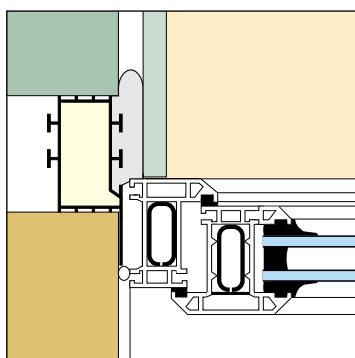
Finishing

Plaster or floor screed is applied directly to Thermabate as the section provides an effective key.

Where it is used to support a floor screed at a door threshold, the screed should be of sufficient thickness (65mm minimum) or reinforced to prevent cracking.

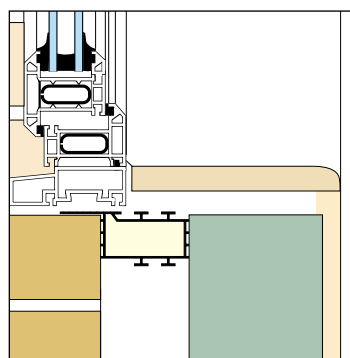
Plastering

The top of the tees should be flush with the masonry reveal. Note that the first coat of plaster should be pricked up into the tees and then scored as a key for the next coat of plaster.



Dry lining

The dabs for dry lining readily key into the Thermabate section.



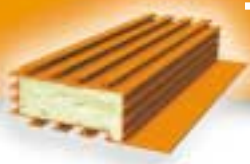
Fixing oversailing window boards

Window boards should be fixed in the conventional manner. Direct fixing to Thermabate is insufficient. Where an embedded tiled inner sill or threshold is required, the Thermabate profile provides a key for cement bedding.



Completion

On completion, the frame is sealed to the surrounding masonry in accordance with normal practice.



Regulations and Standards

Over recent years, the Building Regulations have gradually increased the insulation requirements of all types of construction. The improved thermal insulation in walls, coupled with the use of more thermally efficient windows, now makes it even more important to overcome the potential problems of condensation and mould growth which can arise from thermal bridging where cavities are closed around openings in external walls.

British Board of Agrément Certificate

Thermabate insulated closers in all six section sizes and accessories have been assessed and approved since 1984 (Current Agrément Certificate No. 91/2648)



Warrington Fire Research

Typical Thermabate cavity closer details were tested at Warrington Fire Research, achieving 30 minutes fire integrity to BS 476 part 20.



Technical Standards 6th Amendment 2001

The Building Standards Amendment (Scotland) 2001 include, in Part J, requirements to limit thermal bridging around window and door openings. A method for calculating the Thermal Bridging at the edges of openings is shown.



BRE 262, Thermal Insulation; Avoiding Risks 2002 Edition

This publication addresses the problems of thermal bridging and gives guidance on practical solutions and exposure zones in relation to weather resistance.



The Building Regulations Approved Document Part L1 and L2 2002 Edition

Both L1 and L2 state that the problem of thermal bridging can be limited either by adopting the recommendations in the Robust Construction Details publication or by following the calculation procedure contained within Information Paper IP17/01. Both Approved Documents regard thermal bridging in cavity wall construction in the same manner.



Limiting Thermal Bridging and Air Leakage: Robust construction details for dwellings and similar buildings.

The details within this document can be used as a guide to meeting the performance standards of the 2002 Building Regulations.



Information Paper IP17/01

This illustrates the calculation procedures to be used for thermal bridging when using a detail not contained within the Robust Details publication.



ThermAbate™

The cavity closer 

RMC Specialist Products

Waldorf Way
Denby Dale Road
Wakefield
Yorkshire
WF2 8DH

Telephone
01924 362081
Facsimile
01924 290126
Web site
www.thermabate.co.uk
Email
thermabate@rmc.co.uk

A member of the  Group