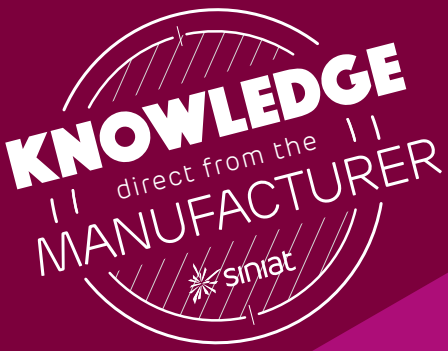
siniat

how to:

insulate your home and understand u-values

with plasterboard

etex inspiring ways of living



building **insulation**

The regulations

Building regulations are in place to drive improvements in thermal efficiency. These regulations apply to new build, renovation or replacement work.

— England and Wales:
Part L Building Regulations
— Northern Ireland:
Technical Standard F1
— Scotland: Technical Handbook
Domestic, Section 6 (energy)

Thermal efficiency within these documents is expressed as a U-value.

Please check that this is the current version by visiting the Siniat website. For archived versions please contact technical services.

U-value, what does it mean?

Put simply, a U-value is the measurement of the rate of heat loss through a material. So in all aspects of home building and renovation customers should strive for the lowest U-values possible. The lower the U-value, the less heat will be unnecessarily lost.

The calculation of U-values can be quite complex. It is measured as the amount of heat loss through a 1m^2 of material for every degree difference in temperature either side of the material. However, Siniat are here to help.

How to calculate u-values

Download our free Siniat Calculator App from the Apple or Android stores, use the App on our website or contact one of our Technical Services Team who will help calculate your U-value for you.

What you need to tell us

1. What type of construction is the wall/roof of your project? Or what age is your property?

2. For walls/roofs
   - What is the construction of the wall/roof outside to in?
   - What insulation products are currently in the wall/roof?
   - Do you know the thermal values of these products?
   - What u-value do you need to meet?

3. Building address (needed for calculating the condensation risk).

The Siniat Technical Services team can be contacted between

9am – 5pm Monday to Friday

01275 377 789

how to select your **thermal board**

best

GTEC Thermal K board

— 50% thermal improvement over GTEC EPS.
— Vapour barrier provided as standard.
— Available in thickness from 30 to 70mm.

better

GTEC Thermal PIR board

— 40% thermal improvement over GTEC EPS.
— Vapour barrier provided as standard.
— Available in thickness from 37.5 to 82.5mm.

good

GTEC Thermal XP board

— Over 10% thermal improvement over GTEC EPS.
— Available in thickness from 27 to 55mm.

basic

GTEC Thermal EPS board

— Our basic level thermal resistance.
— Available in thickness from 22 to 50mm.

Save your client **up to 37%** on annual heating costs with a thinner profile than PIR board.

(Source: GDF Home Energy Assessors.
Based on Pre-Victorian stone detached house)

Save your client **up to 37%** on annual heating costs.

(Source: GDF Home Energy Assessors.
Based on Pre-Victorian stone detached house)

Save your client **up to 32%** on annual heating costs.

(Source: GDF Home Energy Assessors.
Based on Pre-Victorian stone detached house)

Save your client **up to 21%** on annual heating costs.

(Source: GDF Home Energy Assessors.
Based on Pre-Victorian stone detached house)

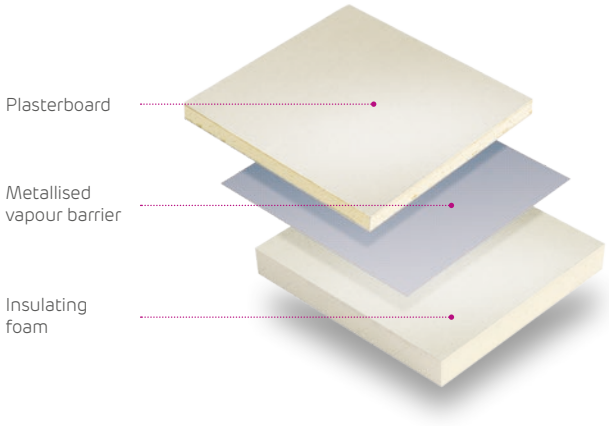
controlling **condensation**

Adding additional insulation layers to a building to prevent heat loss, helping the environment and lowering heating bills is, of course, a good thing, however there are some challenges.

When you apply internal insulation to an external wall, the wall becomes colder. This creates a danger that vapour from inside the home will get trapped behind the insulation, and as it cools it can condense on and inside the wall fabric, in the same way that you get condensation on the surface of single glazed windows. This invisible condensation inside a wall is called interstitial condensation. This condensation can lead to substantial problems of damp, mould and rotting of timber elements.

GTEC Thermal PIR and Thermal K boards have a metallised vapour barrier provided as standard, the vapour barrier sits between the plasterboard and foam layers.

The vapour control layer helps prevent the passage of warm moist air from inside the property from permeating into the wall structure or into the roof space, where it can condense and cause damage.

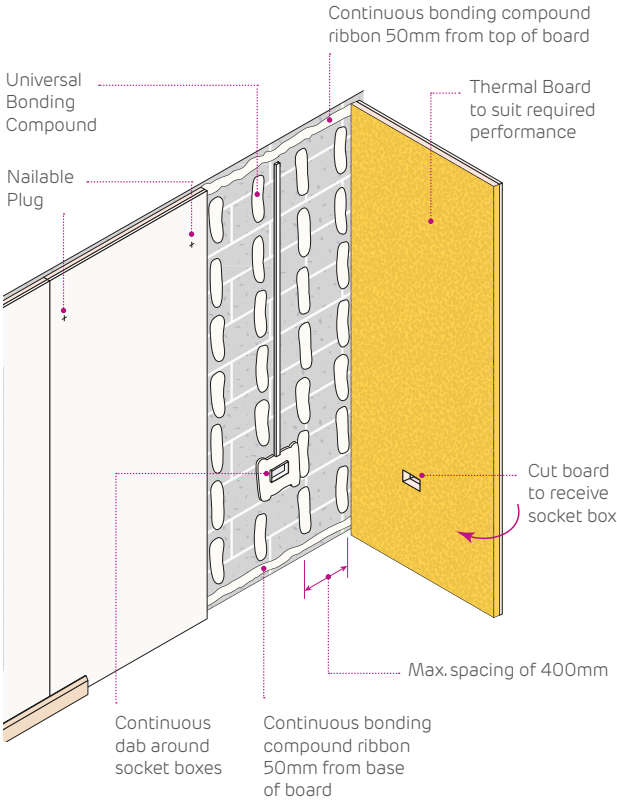


GTEC Thermal K board

GTEC Thermal PIR board

how to install using **dot & dab method**

Thermal board can be installed by either Dot & Dab or Dryliner method. The Dot & Dab method should only be used for walls that already include a cavity.



Installation

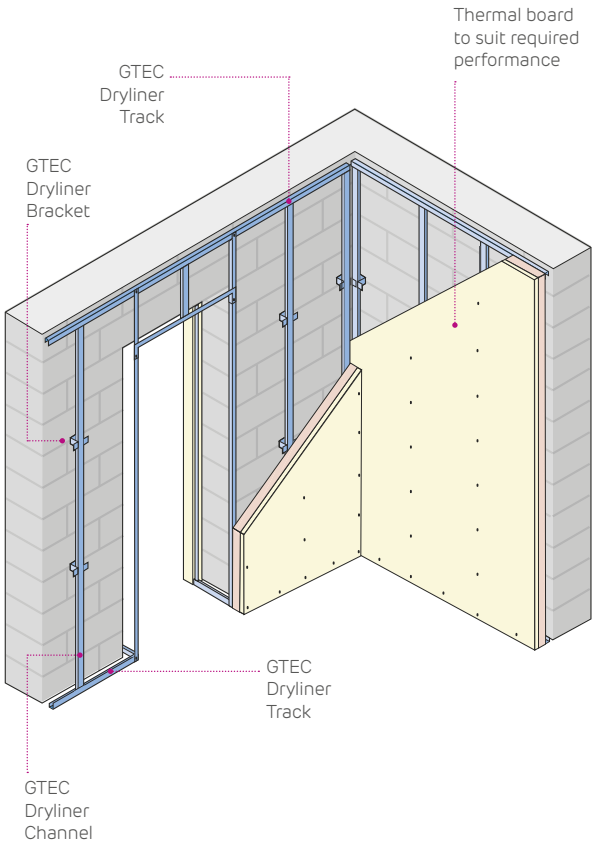
1. Starting from a window, door reveal or internal angle, mark the wall vertically with a chalk line for the row of dabs.
2. Using Siniat Universal Bonding Compound place a continuous ribbon 50mm at the top and bottom of the board.
3. Then place your dabs on the wall making sure that they are 250mm x 75mm in size and at 300mm centres.
4. A maximum spacing of 400mm horizontally should be used. A continuous ribbon should be placed around any plug sockets or light fittings.
5. Press the plasterboard in place against the dabs fitting the board tightly against the ceiling using a wedge or off cut at the base.
6. Tamp the board into place with the floor and ceiling chalk lines using a straight edge.
7. Use two Nailable Plugs to suit board depth, fitted through holes drilled in the board through the dab cavity and penetrating 25mm into masonry.
   (Tip: Wait until the dabs have set before fitting plugs to avoid moving or bending the board.)
8. Remove wedges when compound has dried (allow 8 hours).
9. Finish boards as per instructions at the back of this guide.

Check out our Dot & Dab **'how to'** video on our dedicated Siniat UK Channel **youtube.com/siniatukchannel**

NB: GTEC Thermal boards must be mechanically fixed for fire safety. 2 x nailable plugs need to be installed 300mm from the top of the board and 25mm from each edge, penetrating 25mm into the masonry wall.

how to install **using dryliner**

The dryliner method should be used when upgrading an existing solid wall or to create a cavity.



Check out our Covering Uneven Walls **'how to'** video on our dedicated Siniat UK Channel: **youtube.com/siniatukchannel**

Installation

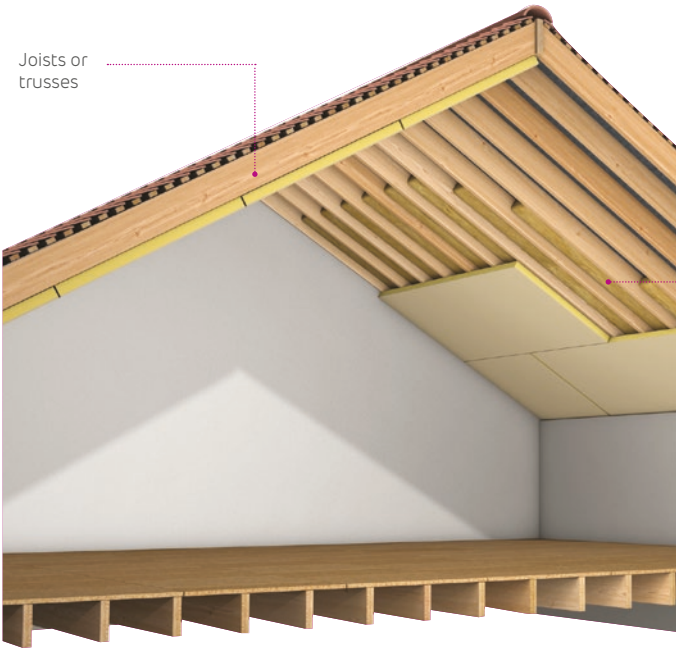
1. Fix a dryliner track at 600mm centres to the floor and ceiling using suitable fixings. Allow for required cavity of at least 25mm.
2. If applying direct to concrete make sure that the surface is dry and a damp proof membrane has been used. Ensure that the large flange of the dryliner track is on the plasterboard side.
3. Mark vertical lines at 600mm horizontal centres to fix the dryliner channels.
4. Start at the centre of the wall and position the dryliner brackets directly to the wall at a maximum 800mm vertical centres on the marked lines (at shoulder and waist height). Secure using suitable fixings. Fold out the toothed wings of each bracket to form legs.
5. Cut each dryliner channel 5mm shorter in height from the floor to the ceiling and place into the dryliner track.
6. Ensure channel is plumb and secure to each bracket using a GTEC Pan Head Self Tapping Screw.
7. If installing kitchen units, install a GTEC fixing channel or timber reinforcement at the height of the wall and floor units need to be secured.
8. Cut plasterboard 5mm shorter than the floor to ceiling height. Butt the board firmly against ceiling and fix with GTEC Drywall Self Tapping screws at 300mm centres. Screws must be at least 10mm longer than the board thickness.
9. Join the plasterboard edges lightly against each other and centre the edges over the channels.
10. Finish boards as per instructions at the back of this guide.

NB: Cannot be used for cavities over 130mm.

how to insulate **lofts and roof spaces**

One of the main areas of heat loss is through the roof. This installation guide will demonstrate how Thermal Board can be installed to meet required thermal performance.

Installing the board and insulation at the same time using a laminated board is less time consuming and easier than separate installations.



Check out our **'how to'** videos on our dedicated Siniat UK Channel: **youtube.com/siniatukchannel**

Installation

1. Remove any existing plasterboard if present.
2. Install the required thickness of glass mineral wool or solid foam insulation between the rafters, joists or trusses ensuring no gaps.
3. Using the required thickness and type of Thermal Boards fix to the wooden rafters, joists or trusses using Siniat High Thread Screws, the screws need to be the total thickness of the board plus at least 25mm to penetrate the timber.
4. Screws to be fixed at 150mm centres around the perimeter and cut ends of the boards and 230mm centres in the centre of the boards.

how to finish **the boards**

Taping and Jointing is a simple finishing solution for drylining installations, to reinforce joints, to prevent cracking and to ensure fire and sound performances are achieved. It is suitable for large areas of plasterboard where speed and ease of application can greatly reduce installation time and costs versus a skim finish.

Recommended 3 stage process

Bedding and fill coat

Tape or bead is bedded into the compound and taper filled out.

1st finish coat

The taper is re-filled with compound where required.

2nd finish coat

Final compound layer is applied and sanded for a smooth finish.

2 stage process

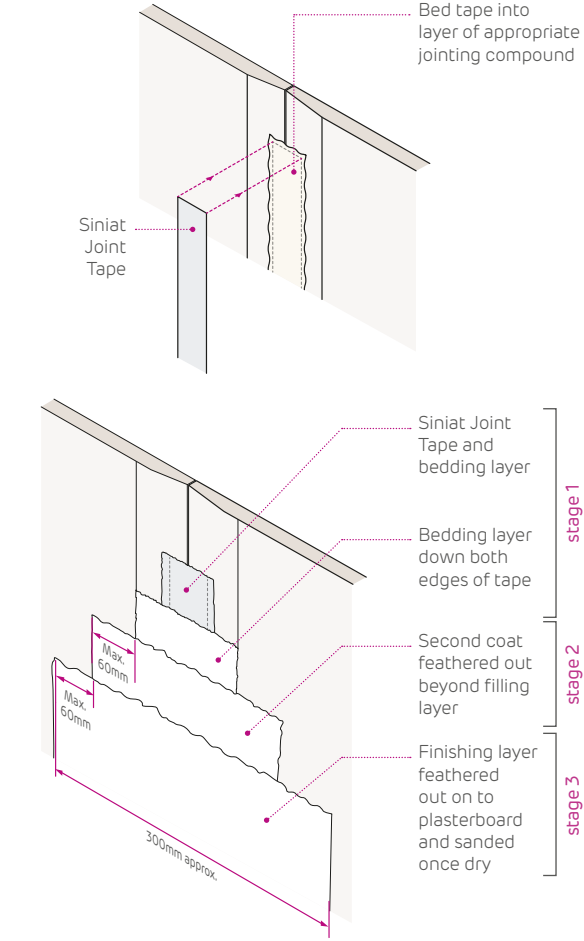
Bedding and fill coat

Tape or bead is bedded into the compound and taper filled out.

2nd finish coat

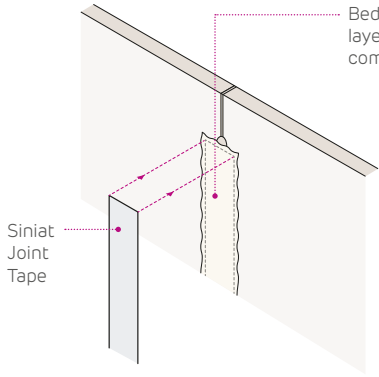
Final compound layer is applied and sanded for a smooth finish.

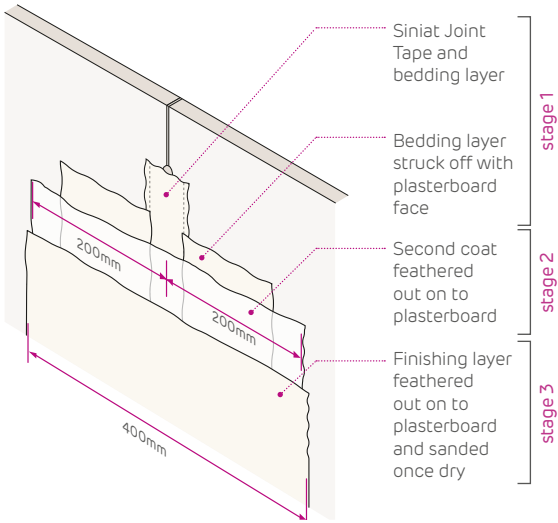
Tapered edge



— Boards must be stored in a dry environment.
— Ensure surfaces are clean and dry before securely and evenly fixing.
— Tapered edge board provides the best finish by allowing the joint tape to sit below the finished surface.
— Square edge plasterboard may also be jointed using the method on the following page.

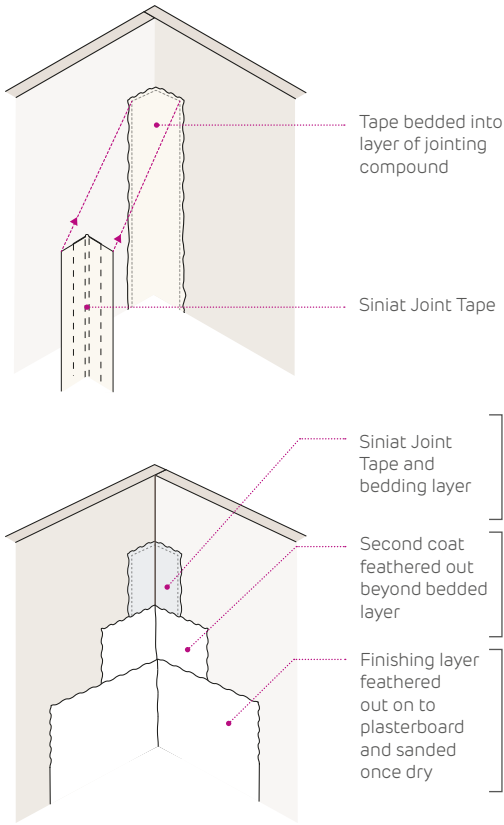
Square or cut edge





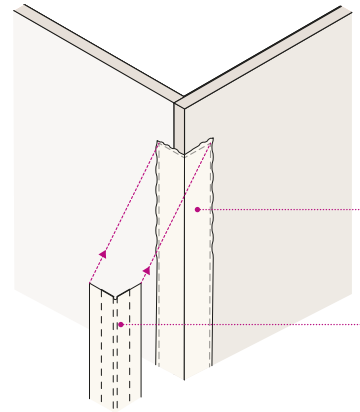
— Correct screw fixings to be used with screw heads just below surface of board.
— Gaps over 3mm to be filled with Siniat Joint Filler or Siniat Multipurpose Joint Compound prior to tape installation.

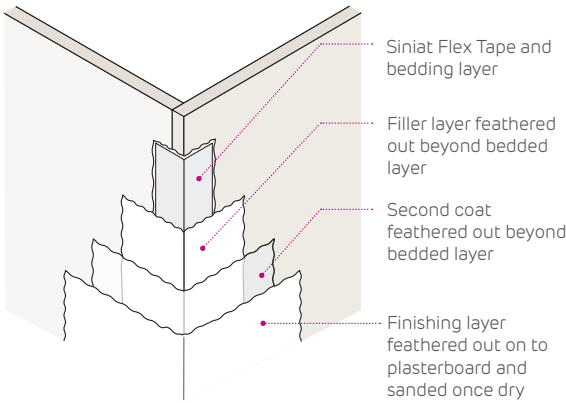
Internal corner



— Compound to be applied in nominal 1mm layers. Thicker layers will extend drying time.
— Siniat Joint Tape cut to length to be pressed into bedding compound.
— Second coat of jointing compound if required to be applied over dry joint, feathered out 50 – 60mm beyond the edge of first coat.
— Finishing coat of compound feathered out 50 – 60mm beyond second coat.
— Finished, dry joint to be sanded to smooth finish for sealing and decoration.

External corner





— Square edge joints only: Joint width to be wider to reduce visible crowning.
— External corners only: Siniat Flex Tape to be applied in place of Siniat Joint Tape as reinforcement.

Drywall and universal sealer

Once the taping and jointing process has been completed, Universal Sealer must be applied to prevent 'regency striping'. When using Siniat Aqua Board, Drywall Sealer must be applied prior to painting/tiling in severe moisture areas.

Regency striping

This term is used to describe the effect of the paint finish reacting differently on the joints to the surface of the board (suction), if the sealer is not applied the joints may be visible no matter how well the taping and jointing process has been completed. Once dry, a paint finish can be applied in the normal manner.

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Installation tips

For a step-by-step video guide and installation tips on using metal frame systems and installing thermal boards, check out our Siniat UK YouTube Channel.

youtube.com/siniatukchannel

For advice with installation contact Technical Services at:

technical.siniat@etexbp.co.uk

or call: **0800 145 6033**

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