

For Ceilings



RhinoBoard

## Overview

### Description

Gyproc RhinoBoard is manufactured according to the ISO 9001 Quality Management System and the ISO 14001 Environmental Management System. RhinoBoard is a plasterboard and consists of an aerated or foamed gypsum core encased in, and firmly bonded to, special paper liners.

RhinoBoard is used as lining/cladding for ceilings, drywalls and drylining. RhinoBoard is non combustible and it is used as a lining in fire rated drywall and ceiling systems.

The face (unprinted) surface should receive all decoration (i.e. gypsum based plaster, paint, vinyl, etc.).

Do not decorate the printed surface.

Do not expose standard RhinoBoard to contact with water.

It is not recommended for use in industrial kitchens and industrial bathrooms or exterior applications.

### Types of board

#### Gyproc RhinoBoard

This is a standard grade board with no special additives in the gypsum core, but with specially treated paper liners.

Mass per m <sup>2</sup>		
	CTN	BPN
Gyproc RhinoBoard 6.4mm	5.5kg/m <sup>2</sup>	5.7kg/m <sup>2</sup>
Gyproc RhinoBoard 9.5mm (standard widths)	7.5kg/m <sup>2</sup>	7.7kg/m <sup>2</sup>

### Properties

#### Fire resistance

Gypsum plasters and plasterboard provide good fire protection in buildings due to the unique behaviour of their gypsum content when exposed to fire. Pure gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) contains nearly 21% chemically bonded water in crystallised form and about 79% calcium sulphate ( $\text{CaSO}_4$ ) which is inert below a temperature of 1300°C. When gypsum protected elements of a structure are exposed to fire, the chemically combined water is gradually released in the form of moisture vapour. If a sufficiently high temperature is maintained, eventually all of the crystallised water will be expelled.

The process of dehydrating gypsum by exposure to heat, known as "calcination", commences at the surface exposed to the fire and proceeds gradually through the gypsum layer (i.e. the thickness of the gypsum plaster covering or the core of the plasterboard). The covering of calcinated gypsum formed on the exposed face adheres tenaciously to the uncalcinated material and serves to retard the process, which becomes progressively slower as the thickness of calcinated gypsum increases.

While this process continues, the temperature directly behind the plane of calcination is only slightly higher than that of boiling water (100°C) and therefore, until all the crystallised water has been liberated, the temperature of materials adjacent to, or in contact with, the unexposed side cannot exceed 100°C. This temperature is well below that at which materials stored in buildings will ignite. Once the gypsum layer is completely calcinated, the residue (calcium sulphate) continues to act as an insulating barrier for as long as it remains intact.

## Non-combustibility

RhinoBoard is listed as a non-combustible material in the National Building Regulations SANS 10400, part T.

## Thermal insulation

Thermal conductivity (k) is the measure of a material's ability to transmit heat, and is expressed as heat flow in watts per square metre of surface area for a temperature difference of 1°C per metre thickness and is expressed as W/m<sup>2</sup>·K. Generally, denser materials have high thermal conductivity and are inefficient thermal insulants. Lightweight materials have low conductivity and are efficient thermal insulants. The lower the (k) value of the material, the better is its insulation efficiency. RhinoBoard has a (k) value of 0.21W/m<sup>2</sup>·K.

The thermal resistance (R) of a material is obtained by the following calculation where:

t = the thickness of the material in metres.

$$R = t/k$$

RhinoBoard 6.4mm R value = 0.030m<sup>2</sup> K/W

RhinoBoard 9.5mm R value = 0.045m<sup>2</sup> K/W

## Sound insulation

The Sound Reduction Index quoted on the individual system datasheets are those of actual tests performed by the SABS over a range of frequencies and are based on an impermeate solid RhinoBoard. Copies of test certificates are available if required. Site installation will differ from stated figures due to air leakage paths between junctions with ceiling, floor and other walls, optimum performance requires that these junctions be sealed with suitable acoustic sealants.

## Performance

### Effects of temperature

The boards are not suitable for use in temperatures above 49°C, but can be subjected to freezing temperatures without risk of damage.

When subjected to tests in accordance with SABS 266 : 1982, the Gyproc MoistureResistant absorbed less than 5% of water by weight in the total immersion test.

Thermal properties                      K = 0.25 W/m °C      R = 0.05m<sup>2</sup> K/W

Gyproc MoistureResistant will give similar performance to a standard board when tested for fire rating or sound insulation.

## Technical specification

The Gyproc RhinoBoard range is manufactured according to SABS 266 - 1982. The SABS specification incorporates ISO6308-1980 gypsum plasterboard specification with modifications.

### Profile

9.5mm is manufactured with both tapered edge and square edge and are special orders.

The tapered edge board is usually used for jointing to achieve a monolithic finish as in the Gyproc Drywall System.

## Overview

### Gyproc RhinoBoard storage

RhinoBoard should be stacked on a level surface in a dry place, preferably inside a building and properly protected from damp and inclement weather. If boards are to be stacked on a concrete floor inside a building, a damp proof membrane should first be laid down, or a timber platform should be provided.

The wooden platform provided can be in the form of 'Bangalalas'. The Bangalalas should be spaced at intervals of 400mm across the width of the boards, to prevent sagging of the boards.

The ends and edges of the boards should be neatly aligned. Boards stored outside should be stacked on a level platform of timber bearers as described above, away from the ground. The stack should then be completely covered with a securely anchored polythene sheet or tarpaulin.

Product	Standard sizes			Tolerances		
	Edge	Widths (mm)	Lengths (mm)	Thickness	Width	Length
Gyproc RhinoBoard 6.4mm	Square edged	900 and 1200	2700 - 4200 (300mm increments)	± 0.5mm	+0 to -5mm	+0 to -6mm
Gyproc RhinoBoard 9.5mm	Taper edged	1200	2400 - 3600 (300mm increments)	± 0.5mm	+0 to -5mm	+0 to -6mm

#### Notes:

1. Gyproc non-standard stock products require a lead time.
2. Taper edge board is used where drywall jointing is required.
3. Not all standard sizes are stocked at all Gyproc sales outlets. Please contact your nearest **Saint-Gobain Service Centre** or builders merchant outlet for stock sizes, or see the current price list.



### Gyproc RhinoBoard handling

When RhinoBoard is manually off-loaded or stacked it should be carried, two men to a pair of boards. Boards should not be carried with the surfaces horizontal, since this imposes an undesirable strain on the core. When a board is stacked or removed from a stack, the long edge should be placed down before it is turned horizontal.

Boards should not be slid over each other as this can scuff the surface. RhinoBoard is particularly suited to mechanical handling, but this should be done with care. Forklifts should be equipped with multipronged forks to handle boards exceeding 3000mm in length.



## Gyproc RhinoBoard cutting

The following methods should be used when cutting RhinoBoard:

1. Place the board flat on a level surface, with the writing facing upwards.
2. Mark the cut on the face side of the board, using a chalk line or pencil.
3. Cut along this line with a utility knife.
4. Lift the board on its side and snap it back along the cut.
5. Cut the paper on the back of the board with the utility knife.



## Blade Runner

### Reduces risks of accidents

- No exposed blades - blades never in contact with fingers or hands.
- Cut in a forward motion - trip hazards are visible.
- Tool is pushed away from the body - reduced risk of injury.
- Less dust on site - reduced chance of slips.

### Saves time on site

- Cutting time is halved (no need to turn board around).
- Approximately 1000 linear metres per blade.
- Quick release blades at the touch of a button.
- Cuts shapes, corners and circles on RhinoBoard 9.5mm with a neat professional finish.



## Accessories



Replacement Blades



Holster

## Gyproc RhinoBoard decoration

Before decoration check the entire surface to see that nail holes, taped joints, etc. have been filled and sanded satisfactorily. Ensure that the boards are free from powder/dust. For improved paint finishes, it is suggested that a good quality plaster primer be used on the entire surface.

## Concealed grid ceiling design guidelines

### Fire and smoke baffles

Where fire/smoke baffles are required, these can be created using Gyproc RhinoBoard Firestop fixed to a simple metal or timber frame. The framework should be fixed to the building structure to avoid undue loading of the ceiling suspension grid or, alternatively, additional hangers should be incorporated to support the ceiling alongside the fire/smoke baffle.

### Relative humidity

GypCeil ceilings lined with Gyproc RhinoBoard are suitable for use under normal occupancy conditions. Buildings in which these linings are used should be dry, glazed and enclosed, with environmental conditions of not greater than 70% RH at 10°C to 21°C. For high humidity or high moisture conditions, Gyproc RhinoBoard MoistureResistant shall be used.

### Vapour control

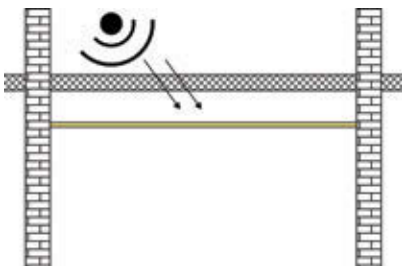
Two coats of Gyproc Gypseal applied to the face of the lining will provide water vapour control to Gyproc MoistureResistant boards.

### Thermal performance

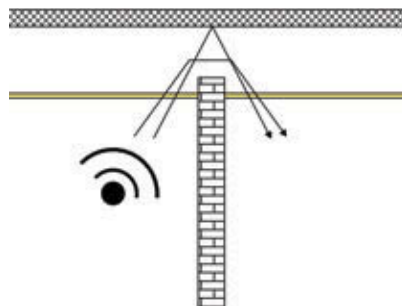
Isover glasswool insulation can be laid over the ceiling to provide the required standard of thermal insulation. Contact Saint-Gobain Technical Solution Centre for further guidance. Insulation shall be laid securely with closely butted joints, leaving no gaps.

### Sound Insulation

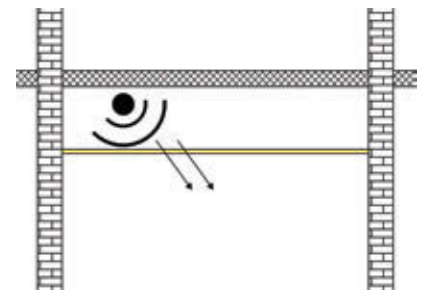
Noise source from above slab



Noise source from adjoining room



Noise source from ceiling void



### Ceiling lift

Airtightness requirements within dwellings, can lead to greater changes in air pressure when a door is opened. The ceiling is normally the lightest fixed element in the room, and therefore most likely to be affected by this change in pressure. This can cause the ceiling to lift, which may create a noise. Whilst this noise can be annoying to the occupier, it has no detrimental effect on the performance of the ceiling. The designer should consider incorporating a pressure release system to minimise the risk of ceiling lift. Where sufficient pressure relief cannot be incorporated, it is recommended that a rigid hanger is used e.g. 25mm x 25mm Donn Galvanised angle.

### Ceiling Framework

Fixing points for suspending the metal grid are required at 1200mm centres. Suitable fixing devices should be used when fixing to the structure, as recommended by fixings manufacturers.

The ceiling grid (screw-up grid) must be suspended from a concrete soffit using Donn Galvanised Steel Angles 25mm x 25mm. This provides a more robust suspension support, which restricts any flexing of the lining when pressure is applied from below. Donn Galvanised Angle 25mm x 25mm is thus the preferred suspension option when a plaster finish is specified to Gyproc RhinoBoard. If Donn Galvanised Angle 25mm x 25mm is used, it is recommended that it's fixed to the soffit via Donn Angle Cleats.

Donn Suspension brackets (for steel brander) or Donn Galvanised Angle 25mm x 25mm (for screw-up grid) shall be used to suspend the grid from timber joists/trusses. Donn Suspension brackets and 25mm x 25mm Donn Galvanised angle are fixed to the timber joists/trusses using Gyproc RhinoBoard Sharp Point Screws 35mm. Maximum joist/tie beam spacing shall be 1200mm centres.

Timber brander can be fixed directly onto the joists/trusses. The size of timber brander used will depend on the joists/truss spacing.

Joist/Truss spacing	Brander size
<1000mm	38mm x 38mm brander
1001 - 1200mm	38mm x 50mm (with 50mm dimension vertically)
1201 - 1400mm	50mm x 75mm (with 75mm dimension vertically)
>1401	Consult a structural engineer

## Suspension

T37K main tees are installed at maximum 1200mm centres. The main tees shall be suspended using Donn Galvanised Angle 25mm x 25mm at 1200mm centres along the length of the main tee. In addition to this, the T32K cross tees should be installed at 300mm centres. Additional cross tees should be fixed to the main tees using Donn Angle Cleats.

## Drywall to ceiling junction

In situations where a GypWall drywall passes through a GypCeil ceiling which is to both sides of the drywall and the ceiling is appropriately fixed to this drywall and perimeter drywalls/walls, consideration must be given to the lateral restraint provided by the ceiling when developing the partition specification. The relevant maximum height is the greater of the floor to GypCeil ceiling or ceiling to structural soffit height. Care should be taken during installation of high drywalls so as to not adversely affect their performance. Contact the Saint-Gobain Technical Solutions Centre for further guidance.

Where a GypWall drywall is fixed to the framework of a GypCeil, in accordance with Saint-Gobain Gyproc installation instructions, the permissible maximum height is equal to the floor to ceiling height.

## Ceiling lining

Tightly butt boards together. The boards shall be installed with the longer side running perpendicular to the direction of brander or cross tees. The boards shall be installed with the shorter side joints staggered by at least 300mm and centered on ceiling framework. Where required install additional framing. For a two layer lining, stagger joints between layers by at least 600mm.

For single layer lining onto a steel framework: fix boards securely using Gyproc RhinoBoard Sharp Point Screws 25mm at maximum 150mm centres.

For double layer lining onto a steel framework: fix first layer using Gyproc RhinoBoard Sharp Point Screws 25mm at maximum 150mm centres and fix second layer with Gyproc RhinoBoard Sharp Point Screws 42mm at maximum 150mm centres.

For single layer lining onto a timber framework: Fix boards securely using Gyproc RhinoBoard Sharp Point Screws 35mm or Galvanised clout nails at maximum 150mm centres. For plastered ceilings only Gyproc RhinoBoard Sharp Point Screws 35mm must be used. Do not use semi-clout nails.

Position fixings not less than 13mm from cut edges and 10mm from bound edges of boards. Set heads in a depression; do not break paper or gypsum core.



## Concealed grid ceiling design guidelines

### Services

The plenum can be used to route all service requirements including ducting, pipework, electrical cables and conduits. Where light fittings, access panels and similar components are incorporated as part of the design requirements, consideration must be given to maintaining the integrity of the ceiling to meet fire resistance and sound insulation requirements. Services shall be independently supported. Note fixing instructions for services.

### Fixtures

Fixings to the system should always be made into the ceiling grid or to supplementary framing. Where heavy loads are anticipated, an independent suspension should be provided from the structure.

### Control joints

Gyproc Control Joints may be required in certain ceilings to relieve stresses induced by expansion and contraction of the structure. Control joints are visible and may impinge on the aesthetics of the building. Consequently the position of the control joints should be determined by the architect/designer. Control joints shall be specified where any of the conditions listed below exist:

- Where excessive movement is likely to occur.
- Where a ceiling traverses movement joint within the surrounding structure.  
The width of the drywall control joint shall be equal to that of structure.
- Where the building/substrate structural system/material changes.
- Interior ceilings with perimeter relief: Control joints shall be installed so that linear dimensions between control joints shall not exceed 15m and total area between control joints does not exceed 225m<sup>2</sup>.
- Exterior ceilings and soffit: Control joints shall be installed so that linear dimensions between control joints shall not exceed 9m and total area between control joints does not exceed 81m<sup>2</sup>.
- A control joint or intermediate blocking shall be installed where the ceiling framing members change direction.
- A control joint is desired or incorporated as a design accent or architectural feature.

### Board finishes

For a jointed finish, Gyproc RhinoGlide (new formula) shall be applied 300mm wide on the tapered side of the board and 600mm wide on the butt jointed sides. For a skimmed finish, apply Gyproc RhinoLite to a minimum thickness of 3mm. Do not apply epoxy paints onto surfaces with gypsum plasters.

### Decoration

#### M-Strip Ceilings

Spot fill all nail and screw heads and sand down when dry.

##### • Aluzinc M-Strip

- Lightly sand to create a key.
- Apply one coat of primer.
- Apply PVA as required.

##### • Plastic M-Strip

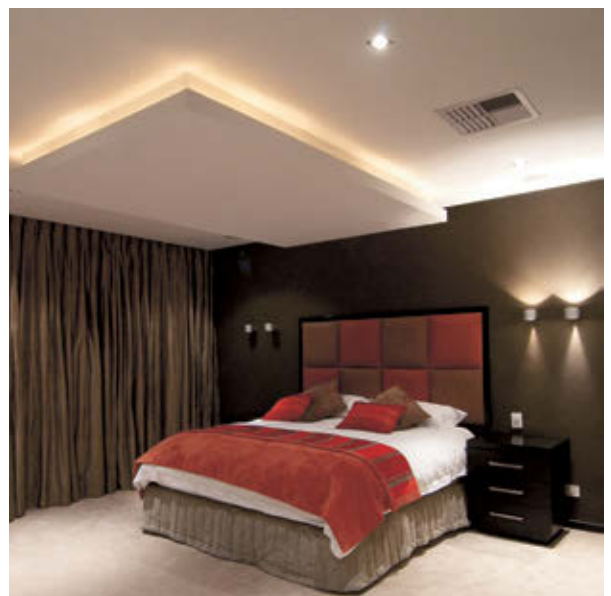
- No primer necessary.
- Apply two coats of super acrylic PVA.

#### Flush Plastered Ceilings

Before decorating check the entire surface carefully to see that the plaster has cured and is dry and free from powder/dust. All plastered surfaces should be sealed with an oil or solvent based sealer such as paint bonding liquid or a pigmented plaster primer. Allow to dry for 24 hours before applying paint as required.

#### Gyproc RhinoBoard 9.5mm Jointed Ceilings

A good quality oil based plaster primer must be used on the entire surface.





## General Information

### Maximum spans of suspension on main tee

Manufacturer's tee shall suspend at a maximum of 1200mm apart.  
For specialised spans contact the manufacturer for details.

### Junction between Perimeter Trims and Ceiling Grid

When junctions are further than 400mm apart, an additional suspension point should be added in.

#### Perimeter trims - standard suspended ceilings:

Perimeter trims for suspended ceilings can be the L-shape or the shadow line type (stepped).

#### Perimeter trims - Flush Plaster suspended ceilings:

Galvanised angle or a shadow line type is used to create a shadow line which minimises building imperfections.

The perimeter trims are measured as an independent item in bills of quantity, as no two areas will necessarily yield the same usage of trims.

### Tee systems

Recommendations for the suspension of tee systems

- Subject to loading detail, suspension should not exceed 1200mm centres.
- The suspension must not be out of plumb (vertical) more than 25mm for each 150mm of plenum depth and in no case should exceed 500mm to a 3000mm depth.
- Whenever the above is exceeded and/or when the hanger suspension is more than 2000mm long, then a sub grid is recommended. Should suspension be vertical, then a 4200mm drop would be acceptable using hanger strap.
- In no case should suspension be from other services in the ceiling void.
- A hanger suspension point within 400mm from the wall angle or shadow moulding must be installed on main tees and cross tees.
- Two steel pop rivets with a shear strength three times that of the maximum allowed ceiling load is to be used.
- When securing wire to tee, it should be wound tightly around itself at least three times.
- Should the ceiling mass exceed 20kg/m<sup>2</sup>, a sub grid is required and a consulting engineer should recommend suitable suspension.

Hanger limitations

Wire hangers: 2500mm

25x25mm angle hangers: 3600mm

## Steel Brandering

Steel brandering is designed to replace the conventional timber brandering, and offers you the following advantages:

1. Reduced weight for transportation and easier handling.
2. Guaranteed straightness of long sections.
3. Quick and easy levelling by means of the suspension bracket / levelling clip.
4. Reduced waste due to availability of different lengths.
5. Improved accuracy.
6. Easier cutting on site.



### Steel brandering should be installed as follows:

1. The brandering section should be fixed at 90° to the roof trusses with a Gyproc RhinoBoard Sharp Point Screws or nail of suitable length while not exceeding a 1200mm truss spacing. Suspension brackets should be used where necessary.
2. The brandering should be fixed at centres as follows. The RhinoBoard must be fixed at 90° to the steel brandering; e.g. parallel to the roof truss, with drywall screws at 150mm centres.
3. The steel brandering system can be used with either the M-strip detail or as a flush plastered or jointed ceiling as per standard timber brandering.
4. A joiner section should be used to join two pieces of brandering for applications over 4200mm.

**Note:** Steel Brandering is not designed to replace a conventional T37 ceiling but rather to offer an alternative to timber brandering.

Type of ceiling	Brander Centres	RhinoBoard Fixing
Gyproc RhinoBoard 6.4mm M-Strip	400mm centres in one direction only	RhinoBoard Sharp point Screws 25mm spaced at 150mm centres
Gyproc RhinoBoard 6.4mm Flush Plastered Ceiling	300mm centres in one direction only	RhinoBoard Sharp point Screws 25mm spaced at 150mm centres
Gyproc RhinoBoard 9.5mm Flush Jointed Ceiling	500mm centres in one direction only	RhinoBoard Sharp point Screws 25mm spaced at 150mm centres
Gyproc RhinoBoard 9.5mm Flush Plastered Ceiling	400mm centres in one direction only	RhinoBoard Sharp point Screws 25mm spaced at 150mm centres

## Estimating guide for Gyproc RhinoBoard 6.4mm Ceilings

When calculating quantities, please note the following standard sizes:

Standard size	Widths	Lengths
Gyproc RhinoBoard 6.4mm (300mm increments)	900mm and 1200mm	2700mm - 4200mm
Gyproc RhinoArt Cove 75mm (300mm increments)	-	2700mm - 4200mm
Gyproc RhinoArt Cove 125mm	-	3000mm only
Gyproc M-Strip (300mm increments)	-	2700mm - 4200mm

All RhinoArt Decor cornices available in 2000mm.

### Steel branderling- calculation of quantities

#### Information required:

1. Ceiling System and Specification
2. Total Area
3. Total perimeter
4. Truss spacing
5. List of required materials

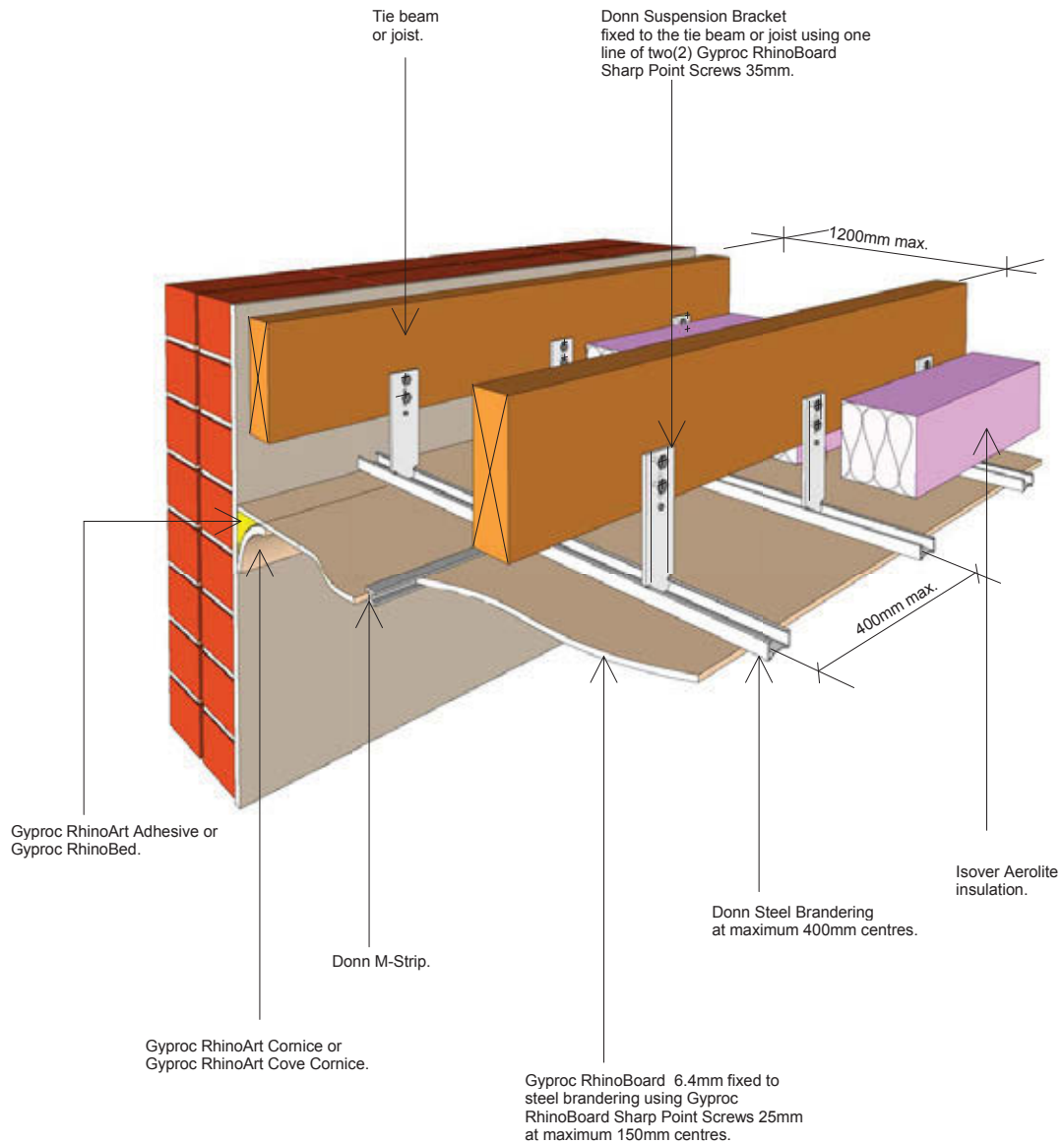
Gyproc components	With Gyproc RhinoBoard 6.4mm M-strip	With Gyproc RhinoBoard 9.5mm skimmed
Steel Branderling	Ceiling Area/ (length of branderling x 0.38)	Ceiling Area/ (length of branderling x 0.38)
Hanger Brackets	Ceiling Area/ (Truss Spacing x 0.32)	Ceiling Area/(Truss Spacing x 0.32)
Joiners	Total number of Branderings/2	Total number of Branderings/2
RhinoBoard	Ceiling Area/Area of one board	Ceiling Area/Area of one board
Cornice	Total perimeter/Cornice length	Total perimeter/Cornice length
RhinoTape	-	(Length +Width )-of one board x number of boards divided by 45
Packets of 1000 Screws	Ceiling Area/60	Ceiling Area/60
M-Strip	(Length +Width )-of one board x number of boards divided by the length of one M-strip	-
40kg RhinoLite bags	-	Ceiling Area/20

## GypCeil Classic M-Strip

Gyproc RhinoBoard 6.4mm M-Strip ceiling consisting of steel branders fixed at 400mm centres in one direction onto which RhinoBoard is fixed, printed side up, at right angles to the branders, using Gyproc RhinoBoard Sharp Point Screws 25mm spaced at 150mm centres.

Joints between boards to consist of Rhino M-Strip fitted over board edges with the narrow flange facing down and boards fixed onto branders to within 25mm of Rhino M-Strip. All nail or screw heads to be stopped and sanded level when dry.

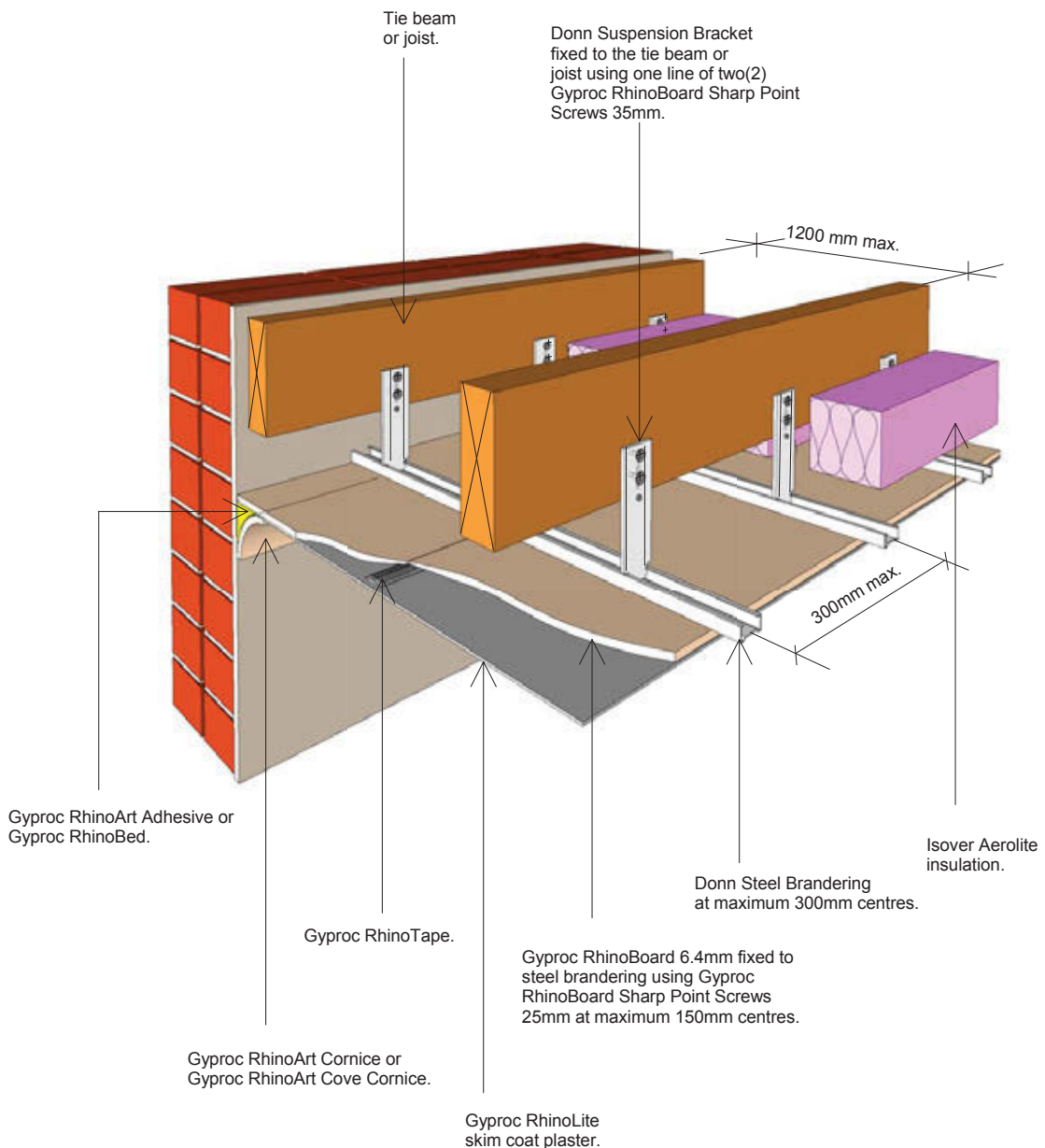
### Steel brandered ceiling



## GypCeil Classic Flush Plastered

GypCeil Classic Flush Plastered ceiling consists of steel branders fixed at 300mm centres in one direction onto which Gyproc RhinoBoard 6.4mm is fixed at right angles to the branders with printed side up using Gyproc RhinoBoard Sharp Point Screws 25mm spaced at 150mm centres. All joints to be covered with Gyproc RhinoTape (double over butt joints) and the ceiling then plastered with a 3 - 6mm coat of Gyproc RhinoLite or Gyproc CreteStone plaster applied as per manufacturers' instructions.

### Steel brandered ceiling



## GypCeil Classic M-Strip installation guide



1 Establish ceiling height then measure and mark the desired height in one corner of the room.



2 Using a water level or a laser level transfer the height mark (as per previous step) to all corners of the room.



3 Join the marks (as per previous step) using a chalk line.



4 Measure 38mm away from the wall for installation of first suspension bracket.



5 Mark at 400mm centres.



6 Install suspension brackets using 2 x Gyproc RhinoBoard Sharp Point Screws 35mm per suspension bracket. Use the chalk line as a benchmark.



7 Measure and cut steel branding to size and clip onto suspension brackets.



8 After installing the steel branding, install Isovor Aerolite according to SANS 10400-XA for new buildings. (Refer to page 20).



9 Measure and cut RhinoBoard 6.4mm to size. Install the board and fasten using Gyproc RhinoBoard Sharp Point Screws 25mm spaced at 150mm centres.



10 After installing the first board, measure and cut M-strip to size and install.



11 Install the next RhinoBoard 6.4mm. Repeat steps 9 and 10 until entire area is covered



## GypCeil Classic Flush Plastered installation guide



1 Establish ceiling height then measure and mark the desired height in one corner of the room.



2 Using a water level or a laser level transfer the height mark (as per previous step) to all corners of the room.



3 Join the marks (as per previous step) using a chalk line.



4 Measure 38mm away from the wall for installation of first suspension bracket.



5 Mark at 300mm centres.



6 Install suspension brackets using 2 x Gyproc RhinoBoard Sharp Point Screws 35mm per suspension bracket. Use the chalk line as a benchmark.



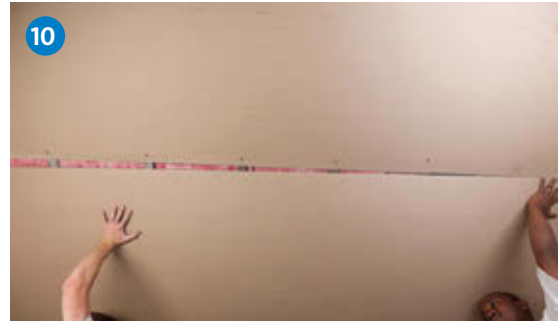
7 Measure and cut steel bracing to size and clip onto suspension brackets.



8 After installing the steel bracing, install Isover Aerolite according to SANS 10400-XA for new buildings.



9 Measure and cut Gyproc RhinoBoard 6.4mm to size. Install the board and fasten using RhinoBoard Sharp Point Screws 25mm spaced at 150mm centres.



10 Install the next RhinoBoard 6.4mm. Repeat steps 9 until entire area is covered.



11 After boarding is complete, apply RhinoTape to all joints.



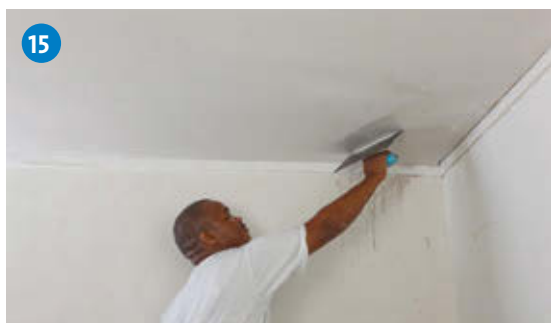
12 Apply Gyproc RhinoLite to all joints (pre-filling of joints) using a 150mm tapping knife.



13 Apply RhinoLite to the entire surface using a 300mm steel trowel.



14 Leave the RhinoLite to set for a minimum of 40 minutes. Using a block brush lightly sprinkle water onto the RhinoLite surface. Use a sponge rubber float, and float the entire surface.



15 Using a 300mm steel trowel, scrap off the dead plaster (Fat).



## Timber Brandering

### Specification

Branding  
Truss (tie beam) spacings will determine the size of branding to be used.

**Note:** All sizes refer to 38mm x 38mm SABS approved SA Pine or 35mm x 35mm SABS approved Saligna branding.  
\* Staples are not recommended to secure board to branders.

Truss spacing	Brander size
Up to 1000mm	38mm x 38mm
1000mm - 1200mm	38mm x 50mm (with 50mm dimension vertical)
1201mm - 1400mm	50mm x 75mm or introduce extra tie beams

### Brander centres

Type of ceiling	Brander Centres	RhinoBoard Fixing
Gyproc RhinoBoard 6.4mm M-Strip	400mm centres in one direction only	32mm galvanised clout nails 35mm Gyproc RhinoBoard Sharp Point Screws spaced at 150mm centres
Gyproc RhinoBoard 6.4mm Flush Plastered Ceiling	300mm centres in one direction only	35mm Gyproc RhinoBoard Sharp Point Screws spaced at 150mm centres
Gyproc RhinoBoard 9.5mm Flush Jointed Ceiling	500mm centres in one direction only	32mm galvanised clout nails 35mm Gyproc RhinoBoard Sharp Point Screws spaced at 150mm centres
Gyproc RhinoBoard 9.5mm Flush Plastered Ceiling	400mm centres in one direction only	35mm Gyproc RhinoBoard Sharp Point Screws spaced at 150mm centres

### Fixing of Brandering

Branding is nailed to tie beams using a 75-100mm nail. For fixing RhinoCornice 75mm, brander should be 38mm centres from wall line. Level branding from lowest point. Insert a wedge between brander and tie-beam and secure with skew-nail. Use a cleat for gaps exceeding 13mm.

**NB:** Light fittings must be fixed to the branding or conduit not to the RhinoBoard.

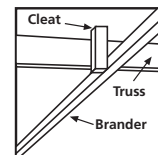


FIG. 1

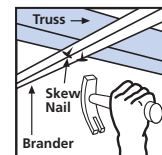


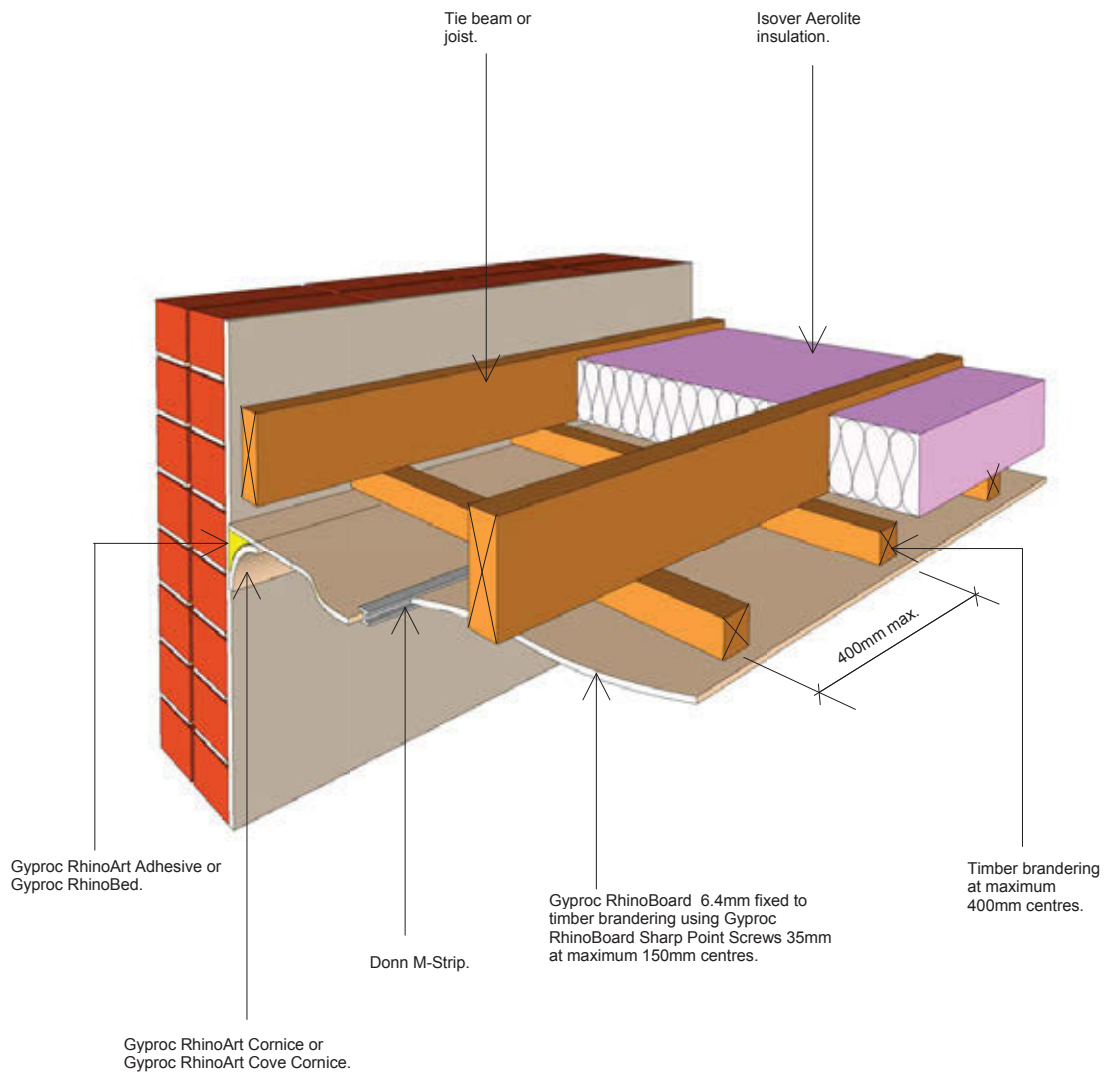
FIG. 2

## GypCeil Classic M-Strip

Gyproc RhinoBoard 6.4mm M-Strip ceiling consisting of SABS approved SA Pine, Saligna branders at 400mm centres in one direction onto which RhinoBoard is fixed, printed side up, at right angles to the branders, using 35mm galvanised clout nails or Gyproc RhinoBoard Sharp Point Screws 35mm spaced at 150mm centres.

Joints between boards to consist of Rhino M-Strip fitted over board edges with the narrow flange facing down and boards fixed onto branders to within 25mm of Rhino M-Strip. All nail or screw heads to be stopped and sanded level when dry.

### Timber brandered ceiling



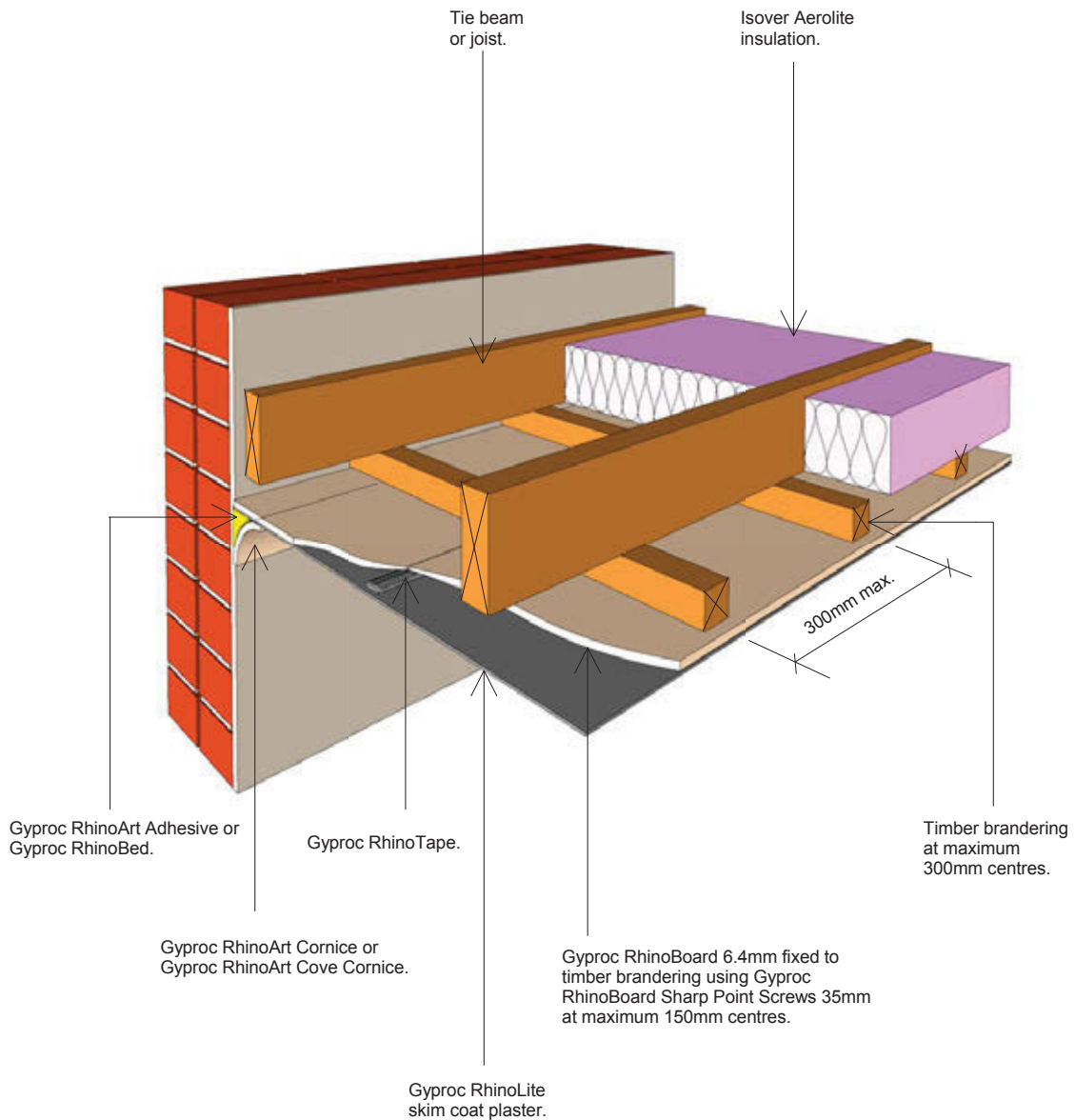


## GypCeil Classic Flush Plastered

GypCeil Classic Flush Plastered ceiling consists of SABS approved SA Pine, Saligna branders at 300mm centres in one direction onto which Gyproc RhinoBoard 6.4mm is fixed at right angles to the branders with printed side up using Gyproc RhinoBoard Sharp Point Screws 35mm spaced at 150mm centres. All joints to be covered with Gyproc RhinoTape (double over butt joints) and the ceiling then plastered with a 3 - 6mm coat of Gyproc RhinoLite or Gyproc CreteStone plaster applied as per manufacturers' instructions.

N.B. Due to the extra weight from plastering it is recommended to screw the board for a more secure fix.

### Timber brandered ceiling



# Climate zones of South Africa

## How do the climatic zones work?

South Africa has a diverse landscape with dramatically different climates, from temperate coastal zones to the dramatic winters seen in the areas around the Drakensberg. In setting out the standards and regulations that govern the energy efficiency of South Africa's built environment, one standard could not be applied across the country. Different standards have been set to achieve the desired energy efficiency, depending on the climatic conditions of any specific location.

For example: Zone 1 covers the bulk of the interior where the coldest conditions in the country are experienced. In this zone, 135mm ThinkPink Aerolite will achieve the specified R value of between 2.30 and 3.35. Homes in Zone 5, the temperate East Coast of South Africa only require Glasswool insulation of 100mm thick, in order to achieve the specified R value of 2.15 to 2.29.

### Zone Climatic conditions

- 1 Cold interior
- 2 Temperate interior
- 3 Hot interior
- 4 Temperate coastal
- 5 Sub-tropical coastal
- 6 Arid interior



For more information about the new standards and how Saint-Gobain's Technical Solutions can help you offer a superior service to your customers, call 0860 27 28 29 or visit [www.gyproc.co.za](http://www.gyproc.co.za) or [www.isover.co.za](http://www.isover.co.za)



Climatic zone	1	2	3	4	5	6
Minimum required total R-value (m <sup>2</sup> ·K/W) (for roof solar absorptance of more than 0.55)	3.7	3.2	2.7	3.7	2,7	3.5
Estimated total R-value (m <sup>2</sup> ·K/W) of roof and ceiling materials (roof covering and RhinoBoard only)	0.35 – 0.40				0.41 – 0.53	0.35 – 0.40
Estimated minimum required R-value of insulation (m <sup>2</sup> ·K/W)	3.35	2.85	2.35	3.35	2.29	3.15
Isover Aerolite thickness (mm)	135	115	100	135	100	135
R-value of Aerolite	3.38	2.88	2.5	3.38	2.5	3.38



## Saint-Gobain's SpecSure system warranty



Unique to Saint-Gobain Construction Products South Africa, the 10 year system warranty is designed to give you total confidence that the systems you have chosen will meet the most rigorous of building requirements.

All of our systems are developed using the highest quality components designed to work together, and are specifically developed to give you a lifetime of confidence.

SpecSure is more than just a performance warranty. It means that the Saint-Gobain Construction Products SA systems you specify:

- Have a guaranteed 10 year performance.
- Have the technical expertise and experience of the SA's leading construction products specialist behind it.
- Have been tested in accredited fire, acoustic and structural test laboratories.
- Have been site tested to demonstrate installation integrity and simplicity.
- Will be supported at every stage of the project by SA's leading on and off-site technical support personnel.
- Will perform to published parameters if installed in accordance to our specifications.
- Will be repaired or replaced by Saint-Gobain Construction Products South Africa in the unlikely event of system failure attributed to unsatisfactory product/system performance.
- Project Packs offer technical guidance and compliance to the building methodology prescribed which will ensure optimal system performance.

Customer contact centre:

**0860 27 28 29 | [www.gyproc.co.za](http://www.gyproc.co.za)**

