

drywall manual

Linings section

version 3.0.0

publication date: November 2024





For ease of download, the Siniat Drywall Manual has been split into separate volumes with their own page numbering.

Linings section

This section includes updated information, added since it was first published in December 2018.

Revision history

| Version | Date of publication |
|---------|---|
| 1.0.0 | December 2018 |
| | September 2022: Technical content updated and rebranded |
| 3.0.0 | November 2024: Range updated, GTEC removed |

lining systems

Siniat lining systems offer a wide range of plasterboard lining fixing options to walls for most typical substrates. Different cavity depths can be created between the Siniat Board or Siniat Thermal Board lining and underlying wall. These cavities can create service zones and can contribute to overall U-values, and sound insulation performance.

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System performance tables

| Siniat independent wall lining systems | 7 |
|--|----|
| 30 minute systems EN | 9 |
| 60 minute systems EN | 12 |
| Creason independent lining systems | 13 |
| Siniat lining systems to thermally upgrade external walls | 15 |
| Siniat dryliner systems to acoustically upgrade existing walls | 18 |
| Siniat independent wall lining systems | 23 |
| Creason independent lining systems | 33 |
| Siniat dryliner lining systems | 41 |
| Siniat direct bond lining systems | 51 |
| Siniat shallow wall lining systems | 61 |

the right route to compliance

Siniat are committed to using the latest standards to reduce the level of risk in construction and meet increasingly stringent regulations. This approach helps ensure that drywall remains one of the safest parts of a building specification, offering 'built-in' fire resistance and reducing project risk.

The most recent changes to Approved Document B asks for testing to EN fire standards; that the results are only extended using appropriate EN standards, by qualified third parties; and that all fire resistance performances are 3rd Party classified using the official EN classification standard, EN 13501-2.

How do Siniat fire test independent wall lining systems?

A 3rd party UKAS Accredited notified laboratory conducts the test to the EN 1364-1 standard 'Fire resistance tests for non-loadbearing elements – Walls'.



How is a fire test extended?

By extending a fire test following strict EN standards, a single test can be used to substantiate many variations of the specific build-up.

Fire resistance performance can be extended via Direct Field of Application (DIAP) rules included in the fire test standard EN 1364-1.

As there is no EXAP standard covering independent wall lining systems at this time, we default to using the DIAP rules defined in EN 1364-1.

How is an independent wall lining system classified?

Approved Document B asks that fire resistance of building elements should be classified in accordance with EN 13501-2. All of our fire-rated independent wall lining systems have an accompanying 3rd party classification report to this standard. It will contain:

- Details of test build-up
- ► Test results
- Fire classification
- System extensions allowed.

Shift from BS to EN

Siniat have been testing to EN standards for many years – it is the most up to date testing approach and is now the default standard in Approved Document B. EN 1363/4 test methods are slightly more onerous than BS 476 due to differing temperature measurement methods, but the most significant difference between EN and BS standards is the treatment of fire state height.

In EN methods the results do not necessarily apply above the typical 3m furnace size unless certain conditions are met. Fire state height was not considered in BS 476 and therefore has not traditionally formed part of the specification requirements of most UK construction. However, compliance with EN standards, as laid out by Approved Document B, means that fire state height must be considered. This can slightly alter the system make-ups for taller walls, and places overall limits on height.



Maximum Heights

There are two types of maximum heights for an independent wall lining system.

- Cold state: Maximum height without a fire resistance classification.
- Fire state: Maximum height to achieve a specific fire resistance classification.

What is EN fire state height?

The EN fire state heights stated in this manual are Approved Document B and EN Compliant. These values are the lower of the two states, fire and cold state.

The fire state height is derived from extension rules in EN 1364-1 (DIAP).

The cold state height is calculated using structural engineering methods to L/240 limits @ 200Pa or 0.2kN/m². Contact Siniat for further details.

By agreement between the project's client, designers and appointed building control body it may be possible to design based only on mechanical 'cold state' maximum height.



All Siniat independent wall lining systems have been classified to EN 13501-2.

performance tables introduction

Each system displayed includes:

- Build-up
- Fire performance to EN
- Max heights (Cold and EN Fire State)
- System weight
- Nominal thickness.

Reading system codes

Each system displayed has a unique identification code, which spells out the build-up:

Framing-Boarding-Insulation

Example

Independent Wall Lining System IS50R(400)-212dB#0-25G

- Siniat IS50R I stud
- 400mm stud centres*
- 2 x 12.5mm dB board
- Asymmetric system, no boarding on second side
- 25mm glass mineral wool

*Numbers in brackets following stud refer to the stud spacing. (400) indicates 400mm centres, while no number denotes the default spacing of 600mm.

Performance notes

- [•] 'EN Fire State Height' is the highest permissible 'fire state' height calculated according to the following EN standards and clauses, as required to comply with Approved Document B, and where these heights are no greater than the 'cold state' mechanical height. The fire state height is derived from extension rules in EN 1364-1 (DIAP).
- Insulation shown may be replaced with thicker and/or heavier quilt material without impairing the quoted performances (may also be replaced with stone mineral wool if required).
- Adding insulation to an uninsulated system, or removing it from an insulated system, may impair quoted performances.
- Performance values are for imperforate, jointed systems using Siniat components (metal studs and tracks, boards, metal accessories, screws and finishing systems) and specified insulation quilt material (type and thickness) and installed to Siniat specification and installation guides. Any alterations may impair the quoted performance.
- All maximum cold state independent wall lining system heights are calculated with a uniform lateral pressure of 200Pa or 0.2kN/m², the quoted height reflects the maximum deflection of height/240 at mid-height.
- It may be possible to increase cold state heights from those quoted in the system tables where reduced deflection limits or pressure criteria are acceptable.



System performance tables

Siniat independent wall lining systems

Buildup Performance Facing layers Frame Insulation Fire perf. Max height² Max height Nominal Weight Cold state EN Fire state* thickness EN 1364-1 & Glass mineral EN 13501-21 wool (mm) (mins) (m) (mm) (kg/m^2) IS50R-12St#0 1 x 12.5mm Siniat IS50/Rx at 600mm 2.7 62.5 9.0 Standard Board centres IS50R(400)-12St#0 1 x 12.5mm Siniat IS50/Rx at 400mm 62.5 90 3.1 Standard Board centres IS60B-12St#0 1 x 12.5mm Siniat IS60/B at 600mm 3.5 72.5 9.0 Standard Board centres IS60B(400)-12St#0 1 x 12.5mm Siniat IS60/B at 400mm 4.0 72.5 10.0 Standard Board centres IS70B-12St#0 82.5 9.0 1 x 12.5mm Siniat IS70/B at 600mm 4.0 Standard Board centres IS70B(400)-12St#0 1 x 12.5mm Siniat IS70/B at 400mm 4.5 82.5 10.0 Standard Board centres IS90B-12St#0 1 x 12,5mm Siniat IS90/B at 600mm 4.7 102.5 10.0 Standard Board centres IS90B(400)-12St#0 1 x 12.5mm Siniat IS90/B at 400mm 5.4 102.5 10.0 Standard Board centres IS50R-12St#0-25G 1 x 12.5mm Siniat IS50/Rx at 600mm 25 2.7 62.5 9.0 Standard Board centres IS50R(400)-12St#0-25G 1 x 12.5mm Siniat IS50/Rx at 400mm 25 3,1 62.5 10.0 Standard Board centres IS60B-12St#0-25G 1 x 12.5mm Siniat IS60/B at 600mm 25 3.5 72.5 10.0 Standard Board centres



Siniat independent wall lining systems continued

| Buildup | | | | Performance | | | | |
|------------------|--------------------------------|----------------------------|--|---|---------------------------------------|------------------------------|----------------------|---------|
| | Facing layers | Frame | Insulation Glass mineral wool | Fire perf. EN 1364-1 & EN 13501-2 ¹ | Max height ² Cold state | Max height EN Fire state* | Nominal thickness | Weight |
| | | | (mm) | (mins) | (m) | | (mm) | (kg/m²) |
| IS60B(400)-12St# | ^I 1 x 12.5mm Siniat | IS60/B at 400mm centres | 25 | - | 4.0 | - | 72.5 | 10.0 |
| IS70B-12St#0-250 | ^I 1 x 12.5mm Siniat | IS70/B at 600mm centres | 25 | - | 4.0 | - | 82.5 | 10.0 |
| IS70B(400)-12St# | ^I 1 x 12.5mm Siniat | IS70/B at 400mm centres | 25 | - | 4.5 | - | 82.5 | 10.0 |
| IS90B-12St#0-250 | ^I 1 x 12.5mm Siniat | IS90/B at 600mm centres | 25 | - | 4.7 | - | 102.5 | 10.0 |
| IS90B(400)-12St# | ^I 1 x 12.5mm Siniat | | 25 | - | 5.4 | - | 102.5 | 11.0 |

System performance tables

30 minute systems EN

Buildup Performance Facing layers Frame Insulation Fire perf. Max height² Max height Nominal Weight Cold state EN Fire state* thickness EN 1364-1 & Glass mineral EN 13501-21 wool (mm) (mins) (m) (mm) (kg/m^2) IS50R-212dB#0 2 x 12.5mm Siniat IS50/Rx at 600mm EI30 2.8 2.8 75 23.0 dB Board centres IS50R(400)-212dB#0 📿 EI30 2 x 12.5mm Siniat IS50/Rx at 400mm 3.2 3.2 75 _ 23.0 dB Board centres IS60B-212dB#0 2 x 12.5mm Siniat IS60/B at 600mm EI30 3.6 3.6 85 23.0 dB Board centres IS60B(400)-212dB#0 📿 EI30 85 2 x 12.5mm Siniat IS60/B at 400mm 4.1 4.0 24.0 dB Board centres IS70B-212dB#0 📿 EI30 4.0 95 2 x 12.5mm Siniat IS70/B at 600mm 4.0 23.0 dB Board centres IS70B(400)-212dB#0 2 x 12.5mm Siniat IS70/B at 400mm EI30 4.6 4.0 95 24.0 dB Board centres IS90B-212dB#0 📿 EI30 2 x 12.5mm Siniat IS90/B at 600mm 4.8 4.0 115 24.0 = dB Board centre IS90B(400)-212dB#0 2 x 12.5mm Siniat IS90/B at 400mm 📿 EI30 5.5 4.0 24.0 115 dB Board centres IS50R-212dB#0-25G 📿 EI30 2 x 12.5mm Siniat IS50/Rx at 600mm 25 2.8 2.8 75 23.0 dB Board centres IS50R(400)-212dB#0-25G 2 x 12.5mm Siniat IS50/Rx at 400mm 25 📿 EI30 3.2 3.2 75 24.0 dB Board centres IS60B-212dB#0-25G 2 x 12.5mm Siniat IS60/B at 600mm 25 📿 EI30 3.6 3.6 85 24.0 dB Board centres

30 minute systems EN continued

| Buildup | | | | Performance | | | | |
|------------------|--------------------------------------|-----------------------------|---|---|---------------------------------------|------------------------------|----------------------|---------|
| | Facing layers | Frame | Insulation Glass mineral wool | Fire perf. EN 1364-1 & EN 13501-2 ¹ | Max height ² Cold state | Max height EN Fire state* | Nominal thickness | Weight |
| | | | (mm) | (mins) | (m) | | (mm) | (kg/m²) |
| IS60B(400)-212dE | 3 #0-25 G | | | ~ | | | | |
| | 2 x 12.5mm Siniat dB Board | IS60/B at 400mm centres | 25 | EI30 | 4.1 | 4.0 | 85 | 24.0 |
| IS70B-212dB#0-2 | 5G | | | | | | | |
| | 2 x 12.5mm Siniat dB Board | IS70/B at 600mm centres | 25 | EI30 | 4.0 | 4.0 | 95 | 24.0 |
| IS70B(400)-212dE | 3#0-25G | | | | | | | |
| | 2 x 12.5mm Siniat dB Board | IS70/B at 400mm centres | 25 | C EI30 | 4.6 | 4.0 | 95 | 24.0 |
| IS90B-212dB#0-2 | 5G | | | | | | | |
| | 2 x 12.5mm Siniat dB Board | IS90/B at 600mm centres | 25 | C EI30 | 4.8 | 4.0 | 115 | 24.0 |
| IS90B(400)-212dE | 3#0-25G | | | | | | | |
| | 2 x 12.5mm Siniat dB Board | IS90/B at 400mm centres | 25 | C EI30 | 5.5 | 4.0 | 115 | 25.0 |
| IS50R-212F#0 | 2 x 12.5mm Siniat Fire Board | IS50/Rx at 600mm centres | - | C EI30 | 2.8 | 2.8 | 75 | 21.0 |
| IS50R(400)-212F# | 0 2 x 12.5mm Siniat Fire Board | IS50/Rx at 400mm centres | - | C EI30 | 3.2 | 3.2 | 75 | 22.0 |
| IS60B-212F#0 | | | | C | | | | |
| | 2 x 12.5mm Siniat Fire Board | IS60/B at 600mm centres | - | EI30 | 3.6 | 3.6 | 85 | 22.0 |
| IS60B(400)-212F# | | | | | | | | |
| | 2 x 12.5mm Siniat Fire Board | IS60/B at 400mm centres | - | C EI30 | 4.1 | 4.0 | 85 | 22.0 |
| IS70B-212F#0 | | | | | | | | |
| | 2 x 12.5mm Siniat Fire Board | IS70/B at 600mm centres | - | C EI30 | 4.0 | 4.0 | 95 | 22.0 |
| IS70B(400)-212F# | ا 0 | | | | | | | |
| | 2 x 12.5mm Siniat Fire Board | IS70/B at 400mm centres | - | C EI30 | 4.6 | 4.0 | 95 | 22.0 |
| | | | | | | | | |

30 minute systems EN continued

| Buildup | | | | Performance | | | | |
|-----------------|---------------------------------|----------------------------|---|---|---------------------------------------|------------------------------|----------------------|---------|
| | Facing layers | Frame | Insulation Glass mineral wool | Fire perf. EN 1364-1 & EN 13501-2 ¹ | Max height ² Cold state | Max height EN Fire state* | Nominal thickness | Weight |
| | | | (mm) | (mins) | (m) | | (mm) | (kg/m²) |
| IS90B-212F#0 | 2 x 12.5mm Siniat Fire Board | IS90/B at 600mm centres | - | 😪 EI30 | 4.8 | 4.0 | 115 | 22.0 |
| IS90B(400)-212F | | IS90/B at 400mm centres | - | C EI30 | 5.5 | 4.0 | 115 | 23.0 |

System performance tables

60 minute systems EN

| Buildup | | | | Performance | | | | |
|------------------|---|-----------------------------|--|---|---------------------------------------|------------------------------|----------------------|---------|
| | Facing layers | Frame | Insulation Glass mineral wool | Fire perf. EN 1364-1 & EN 13501-2 ¹ | Max height ² Cold state | Max height EN Fire state* | Nominal thickness | Weight |
| | | | (mm) | (mins) | (m) | | (mm) | (kg/m²) |
| IS50R-312F#0 | 3 x 12.5mm Siniat Fire Board | IS50/Rx at 600mm centres | - | ⊘ EI60 | 2.9 | 2.9 | 87.5 | 32.0 |
| IS50R(400)-312F# | | IS50/Rx at 400mm centres | - | ⊘ EI60 | 3.3 | 3.3 | 87.5 | 32.0 |
| IS60B-312F#0 | 3 x 12.5mm Siniat Fire Board | IS60/B at 600mm centres | - | ⊘ EI60 | 3.6 | 3.6 | 97.5 | 32.0 |
| IS60B(400)-312F# | 0 3 x 12.5mm Siniat Fire Board | IS60/B at 400mm centres | - | E I60 | 4.1 | 4.0 | 97.5 | 32.0 |
| IS70B-312F#0 | 3 x 12.5mm Siniat Fire Board | IS70/B at 600mm centres | - | C EI60 | 4.0 | 4.0 | 107.5 | 32.0 |
| IS70B(400)-312F# | 0 3 x 12.5mm Siniat Fire Board | IS70/B at 400mm centres | - | ⊘ EI60 | 4.6 | 4.0 | 107.5 | 33.0 |
| IS90B-312F#0 | 3 x 12.5mm Siniat Fire Board | IS90/B at 600mm centres | - | C E160 | 4.8 | 4.0 | 127.5 | 32.0 |
| IS90B(400)-312F# | 0 3 x 12.5mm Siniat Fire Board | IS90/B at 400mm centres | - | C EI60 | 5.5 | 4.0 | 127.5 | 33.0 |

Creason independent lining systems

| System Ref. | Component | Max Height (m) | Weight (kg/m²) | Acoustic Absorption Class, BS EN ISO 11654 | Absorption co-efficient (Ctw), BS EN ISO 11654 |
|------------------------|--|---|-------------------|--|--|
| PGL 001: Creason linin | g – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason C10no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 75mm glass mineral wool and 600mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | В | 0.8 |
| PGL 002: Creason linin | g – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason C10no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 50mm glass mineral wool and 600mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | с | 0.75 |
| | | | | | |
| PGL 003: Creason linin | | | | | |
| | Ceiling Outer Layer(s): 1x Creason C10no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 50mm glass mineral wool and 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.70 |
| PGL 004: Creason linin | q – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason C10no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.60 |
| PGL 101: Creason linin | g – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason R12no2 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 50mm glass mineral wool | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.7 |
| | and 300mm void | | | | |
| PGL 102: Creason linin | g – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Siniat Creason R12no2 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.65 |

BS EN ISO 11654: Acoustics. Sound absorbers for use in buildings. Rating of sound absorption. Note: Maximum height calculated with deflection limit of L/240. Increased heights are achievable with acceptance of increased deflection. Contact Technical Services for further information.

Creason independent lining systems continued

| | | Max Height | Weight | Acoustic Absorption Class, BS EN ISO 11654 | Absorption co-efficient (αw), BS EN ISO 11654 |
|-----------------------------|--|---|---------|--|---|
| System Ref. | Component | (m) | (kg/m²) | | |
| PGL 201: Creason linin Void | ig – see page 37 Ceiling Outer Layer(s): 1x Creason R15no1 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 50mm glass mineral wool and 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.70 |
| PGL 202: Creason linin | ig – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason R15no1 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 30mm glass mineral wool and 50mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.7 |
| PGL 301: Creason linin | ig – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason R15no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 50mm glass mineral wool and 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | С | 0.60 |
| PGL 302: Creason linin | ig – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason R15no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | D | 0.50 |
| PGL 401: Creason linin | ig – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason L5x80no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 80mm glass mineral wool and 300mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | D | 0.55 |
| PGL 402: Creason linin | ig – see page 37 | | | | |
| Void | Ceiling Outer Layer(s): 1x Creason L5x80no8 Lining: Siniat IS50Rx/IS60B/IS70B/ IS90B Siniat I Studs at 600mm centres Insulation: 80mm glass mineral wool and 100mm void | IS50/Rx = 2.8m IS60/B = 3.6m IS70/B = 4.0m IS90/B = 4.8m | 12 | D | 0.55 |

LININGS PERFORMANCE NOTES

Performance values are for imperforate, jointed systems using Siniat components (metal studs and tracks, boards, metal accessories, screws and finishing systems) and specified insulation quilt material (type, thickness and density) and installed to Siniat specification and installation guides.

Siniat lining systems to thermally upgrade external walls

| Approved Document L1B: 2013 recommends upgrading external walls to meet a target U-Value of minimum 0.30W/m ² k | | | |
|--|---|---|---|
| | 102mm brick (λ=0.77 W/mK) | 100mm dense concrete block (λ=1.21 W/mK) | 215mm dense concrete block (λ=1.21 W/mK) |
| | Base U-Value = 3.31 W/m ² K | Base U-Value = 3.96 W/m ² K | Base U-Value = 2.88 W/m ² K |
| Any Siniat plasterboard (λ=0.25) | 12.5mm - 1.90 15mm - 1.87 | 12.5mm - 2.10 15mm - 2.06 | 12.5mm - 1.75 15mm - 1.72 |
| Siniat Thermal EPS Board (λ=0.037) | 22mm - 1.17 30mm - 0.91 40mm - 0.73 50mm - 0.61 | 22mm - 1.25 30mm - 0.96 40mm - 0.76 50mm - 0.63 | 22mm - 1.12 30mm - 0.88 40mm - 0.71 50mm - 0.59 |
| Siniat Thermal XP Board (λ=0.033) | 27mm - 0.95 35mm - 0.84 55mm - 0.53 | 27mm - 0.99 35mm - 0.87 55mm - 0.54 | 27mm - 0.91 35mm - 0.81 55mm - 0.52 |
| Siniat Thermal PIR Board (λ=0.022) | 37.5mm - 0.60 52.5mm - 0.42 62.5mm - 0.36 72.5mm - 0.31 82.5mm - 0.27 | 37.5mm - 0.61 52.5mm - 0.43 62.5mm - 0.36 72.5mm - 0.31 82.5mm - 0.27 | 37.5mm - 0.58 52.5mm - 0.42 62.5mm - 0.35 72.5mm - 0.30 82.5mm - 0.27 |
| Lining System | Siniat Dryliner System only* | Siniat Dryliner System only* | Siniat Dryliner System only* |

*Siniat Direct Bond System not recommended on solid masonry walls - U-Values shown (W/m²k) are calculated using guidance in BR 443 and BRE Digest 465. - Condensation risk should be analysed based on usage location and wall type. - Dryliner cavity depth = 25mm.

Siniat lining systems to thermally upgrade external walls continued

| Approved Document L1B: 2013 recommends upgrading external walls to meet a target U-Value of minimum 0.30W/m ² k | | | |
|--|---|---|---|
| | 215mm Brick (λ=0.77 W/mK) | 102mm brick (λ=0.77 W/m 50mm Air cavity 100mm dense concrete bl | |
| | Base U-Value = 2.23 W/m²K | Base U-Value = 1.75 W/m ² K | Base U-Value = 1.75 W/m²K |
| Any Siniat plasterboard (λ=0.25) | 12.5mm - 1.49 15mm - 1.46 | 12.5mm - 1.26 15mm - 1.24 | 12.5mm - 1.40 15mm - 1.38 |
| Siniat Thermal EPS Board (λ=0.037) | 22mm - 1.00 30mm - 0.81 40mm - 0.66 50mm - 0.56 | 22mm - 0.89 30mm - 0.73 40mm - 0.61 50mm - 0.53 | 22mm - 0.96 30mm - 0.78 40mm - 0.64 50mm - 0.55 |
| Siniat Thermal XP Board (λ=0.033) | 27mm - 0.83 35mm - 0.75 55mm - 0.49 | 27mm - 0.75 35mm - 0.68 55mm - 0.46 | 27mm - 0.80 35mm - 0.72 55mm - 0.48 |
| Siniat Thermal PIR Board (λ=0.022) | 37.5mm - 0.55 52.5mm - 0.40 62.5mm - 0.34 72.5mm - 0.29 82.5mm - 0.26 | 37.5mm - 0.51 52.5mm - 0.39 62.5mm - 0.32 72.5mm - 0.28 82.5mm - 0.25 | 37.5mm - 0.53 52.5mm - 0.40 62.5mm - 0.33 72.5mm - 0.29 82.5mm - 0.26 |
| Lining System | Siniat Dryliner System only* | Siniat Dryliner System only | Siniat Direct Bond System* |

*Siniat Direct Bond System not recommended on solid masonry walls - U-Values shown (W/m²k) are calculated using guidance in BR 443 and BRE Digest 465. - Condensation risk should be analysed based on usage location and wall type. - Dryliner cavity depth = 25mm.

Siniat lining systems to thermally upgrade external walls continued

| Approved Document L1B: 2013 recommends upgrading external walls to meet a target U-Value of minimum 0.30W/m ² k | 102mm brick (λ=0.77 W/m 50mm air cavity 102mm brick (λ=0.56 W/m | |
|--|---|---|
| | Base U-Value = 1.50 W/m²K | Base U-Value = 1.5 W/m²K |
| Any Siniat plasterboard (λ=0.25) | 12.5mm - 1.13 15mm - 1.11 | 12.5mm - 1.23 15mm - 1.22 |
| Siniat Thermal EPS Board $(\lambda=0.037)$ | 22mm - 0.82 30mm - 0.69 40mm - 0.58 50mm - 0.50 | 22mm - 0.88 30mm - 0.73 40mm - 0.61 50mm - 0.52 |
| Siniat Thermal XP Board $(\lambda=0.033)$ | 27mm - 0.70 35mm - 0.64 55mm - 0.44 | 27mm - 0.75 35mm - 0.68 55mm - 0.46 |
| Siniat Thermal PIR Board (λ =0.022) | 37.5mm - 0.49 52.5mm - 0.38 62.5mm - 0.31 72.5mm - 0.28 82.5mm - 0.24 | 37.5mm - 0.51 52.5mm - 0.39 62.5mm - 0.32 72.5mm - 0.28 82.5mm - 0.25 |
| | Siniat Dryliner System* | Siniat Direct Bond* |

*Siniat Direct Bond System not recommended on solid masonry walls - U-Values shown (W/m²k) are calculated using guidance in BR 443 and BRE Digest 465. - Condensation risk should be analysed based on usage location and wall type. - Dryliner cavity depth = 25mm.



100mm aerated block (min. 575kg/m³) Rw(Rw + Ctr) dB = 36 (33)

| | Siniat dryliner to one side | Siniat dryliner to both sides |
|---|-----------------------------|-------------------------------|
| Facing Outer Layer(s): 12.5mm Siniat Standard Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | Performance: 42 (36) | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | Performance: 43 (37) | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 45 (39) | Performance: 51 (39) |
| Facing Outer Layer(s): 15mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 46 (39) | Performance: 53 (39) |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Facing Inner Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 48 (40) | Performance: 59 (43) |

- Performance values shown (R_W, -C_{tr} dB) are simulated in Marshall Day INSUL V9. - Bespoke build ups can be thermally modelled. Contact Siniat Technical Services for more details.





100mm dense brick/block (min. 1880kg/m³) $Rw(R_W + C_{tr}) dB = 46(43)$

| | Siniat dryliner to one side | Siniat dryliner to both sides |
|---|-----------------------------|-------------------------------|
| Facing Outer Layer(s): 12.5mm Siniat Standard Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | Performance: 46 (39) | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | Performance: 47 (40) | _ |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 55 (48) | Performance: 60 (47) |
| Facing Outer Layer(s): 15mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 56 (48) | Performance: 62 (47) |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Facing Inner Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 58 (51) | Performance: 68 (51) |

- Performance values shown (R_W, -C_{LT} dB) are simulated in Marshall Day INSUL V9. - Bespoke build ups can be thermally modelled, contact Siniat Technical Services for more details.



140mm dense block (min. 1880kg/m³) $Rw(R_W + C_{tr}) dB = 51(47)$

| | Siniat dryliner to one side | Siniat dryliner to both sides |
|---|-----------------------------|-------------------------------|
| Facing Outer Layer(s): 12.5mm Siniat Standard Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | _ | _ |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 58 (50) | Performance: 61 (49) |
| Facing Outer Layer(s): 15mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 58 (50) | Performance: 63 (49) |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Facing Inner Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 61 (53) | Performance: 70 (53) |

- Performance values shown (R_W, -C_{Lf} dB) are simulated in Marshall Day INSUL V9. - Bespoke build ups can be thermally modelled, contact Siniat Technical Services for more details.



215mm dense brick (min. 1880kg/m³) $Rw(R_W + C_{tr}) dB = 57 (52)$

| | Siniat dryliner to one side | Siniat dryliner to both sides |
|---|-----------------------------|-------------------------------|
| Facing Outer Layer(s): 12.5mm Siniat Standard Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | | |
| Facing Outer Layer(s): 15mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Facing Inner Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 64 (55) | Performance: 74 (63) |

- Performance values shown (R_W , - $C_{L\Gamma}$ dB) are simulated in Marshall Day INSUL V9. - Bespoke build ups can be thermally modelled, contact Siniat Technical Services for more details.





200mm concrete (min. 2340kg/m³) $Rw(R_W + C_{tr}) dB = 59(54)$

| | Siniat dryliner to one side | Siniat dryliner to both sides |
|---|-----------------------------|-------------------------------|
| Facing Outer Layer(s): 12.5mm Siniat Standard Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: - | _ | _ |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | | |
| Facing Outer Layer(s): 15mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | _ | |
| Facing Outer Layer(s): 12.5mm Siniat dB Board Facing Inner Layer(s): 12.5mm Siniat dB Board Framing: Siniat Dryliner System at 600mm centres Cavity Depth: 25mm Insulation: 25mm Glass Mineral Wool (min. 10kg/m ³) | Performance: 66 (58) | Performance: 76 (65) |

- Performance values shown (R_W , - C_{LT} dB) are simulated in Marshall Day INSUL V9. - Bespoke build ups can be thermally modelled, contact Siniat Technical Services for more details.

system guidance

Siniat independent wall lining systems

The Siniat Independent Wall Lining system is a fully dry, lightweight, lining system. It is completely separated from the underlying substrate. Siniat I Studs offer superior height performance to C-Studs and also offer EN classified fire resistance performances.

Siniat C-Studs are suitable for any independent wall lining system where fire performance is not a requirement.

Acoustic V bracing may be used with C-Stud independent wall lining systems where fire performance is not a requirement.

The Siniat Independent Wall Lining system combines Siniat Boards with Siniat I or C Studs. The cavity created behind can be of any depth allowing for heavy services, ducting, and insulation.

Once complete, the Siniat Independent Wall Lining system provides a clean, flat and easy to finish plasterboard surface.

Where to use:

- Ideal for commercial projects where deep continuous cavities behind boards are needed to correct or isolate substrates and accommodate services.
- Particularly suited to substrates which may not be suitable for direct fixing, e.g. metal cladding and other modern methods of construction.

| Features | Benefits |
|---------------------------------------|---|
| Plasterboard finish | Easy to decorate flat surface |
| Completely variable cavity depth | Provides space for heavy duty services and thermal insulation |
| Based on Siniat Metal Stud system | Reliable and commonly used |
| Completely independent from substrate | No thermal bridging created |
| Drylines any substrate | Can adjust depth for for uneven surface correction |
| Creates false wall | Cover existing structures |



system components

boards



All Siniat Boards Provides wall surface suitable for finishing in minimum thickness.

See System performance tables, page 7 to 22

frame



Siniat I Studs Metal profile for vertical frame elements.

IS50/RX, IS60/B, IS70/B, IS90/B



Siniat C Stud Metal profile for vertical frame elements.

CS50/RX, CS60/RX, CS70/RX, CS90/RX, CS146/RX, CS90/W, CS70/Y, CS90/Y, CS146/Y



Siniat U Track Metal profile for head and base frame elements.

UT52/RX/Y, UT62/RX, UT72/RX, UT92/RX, UT148/RX



Siniat U Track Deep Used for linings with heights exceeding 4.2m.

UDT52/B, UDT62/B, UDT72/B, UDT92/B, UDT148/B



Siniat Metal Angle Multi-purpose galvanised metal section.

MFC2525, MFC2550, MFC2330



Siniat U Track Extra Deep Used for linings with heights exceeding 4.2m.

UXT72/B, UXT92/W, UXT148/W



Siniat Flat Strap Provide support for plasterboard joints and fixtures.

FS50/RX, FS90/W



Siniat Acoustic V Brace 90° For bracing lining to substrate.

VBRACE90

fix



Siniat Drywall Screws (as appropriate) For mechanical fixing of boards to Siniat Shallow Wall Channel.



insulation

Glass Mineral Wool Insulation To improve acoustic performance.

See annex d: screw selection guide

finishing



Siniat Flex Tape Cross fibre paper tape with heat bonded zinc coated steel strips for the protection of external corner angles.



Siniat Joint Tape Joint reinforcement in conjunction with Siniat Jointing Compounds.



Siniat Foil Roll Intumescent Acoustic Sealant For use as an acoustic sealant, resilient adhesive, decorators caulk and as fire resisting intumescent mastic.



Siniat Compounds To finish joints between boards and bed corner beads prior to decorating. Ensures system performance.

See <u>annex b: product reference</u>



Siniat Universal Sealer To seal plasterboard prior to decoration.

system guidance

Substrate

- Siniat independent wall lining systems are fully independent of the substrate (with the exception of V-braced C-stud variants).
- Protrusions greater than design cavity depth to be removed.

Frame

LG-IW-101S-Head detail



LG-IW-505P-Braced acoustic lining



- Select compatible sized (e.g. 50mm stud and 52mm track) Siniat I Stud, Siniat C Stud and Siniat U Track framing elements to suit system performance.
- Siniat U Track Extra Deep Flange to be used for heights greater than 4.2m.





- Siniat C Studs as starter studs to be fixed with web flat to structure using appropriate fixings at maximum 600mm centres.
- Siniat U Track to be fixed flat to structure using appropriate fixings at maximum 600mm centres and positioned a minimum of 10mm from substrate.
- Timber sole plate may be required on uneven floors or where lining is constructed prior to screeding.
- Protect base track from moisture with damp proof membrane when situated on newly laid concrete floors.
- All Siniat Studs to be 10mm shorter than floor to ceiling height except in case of deflection requirement.
- Intermediate Siniat Studs to be friction fitted to allow for adjustment during boarding.
- Siniat Studs to be at centres required to achieve performance and at a maximum of 600mm centres.
- Where required heights exceed those stated in the performance tables, Siniat Acoustic V-Brace may be used to brace C-Stud linings to structure. Note, no fire resistance performance is offered by these systems. Contact Siniat Technical Services for more information.

PT-CS-151M-insulation fixing method



EN Deflection head for up to 60 mins rated partitions

Insulation

- Insulation, if required, to be of type and thickness to achieve performance and installed in a continuous layer between frames or studs.
- Insulation to be clamped between Siniat Metal Angle fixed through to head track or soffit. (Two fixings per 600mm strip, approx. 300mm apart.)



| Deflection | Packer for all | Track for all | 30 – 120 mins |
|------------|-----------------------------|----------------------|---------------------------------------|
| required | fire ratings | fire ratings | |
| 6-10mm | 15mm Siniat Fire Board | Siniat U Track (UT) | Siniat MFC2550 and Stone Mineral Wool |
| | | | (Min. 45kg/m³) |
| 11-20mm | 2x 12.5mm Siniat Fire Board | Siniat Deep Flange | Siniat MFC2550 and Stone Mineral Wool |
| | | U Track (UDT) | (Min. 45kg/m³) |
| 21-25mm | 2x 15mm Siniat Fire Board | Siniat Deep Flange | Siniat MFC2550 and Stone Mineral Wool |
| | | U Track (UDT) | (Min. 45kg/m³) |
| 26-30mm | 3x 12.5mm Siniat Fire Board | Siniat Deep Flange | Siniat MFC2550 and Stone Mineral Wool |
| | | U Track (UDT) | (Min. 45kg/m³) |
| 31-40mm | 3x 15mm Siniat Fire Board | Siniat Extra Deep | Siniat MFC2550 and Stone Mineral Wool |
| | | Flange U Track (UXT) | (Min. 45kg/m³) |

Boarding

- Siniat Independent Lining system is suitable for single, double and multiple layer boarding.
- Select base layer(s) and finishing layer(s)
 Siniat Boards by consulting <u>System performance</u> tables, page 7 to 22.
- Strips of board 300mm wide or less to be avoided by stud location rearrangement.
- Boards to be mechanically fixed to studs at 300mm centres using appropriate Siniat Drywall Screws. See <u>annex d: screw selection guide</u>.
- Base layers of boarding may be temporarily fixed at 600mm centres providing final layer is fixed through to stud at 300mm centres
- Board edges to be centred over studs.
- ▶ Stagger all board joints between layers.

Over-height single layer boarding only:

Where partition height exceeds board height fix boards to continuous band of Siniat Flat Strap FS90/W behind all horizontal joints.

Over-height multiple layer boarding only:

Where partition height exceeds board height for double or multiple layer boarding fix outer layer of boards to continuous band of Siniat Flat Strap FS50/RX behind all horizontal joints.

Openings

LG-IW-401P-Window reveal



- Sections of Siniat C Studs to be fitted to back of jamb C Stud above and below opening.
- Reinforce head-to-jamb junction 150mm down each jamb stud by cutting and folding head track.
- Jamb studs to be fixed to track with appropriate Siniat Drywall Screws see <u>annex d: screw selection guide</u>.
- Reveals may be formed by fixing plasterboard to web of Siniat C Stud. Additional studs and tracks may be required for deeper reveals.

Corners and junctions



LG-IW-502P-External Corner



LG-IW-504P-Junction with partition of greater acoustic wperformance



LG-IW-503P-Junction with partition



- Abutting partitions to coincide with studs, install additional intermediate 'pick-up' stud if required.
- Connect studs through plasterboards at corners and junctions at 600mm vertical centres using appropriate Siniat Drywall Screws.
- ▶ See Construction Details Drawings for further guidance on arrangement and fixing.

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Penetrations

- M&E runs and other services to be pre-planned to minimise or eliminate penetrations.
- Penetrations to be fire-stopped with appropriate materials in line with regulations and manufacturer guidelines.
- Pipe penetrations of 40mm or less may be sealed with Siniat Intumescent Acoustic Sealant (for cPVC pipes use FSi Promat PyroPro HPE).

Fixtures

Fixtures may be attached directly to board provided adequate provision has been made. See guidance in partitions systems.

Finishing

- All board joints to be taped, jointed or finished according to guidance in <u>Taping and jointing</u> to achieve system performances.
- Siniat Finish materials appropriate to board type to be used.

System continuity

- Bead of Siniat Intumescent Acoustic Sealant to be applied to perimeter of all runs and in all other locations specified in Construction Detail Drawings.
- Siniat Intumescent Acoustic Sealant to seal all other acoustic or air paths to prevent fire/smoke spread and acoustic transmission.
- Full, imperforate system continuity must be maintained to achieve stated performances.

Siniat direct bond lining systems – page 51

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lining systems page 32 of 68 system guidance

Creason independent lining systems

Sound absorbing wall linings can be created using the Creason Independent Lining system to improve acoustic comfort by reducing sound reflection in larger spaces.

Used above pedestrian height perforated Creason Board is applied to the Siniat Independent Wall Lining system with insulation for an easy to install sound absorbing lining. Flexible design and simple specification can be achieved by using these standard components. Attractive designs are possible created with the variety of patterns in the Creason range.

Standalone acoustic panels can also be created to mount to walls to improve sound absorption.

Where to use:

 Creason Independent Linings are used in commercial applications to improve the acoustic conditions in large spaces.

| Features | Benefits |
|--|--|
| Variable cavity depth | Cavity size can be optimised for service and insulation requirements. Up to Class B acoustic absorption |
| Utilises Siniat Independent Wall Lining framing | One set of components on site. Easy to install. |
| Creates a false wall | Can be used to upgrade existing structures |
| Perforated boards in a range of patterns | Provides a range of aesthetic options for variation in large spaces |



system components

boards



Creason Boards Perforated board for acoustic absorption.

See, System performance tables, page 13

fix



Siniat Drywall Screws (as appropriate) For mechanical fixing of boards to Siniat Shallow Wall Channel.

See Siniat direct bond lining systems Page 51

insulation



Glass Mineral Wool Insulation To improve acoustic performance.

frame



Siniat I Studs Metal profile for vertical frame elements.





Siniat C Stud Metal profile for vertical frame elements.

CS50/RX, CS60/RX, CS70/RX, CS90/RX, CS146/RX, CS90/W, CS70/Y, CS90/Y, CS146/Y



Siniat U Track Deep Used for linings with heights exceeding 4.2m.

UDT52/B, UDT62/B, UDT72/B, UDT92/B, UDT148/B



Siniat U Track Extra Deep Used for linings with heights exceeding 4.2m.

UXT72/B, UXT92/W, UXT148/W



Siniat U Track Metal profile for head and base frame elements.

UT52/RX/Y, UT62/RX, UT72/RX, UT92/RX, UT148/RX



Siniat Acoustic V Brace 90° For bracing lining to substrate.

VBRACE90



Siniat Metal Angle Multi-purpose galvanised metal section.

MFC2525, MFC2550, MFC2330
finishing



Siniat Flex Tape Cross fibre paper tape with heat bonded zinc coated steel strips for the protection of external corner angles.



Siniat Joint Tape Joint reinforcement in conjunction with Siniat Jointing Compounds.



Siniat Foil Roll Intumescent Acoustic Sealant For use as an acoustic sealant, resilient adhesive, decorators caulk and as fire resisting intumescent mastic.



Siniat Compounds To finish joints between boards and bed corner beads prior to decorating. Ensures system performance.

See annex b: product reference



Siniat Universal Sealer To seal plasterboard prior to decoration.

- Siniat Independent Wall Lining system is fully independent of the substrate,
- ▶ Protrusions greater than design cavity depth to be removed.

Boarding

LG-PG-101S-Head detail





LG-PG-501P-Internal Corner



- ▶ Siniat Creason Independent Lining system is suitable for single layer boarding.
- Select Siniat Creason Board according to acoustic performance required and desired perforation pattern.
- Siniat Creason boards to be arranged to achieve desired board pattern. Siniat Creason Boards and Siniat Boards may be mixed for decorative effect

I G-PG-502P-External Corner



however acoustic absorption only occurs where board, void and insulation match the system performance.

- Studs to coincide with areas of un-perforated board.
- Siniat Creason boards are recommended for use above pedestrian height unless otherwise protected.

Boarding continued

FC-PG-201E-Creason board designs



Boarding continued

Penetrations

 M&E runs and other services to be pre-planned to minimise or eliminate penetrations through linings.

Finishing

- All board joints to be taped, jointed or finished according to guidance in <u>annex a1: taping and</u> jointing, to achieve system performances.
- Siniat Creason Board to be sealed and painted with rollers to prevent blocking tissue backing and reducing absorption capability.
- Siniat Finish materials appropriate to board type to be used.

System continuity

- Bead of Siniat Intumescent Acoustic Sealant to be applied to perimeter of all runs and in all other locations specified in Construction Detail Drawings to prevent dust accumulation.
- Only areas with full system continuity will achieve stated performances.



Siniat dryliner **lining systems**

The Siniat Dryliner Lining system is a dry, lightweight lining system. The cavity created behind the boards allows for heavier services and sound or thermal insulation. For stable, high performance drylining, the system uses Siniat Dryliner Brackets fixed to the substrate to support a frame of Siniat Dryliner Channel and Tracks.

Once complete, the Siniat Dryliner Lining system provides a clean, flat, and easy to finish plasterboard surface.

Where to use:

The Siniat Dryliner Lining system is ideal for most stable substrates where continuous cavities behind boards of up to 130mm are required and/or where high levels of substrate correction are needed.

| Features | Benefits |
|--|---|
| Plasterboard finish | Easy to decorate flat surface |
| Cavity up to 130mm deep | Space for heavy duty services and insulation |
| Mechanical board fixing | Fixes all Siniat Boards |
| Cavity frame design | Achieves higher technical performances |
| Mechanical fixing bracket | Fixes to most stable substrates |
| Compatible with Siniat Thermal Boards | Additional air cavity improves U-Value |
| Adjustable bracket design | Can adjust depth for high level of substrate correction |



system components

boards



All Siniat Boards Provides wall surface suitable for finishing in minimum thickness.

See <u>System performance tables, page 7 to 22</u>



All Siniat Thermal Boards Provides wall surface suitable for finishing and thermal insulation.

See System performance tables, page 7 to 22

frame



Siniat Dryliner Channel A galvanised steel furring channel for plasterboard fixing,

RD1



Siniat SR bracket Adjustable bracket to brace Siniat Dryliner Channel to substrate.

RD2



Siniat XR bracket Adjustable, extended reach bracket to brace Siniat Dryliner Channel to substrate.

RD11





RD9





Siniat Drywall Screws (as appropriate) For mechanical fixing of boards to Siniat Shallow Wall Channel.

See annex d: screw selection guide



Siniat Metal Angle Multi-purpose metal section.

MFC2330, MFC2525, MFC2550

insulation



Glass Mineral Wool Insulation To improve acoustic performance.

finishing



Siniat Flex Tape Cross fibre paper tape with heat bonded zinc coated steel strips for the protection of external corner angles.



Siniat Joint Tape Joint reinforcement in conjunction with Siniat Jointing Compounds.



Siniat Foil Roll Intumescent Acoustic Sealant For use as an acoustic sealant, resilient adhesive, decorators caulk and as fire resisting intumescent mastic.



Siniat Compounds To finish joints between boards and bed corner beads prior to decorating. Ensures system performance.

See annex b: product reference



Siniat Universal Sealer To seal plasterboard prior to decoration.

Substrate

- Siniat Dryliner Lining system is suitable for most stable substrates where fixing of bracket will be structurally secure.
- Siniat Independent Wall Lining system to be used for substrates subject to uncontrolled moisture ingress.

Frame



Frame continued

LG-DY-101S-Head detail



- Siniat Dryliner Track to be fixed to structure at perimeter of lining run. Fix at 600mm centres using appropriate fixings. Allow for board depth when positioning channel and to achieve required cavity depth.
- Select Siniat Dryliner Brackets (SR and XR) to suit cavity depth required:

| Siniat Dryliner Bracket | Cavity Depth Range |
|-------------------------|--------------------|
| Siniat SR Bracket | 25mm-60mm |
| Siniat XR Bracket | 25mm-130mm |

Siniat Dryliner Channel to be positioned at maximum 600mm centres for Siniat Board and at maximum 400mm horizontal centres for Siniat Thermal Boards.

Insulation

- Any insulation to be of type and thickness to achieve performance and tightly installed in a continuous layer between brackets and behind channels..
- 10mm clear gap to be maintained between substrate and insulation.



LG-DY-103S-Base detail

- Siniat Dryliner Brackets to fixed to structure in a line at maximum 800mm vertical centres to receive Siniat Dryliner Channel.
- Siniat SR and XR Brackets to be fixed using appropriate structural fixing supplied by others.
- Siniat Dryliner Channel to be 5mm shorter than floor to ceiling height, located into Siniat Dryliner Track.
- Siniat Dryliner Channel to be attached to both Siniat Dryliner Bracket legs with appropriate Siniat Drywall Screws (<u>annex d: screw selection</u> <u>guide</u>) and levelled by adjusting brackets. Excess bracket leg length to be removed or bent back.

Boarding

- The Siniat Dryliner lining system is suitable for single, double and multiple layer boarding.
- Select base layer(s) and finishing layer(s) Siniat Boards by consulting <u>System performance tables, page 15</u> to page 22, Boards to be 5mm less than floor to ceiling height.
- Board edges to be centred over channels.
- Boards to be mechanically fixed to channels and track at 300mm centres using appropriate Siniat Drywall Screws. See <u>annex d: screw selection guide</u>.
- Board joints to be staggered between layers.

Over-height single layer boarding:

 Where partition height exceeds board height fix boards to continuous band of Siniat Flat Strap FS90/W or Siniat MFIX behind all horizontal joints to maintain fire integrity. Over-height multiple layer boarding only:

Where partition height exceeds board height for double or multiple layer boarding fix outer layer of boards to continuous band of Siniat Flat Strap FS50/RX behind all horizontal joints.

Thermal boards only:

- Select Siniat Thermal Board type and thickness according to desired thermal value and requirement for vapour barrier.
- Siniat Thermal Board thickness may be reduced by utilising higher insulation grade boards, e.g. Siniat Thermal PIR Board.

Movement control joints

 Form movement control joints at maximum 10m intervals in the lining run.

Openings and corners LG-DY-401P-Window reveal



Siniat Intumescent Acoustic Sealant Siniat Dryliner Track Thinner, higher grade of **Siniat Thermal Board** to reduce reveal depth Siniat Dryliner Brackets to suit required cavity depth Siniat Metal Angle Siniat Corner 90° External / Siniat Flex Tape Siniat Dryliner Channel plan

LG-DY-501P-Internal Corner



LG-DY-502P-Internal corner – Siniat Thermal Boards



LG-DY-504P-External corner – Siniat Thermal Boards





lining systems page 48 of 68

LG-DY-402P-Window reveal - Siniat Thermal Boards

Openings and corners continued

LG-DY-505P-Partition junction



Siniat Dryliner Brackets to suit required cavity depth Siniat Dryliner Channel Siniat Partition System to suit required performance Rock wool insulation to improve continuity of thermal layer at first stud Siniat Thermal Board to suit required performance

LG-DY-506P-Partition junction – Siniat Thermal Boards

LG-DY-507P-Change in lining depth



At external corners Siniat Dryliner Channel and brackets to be positioned maximum of 25mm from edge of substrate. Siniat Metal Angle to be fixed to head and base track to provide internal reinforcement and fixing substrate.

Finishing

- All board joints to be taped, jointed or finished according to guidance in <u>annex a1: taping and</u> jointing, <u>annex a2: skimming</u> and <u>annex a3: tiling</u> to achieve system performances.
- Siniat Finish materials appropriate to board type to be used.

Penetrations

- M&E runs and other services to be pre-planned to minimise or eliminate penetrations through linings.
- Pipe penetrations of 40mm or less may be sealed with Siniat Intumescent Acoustic Sealant (for cPVC pipes use FSi Promat PyroPro HPE).

Fixtures

- Fixtures may be fixed through to substrate using appropriate fixings or fixed through board to channels.
- Fixtures may be attached directly to board provided adequate provision has been made, see section on <u>partitions systems</u>

System continuity

- Bead of Siniat Intumescent Acoustic Sealant to be applied to perimeter of all runs and in all other locations specified in Construction Detail Drawings.
- Siniat Intumescent Acoustic Sealant to seal all other acoustic or air paths to prevent fire/smoke spread and acoustic transmission.
- Full, imperforate system continuity to be maintained to achieve stated performances.

Siniat direct bond **lining systems**

The Siniat direct bond lining system is the simplest option for single layer drylining of most masonry substrates. It provides a clean, flat and easy to finish surface by bonding Siniat board to the masonry substrate. This construction method reduces drying out time speeding up internal fit-out.

The system uses Siniat Universal Bonding Compound to directly attach Siniat Plasterboards to the wall and corrects minor surface irregularities. Siniat Thermal Boards can also be bonded to increase thermal performance through the wall.

Where to use:

 Siniat Direct Bond Lining systems are used in new build residential and general renovation projects in normal humidity.

| Features | Benefits |
|---|---|
| Few products required | Low installation cost |
| Limited increase in wall thickness | Minimal effect on room size and achieves the required finish |
| Service cavity of 10-25mm can be created | Allows installation of conduits and small services material costs |
| Suitable for Siniat Thermal Boards | One-fix method of achieving required thermal performance |
| Workable bonding compound | Easily achieves air tightness by bonding around the wall perimeter. Allows adjustment during boarding |
| Bonds to the majority of masonry substrates | Suits most construction projects and corrects surface irregularities |





system components

boards



All Siniat Boards, except Aquaboard™ and Siniat Vapour Board Provides wall surface suitable for finishing.

See System performance tables, page 7 to 22



All Siniat Thermal Boards Provides wall surface suitable for finishing and thermal insulation.

See System performance tables, page 7 to 22

fix



Siniat Universal Bonding Compound Directly bonds plasterboard to walls.



Nailable Plug Mechanical secondary fixing of Siniat Thermal Boards.

finish



Siniat Flex Tape Cross fibre paper tape with heat bonded zinc coated steel strips for the protection of external corner angles.



Siniat Joint Tape Joint reinforcement in conjunction with Siniat Jointing Compounds.



Siniat Foil Roll Intumescent Acoustic Sealant For use as an acoustic sealant, resilient adhesive, decorators caulk and as fire resisting intumescent mastic.



Siniat Compounds To finish joints between boards and bed corner beads prior to decorating. Ensures system performance.





Siniat Universal Sealer To seal plasterboard prior to decoration.

Substrate

- Siniat Direct Bond Lining system is suitable for most level, masonry substrates.
- All substrates to be clean and dust free with all loose material removed. All grease, oil and contaminants to be removed; chemical cleaning may be required.
- Substrate treatment for bonding:

| Treatment |
|-------------------------------|
| May require mechanical fixing |
| None |
| PVAC bonding agent |
| |

- All loose plasterwork to be removed. Existing plasterwork in good condition may be suitable for Siniat Direct Bonding provided all paint has been removed and adequate key is established by treating with a PVAC bonding agent according to manufacturer's instructions.
- Substrates subject to moisture ingress require mechanical fixing of Siniat Shallow Wall Channels.
 External solid walls are not suitable for bonding, or in basement applications.



LG-DB-182S-Base detail – Siniat Thermal Boards





lining systems page 55 of 68

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LG-DB-184S-Head detail – Siniat Thermal Boards

 Boards to be fixed to substrate using Siniat Universal Bonding Compound. Minimum 20% contact area between boards and dabs.

Bonding dabs to be:

- ▶ 250mm x 50-75mm.
- Minimum 10mm thick and up to 25mm to provide board levelling.
- At 600mm maximum horizontal centres and 300mm maximum vertical centres.
- At 400mm maximum horizontal centres and 300mm vertical centres for Siniat Thermal Boards.
- ▶ Minimum of three 'columns' of dabs per board.
- Minimum 25mm from board edges.
- Continuous ribbons of bonding compound to be provided 50mm from head and base of each board and around perimeter of walls to ensure air-tightness and provide robust fixing for trims.
- Socket boxes to be surrounded by continuous ribbon of bonding compound.

Boarding

LG-DB-201E-Nailable plug arrangement



Movement control joints

 Form movement control joints at maximum 10m intervals in the lining run.

- The Siniat Direct Bond lining system is suitable for single layer boarding only.
- Select finishing layer Siniat Board by consulting System performance tables, page 7 to 22.
- Siniat Vapour Board, Aquaboard[™] and Weather Defence[™] board cannot be bonded using the Siniat Direct Bond lining system.
- ▶ Boards to be 5mm less than floor to ceiling height.
- Direct Bond system only suitable for single height boarding, stacking boards is prohibited.

Thermal boards only:

- Select Siniat Thermal Board type and thickness according to desired thermal value and requirement for vapour barrier.
- Siniat Thermal Board thickness may be reduced by utilising higher insulation grade boards, e.g. Siniat Thermal PIR Board.
- Retain each Siniat Thermal Board with two Nailable Plugs to suit board depth, fitted through holes drilled in board, through cavity and penetrating 25mm into masonry substrate. Render or plaster should not be regarded as a stable substrate for Nailable Plug penetration.
- Continuous ribbon of Siniat Universal Bonding Compound to be provided either side of movement control joint.

Openings



LG-DB-402P-Door jamb

LG-DB-403P-Window reveal – Siniat Thermal Boards



 See Construction Details Drawings for further guidance on arrangement and fixing.

Corners and junctions

LG-DB-501P-Internal corner



LG-DB-502P-Internal corner – Siniat Thermal Boards



LG-DB-503P-External corner





LG-DB-505P-Partition junction

LG-DB-506P-Partition junction – Siniat Thermal Boards



See Construction Details Drawings for further guidance on arrangement and fixing.

Finishing

- All board joints to be taped, jointed or finished according to guidance in <u>Taping and jointing</u>, <u>annex</u> <u>a3: tiling</u> and <u>annex a3: tiling</u> to achieve system performances.
- Siniat Finish materials appropriate to board type to be used.

Penetrations

- M&E runs and other services to be pre-planned to minimise or eliminate penetrations through linings.
- Pipe penetrations of 40mm or less may be sealed with Siniat Intumescent Acoustic Sealant (for cPVC pipes use FSi Promat PyroPro HPE).

Fixtures

 All fixtures to be fixed through to substrate using appropriate fixings.

Siniat shallow wall **lining systems**

The Siniat Shallow Wall Lining system is an alternative to the Siniat Direct Bond Lining system. It provides a mechanical fix for boards which are unsuitable for use with Siniat Universal Bonding Compound. It can also create a fully mechanically fixed option where the substrate cannot be bonded, such as some concrete walls. The system uses Siniat Universal Bonding Compound to attach Siniat Shallow Wall Channels to the substrate providing a fixing surface for Siniat Boards.

When bonded, it can correct minor surface irregularities through minimal levelling adjustment of the shallow channel before the dabs have cured. Alternatively, the Siniat Shallow Wall Channels can be fixed directly into the substrate.

Where to use:

The Siniat Shallow Wall Lining system is suitable for most project types and masonry substrates.

| Features | Benefits |
|--|---------------------------------------|
| Plasterboard finish | Easy to decorate flat surface |
| Intermittent cavity up to 25mm deep | Space for small conduits and services |
| Mechanical board fixing | Substrate for all Siniat Boards |
| Mechanical or adhesive channel fixing | Fixes to most substrates |
| Compatible with Siniat Thermal Boards | Improves U-Values |
| Perforated channel for bonding key | Strong and easy to fix |



system components

boards





All Siniat Boards Provides wall surface suitable for finishing in minimum thickness.

See System performance tables, page 7 to 22



Siniat Shallow Wall Channel Dabbed or fixed to wall to provide fixing substrate for boards.

MFCS/RX

fix



Siniat Universal Bonding Compound Gypsum based compound for bonding Siniat Shallow Wall Channel to walls. Suitable for Siniat Thermal boards.



Siniat Drywall Screws (as appropriate) For mechanical fixing of boards to Siniat Shallow Wall Channel.

See annex d: screw selection guide

finish



Siniat Flex Tape Cross fibre paper tape with heat bonded zinc coated steel strips for the protection of external corner angles.



Siniat Joint Tape Joint reinforcement in conjunction with Siniat Jointing Compounds.



Siniat Foil Roll Intumescent Acoustic Sealant For use as an acoustic sealant, resilient adhesive, decorators caulk and as fire resisting intumescent mastic.



Siniat Compounds To finish joints between boards and bed corner beads prior to decorating, Ensures system performance.





Siniat Universal Sealer To seal plasterboard prior to decoration.

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Substrate

- Siniat Shallow Wall Lining system is suitable for most level, masonry substrates and may be bonded or mechanically fixed.
- All substrates to be clean and dust free with all loose material removed. All grease, oil and contaminants to be removed; chemical cleaning may be required.
- Substrate treatment for bonding:

| Substrate | Treatment |
|------------------------|-------------------------------|
| Very low suction | May require mechanical fixing |
| Low and medium suction | None |
| High suction | PVAC bonding agent |

- All loose plasterwork to be removed. Existing plasterwork in good condition may be suitable for Siniat Universal Bonding Compound provided all paint has been removed and key is established by treating with a PVAC bonding agent according to manufacturer's instructions.
- Substrates subject to moisture ingress require mechanical fixing of Siniat Shallow Wall Channels.
 External solid walls are not suitable for bonding, or in basement applications.

Frame

LG-ML-101S-Head Detail



LG-DB-180M-Dab sizing



LG-ML-102S-Base Detail



LG-ML-181M-Mechanical fixing



Frame continued

- Siniat Shallow Wall Channel to be fixed to substrate in continuous vertical lengths at 600mm horizontal centres using dabs of Siniat Universal Bonding Compound or mechanically fixed using appropriate fixings by others.
- Siniat Shallow Wall Channels may be shot fired to dense substrates following fixing manufacturer's instructions.
- Horizontal lengths of Siniat Shallow Wall Channel to be fixed maximum 50mm from head and base of lining.

Bonding dabs to be:

- ▶ 250mm x 50-75mm.
- Minimum 10mm thick and up to 25mm to provide board levelling.
- ▶ At 450mm maximum vertical centres.
- Minimum of two dabs per channel not exceeding vertical centres above.
- ▶ Minimum 25mm from board edges.
- Continuous ribbons of bonding compound to be provided 50mm from head and base of board and around perimeter of walls and openings to provide fixing for horizontal channel.
- Socket boxes to be surrounded by continuous ribbon of bonding compound.

Boarding

- The Siniat Shallow Wall lining system is suitable for single layer boarding only.
- ▶ Boards to be 5mm less than floor to ceiling height.
- Board edges to be centred over channels.
- Boards to be mechanically fixed to channels at 300mm centres using appropriate Siniat Drywall Screws. See <u>annex d: screw selection guide</u>.

Thermal Boards only:

- Select Siniat Thermal Board type and thickness according to desired thermal value and requirement for vapour barrier.
- Siniat Thermal Board thickness may be reduced by utilising higher insulation grade boards, e.g. Siniat Thermal PIR Board.

Movement control joints

LG-ML-301P-Movement joint



 Form movement control joints at maximum 10m intervals in the lining run.

Openings and corners



Openings and corners continued

LG-ML-501P-Internal corner





LG-ML-503P-Junction with partition



- Siniat Shallow Wall Channel to be fixed vertically and horizontally around openings to provide maximum 50mm of unsupported board.
- At corners Siniat Shallow Wall Channel to be fixed vertically to provide maximum 50mm of unsupported board.

Finishing

- All board joints to be taped, jointed or finished according to guidance in <u>annex a1: taping and</u> jointing, <u>annex a2: skimming</u> and <u>annex a3: tiling</u> to achieve system performances.
- Siniat Finish materials appropriate to board type to be used

Penetrations

- M&E runs and other services to be pre-planned to minimise or eliminate penetrations through linings.
- Pipe penetrations of 40mm or less may be sealed with Siniat Intumescent Acoustic Sealant (for cPVC pipes use FSi Promat PyroPro HPE).

Fixtures

 All fixtures to be fixed through to substrate using appropriate fixings.

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