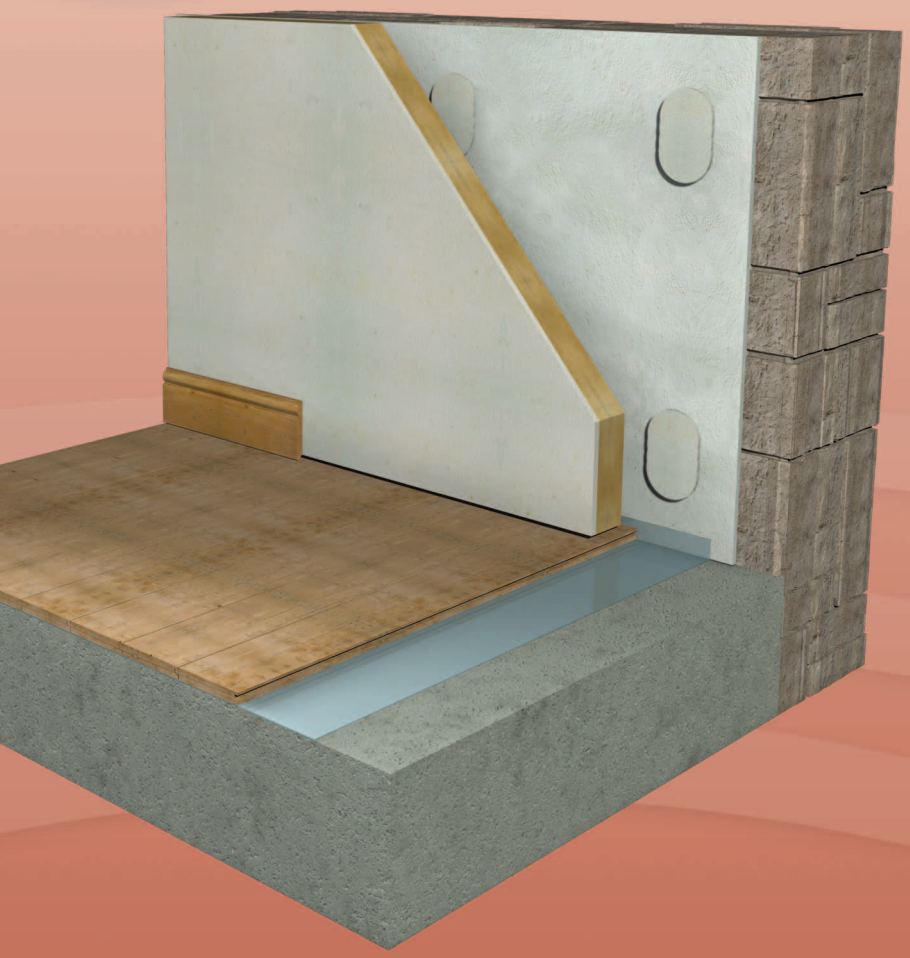
Issue 1.5 • April 2024

One of the isomass systems range

isocheck™ Isoliner Thermal Laminates



HIGH PERFORMANCE ACOUSTIC & THERMAL INSULATION SOLUTION for

- New build
- Conversions
- Refurbishments

TESTED BY NHBC ACOUSTIC SERVICES

Institute of Acoustics sponsoring organisation

MADE IN THE UK

QAS International ISO 9001:2015 REGISTERED COMPANY

Taking the *mystery* out of Acoustics

USING THERMAL LAMINATES TO ACHIEVE 'FABRIC FIRST'

Thermal laminate products, featuring plasterboards bonded to high performance rigid foam insulation, have become an effective means of helping achieve energy efficient building fabric solutions in both new build and refurbishment projects.

Modern construction is centred around achieving highly insulated, airtight building fabric, complemented by appropriate ventilation to maintain a healthy supply of fresh air.

Restricting the flow of heat through building materials, and the leakage of warm air through gaps in the structure, reduces the need to continually heat the internal environment - with a corresponding reduction in energy use and fuel bills.

THE ISOMASS HIGH PERFORMANCE SOLUTION

Isocheck Isoliner Thermal Laminates provide thermal insulation and a ready-to-finish internal lining in one product. It allows additional insulation to be installed internally, in an efficient continuous layer, to help meet the U-value targets required by current building regulations, without the need to fix plasterboards separately.

Designed to supplement insulation positioned within new and existing structures, Isoliner is particularly suited to refurbishment projects where external insulation, or invasive work to existing fabric, is undesirable. It can be used to line walls, and ceilings of pitched roofs and certain flat roofs.

isocheck™ acoustic insulating products

Product data

Board thickness	Board size	Weight (approx.)
37.5mm (25mm PIR)	2400mm x 1200mm	27.0kg per board
52.5mm (40mm PIR)	2400mm x 1200mm	28.0kg per board
62.5mm (50mm PIR)	2400mm x 1200mm	29.0kg per board
72.5mm (60mm PIR)	2400mm x 1200mm	30.0kg per board
82.5mm (70mm PIR)	2400mm x 1200mm	31.0kg per board
92.5mm (80mm PIR)	2400mm x 1200mm	31.5kg per board

Thermal conductivity:	Insulation: 0.022W/mK. SoundBloc: 0.24W/mK.
Thermal resistance:	From 1.20m^{2}K/W to 3.70m^{2}K/W, depending on insulation thickness.
Environmental:	Manufactured in a factory accredited to ISO 14001:2004.
	Zero ozone depletion potential (ODP) and low global warming potential (GWP).

DESCRIPTION

Isoliner Thermal Laminates comprise a rigid polyisocyanurate (PIR) foam insulation board bonded to a 12.5mm tapered edge Gyproc SoundBloc (10.6kg/m^2). On the reverse face, the insulation has a multi-layer kraft paper and aluminium facing.

ACOUSTIC BENEFITS

Isoliner Thermal Laminates feature a plasterboard with greater acoustic mass than the plasterboards used in many other thermal laminate products.

For applications with a Sound Reduction Index (Rw) requirement, the use of Isoliner Thermal Laminates may assist in reducing airborne sound transmission, especially in lightweight structures, subject to the method of fixing and the other components in the construction.

Isoliner Thermal Laminates are also:

- Suitable for both direct bonding (dot and dab) and mechanical fastening.
- Easy to handle and install.
- For use on solid walls, cavity walls, timber frame walls, beneath rafters in pitched roofing and beneath joists in flat roofing.
- Ideal for new build, conversions and refurbishments projects.

APPLICATIONS

Isoliner Thermal Laminates are an extremely versatile insulation and dry lining solution which can be used in a wide range of applications within a building.

WALLS

PITCHED ROOFS

FLAT ROOFS

ISOLINER THERMAL LAMINATES - TYPICAL U-VALUES

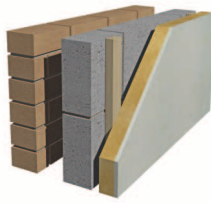
Illustrated below are a series of constructions and their associated U-values. These are typical values. If your design requirement is not shown below please contact us - we will be able to advise on solutions to meet your target U-value.

Refurbishment - Solid Wall

U-value (W/m^2K)	215mm brick or 600mm stone
0.35	62.5mm board (50mm PIR)
0.30	72.5mm board (60mm PIR)
0.27	82.5mm board (70mm PIR)

Refurbishment - Cavity Wall

U-value (W/m^2K)	215mm brick, 100mm cavity, 100mm block
0.34	62.5mm board (50mm PIR)
0.30	72.5mm board (60mm PIR)
0.26	82.5mm board (70mm PIR)

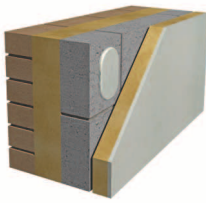


New Build - Traditional Cavity Wall - partial fill

U-value (W/m^2K)	215mm brick, 100mm cavity, partial fill insulation, 100mm block
0.21	37.5mm board (25mm PIR)
0.20	42.5mm board (30mm PIR)
0.19	52.5mm board (40mm PIR)
0.18	62.5mm board (50mm PIR)

New Build - Traditional Cavity Wall - full fill

U-value (W/m^2K)	215mm brick, 100mm cavity, full fill insulation, 100mm block
0.22	37.5mm board (25mm PIR)
0.21	42.5mm board (30mm PIR)
0.19	52.5mm board (40mm PIR)
0.18	62.5mm board (50mm PIR)



Note: mechanical fixing has been illustrated for solid wall refurbishment constructions and adhesive fixing (dot and dab) for traditional cavity walls but either method will achieve the same results.

New Build - 90mm Stud Timber Frame Wall

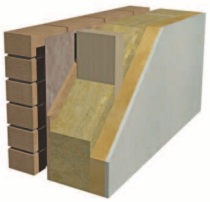
U-value (W/m^2K)	215mm brick, non-reflective breather membrane, 90mm stud and insulation
0.27	37.5mm board (25mm PIR)
0.25	42.5mm board (30mm PIR)
0.22	52.5mm board (40mm PIR)
0.20	62.5mm board (50mm PIR)

New Build - 90mm Stud Timber Frame Wall

U-value (W/m^2K)	215mm brick, reflective breather membrane, 90mm stud and insulation
0.23	37.5mm board (25mm PIR)
0.22	42.5mm board (30mm PIR)
0.20	52.5mm board (40mm PIR)
0.18	62.5mm board (50mm PIR)

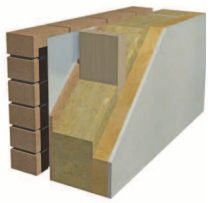
New Build - 140mm Stud Timber Frame Wall

U-value (W/m^2K)	215mm brick, non-reflective breather membrane, 140mm stud and insulation
0.21	37.5mm board (25mm PIR)
0.20	42.5mm board (30mm PIR)
0.18	52.5mm board (40mm PIR)
0.17	62.5mm board (50mm PIR)



New Build - 140mm Stud Timber Frame Wall

U-value (W/m^2K)	215mm brick, reflective breather membrane, 140mm stud and insulation
0.18	37.5mm board (25mm PIR)
0.17	42.5mm board (30mm PIR)
0.16	52.5mm board (40mm PIR)
0.15	62.5mm board (50mm PIR)



LINEAR THERMAL BRIDGING – WINDOW AND DOOR REVEALS

Achieving a well-insulated building fabric and avoiding paths (called thermal bridges) for heat to bypass layers of insulation means attention to detail. In particular, it means careful treatment of the junctions between elements, such as openings in the fabric for doors and windows.

Doors and windows have their own thermal performance. That performance may be relatively good in a new-build project, or where replacements have been installed as part of a refurbishment.

For the performance to be effective, however, they have to be part of the insulation envelope - and where a laminate board is installed internally, it is unlikely they will be fixed so far back in the opening.

Continuing the laminate board into the 'reveals' of window and door openings is therefore necessary to maintain the continuity of the insulation envelope. Current industry guidance, in the form of Accredited Construction Details (ACDs), recommends that insulation used in reveals should provide a minimum thermal resistance of 0.34m^2K/W, which is exceeded when using a 37.5mm Isoliner Laminate Board.

Failing to treat thermal bridges such as window and door reveals creates 'cold spots' where the risk of condensation occurring increases. As warm, moist air comes into contact with the locally cold surface, the temperature of the air drops and deposits the excess moisture as condensation.

FIXING INSTRUCTIONS

Masonry walls: direct bonding ('dot & dab')

Isoliner Laminate Boards can be adhered to masonry substrates using proprietary gypsum-based adhesive, in accordance with manufacturer's instructions.
The adhesive should be supplemented with a limited number of suitable mechanical fixings to guard against early collapse in the event of a fire. To achieve an airtight seal at perimeter joint locations, use Isomass Fire Rated Acoustic Sealant.

Mechanical fixing to timber battens

Secure timber battens to the supporting masonry wall at maximum 600mm centres. Fix Isoliner Laminate Boards to the battens using drywall screws, with a minimum of 25mm penetration into the timber.
The screw head should sit flush with the face of the plasterboard. To achieve an airtight seal at perimeter joint locations, use Isomass Fire Rated Acoustic Sealant.

Mechanical fixing to Isoliner Wall Systems

Install the Isoliner System in accordance with the installation instructions, secured to the supporting masonry wall and with vertical studs at 400mm or 600mm centres. Fix Isoliner Laminate Boards to the frame system frame using drywall screws, with a minimum of 25mm penetration into the timber.
The screw head should sit flush with the face of the plasterboard.

To achieve an airtight seal at perimeter joint locations, use Isomass Fire Rated Acoustic Sealant.

Ceiling applications: pitched roof and cold flat roofs

Spacing of supporting rafters and joists should not exceed 600mm. Fix Isoliner Laminate Boards to the structural timbers using drywall screws, with a minimum of 25mm penetration into the timber.
The screw head should sit flush with the face of the plasterboard. To achieve an airtight seal at perimeter joint locations, use Isomass Fire Rated Acoustic Sealant.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to isomass building products.

isomass® building acoustics

Isomass Limited, Unit 14 Papworth Business Park,
Stirling Way, Papworth Everard, Cambridgeshire CB23 3GY
Tel: 0330 175 8228
Email: info@isomass.co.uk • www.isomass.co.uk