CI/SfB | | (31.9) |

BETTER BY
DESIGN

IG
STEEL LINTELS

HI-THERM LINTEL

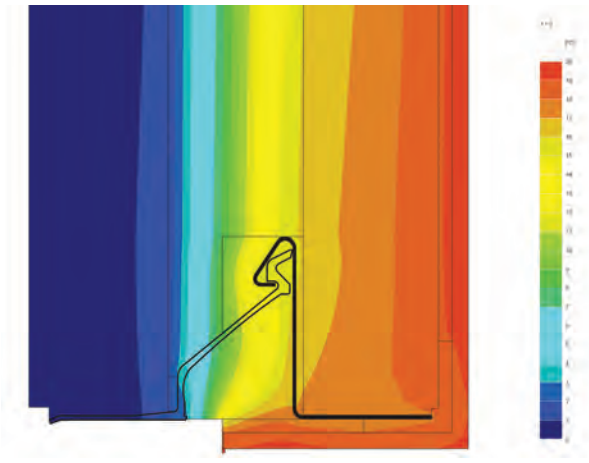
SUSTAINABILITY LINTEL

The low cost solution to reduced carbon emissions and improved Fabric Energy Efficiency

www.iglintels.com

Hi-Therm Lintel

IG leads the way with the development of a completely unique lintel range to address the thermal requirements of new building regulations which require that lintels should be assessed for their effect on the thermal performance of a building. The thermal performance of a lintel is expressed in terms of Psi Values (Ψ) i.e. linear thermal transmittance.



bre

THERMAL PERFORMANCE TESTING

Testing of IG's Hi-Therm Lintel was carried out by the BRE (Building Research Establishment) using Physibel's thermal analysis software TRISCO which complies with BS EN ISO 10211-1. The modelling follows the requirements of the BRE conventions document BR497.

BBA BRITISH BOARD OF AGRÉMENT
Certificate Number: 12/4958

Psi COMPARISON CHART

To help understand the immense thermal benefits of the Hi-Therm Lintel it must be compared to other lintel types.

Lintel type comparison	Values
IG Hi-Therm Lintel	**0.05 W/m·K**
Typical IG Lintel	0.23 W/m·K
Non-plated Steel Lintel (default)	0.3 W/m·K
Plated Steel Lintel (default)	0.5 W/m·K

Psi 0.05 W/m·K

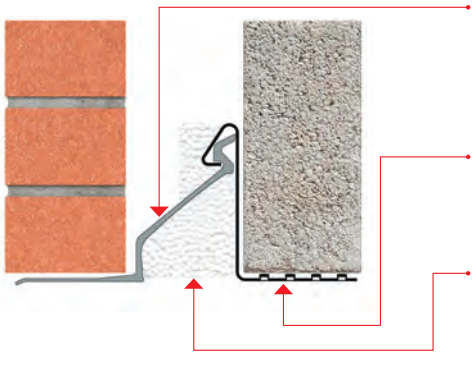
THERMAL ANALYSIS

Our in-house experts use the latest 'Physibel Trisco' thermal analysis software to calculate Psi values and advise clients on the optimum lintel solution for compliance with the required building regulations.

BBA CERTIFICATION

Hi-Therm has BBA certification having undergone rigorous structural testing to BS EN 845 part 2. Fire performance has been accredited in accordance with BS EN 1363-1 1999 having attained a one hour fire performance at Exova Warrington Fire.

THE PATENTED HI-THERM DESIGN



GRP
GRP has a low thermal conductivity therefore when used to support the outer leaf in a cavity wall construction, thermal bridging is significantly minimised.

GALVANISED STEEL
Galvanised steel is used to support the heavier load on the internal leaf of the cavity wall.

INSULATION
Prefitted expanded polystyrene insulation enhances the thermal performance of the lintel.

**No DPC Required: Up to areas classified as very severe by NHBC*

The low cost solution to reduced carbon emissions and improved Fabric Energy Efficiency.

The lintel solution for:

- ✓ Zero Carbon
- ✓ 2016 FEES
- ✓ Codes 4 - 6
- ✓ Part L 2013

KEY BENEFITS

- A low cost sustainable solution to CO2 reduction within SAP.
- A low cost route to improved Fabric Energy Efficiency (FEES).
- Generates up to a 34% reduction in total non-repeating Thermal Bridging.
- Future proof performance in line with predicted requirements for part L 2013.
- Up to 5 times more thermally efficient than a steel cavity wall lintel.
- Hi-Therm is totally maintenance-free unlike most other sustainable technologies.
- The Hi-Therm lintel offers the simplicity of a one piece lintel solution which achieves these significant advantages through traditional building practices, unlike a two part lintel solution.
- An affordable yet significant aid to compliance with 'The Code for Sustainable Homes' levels 4, 5 and 6.

EXAMPLE COST SAVING

The use of Hi-Therm created savings of £1120 through the reduction of cavity width from 150mm to 100mm without any loss of SAP performance.

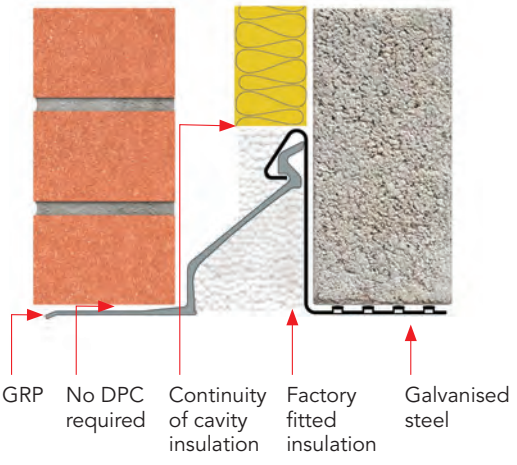
Cost Saving = £1120 per house

based on the example shown on page 5

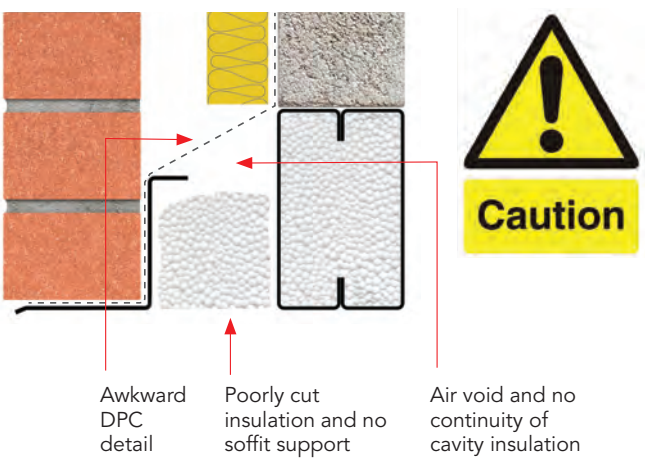
Hi-Therm integrated lintel for better buildability

Split lintels - in some cases split lintels may be offered as a means of enhancing thermal performance however they are in no way comparable in terms of efficiency or buildability to IG's Hi-Therm lintel.

GOOD DETAILING



POOR SITE DETAILING



HI-THERM	SPLIT LINTELS
• No DPC required * *Except in areas classified as very severe by NHBC	• An additional DPC is required on all installations and requires skilled positioning **ff**
• Hi-Therm closes the cavity	• A cavity closer must be supplied and fitted **ff**
• The single component design simplifies installation	• Requires two separate lintels with double the handling and installation labour **ff**
• The one piece design assists stability between the internal and external leaves and creates stability during the build process	• Individual lintels will require propping and additional wall ties will be required to overcome the lack of inherent stability in a split lintel solution **ff**
• Top insulation integrates well with cavity wall insulation for optimum performance	• Creates a difficult to insulate cavity requiring a complex solution to achieve continuous insulation **ff**
• Hi-Therm gives cost certainty with no additional costs	• **ff** = Additional Costs

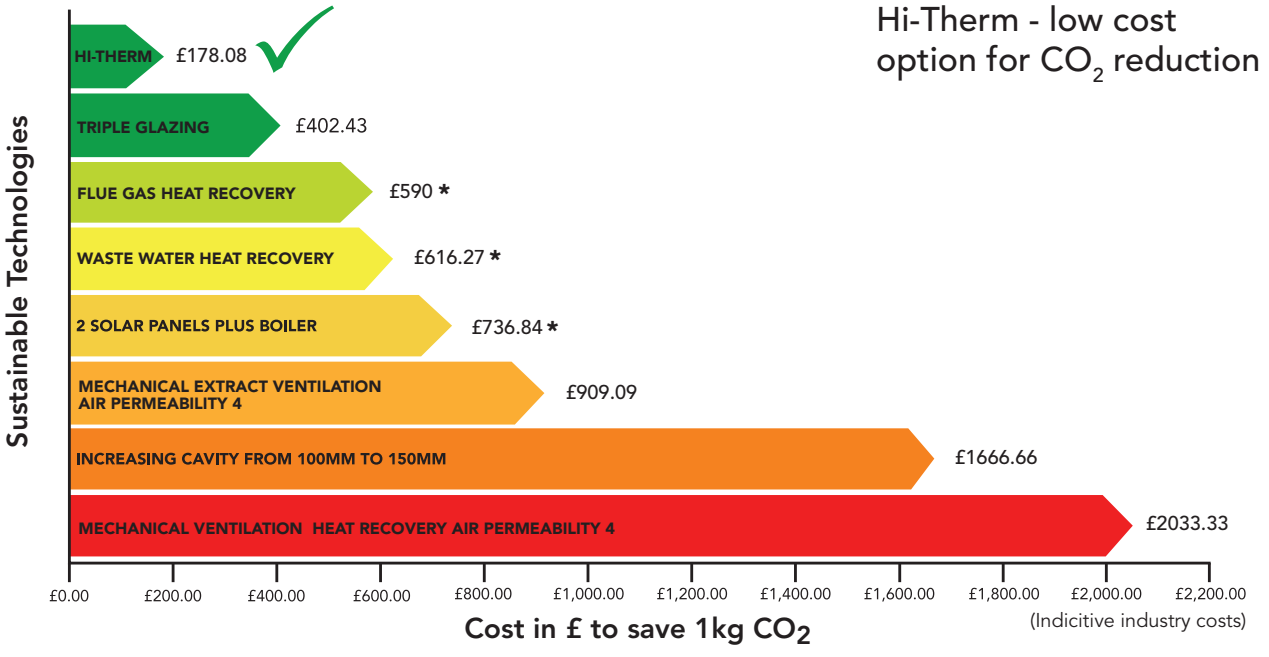
Hi-Therm: Case Study

To demonstrate the outstanding benefits of Hi-Therm we have illustrated the key outcomes in comparison to existing and alternative sustainable technologies.

This case study is based on an actual semi detached 75m², 3 bedroom house design and the figures were produced by an independent energy assessor using SAP 2009 software.

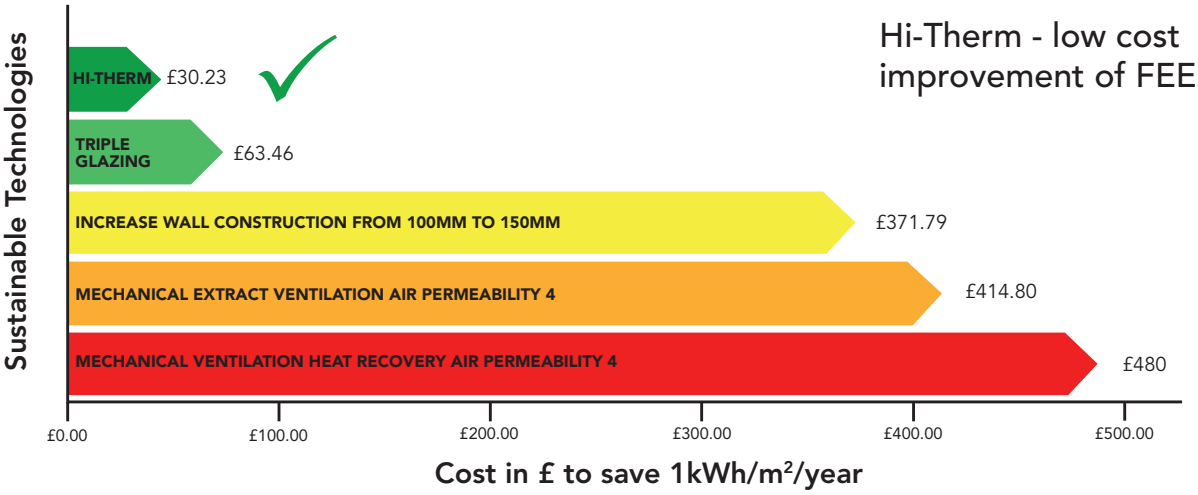
The following charts indicate the cost effectiveness of Hi-Therm compared to these other sustainable technologies and show it to be the lowest cost solution for both carbon reduction and enhanced Fabric Energy Efficiency (FEES).

The £ cost to reduce CO2 Emissions by 1kg



Note: *These options do not improve Fabric Energy Efficiency

The £ cost to improve Fabric Energy Efficiency by 1kWh/m²/year



Note: FEES are a contributory value to score in the 'Code For Sustainable Homes' and gain compliance with Part L 2013

HT/S Standard Load
HT/HD Heavy Duty Load

Blockwork built tight against inner face of the lintel. Place mortar bed on top of blockwork before floor units are laid to provide even distribution of load. Lintels may be propped to facilitate speed of construction. Insulation fixed on top of the lintel has been cut back on this illustration for clarity.

Hi-Therm Lintel for Cavity Wall

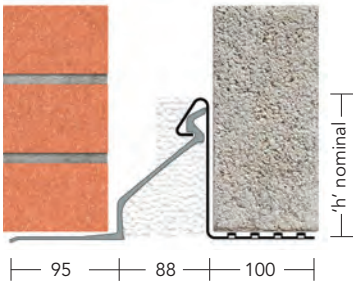
Available for cavity widths from **90mm to 165mm**

HT/S 100	For cavity widths 90-105mm
HT/S 110	For cavity widths 110-125mm
HT/S 130	For cavity widths 130-145mm
HT/S 150	For cavity widths 150-165mm

Manufactured length 150mm increments	600-1500	1650-2100	2250-3000	3150-3600
Height 'h'	135	150	229	229
Thickness	2.5	2.9	2.9	3.2
Total UDL kN 3:1	20	21	27	27
Total UDL kN 19:1	17	17	20	20

NOTE The exact lintel profile will vary dependent on lintel length and loading

Standard Load

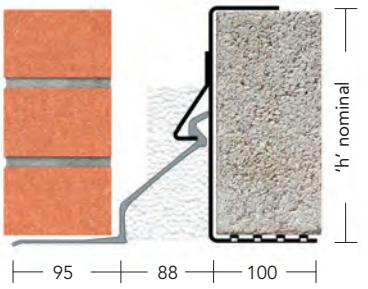


HT/HD 100	For cavity widths 90-105mm
HT/HD 110	For cavity widths 110-125mm
HT/HD 130	For cavity widths 130-145mm
HT/HD 150	For cavity widths 150-165mm

Manufactured length 150mm increments	600-1500	1650-2400	2550-3000	3150-3600
Height 'h'	150	229	229	215
Thickness	3.2	2.9	3.2	2.9
Total UDL kN 3:1	30	35	35	35
Total UDL kN 19:1	22	35	35	32

NOTE The exact lintel profile will vary dependent on lintel length and loading

Heavy Duty Load



*DAMP PROOFING Not required on Hi-Therm lintels up to severe exposure.

Hi-Therm: Redefining Thermal Performance

WHY HI-THERM?

Hi-Therm is the very latest in lintel design from a manufacturer who has continually pushed lintel performance forward, ahead of changing market requirements.

This innovative patented lintel has been designed to address the next challenge in modern well insulated buildings where non-repeating thermal bridging still negatively affects thermal performance. Hi-Therm is a practical solution to this problem.

Now Hi-Therm, with its unique hybrid Steel/GRP construction, has provided a highly cost effective sustainable solution to significant carbon reduction and improvements in a building's Fabric Energy Efficiency (FEES).

HOW IT WORKS

The secret lies in using a glass reinforced polymer (GRP) for the outer leaf of the lintel. The GRP acts as a thermal break, preventing heat escaping from the internal leaf of a building across the cavity to the external leaf, meaning that Hi-Therm provides a lintel solution with virtually zero thermal bridging.

Importance of Psi value & Y-values
To help understand the immense thermal benefits of the Hi-Therm Lintel it must be compared with other lintel Psi values.

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UNDERSTANDING LINTEL PERFORMANCE

Building Regulations Requirements
Building Regulations Part L now require that lintels should be assessed for their effect on the thermal performance of a building. The thermal performance of a lintel is expressed in terms of a Psi value (Ψ) i.e. Linear Thermal Transmittance, which is calculated using specialist thermal modelling software.

Lintels are one of the single most cost effective factors which can improve a dwelling SAP calculation.

Part L Building Regulations
Part L Building Regulations and The Code for Sustainable Homes now put great emphasis on how thermal bridging is accounted for in buildings.

The 'Standard Assessment Procedure' SAP is used to assess the energy performance of dwellings and thereby helps deliver the government's objectives of improving thermal performance of buildings in the U.K.

Y Values account for the heat loss through non-repeating thermal bridges (i.e. lintels, cills, jambs etc) within SAP. Y values are calculated by measuring the linear length of the thermal bridge & multiplying by the respective Psi value, hence the importance of low Psi values.

Using low Psi value significantly improves the Y value, which in turn has a positive impact on the overall SAP calculation, thus giving designers flexibility to choose less onerous wall u values etc whilst still maintaining compliance with regulations.

VALUE ENGINEERING SUPPORT

A full package of technical support enables the building designer to understand and assess the benefits of Hi-Therm at an early stage in a project's design.

Our in-house experts use the latest 'Physibel Trisco' thermal analysis software to calculate Psi values and advise clients on the optimum lintel solution for compliance with the required building regulations.

IG have led the way on thermal analysis and offer this service from an in house source.

NBS plus specifications are available on **www.iglintels.com**
or
via RIBA for NBS plus subscribers

BETTER BY DESIGN

IG STEEL LINTELS

Hi-Therm

IG has redefined Lintel performance with Hi-Therm, designed to exceed the thermal requirements in forthcoming building regulations. Hi-Therm is supported by an advanced technical service package.

Standard Lintels

IG produce a wide range of standard galvanised steel and stainless steel lintels. All IG standard lintels satisfy the thermal performance requirements of all UK building regulations.

Special Lintels

IG offer a complete custom design service to ensure your project has the best lintel for the job. Our technical expertise is renowned for delivering solutions with total efficiency.

Brick Slip Feature Lintels

IG Brick Slip Feature Lintels are a one piece prefabricated unit, manufactured bespoke to order, achieving even the most challenging architectural designs.

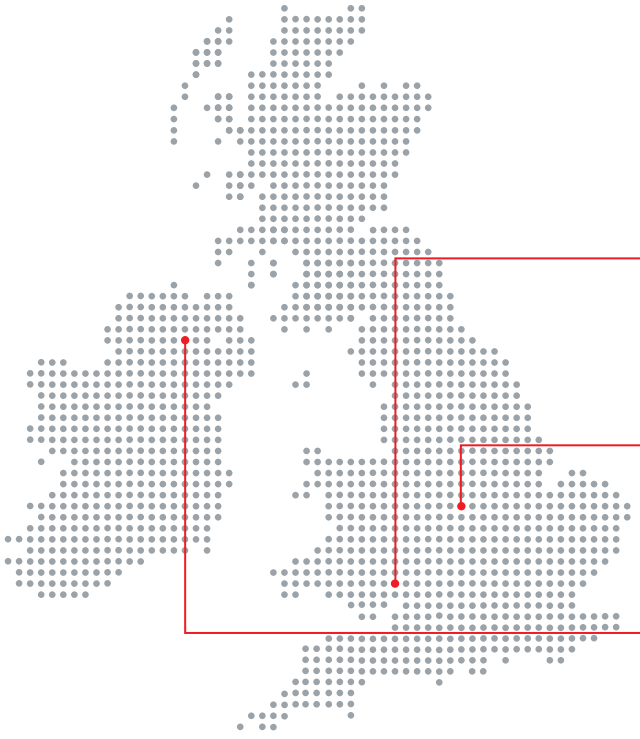
Masonry Support & Windposts

IG continues to set the standard for masonry support and windpost systems for a range of building frame configurations. The innovative Qwik-Fix angle provides a versatile solution when masonry support is required.

Cavity Trays

The IG Cavity Tray presents a lightweight, simple to install and long-lasting solution to preventing damp from penetrating below the roof line.

www.iglintels.com



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