The low cost solution for reduced carbon emissions

iglintels.com
Evolution of lintels

Evolution
Our lintels are engineered to be the most structurally and thermally efficient lintels available.

We have continually evolved and expanded our product range to reflect the needs of our industry.
Leaders in Innovation

1967
IG original open back lintel

1980
IG 1st steel lintel company to insulate a lintel

2010
Masonry Support

2010
Brick Feature Lintels
1989
Keystone
Steel Lintels

1992
Thermal
Breakplate

2009
Hi-therm
Lintels

2011
Brick Slip
Masonry Support

2018
Hi-therm+
Lintel
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08 Key Benefits
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Award Winning Innovation

The Hi-therm lintel has revolutionised the steel lintel industry and has won multiple awards for its innovation.

Product of the Year
Housebuilder Awards

Commercial Innovation of the Year
Construction News Awards

Best Building Fabric Product
Housebuilder Product Awards

Best Eco Product
Build It Awards

The Sky’s the Limit
What the experts say

“We have utilised Hi-therm on a number of developments in a drive to improve our energy performance and limit thermal bridging. Hi-therm is a cost effective solution that has the added benefit of utilising existing site practices; it enables trades to continue working in line with our current processes, which in turn aids consistency in design and performance.”

Paul Jenkins
UK Housing Portfolio Director
Taylor Wimpey

“We specified Hi-therm lintels on our Oakgrove development in Milton Keynes. Crest Nicholson traditionally take the approach of achieving the carbon and energy saving required on a development through a fabric first approach. The Hi-therm lintel contributes to this approach by significantly reducing the thermal bridging through the window and door head junction, making it a cost effective option on this Code 4 site.”

Darren Dancey
Group Technical & Quality Director
Crest Nicholson

“When the government unveiled its changes to Part L 2013 building regulations, Barratts analysed a range of sustainable solutions in order to comply with the mandatory minimum fabric performance standard (Target Fabric Energy Efficiency, TFEE). The Hi-therm lintel has proved to offer a cost effective option as part of a suite of specification upgrades.”

Michael Finn
Group Design & Technical Director
Barratt Homes

“The Hi-therm lintel with its low Psi Value assists in achieving a fabric first approach to meet compliance and, when specified, can significantly help to meet the ever increasing building regulation (Fabric Energy Efficiency Standard, FEES) targets”

Sustainability Consultants AES Southern Ltd

“This innovation thoroughly impressed the judging panel as an example of a problem being identified, a solution being developed and its success being firmly evident.”

Will Botting
Construction News Awards
The original is now even better

The award winning Hi-therm lintel has been upgraded to offer even greater practicality to builders.

IG has invested heavily in Research and Development to re-engineer the Hi-therm lintel utilising our industry leading top hat design.

Fire Performance

Hi-therm+ lintels have been subjected to a fire test in accordance with BS EN 1363-1 1999 at Exova Warrington Fire and achieved a one hour fire performance.

Material Performance

patented galvanised steel & rigid Polymer hybrid design.

Thermal Performance

Hi-therm+ is up to five times more thermally efficient than a standard steel lintel. 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.
Unique Patented Design

Insulation  Steel  Thermal Break

Trusted 3rd party approval
Key Benefits

The Hi-therm+ lintel is unsurpassed in terms of thermal efficiency, buildability and technical support.

Buildability

Better buildability – offers the simplicity of a one piece, structurally superior top hat design creating stability during the building process, unlike a two part lintel solution.

Hi-therm+ is manufactured with a wider range & longer lengths.

Thermal Efficiency

Hi-therm+ is the only BBA Approved one piece lintel solution that achieves the appendix R value for steel lintels in Part L 2013, depending on wall construction.

Up to 5 times more thermally efficient than a standard steel cavity wall lintel, therefore reducing thermal bridging & improving SAP calculations.

Cost Effective

A low cost route to improve both CO₂ reduction & Fabric Energy Efficiency standards, in line with Part L Building Regulations (see page 12 to compare Hi-therm+ cost efficiency with other popular alternatives).
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 the Hi-therm+ sustainability lintel.

Good Detailing

Hi-therm+ closes the cavity.

The single component design simplifies installation.

The one piece design assists stability between the internal and external leaves and creates stability during the build process.

Hi-therm+ gives cost certainty with no additional costs.

Poor Site Detailing

Split Lintels

A cavity closer must be supplied and fitted. ££

Requires two separate lintels with double the handling and installation labour. ££

Individual lintels will require propping and additional wall ties will be required to overcome the lack of inherent stability in a split lintel solution. ££

££ = Additional Costs.
Thermally Efficient

Up to 5 times more thermally efficient than a standard steel lintel.

The proven solution to Part L

The Building Regulations Part L

Building Regulations Part L sets the minimum standards for energy performance of new and existing buildings. In the latest changes to Part L, a mandatory (FEES) Fabric Energy Efficiency Standard has been introduced in addition to the original (TER) Target Emission Rate which measures CO₂.

Part L Challenge

The introduction of FEES is based on the principal of preventing energy waste by ensuring the fabric of the building is adequately insulated and airtight. As the fabric of the building will remain for the lifetime, getting the fabric correct at the beginning will save energy for the whole life of the dwelling, meaning more efficient homes.

The FEES target puts focus on the thermal performance of the building fabric i.e. walls, floors, roofs and the materials/components that make these elements up. Lintels are in most cases the most significant thermal bridge, meaning lintels can have an important impact on the overall thermal performance of a building. For example, In a modern well insulated 3 bedroom house with a floor area of 60m², the heat loss through a standard lintel can account for approximately 6%* of the overall heat loss through the fabric of the house. Using a Hi-therm+ Lintel reduces this figure to 0.25% virtually eliminating thermal bridging.

* based on a default lintel Psi value of 0.5 W/m.K

Psi Value (Ψ)

0.03-0.06

1 Insulation
Pre-fitted expanded polystyrene insulation enhances the thermal performance of the lintel.

2 Polymer Thermal Insulator
Rigid polymer thermal insulator acts on effective thermal break.

3 Galvanised Steel
Galvanised steel inner & outer leaf.
**SAP 2012 and Appendix R**

‘Standard assessment procedure’ (SAP) is adopted by government as the UK’s methodology for calculating the energy performance of buildings and ultimately demonstrating compliance with Part L Building Regulations.

Appendix R of SAP 2012 provides a specification for a notional dwelling of identical proportions and dimension, which provides the target for the CO₂ and the FEES. If a dwelling is built conforming to Appendix R values it will achieve the CO₂ and Fabric Energy Efficiency targets to comply with Part L.

Appendix R requires a lintel Psi value of 0.05W/m.K, which the Hi-therm+ lintel achieves (see the Lintel Type comparison chart).

**The Importance of Psi Values**

The thermal performance of a lintel is expressed in terms of a Psi value (Ψ) i.e. linear thermal transmittance, which is more commonly referred to as ‘thermal bridging’.

The increasing focus on thermal bridging means that materials specifications and component selection need to be carefully considered as part of the overall compliance strategy to meet Part L.

Poorly performing products and SAP calculations using default Psi values are increasingly penalised. The only way to improve the SAP calculation at this stage will be to over compensate in the design by improving other areas of the fabric, such as higher performing insulation, wider cavities or bolt on renewables ultimately increasing the build cost.

To design efficiently for Part L, it is important that energy assessors use independently calculated Psi values or manufacturer calculated Psi values providing they have been calculated by a trained person using specialist thermal modelling software. IG’s technical support team are trained and accredited to provide specific Psi value calculations free of charge that you can directly input in to SAP calculations.

Talk to our technical experts to find out how Hi-therm+ could save money on your build specification.

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**The Importance of Lintels**

Hi-therm+ can achieve the Appendix R value for steel lintels in Part L 2013 depending on the wall construction. This table shows how Hi-therm outperforms other commonly used lintel types.

<table>
<thead>
<tr>
<th>Lintel Type Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-therm+ Lintel</td>
<td>0.03 - 0.06 W/m.K</td>
</tr>
<tr>
<td>Part L Appendix R value</td>
<td>0.05 W/m.K</td>
</tr>
<tr>
<td>Standard Lintel</td>
<td>0.22 W/m.K</td>
</tr>
<tr>
<td>Default Non Plated Steel Lintel</td>
<td>0.33 W/m.K</td>
</tr>
<tr>
<td>Plated Steel Lintel (Default)</td>
<td>0.5 W/m.K</td>
</tr>
</tbody>
</table>

* Depending on wall construction

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**Thermal Break**

![Thermal Break Image](image-url)
Cost Effective

Hi-therm+ offers a cost effective solution to lowering carbon emissions within SAP, offering significant savings compared to other popular alternatives.

In a comparative case study for a house type, using Hi-therm+ would incur less than 20% of the cost of increasing the cavity width by 50mm for the same saving in CO₂. These CO₂ savings are important within SAP because they give flexibility for compliance in situations where other built details are not meeting the standards in Appendix R.

Comparison of popular solutions to reduce carbon emissions by 1kg

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 2012 software.
<table>
<thead>
<tr>
<th>House Builder Testimonials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barratt Homes</strong></td>
</tr>
<tr>
<td>Hi-therm significantly reduced thermal bridging on all house types helping to meet Part L 2013. (see page 21)</td>
</tr>
<tr>
<td><strong>Gospel Oaks</strong></td>
</tr>
<tr>
<td>Hi-therm saved more than £200 per plot by enabling the use of a reduced cavity width. (See page 22)</td>
</tr>
<tr>
<td><strong>Coxon's Mews</strong></td>
</tr>
<tr>
<td>Hi-therm saved thousands of pounds by removing the need for PV panels. (see page 22)</td>
</tr>
<tr>
<td><strong>Berewood</strong></td>
</tr>
<tr>
<td>The use of Hi-therm saved £1,000's by negating the use of costly alternatives. (See page 23)</td>
</tr>
<tr>
<td><strong>Saxon Place</strong></td>
</tr>
<tr>
<td>Hi-therm saved more than £300 per plot by reducing the required level of insulation. (See page 24)</td>
</tr>
<tr>
<td><strong>East Riding</strong></td>
</tr>
<tr>
<td>Hi-therm provided an easily installed Part L solution in comparison to a complex split lintel option. (See page 25)</td>
</tr>
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</table>
# Loading Guide Tables

## STANDARD LOAD

### HT/S+ 100

For cavity widths 90-105

<table>
<thead>
<tr>
<th>Manufactured Length (150mm increments)</th>
<th>600-1200</th>
<th>1350-1500</th>
<th>1650-1800</th>
<th>1950-2100</th>
<th>2250-2400</th>
<th>2550-2700</th>
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### HT/S+ 110

For cavity widths 110-125

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### HT/S+ 130

For cavity widths 130-145

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### HT/S+ 150

For cavity widths 150-165

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Please note other cavity widths and loading conditions are available.

NOTE: The exact lintel profile may vary dependent on lintel length and loading.
# Loading Guide Tables

## HEAVY DUTY

### HT/HD+ 100  For cavity widths 90 - 105

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<td>3.2</td>
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### HT/HD+ 110  For cavity widths 110 - 125

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### HT/HD+ 130  For cavity widths 130 - 145

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### HT/HD+ 150  For cavity widths 150 - 165

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Please note other cavity widths and loading conditions are available.

### NOTE

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## EXTRA HEAVY DUTY

### HT/XHD+ 100 For cavity widths 90-105

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### HT/XHD+ 110 For cavity widths 110-125

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### HT/XHD+ 130 For cavity widths 130-145

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### HT/XHD+ 150 For cavity widths 150-165

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</table>

Please note other cavity widths and loading conditions are available.
Hi-therm+ is also available with a stainless steel outer leaf & galvanised steel inner leaf for use in coastal regions.

The use of stainless steel is ideal when the life expectancy and maintenance programme of a building are key design considerations, for example, in specialist laboratory or medical applications, hospitals, residential care homes, schools, prisons and institutional buildings.

Stainless steel is suitable in these developments because of its outstanding anti-corrosion properties.

Product information

- All stainless steel lintels are manufactured from austenitic stainless steel, grade 304 2b to BS EN 10088-Part 2 Astm 240 (European Grade 1.4307).

- All stainless steel lintels are made to order, specific to each application.

‘British Standard Code of Practice for the use of masonry – part 3; Materials and Components’ recommends the use of stainless steel lintels in buildings that are subjected to aggressive environmental conditions and buildings exceeding three storeys.

There is also a requirement for NHBC registered projects to use stainless steel lintels in coastal locations, namely within 500m of the shoreline.
When fitted, moisture from the lintel is directed outwards through brickwork weeps.

Cavity Wall Wide Inner Leaf

125mm – 150mm Inner Leaf

<table>
<thead>
<tr>
<th>Cavity Widths (mm)</th>
<th>Standard</th>
<th>Heavy Duty</th>
<th>Heavy Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-105</td>
<td>HT/S+100 WIL</td>
<td>HT/HD+100 WIL</td>
<td>HT/XHD+100 WIL</td>
</tr>
<tr>
<td>110-125</td>
<td>HT/S+110 WIL</td>
<td>HT/HD+110 WIL</td>
<td>HT/XHD+110 WIL</td>
</tr>
<tr>
<td>130-145</td>
<td>HT/S+130 WIL</td>
<td>HT/HD+130 WIL</td>
<td>HT/XHD+130 WIL</td>
</tr>
<tr>
<td>150-165</td>
<td>HT/S+150 WIL</td>
<td>HT/HD+150 WIL</td>
<td>HT/XHD+150 WIL</td>
</tr>
</tbody>
</table>

Cavity Wall Wide Outer Leaf

125mm – 150mm Outer Leaf

<table>
<thead>
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</tbody>
</table>

* Contact our technical team for loading figures.

Cant Brick Lintel

The Cant Brick Lintel can be supplied to suit all lintel profiles for 50-165mm wide cavities.

Example specification:
HT/S+100 (CB 60mm)

Stop Ends

A stop end is required at each end of a lintel to prevent moisture cascading over the ends into the cavity and onto the inside wall.

The use of stop ends quickly and economically removes the risk of water being directed into the cavity.

Stop ends can be fixed to the outer leaf of the lintel using a butyl anchoring strip, ensuring the Stop End is secure at the end of the lintel in the most appropriate position to suit the masonry perp joint.

When fitted, moisture from the lintel is directed outwards through brickwork weeps.

Standard Stop End
Case Studies

The following case studies detail projects that highlight the cost and buildability benefits of specifying Hi-therm lintels.
New Barratt Homes
Sites throughout the UK.

Specifying Hi-therm significantly reduced thermal bridging on all house types.

“When the government unveiled its changes to Part L 2013 building regulations, Barratts analysed a range of sustainable solutions in order to comply with the mandatory minimum fabric performance standard (Target Fabric Energy Efficiency, TFEE).

The Hi-therm lintel has proved to offer a cost effective option as part of a suite of specification upgrades.”

Michael Finn
Group Design & Technical Director
Barratt Homes

Oakgrove Village
Milton Keynes, Buckinghamshire.

Specifying Hi-therm significantly reduced thermal bridging on all house types.

“We specified Hi-therm lintels on our Oakgrove development in Milton Keynes where we are required to meet Level 4 of the CfSH.

Crest Nicholson traditionally take the approach of achieving the carbon and energy saving required on a development through a fabric first approach and the Hi-therm lintel contributes to this approach by significantly reducing the thermal bridging through the window and door head junction, making it a cost effective option on this Code 4 site.”

Darren Dancey
Group Technical & Quality Director
Crest Nicholson
Gospel Oak
Tipton, West Midlands.

Hi-therm saved more than £200 per plot and dramatically improved the fabric performance without any specialist build techniques.

“As an experienced builder of eco-friendly homes, we were very impressed with the innovation of the Hi-therm lintel's fabric first approach. With the new Part L 2013 regulations tightening we are always looking for cost effective solutions to improving the building's overall thermal performance.

No other single lintel product has enabled us to reduce thermal bridging as much as Hi-therm. This fabric first approach has enabled us meet the new regulations without the need for costly renewable technology or wider cavities.”

Richard Southgate
Project Co-ordinator/Owner
Wrekin Eco Homes

Coxon’s Mews
Ashby-De-La-Zouch, Leicestershire.

The use of Hi-therm saved £1,000's by negating the use of costly alternatives.

“When split lintels were specified for this project I looked for an alternative product to avoid the increased handling and site work they would involve.

Ashby Energy, our energy assessor, introduced the Hi-therm lintel which significantly lowered the amount of thermal bridging, helping us to meet level 4 in the code for sustainable homes with the simple installation of single piece lintels.”

Frank Sandkey
Buyer
Lychgate Homes

Project Details

- Wrekin Homes purchased the site to develop Eco homes in Tipton, West Midlands.
- Wrekin sought out the latest fabric first solutions.

Hi-therm Solution

- The use of Hi-therm saved more than £200 per plot by enabling the use of a 100mm cavity instead of a 125mm width.
- Hi-therm dramatically improved the fabric performance without any additional or specialist build techniques.
- Hi-therm does not require any of the maintenance associated with many other sustainable technologies.
The use of Hi-therm contributed savings of more than £1,000 per plot on other technology.

“Using the Hi-therm lintel helped us to achieve a pass rating keeping the air test above 5, therefore removing the need for mechanical whole house ventilation/heat recovery, or alternatively other renewable energy products such as PV.

Whilst the Hi-therm was not the only resolution, it is a combination of various products and u-values. which achieve the pass; Hi-therm helped to achieve the pass in this instance.”

Chris Carroll
Quantity Surveyor
Lagan Homes

Project Details
- St. Inns development at Moira, Co. Down, includes detached and semi-detached 3 and 4 bedroom house types and Hi-therm was specified on each home.

Hi-therm Solution
- Full technical support and site-specific Psi value calculations provided.
- Hi-therm’s performance contributed to the saving of upwards of £1,000 per plot on other sustainable technology.
- Hi-therm does not require any ongoing maintenance, unlike many alternative sustainability solutions.

---

The Waterlooville site was required to meet Level 4 of the code for sustainable homes. We wanted to achieve compliance and deliver the energy savings with a cost effective fabric first approach rather than the use of complex and expensive renewable technologies. Having discussed this with our energy assessor and our lintel supplier we decided to specify the Hi-therm lintel.

This choice delivered reduced thermal bridging at the head junctions and openings allowing us to meet our carbon targets. We particularly valued the fact that no changes to our construction practices onsite were required.”

Phil Jackson
Group R&D Manager
Bloor Homes

Project Details
- The Berewood development includes a full range of property types from 1 to 5 bedrooms and Hi-therm was specified on each home within the 168 acre site.

Hi-therm Solution
- The use of Hi-therm was a significant contributor to the achievement of Level 4, Code for Sustainable Homes.
- Full technical support provided to develop a suitable specification for the site.
- Hi-therm does not require any special installation techniques.

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At Rowland we aim to build a better home for our house buyers which will lower their energy costs and minimise maintenance. That’s why we were so impressed by what the Hi-therm lintel offered us in terms of thermal performance while at the same time being extremely cost effective to build.

Scott Warley
Senior Buyer
Rowland Homes

The use of Hi-therm sustainability lintel saved over £300 per plot on wall insulation.

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Hi-therm reduced thermal bridging to improve the energy efficiency of the dwellings

“Red Oak Developments is committed to building energy efficient homes. The Kings Hill project was designed to a high specification. We wanted to create a home that was both energy efficient and traditionally beautiful.

We combined Keystone’s Prefabricated Insulated Brick Flat Arch with the new Hi-therm lintels to give a product that was thermally efficient, quick to install and yet highly attractive. Choosing Hi-therm gave a 95% reduction in the thermal bridging due to lintels compared to the default and contributed significantly to lowering carbon emissions within SAP.”

Neil Shields
Red Oak Developments

Hi-therm Solution

– The use of Hi-therm significantly improved the energy efficiency of the properties.
– Keystone offered specialist support from the initial Psi value calculations through to installation.
– Hi-therm does not require any special installation techniques.

Project Details

– Beautiful home with over 3100 sq ft of accommodation set in half an acre.
– Like all Red Oak Developments homes, Kings Hill is highly energy efficient and built with sustainability in mind.

Project Details

–  This is a quality development of 61, 3 and 4 bedroom houses in a scheme, designed and landscaped to create a mature, established feel.
–  Rowland is committed to building environmentally efficient homes using the latest sustainable technologies.

Hi-therm Solution

–  By utilising Hi-therm’s enhanced Psi value, Rowland was able to re-assess the overall fabric specification.
–  The use of Hi-therm saved over £300 per plot by enabling the wall insulation cost to be reduced from 0.32w/m/h to 0.36w/m/h.
–  Hi-therm was specified on all house types providing 1,000’s of savings overall.

Saxon Place
Penwortham, Lancashire.

Hi-therm Solution

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–  Hi-therm was specified on all house types providing 1,000’s of savings overall.
When introduced to Hi-therm, Jelson’s energy assessors discovered they could considerably enhance the energy performance of the houses by adopting the use of Hi-therm in all their house types.

The increase in performance was so substantial that it enabled the assessors to still meet the building codes while removing one to two PV panels per plot at a saving of £350 - £400 per panel.

As a result of these cost efficiencies, Jelson now include Hi-therm sustainability lintels in the specification of all new builds going forward.”

“Within the Building Design department of East Riding of Yorkshire Council we are constantly looking at products which will enhance the quality and performance of our buildings.

We were specifying a split lintel solution with 150mm wide cavities for our affordable housing developments to help lower thermal bridging and meet building regulations.

However, the split lintel option was causing installation issues on site with the insulation and DPC detail around the split lintels and therefore were looking for a solution to ease the installation and maintain the thermal insulation continuity.

We were introduced to the Hi-therm Lintel, which our technical team and Energy Assessor recognised would offer benefits over split lintels from a technical and building construction perspective. As a result, we have now specified the Hi-therm Lintel for our next phase of affordable homes.”

Mark Thomas
Senior Architect
ERI&F Building Design