Introduction to Thin Bricks

Technical Guide
Last Updated: April 2025

BRICK DEVELOPMENT ASSOCIATION

The Brick Development Association

The Brick Development Association is the national authority on clay bricks and pavers.

The membership accounts for almost 99% of the bricks produced in the UK; the BDA members are commitment to manufacturing products of outstanding quality and developing one of the nation's most productive and sustainable supply chains.

The BDA Guides and Technical Guides are continually updated to take account of the latest materials, systems and products developed in the clay brick and paver sector.

We are grateful to our various team of experts, contributors, staff as well as our membership whose support, we are eternally grateful for.

Robert Flello

Chief Executive Officer
Brick Development Association

Scope of Document

This is an initial guidance document for the general public and members of the construction profession.

The guide details the use of thin clay bricks (under 102.5mm), showcasing their ability to deliver traditional brick aesthetics while improving thermal performance or interior space.

The BDA are committed to providing impartial and authoritative information.

We make every effort to ensure the accuracy and quality of information and guidance when it is published. However, we can take no responsibility for the subsequent use of this information, nor for any errors or omissions it may contain.

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Introduction

Clay bricks have long been a trusted and durable building material, renowned for their longevity and resistance to the elements. Thin Brick offers a modern interpretation of this classic material, addressing contemporary environmental challenges while preserving the desirable attributes of traditional clay masonry.

As a significant advancement in sustainable construction, Thin Brick prioritises carbon reduction throughout its manufacturing process. By minimising energy consumption and emissions, Thin Brick aligns with the growing global emphasis on reducing our environmental footprint.

Despite its commitment to sustainability, Thin Brick does not compromise on the essential qualities that have made clay bricks a preferred choice for construction. It retains the durability, aesthetic appeal, and security that have made clay masonry a timeless and reliable building material. Thin Brick offers a harmonious blend of tradition and innovation, making it a sustainable and responsible choice for modern construction projects.

Thameswey-Woking Wienerberger Eco Brick

What is Thin Brick?

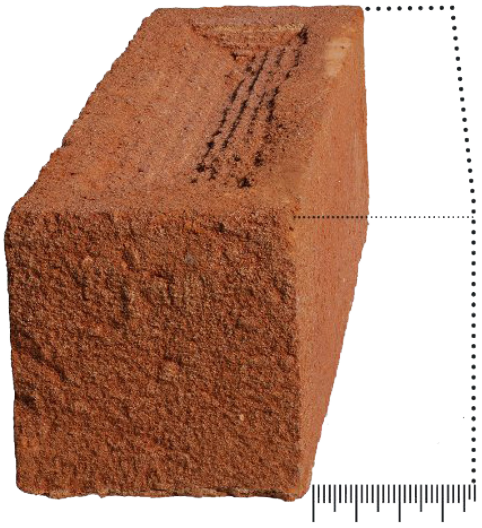
Thin brick is a reduced width clay brick alternative to traditional UK metric brick dimensions, which allows enhanced thermal benefits by optimising available cavity for insulation, or reduction of the overall wall build-up providing increased living space.

Why Introduce Thin Brick?

The Future Homes Standard will become mandatory in 2025* and aims to ensure that all new homes built from 2025 will produce 70-80% less carbon emissions than homes built under the current Building Regulations. Changes to Approved Document Part L of the Building Regulations include a reduction in allowable emissions and increased energy performance standards, providing a preparatory step towards the aims of the Future Homes Standard.

Such changes to Part L will require careful consideration from the specifier regarding their choice of building materials. As the operational carbon footprint of a home requires reduction, building components will be required to have minimal energy consumption.

The use of a clay brick which is thinner than the metric standard 102.5mm offers architects, designers, and end users the same visual appeal and trusted construction techniques of the traditional brick in cavity construction, but with an additional cavity space allowing for extra thermal insulation and lower U-values, or alternatively the space gained can be used to enhance the internal accommodation.

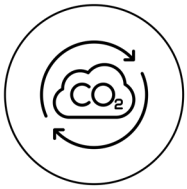


Thin Brick - 65mm

UK Standard Brick - 102.5mm

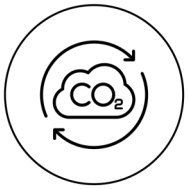
Benefits of Thin Brick

Currently the standard UK metric brick size is 215 x 102.5 x 65mm. Approved Document Part A of the Building Regulations states that cavity walls in coursed brickwork should have leaves at least 90mm thick and the National Annex to EuroCode 6 recommends a minimum of 75mm leaf thickness. Thin bricks have been used successfully in Europe for many years and in addition to guidance from British or European Standards, the BDA member companies are adopting a 65mm width for thin bricks to provide the maximum benefits discussed below:



Carbon Friendly

The inherent use of less material will typically equate to up to 31% reduction in embodied carbon.

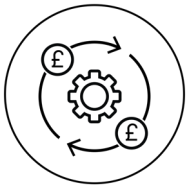


Versatility

Allows architects and designers to achieve the desired aesthetic without compromising structural integrity.

Low Maintenance

As with traditionally sized bricks, little or no maintenance will be required to the outer leaf during its lifetime.

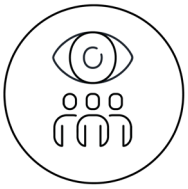


Cost Effectiveness

Thin bricks reduce material costs due to the thinner profile and lower weight, leading to up to 5 tonnes of CO_2 savings in transportation, and up to a 36% reduction in mortar and water requirements.

Light Weight

The reduced weight makes it suitable for applications where load-bearing capacity is a concern, in addition there is reduced risk of manual handling injuries due to brick and mortar weight reduction.



Social Impact

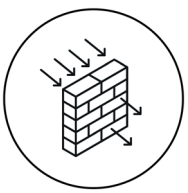
As more thin bricks can be delivered on a load, this reduces the amount of deliveries to site resulting in less air pollution and a reduction in noise that can affect local communities.

Standards

Thin bricks can be used in buildings that are required to meet the NHBC standards - approval of manufacturers individual thin bricks would still be subject to the traditional NHBC Building control and warranty processes.

Longevity

Thin bricks are manufactured from the same raw materials and using the same firing processes as standard width bricks, and will therefore offer the same durability benefits as standard sized bricks.



Lower U-Value

The space gained by using a thin brick allows for an increased amount of thermal insulation in the cavity, which improves the EPC rating of a property, impacting on lower energy usage and ultimately reduced costs for homeowners.

Construction using Thin Bricks

The construction of the outer leaf using thin bricks follows the same principles as that of a traditional 102.5mm outer leaf, and as with the traditional brick size all design and workmanship should comply with the recommendations of BS EN 1996, PD 6697 and BS 8000:Part 3, with some adjustments allowing for the 65mm width as follows:

- The maximum height of a lift of thin brick is the same as that recommended for traditional brickwork when tied back to a blockwork inner leaf. The stability of the freshly laid brickwork should be checked, and it may be prudent to lay longer lengths of thin brick than traditional bricks to maintain productivity whilst limiting the height to allow the masonry to gain strength.

- Telescopic under floor vents can be used with thin brick, it is recommended that the individual thin brick manufacturer is contacted for further details.

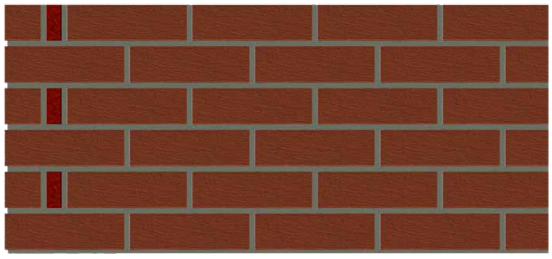
- Damp proof courses and cavity trays of reduced width will be required to accommodate the 65mm thickness and all standard types of DPC material can be used. The same good practice recommendations of laying a DPC in the centre of the mortar bed joint remain the same when using thin bricks. Cavity trays should terminate one course above the structural opening, which will require the use of proprietary stop ends and a second row of weep vents to the lintel.

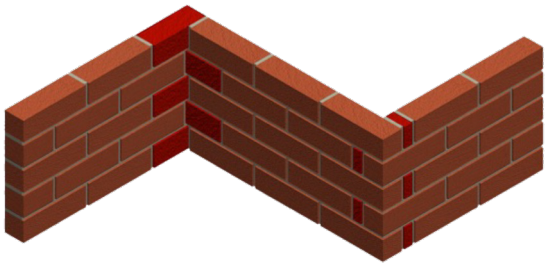
- Current Codes of Practice recommend a minimum 50mm embedment of wall ties in the outer leaf to ensure stability of the wall structure. Due to UK thin bricks having a width of 65mm, a tie allowing an embedment of 40mm must be specified. Such ties comply with the requirements of BS EN 845-1 and are classified as Type 4. Depending on the wall tie type and tensile and compressive performance of wall ties should equate to four ties per square metre – they should be positioned at 225mm vertical centres at reveals and movement joints, and at 450mm vertical centres generally throughout the brickwork. Horizontal provision should be at 225mm from reveals and movement joints, and at 560mm horizontal centres throughout the brickwork.

Photo credits: Wienerberger UK

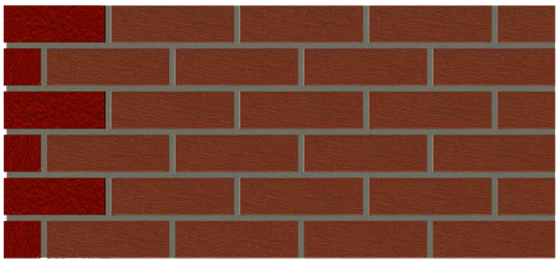
Construction using Thin Bricks

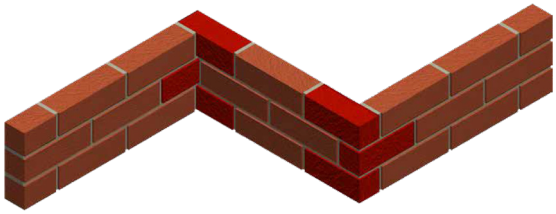
- As with traditionally sized bricks, consideration should be given to the bonding arrangement with careful placement of cut bricks to achieve the minimum overlap as set out in BS EN 1996. When set out to stretcher bond (or half bond) there are two approaches that can be taken at external returns – either the use of a 178mm cut brick or a 28mm cut brick depending on the specifiers aesthetic preference. Alternatively, corner brick special shapes can cut and bonded or formed by cutting the back section from a matching traditional brick. At reveals a 178mm long cut brick can be used to achieve half bond, with a 28mm cut maintaining half bond and traditional brick dimensions to openings. It is recommended to cut bricks using mechanical methods such as a disc cutter rather than the use of a hammer and bolster to reduce wastage of the product. Suitable PPE should be used when employed in a cutting operation. It may be preferable to order sufficient cut bricks from the relevant thin brick manufacturer.



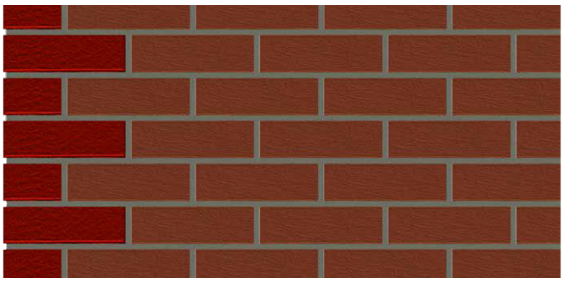


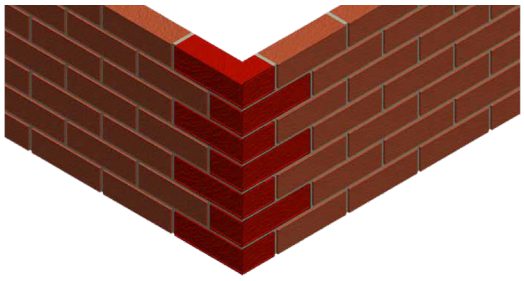
Setting Out: 28mm cut option





Setting Out: 178mm cut option





Setting Out: Corner brick special option

- Cavity closers should be specified to suit the cavity required and are not specially designed for use with thin bricks.
- Designs using thin bricks should be verified by a qualified Structural Engineer. Currently the maximum height of brickwork that can be achieved for NHBC approval using thin bricks is 12 metres; thin bricks to F2 durability designation (in accordance with BS EN 771-1) can also be used below DPC level.
- For window and door frames, it is recommended to fix back to the internal blockwork leaf using brackets or lugs and fixings that are recommended for the substrate.
- Due to the reduced width of thin bricks, lintels designed to co-ordinate with the 65mm width should be specified. Such lintels should comply with the requirements of BS EN 845-2 and the specifier should determine the cavity size, structural opening span and 150mm bearing at each end when ordering.
- Weep vents to accommodate the reduced width are required and are available through individual thin brick manufacturers.
- All mortar joints should be fully filled and have an ironed finish to limit rain penetration. Recessed mortar joints should not be used.
- Designers should include protective details – flush sills and cappings should not be used.
- Thin bricks are not recommended for use in areas of 'very severe exposure' and it is recommended that designers refer to the UK exposure zones in accordance with diagram 12 of Approved Document Part C.
- Whilst thin bricks differ in their width, many aspects of design and bricklaying remain the same as with the traditional 102.5mm brick including the use of reference panels, blending of bricks, allowing for size tolerances, protection of brickwork during construction and so on – for further guidance refer to PD 6697, 8000:Part 3 and the Brick Development Association guide, 'Good Site Practice and Workmanship.'

Photo credits: Wienerberger UK

Brick Development Products & Services

Brick Awards
The Brick Awards celebrate the best examples of clay brick in our built environment. Each year the awards attract over 350 entries from leading architects, housebuilders, developers and contractors; across 17 hotly contested categories. It is FREE and simple to enter on our web site: www.brick.org.uk

Technical Publications
The BDA provides a range of technical publications and guides; which are freely available to Architects, Developers, Builders and General public on our web site: www.brick.org.uk

The Fourth Edition of 'Guide to Successful Brickwork' is available at all good book shops.

Brick Works Events
The BDA regularly runs courses and seminars for all those professionals involved with the design and construction of brick buildings. Please contact George Spreckley our Events & PR Manager on email: georgespreckley@brick.org.uk

Brick Bulletin
This widely acclaimed e-magazine features the latest developments in brick design and is recognised world wide as the foremost journal of contemporary brickwork. It is available free through the 'Brick Bulletin' tab our website: www.brick.org.uk.

Brickmakers Quality Charter
Clay brick makes a significant contribution to the UK's safe, healthy and sustainable built environment. The Brickmakers Quality Charter scheme promotes the responsible sourcing of clay brick, through credentialling and the flexibility businesses seek from an established and audited supply chain.

Training and Education
The BDA offers lectures and other educational services for Architects, Engineers, Developers as well as support for students and public interested in creating successful brickwork. We also provide technical input to events for practicing architects, engineers and organisations involved in continuing professional development.

Research and Testing
The BDA identifies specific areas where independent research and testing programmes are required to further the confident use of clay brick and to ensure quality.

Statistical and Marketing Information
The Brick Development Association is an independent body committed to providing authoritative information about the use of clay brick in construction.

We collate statistical information on brick production, UK deliveries, and related supply for imported products together with volume information including testing, research and development.

We provide free technical support on the use of clay brick, and encourage best practice in the use of brick in the built environment.

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Brick Development Association
Commerce House
Festival Park
Stoke-on-Trent
ST1 5BE

01782 744631
brick@brick.org.uk
www.brick.org.uk

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