



POROTHERM

BUILD QUICKER. BUILD SMARTER.


Wienerberger



WELCOME TO THE POROTHERM BROCHURE.

In this document you'll find an overview of the Porotherm system, covering its core properties, its innovative benefits and its practical on-site usage. As an established system, used for over a decade in the UK, we have a range of case studies to explore, and a history of reliability and performance to build on.

But first we'd like to tell you a bit more about the Wienerberger philosophy and approach – it underpins everything we do.

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MATERIAL SOLUTIONS FOR A BETTER QUALITY OF LIFE.

At Wienerberger, our mission is a simple one: to be the most recognised and respected provider of building material solutions in the UK market.

We want to be understood by our customers and employees as focused on creating products, services and solutions that deliver, above all else, a better quality of life.

It's an ethos that means that our Porotherm Multi-Cellular Clay Block Walling System has been designed to enrich the projects and environments it's used in.

OUR PILLARS.

WE WORK ACCORDING TO FOUR PILLARS:



VALUE.

When we say value, we don't mean cost. Throughout the supply chain, we demand that our products and services exceed rather than just meet expectations. That way we ensure we offer true value to our stakeholders.



QUALITY & EXPERTISE.

Our global manufacturing heritage spans two centuries and we channel all of that expertise in the UK. Whether it's an innovative clay block walling system, a handmade roof tile or SuDs pavers, we apply exacting quality standards to our work.



INNOVATION.

We're dedicated to finding new ways to be better. That means embracing new technologies, exploring new techniques and investing in new ideas to help our products and services deliver a better quality of life.



SUSTAINABILITY AT WIENERBERGER.

Sustainability is not just a commitment towards minimising our impact on the environment; it's a commitment to be better across the board. We take great care with the resources we use and embed our products with industry-leading innovations.





INTRODUCING POROTHERM. BUILD QUICKER. BUILD SMARTER. BUILD BETTER.

WHAT IS POROTHERM?

Porotherm is a multi-cellular clay block walling system designed with efficiency and performance in mind.

The horizontal faces are ground to +/-0.5mm tolerances, while the unique interlocking vertical joints do not require mortar.

The system has been expertly designed as a solution for any number of common construction requirements, including:

- Inner leaf brick-faced cavity walls
- Inner and outer leaves of rendered cavity walls
- Infill panels within framed structures
- Partition walls and separating walls
- Single leaf (monolithic) external walls
- Both load-bearing and non-load-bearing applications

BUILD QUICKER.



Achieve storey height (3m) within a day



Weathertight construction allows for parallel internal and external work



Lighter, safer, and easier to lay

0°C

Work down to zero degrees with ZeroPlus mortar

BUILD SMARTER.



Achieve cost certainty with options for cavity and monolithic



Less waste and less stock on site lowers costs

Up to
95%

Uses less water than traditional methods



Interlocking construction with no mortar on vertical joints

BUILD BETTER.



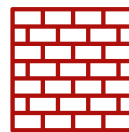
BRE Home Quality Mark



Thermally and acoustically efficient

A1

Class A1 fire resistant



Suitable for multiple wall types



THE ECONOMICS OF POROTHERM.

The cost savings of Porotherm are not in the material but in the overall project savings. The speed, efficiency and safety benefits allow the whole project to be completed more accurately and quickly.

SPEED OF LAYING

A simple measure of productivity highlights the stark contrast between Porotherm and other methods – our precision clay blocks can be laid significantly faster.

OPTIMISE YOUR STOCK

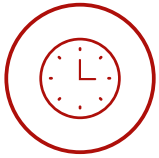
The structural versatility of the Porotherm system reduces the variety of block types and strengths required on-site.

EFFICIENCY IN THE BUILD PROGRAMME

Although the price per square metre of block work is comparable to other masonry materials, the speed and efficiency that the Porotherm system offers on-site creates substantial savings in virtually every area, starting with a clear reduction in preliminary costs, and consolidated by reduced labour and mortar costs (due to the virtually dry nature of the system).

So aside from the ease of working with it, Porotherm also makes a powerful economic argument. Porotherm is a system with powerful economic credentials for a wide variety of projects.

WHY CHOOSE POROTHERM?



FASTER. MORE SPEED. NO COMPROMISE.

Our Porotherm Multi-Cellular Clay Block Walling System is a faster way of building.

But increasing the build speed doesn't come with any compromise in performance or longevity – it's simply a reflection of the system's engineering and design.

- The unique interlocking design means there is no requirement for mortar on the vertical joints at all, effectively halving the mortar requirement and saving on labour
- The multi-cellular clay blocks allow parallel working for internal and external trades early in the project, reducing overall build time
- Porotherm can be used earlier in the construction process because the installation process is less restricted by the weather
- It is comparable to timber frame in terms of construction speed



DRIER. LESS WATER. MORE WEATHERTIGHT.

The Porotherm system is also fundamentally drier, which, in conjunction with the speed of the system takes external finishes off the critical path.

- This means the build can become watertight more quickly and the external skin can be removed from the critical path to allow parallel working



MORE EFFICIENT.

LESS RESOURCE. MORE PERFORMANCE.

Porotherm's efficiency does not simply come from speed of construction, it is also lighter, cleaner and safer than traditional methods.

- The interlocking cellular system means less water and mortar is required (and wasted) during construction phase
- The clay blocks can be used to build a thermally and acoustically efficient wall that's both breathable and Class A1 fire resistant
- There is no moisture shrinkage at all – no disruption to finishes, fewer movement joints and vastly reduced risk of cracking
- Reduces snagging costs
- New 500mm block size means less blocks on site, freeing up storage and lowering costs



SAFER.

BETTER ENGINEERED. EASIER TO BUILD WITH.

Porotherm is designed to make construction more efficient in every way, and this can help on-site installation to be as simple and safe as it can possibly be.

- The system design means no sharp corners, reducing the risk of cuts and injury
- The ZeroPlus mortar is applied with a roller, minimising the risk of mortar coming into contact with skin
- The bed joint mortar is mixed locally to the work area using a mechanical whisk, reducing the need for cement mixers, reducing forklift movements and simplifying site safety management



INSTALLATION.

Here is a quick overview of the Porotherm Multi-Cellular Clay Block Walling System installation process.

The typical process contains six key steps.



Step 1

Lay the first course on a traditional sand-cement mortar bed



Step 2

Ensure blocks are level, horizontal in both directions and vertically plumb. This is crucial because there is only a 1mm bed joint thereafter



Step 3

Mix ZeroPlus according to manufacturer's instructions



Step 4

Apply ZeroPlus to blocks with a roller



Step 5

Repeat until the wall is complete



Step 6

Block-cutting is straightforward

For a detailed understanding of the Porotherm System in regards to technical information and on-site support, including fixtures and accessories, chasing for electrical and plumbing services and further information around installation, please see our accompanying Porotherm Multi-Cellular Clay Block Walling System Best Practice Guide which can be downloaded or a hard copy can be requested.



CASE STUDIES.

PoroTherm is a system that proves that what's on the inside counts. Precision engineered PoroTherm blocks have been at the heart of inspiring projects all over Europe for a decade, enabling a smart, sustainable and beautiful built environment.

Here are some projects showcasing how PoroTherm has been used in the UK.







PROJECT NAME

**BLACKBURN
CATHEDRAL**

CLERGY COURT

PROJECT TYPE
POROTHERM

BLOCK TYPE
PTH100

PROJECT LENGTH
18 MONTHS TOTAL





INTRODUCTION.

FIRST BUILT IN 1826, THE GRADE II LISTED BLACKBURN CATHEDRAL IS ONE OF THE MOST ICONIC HOUSES OF WORSHIP IN NORTHERN ENGLAND.

The site of the cathedral, which was officially consecrated in 1977, has been a place of worship for over a thousand years, dating back to the Norman era, when it became home to the first stone church.

Fast-forward a millennium and in June 2012, the Cathedral embarked on another ambitious first, announcing an £8.5 million plan to construct a Clergy Court and Cloister Garth - the first of its kind in the UK for over 570 years.

THE CHALLENGE.

WITH THE HISTORICAL IMPORTANCE OF BLACKBURN CATHEDRAL, CONSIDERATE MATERIAL SELECTION WAS PARAMOUNT TO THE SUCCESS OF THE PROJECT.

As well as ensuring that the new building materials complemented the existing structures, the architects at the global firm, Purcell, focused on finding a walling solution that would minimise wastage on-site.

Furthermore, with the location of the building at the heart of Blackburn town centre, it was important that the materials would maximise storage capacity and ensure ease of access on a very tight site.









THE SOLUTION.

TO STREAMLINE THE BUILDING PROCESS, WHILE RESPECTING THE CATHEDRAL'S HISTORY, THE ARCHITECTS AT PURCELL SPECIFIED OUR VERSATILE POROTHERM BLOCK WALLING SYSTEM.

The system offers a winning combination of precision-engineering and reassuringly traditional building values, which made it a perfect fit for the project, which would bring new life to a true British heritage site.

Porotherm's performance regarding thermal, strength and density also meant that one block type suited all requirements, which reduced storage requirements and ensured easy access for building professionals onsite.

THE SOLUTION.

FROM BOTH A SPEED OF BUILD AND AN AESTHETIC POINT OF VIEW, THE POROTHERM SYSTEM SURPASSED THE EXPECTATIONS OF BOTH CONTRACTOR AND ARCHITECT.

The speed of the system was exemplified on the Dandy Walk elevation, which required fast completion in order for public highway works to begin. This could not have been completed in the timeframe using traditional building methods.

The precise dimensions of Porotherm came to the fore when the render base coat was applied. From an aesthetic perspective the ability to provide movement joints at 20m centres created a wonderfully smooth finish.





“Porotherm has enabled not only a speedier build but also proven how well a truly innovative system interlocks brilliantly with the historic fabric of the Cathedral.”

**Canon Andrew Hindley,
Project Client**









PROJECT NAME

**CARROWBRECK
MEADOW**

NORWICH

PROJECT TYPE
POROTHERM

BLOCK TYPE
PTH100

PROJECT LENGTH
12 MONTHS TOTAL





INTRODUCTION

THE CARROWBRECK MEADOW DEVELOPMENT IN NORWICH IS ONE OF THE FIRST PASSIVHAUS CERTIFIED RESIDENTIAL PROJECTS IN THE AREA.

The design combines local 'barn' vernacular with a contemporary twist and incorporates a simple black and white materials palette. The homes were designed to sit comfortably in their woodland setting and were positioned to take advantage of solar energy throughout the seasons.

Fourteen new dwellings were developed - 8 detached and 6 semi-detached - which were designed using the Passivhaus principles to build houses with cost effective, long term energy performance. To help achieve this, Porothersm was specified.

The project has since been nominated for a number of awards:

Awards	Award Won
RIBA East Awards 2017	RIBA East Design Award
RIBA Awards 2017	RIBA National Award
Norfolk Constructing Excellence Awards	Innovation and Sustainability - Project of the Year
NPS Excellence Awards	Innovation
RTPI Awards for Planning Excellence	Excellence in Planning to Deliver Housing
LABC East Anglia Building Excellence Awards	Best New Housing Development
Design & Craftsmanship Awards	New Residential
Building Awards	Housing Project of the Year
LABC Grand Finals	Best High Volume New Housing Development
House Builder Awards	Best Sustainable Scheme and Best Design (3 storeys or fewer)

THE CHALLENGE.

THE PROJECT WAS COMMISSIONED BY NORWICH CITY COUNCIL TO PROMOTE THE PASSIVHAUS STANDARD, WHICH IS THE FASTEST GROWING ENERGY PERFORMANCE STANDARD IN THE UK. THE PASSIVHAUS STANDARD AIMS TO PROMOTE THE BUILDING OF HOUSES THAT HAVE BOTH AN EXCELLENT THERMAL PERFORMANCE AND EXCEPTIONAL AIRTIGHTNESS WITH MECHANICAL VENTILATION.

It marks a point at which the local authority were beginning to invest directly in quality local housing, having chosen to invest in a quality, high standard of energy efficiency.









THE SOLUTION.

THE POROTHERM SYSTEM WAS SPECIFIED FOR THE PROJECT AS AN EFFICIENT ALTERNATIVE TO TRADITIONAL BUILDING MATERIALS SUCH AS TIMBER, CONCRETE OR LIGHT STEEL FRAMES. THE ABILITY TO ACHIEVE THE LEVEL OF THERMAL EFFICIENCY AND AIRTIGHTNESS REQUIRED FOR PASSIVHAUS CERTIFICATION WAS ONE OF THE KEY CONSIDERATIONS.

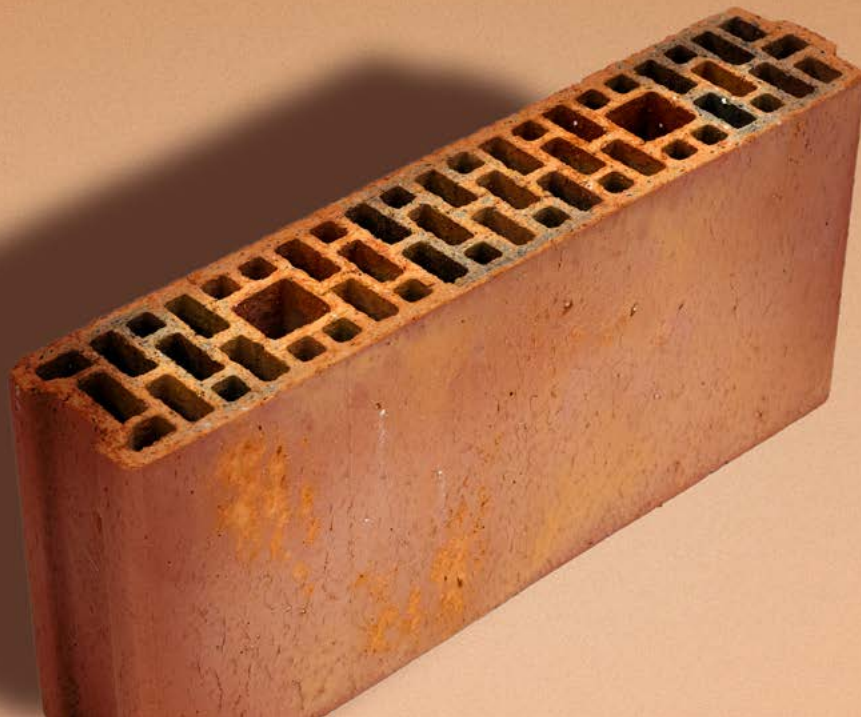
Porotherm was also considered because of its environmentally friendly and long lasting properties, with a long life expectancy of more than 150 years. It is a stronger, safer and much faster system and allows for direct labour to be used, enabling greater control of costs and an increase in efficiency.

“The system helped to achieve a thermal bridge and draught free building envelope, which exceeds building regulation requirements five times over.”

**Paul Hamilton,
Senior Manager at R G Carter**



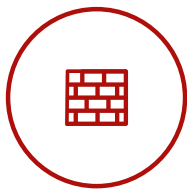




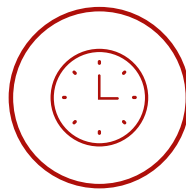
THE UK RANGE.

The Porotherm System has a range of block sizes specific to the requirement of your project.

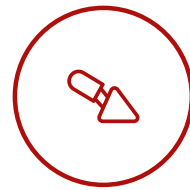
The range now includes our new 500mm block, an evolution of the system which enables a range of benefits including:



Less blocks per m²



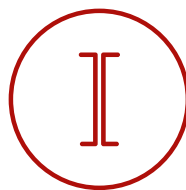
Less time to lay



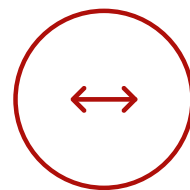
Less cuts requiring pointing



Less wastage



Less perpends requiring filling and parging for airtightness



Increased resistance to lateral movement



Dimensions W x L x H (mm)	100 x 500 x 224	140 x 500 X 224	190 x 500 x 224
Quantity / Pack No. (m ²)	100 (11.2)	72 (8.0)	50 (5.6)
Weight Each kg	10.6	13.3	18.1
Weight Pack (inc pallet) kg	1142	974	922
Unit Gross Density kg/m ³	950	850	850
Thermal Conductivity W/ mK	0.29	0.26	0.26
Wall Typical Air Tightness (Parged) m ³ /(h.m ²)	≤1.2	≤1.2	≤1.2
Typical Mean Unit Compressive Strength N/ mm ²	10	10	10
Typical Characteristic Masonry Strength f _k (N/ mm ²)	6.5	5.0	4.5

For more information on our Porotherm UK range please contact us on
0161 491 8200 or email: porotherm@wienerberger.com



MONOLITHIC.

The PoroTherm range allows for Monolithic construction, enabling the use of a single leaf for external walls.

As a natural clay product, the blocks are safe and non-harmful for use in any housing project, and when plastered they can achieve excellent airtightness and thermal performance.

They're the perfect choice for sustainable and Passivhaus design, where they provide the following:

- A natural product with over 150 years lifespan
- Retained structural integrity for the entire building lifespan
- Zero shrinkage
- Inherent air tightness
- Breathable through micropores in the clay block cell structure
- Minimal use of non-sustainable materials like cement
- Thermal mass of the block and specific heat capacity of clay is linked with excellent thermal conductivity providing thermal insulation and a healthy living environment
- Simple design and building method



For more information on our Monolithic range please contact our head office on **0161 491 8200** or email: porotherm@wienerberger.com

POROTHERM TRAINING.

Understanding exactly how Porotherm works and how it can benefit your project, enables you to get the most from your construction methods, and the most from your materials too. We have a network of Porotherm training centres ready to enhance your skills and understanding.

Bespoke training can be provided to suit tradespeople, site management and all interested parties. We offer essential hands on experience with both the traditional UK core range and monolithic range.

Our technical team can also provide on-site support and consultancy, ensuring your project can optimise the performance and quality provided by Porotherm at every stage of the construction process.

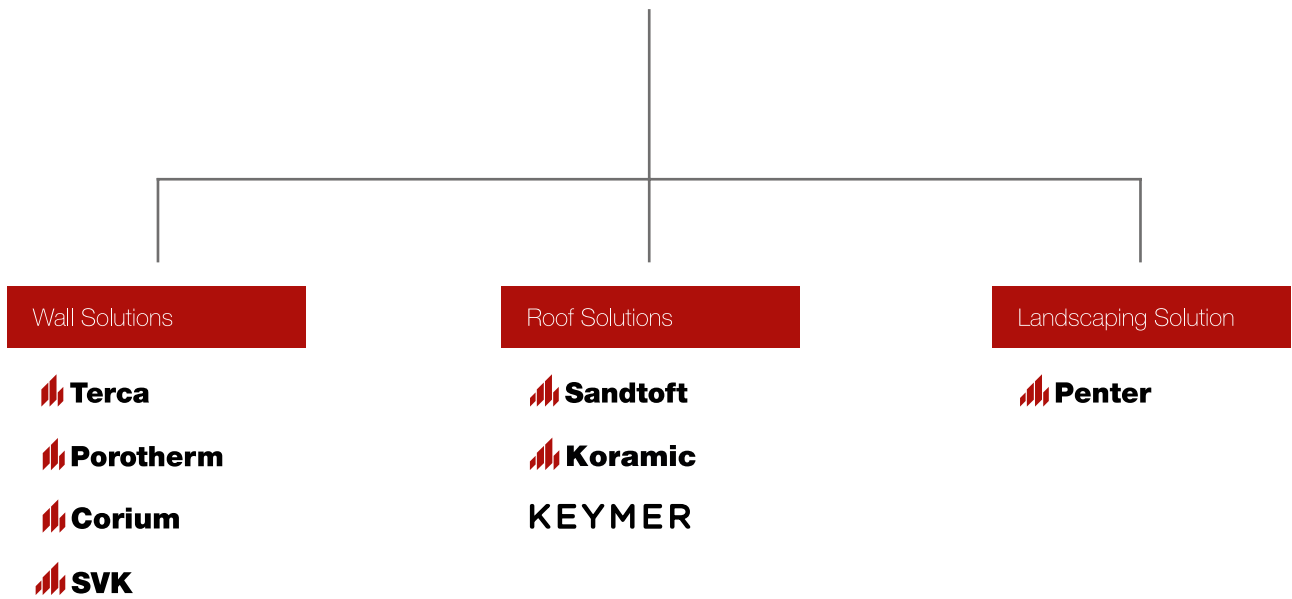
For more information on the Porotherm training options available, please call 0161 491 8200 or email porotherm@wienerberger.com



ACCREDITATIONS.

Porotherm Multi-Cellular Clay Block System:

- Complies with BS EN 771-1
- Carries a CE Mark
- Eurocode 6 or in compliance with Approved Document A of the building regulations
- Accepted by the NHBC and registered with LABC



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