

Installation



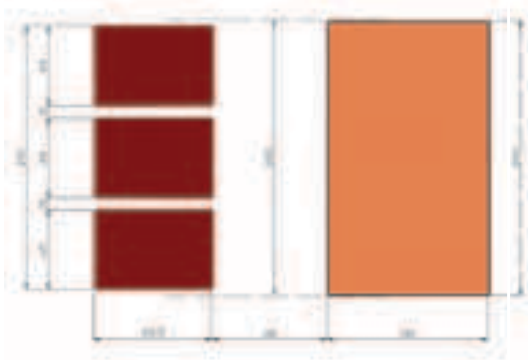
Porotherm. The way forward.

What is Porotherm?

Porotherm is a modern clay block structural walling system offering virtually dry construction, thanks to its mechanical vertical joints and true 1mm bed joint technology. We recommend that trained bricklayers are employed to construct Porotherm walls.

The system has been developed and used throughout Europe on numerous buildings during the last 30 years. Wienerberger is the largest clay block manufacturer in the world and utilising our technical expertise and experience, have tailored this multi-functional building system for the UK.

The Porotherm System is normally used as the inner-leaf of a cavity wall and also as single leaf (monolithic) construction. These products can be used in load bearing and non-load bearing conditions; up to 5/6 storey build height, with the monolithic formats.



Porotherm 100, 140 and 190mm block heights course with UK facing bricks

Forms of construction where the Porotherm System can be used

The structure and composition of Porotherm blocks makes them an extremely versatile material. Used with the bed joint mortar supplied, the system is suitable for most aspects of construction normally associated with the more traditional types of materials. Porotherm can be used for any of the following:

- Inner leaf of brick-faced cavity walls
- Inner and outer leaves of rendered cavity walls
- Single leaf (monolithic) internal & external walls
- Infill panels within framed structures
- Load bearing and non-load bearing situations
- Partition walls

Functional rather than aesthetic, Porotherm blocks are usually given a rendered external finish on monolithic single skin walls, or an outer leaf of facing brick in a cavity wall construction. The controlled application of bed joint mortar promotes an extremely clean construction, with virtually no waste. Internal surfaces are normally finished with wet plaster or plasterboard on dabs over an initial parge coat, as are most masonry constructions to provide the primary air barrier.

What are the components of the system?





Wienerberger work with Porotherm System Distributors to offer the complete range of components necessary to build with Porotherm clay blocks, which includes:

- Bed joint mortar
- Damp proof courses
- Lintels
- Cutting tools
- Mortar applicators
- Wall ties
- Fixings
- External and Internal finishes

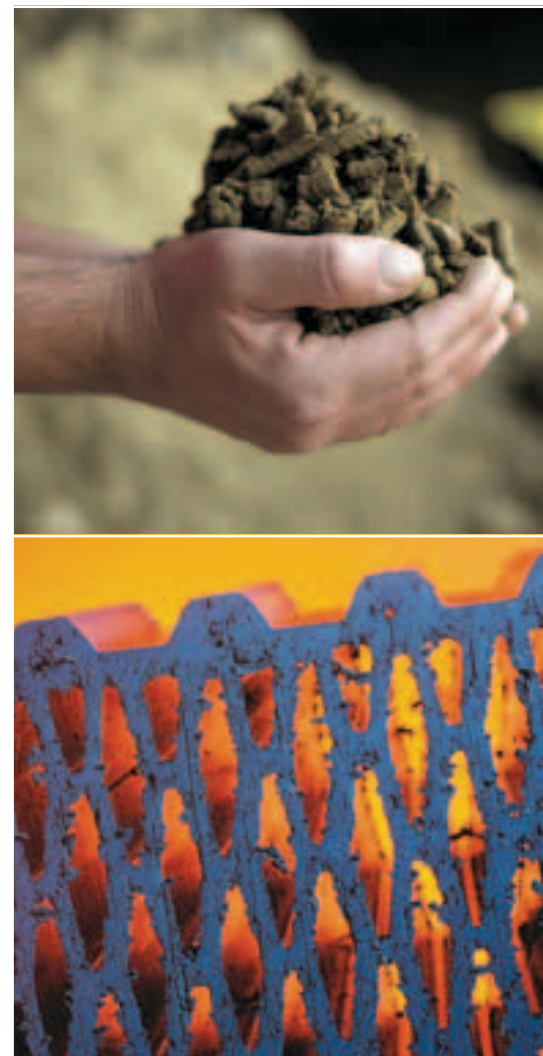
Porotherm Blocks

These are made from clay and have a high recycled material content (typically mineral spoil, sawdust and paper). The blocks are extruded, dried and fired in a highly efficient manufacturing process. After the products have been fired, the block height is precision ground to an accuracy of +/- 0.5mm. This enables true thin-joint technology in construction. Part of the secret to the thermal efficiency of the products is in the multi-perforation patterns and pore structure which combine to provide thermal insulation and vapour permeability properties.

- Virtually unlimited lifetime
- Maximum fire protection
- Optimal thermal protection

Porotherm Core Range		DIMENSIONS W x L x H (mm)	WEIGHT EACH Kg	QUANTITY/ m ²
	POROTHERM 100	100 x 300 x 224	6.4	15
	POROTHERM 140	140 x 300 x 224	7.9	15
	POROTHERM 190	190 x 300 x 224	10.7	15
	POROTHERM 365 (T12)	365 x 248 x 249	14.1	16

Materials and components used within the Porotherm System.





Porotherm bed joint mortar

The requisite amount of bed joint mortar is supplied with the blocks. This is a combination of fine ground sand, cement and other ingredients which is specifically for use with Porotherm blocks.

Bed joint mortar is used only in the horizontal joints and is normally applied to the blocks by either rolling or dipping. There is no requirement for mortar in the mechanical vertical joints. Where infill blocks are necessary, e.g. openings, the vertical joint at the cut is normally filled with traditional or thermal mortar.

Supplied in 25kg sacks, bed joint mortar is added to water and mixed until the correct consistency is obtained. Guidance for mixing is given on the packaging. Once mixed, the material remains workable for up to 3 hours in most instances whilst still in the mixing container. However, once applied to the blocks, the bed joint mortar will begin to set within 30 minutes. Significant strength is gained after a matter of hours and full strength after approximately 24 hours. We recommend that the bed joint mortar is applied to the blocks using the correct size of roller applicator. The amount of mortar supplied with the blocks is optimised for roller application.

Mortar roller applicators

Wienerberger recommend the use of rollers to apply the bed joint mortar. These are available from Porotherm System Distributors in a variety of sizes to suit the product selected. It is recommended that the roller is submersed in water during break times. It is imperative that the roller is cleaned thoroughly with clean water at the end of each day, this will ensure trouble free operation each time it is used.

Before each use it is recommended to spray the inside of the hopper to allow for easy cleaning later: We recommend the use of an environmentally friendly 'mould release oil'. This is vegetable based and is available from your Porotherm System Distributor.



Training and Demonstration Centre

Wienerberger and its first distribution partner believed that the introduction of the Porotherm building system to the UK required a serious commitment to promoting an understanding of the product, along with practical and technical training.

The first dedicated Porotherm Training Centre has been developed at Longbridge in Birmingham. Just 5 minutes off the motorway network, the site provides easy access from both the north and south. Sessions are held on a regular basis and can be tailored to suit the needs of specific clients or organisations.

Since its opening in April 2009, the centre has hosted both practical and technical training sessions for the whole range of construction professionals. Bricklayers, project managers, architects and senior directors from leading companies have utilised the visual presentation facility and hands-on training area.

This has proved to be a great success in promoting a clear understanding of the Porotherm System and the advantages it can offer. The provision of a dedicated Porotherm training facility has therefore become one of the key requirements to become a Porotherm System Distributor.

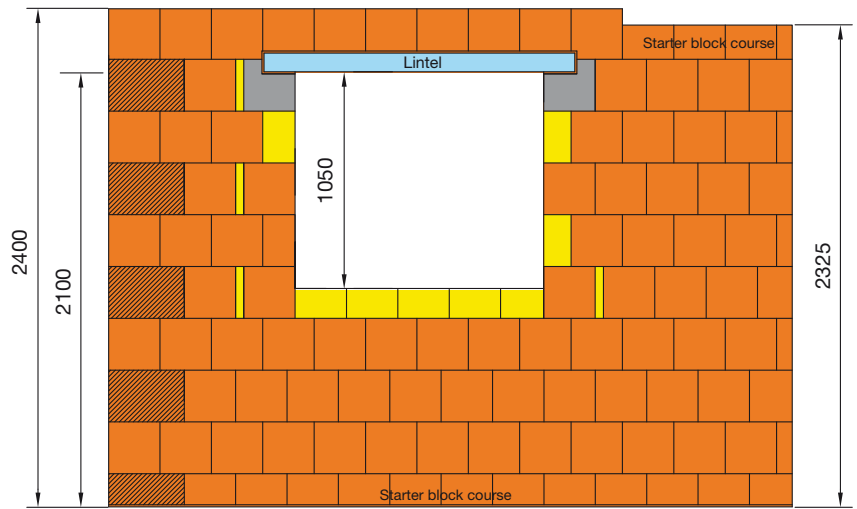
Wienerberger are also investing in the future by working closely with Building Colleges to develop local skills and nationally accredited courses for Lightweight Clay Block Masonry.





Reciprocal saw (Alligator saw)

De-Walt manufacture Alligator saws, designed specifically for cutting Porotherm when fitted with the correct blade. The Alligator saw cuts through Porotherm blocks easily and creates very little dust. For high volumes or repetitive cuts, wet bench saws can be used on site. Alternatively, pre-cut blocks can be ordered from Porotherm System Distributors.



T12-365 Block

Damp proof course (DPC)

A variety of DPCs are suitable for use with Porotherm. The System Distributors stock and supply Zedex co-polymer high performance membranes for the core range of blocks in prescribed widths to accommodate a 5mm overhang either side. Zedex was used in the CERAM test programme.

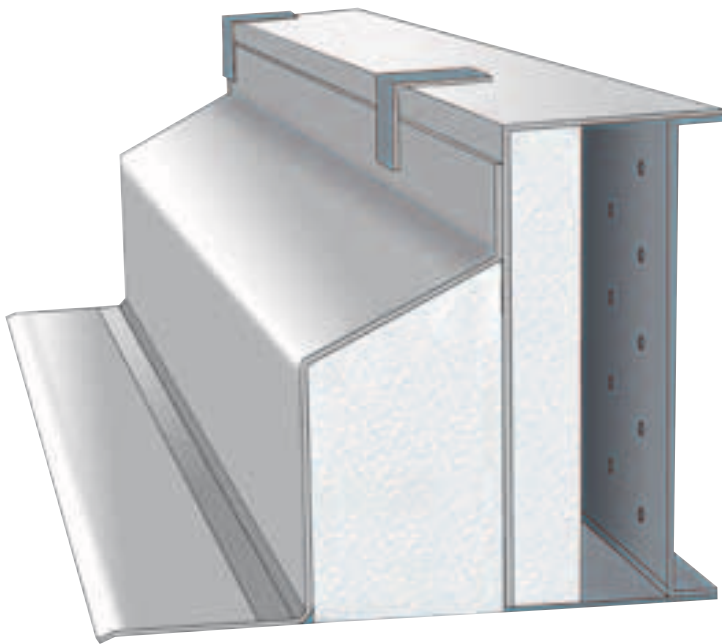


Wall ties for the Porotherm range

Wall ties used in traditional brick and block structures are not suitable for use with the Porotherm walling systems, as they are too thick to fit into the 1mm joints. Whilst there are a variety of compatible stainless steel wall ties available, Ancon Building Products have developed and tested a range of ties specifically for Porotherm. These were included in the CERAM test programme. Where it is necessary to create space within the bed for ties, the use of a carborundum rasp may be required.

Lintels

A range of lintels has been developed by Keystone specifically for the Porotherm System. These have been tested as part of the CERAM test programme to ensure their suitability and are available from Porotherm System Distributors. A two part cavity wall lintel has been developed to allow independent construction of each leaf. Lintels are bedded in traditional mortar - nominally 10mm thick.






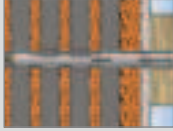


Installing lintels

Install the lintel on a horizontally levelled traditional mortar bed and support it correctly. The bearing depth must be the same on both sides and at least 150mm. Mortar should be applied to the faces of the vertical joints at either end of the lintel. NB. Lintels may need temporary propping - especially during the installation of concrete floors. For more information refer to Keystone.



Fixings

It is very straight forward to fix into Porotherm products. A wide range of fixings are suitable. The range of fixings tested on Porotherm blocks by 'fischer' are shown below.

PRODUCTS	FIXINGS
<p data-bbox="715 645 887 674">Universal plug UX</p> 	<p data-bbox="1241 645 1294 674">Light</p>  <p data-bbox="1074 788 1457 813">e.g. Lamps / pictures / towel rails / small shelves</p>
<p data-bbox="659 833 943 862">fisher Nylon FUR Frame Fixing</p> 	<p data-bbox="1225 833 1305 862">Medium</p>  <p data-bbox="1034 1005 1497 1030">e.g. Wardrobes / door frames / windows / kitchen cabinets</p>
<p data-bbox="691 1052 911 1081">Injection cartridge FIS V</p> 	<p data-bbox="1233 1052 1297 1081">Heavy</p>  <p data-bbox="1070 1276 1460 1301">e.g. Gates / staircases / hand rails / consoles / TV</p>

IMPORTANT – Do not use hammer action. When drilling into Porotherm, only rotary action is required.

Building with Porotherm

Porotherm is fast – up to 10m² per man, per hour is possible – sometimes more in favourable conditions e.g. long straight runs etc. The true 1mm thin joint technology of Porotherm enables a quick, clean and virtually dry construction. Note; Health and Safety guidance is given at the back of this brochure.

Setting out the first course

The first course of Porotherm is laid above DPC, on a bed of traditional mortar to a string line. We suggest a ratio of 1:5 (cement : sand). It is imperative that each block is laid completely level, horizontal in both directions and vertically plumb. Laser levelling equipment is usually used together with the use of a boat level which helps ensure the required level of accuracy across the plane of the wall. There must be a continually flat and level block surface, with no ‘lips’ between the blocks. A spirit level run across the tops of adjacent blocks is usually used to check this. A rubber mallet is usually used to adjust the position of the blocks.

Mixing the bed joint mortar

The mortar should not be mixed or used unless the air temperature is at least +3°C or rising. Once the first course has been laid, allow enough time for the traditional bed of mortar to harden, as this course must be stable, before proceeding with further courses.

Mixing the bed joint mortar (roller method)

- Always use a clean mixing bucket of the required capacity.
- For a full bag mix, add 7.5 litres of clean water to the mixing bucket prior to adding any powder.
- Add the dry bed joint mortar and then agitate using a suitable paddle mixer until a smooth and lump free consistency is produced.
- After a short resting period, stir again.

Water addition may be varied according to weather conditions e.g. more water may be required in the mix during warm, windy conditions. Where the dipping method is used, it may be necessary to use between 9 and 11 litres of clean water, to 25kg of bed joint mortar powder. Use the lower quantities of water during cold or inclement weather.

Typical build



Start: 11.52am End: 12.32pm
Two men 40 minutes to lay 130 blocks = 8m²
Laying Speed = 6m² per man per hour



Remove any debris that may be present on each course of blocks using a dampened bristle brush. This is to avoid contamination of the mortar roller and any large particles fouling the joints. The bond should be a minimum of 1/3 of the block length, necessary as a coursing overlap.

Fill the mortar roller with the bed joint mortar and 'charge' the drum by running in one direction, several times, until the entire drum is coated. The roller has a trigger operated gate, which opens to dispense mortar onto the drum.

Complete coating of the block webs and especially the shells (edges) is required. This is easily achieved by co-ordinating the speed of rolling with trigger pressure.



Where a DPC is required between two courses of Porotherm blocks, apply bed joint mortar to the lower layer of blocks. Roll the DPC in place and roll a layer of bed joint mortar directly onto the DPC. Then proceed with the following courses as normal.

Maximum lift height

Generally the day after the base course is laid, Porotherm can be constructed up to storey height. Depending upon weather conditions and the frequency of any returns or intermediate walls, temporary propping may be required.



Effective protection against rain can be provided by covering the tops of walls with adequately weighted membrane or board. Always allow free air circulation under any membrane protection.

Scaffolding

Scaffolds should be erected in accordance with the current regulations, as it would be for any other masonry structure and undertaken by a competent company.

The logistics of constructing Porotherm in advance of the external façade may also require the erection of scaffold in advance to provide safe working conditions.

Chases

Installing chases for the purposes of running services is best achieved by using a proprietary tool designed specifically for the purpose e.g. a wall chaser with two parallel diamond tipped cutting wheels. A bolster chisel can then be used to remove the cut section.

Table 8.1 - Sizes of vertical chases and recesses in masonry, allowed without calculation

Thickness of wall mm	Chases and recesses formed after construction of masonry		Chases and recesses formed during construction of masonry	
	Max depth mm	Max width mm	Minimum wall thickness remaining mm	Max width mm
85 - 115	30	100	70	300
116 - 175	30	125	90	300
176 - 225	30	150	140	300
226 - 300	30	175	175	300
> 300	30	200	215	300

NOTE 1 The maximum depth of the recess or chase should include the depth of any hole reached when forming the recess or chase.

NOTE 2 Vertical chases which do not extend more than one third of the storey height above floor level may have a depth up to 80mm and a width up to 120mm, if the thickness of the wall is 225mm or more.

NOTE 3 The horizontal distance between adjacent chases or between a chase and a recess or an opening should not be less than 225mm.

NOTE 4 The horizontal distance between any two adjacent recesses, whether they occur on the same side or on opposite sides of the wall, or between a recess and an opening, should not be less than twice the width of the wider of the two recesses.

NOTE 5 The cumulative width of vertical chases and recesses should not exceed 0.13 times the length of the wall.

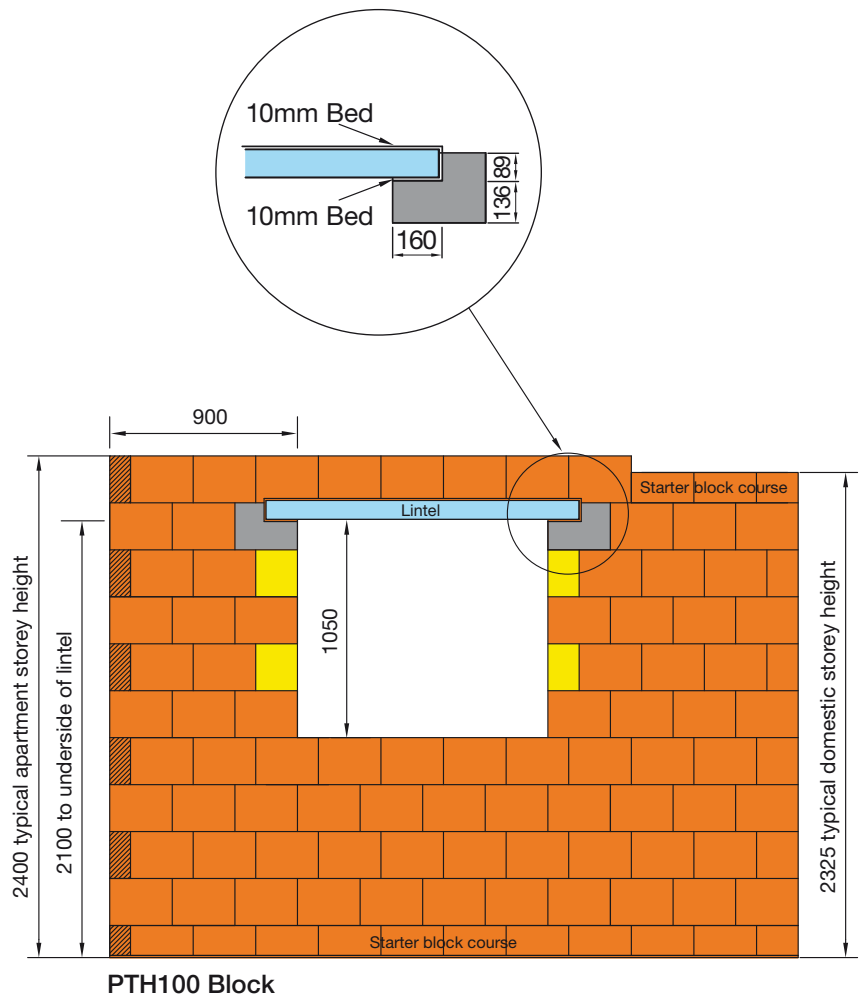


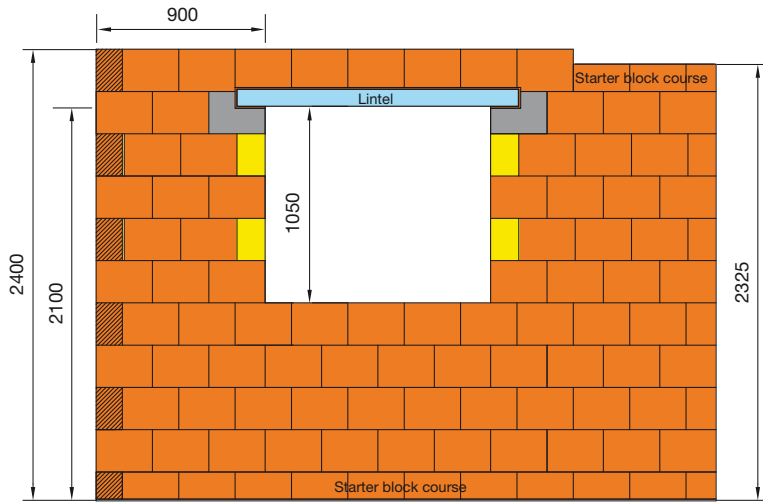


Movement joints

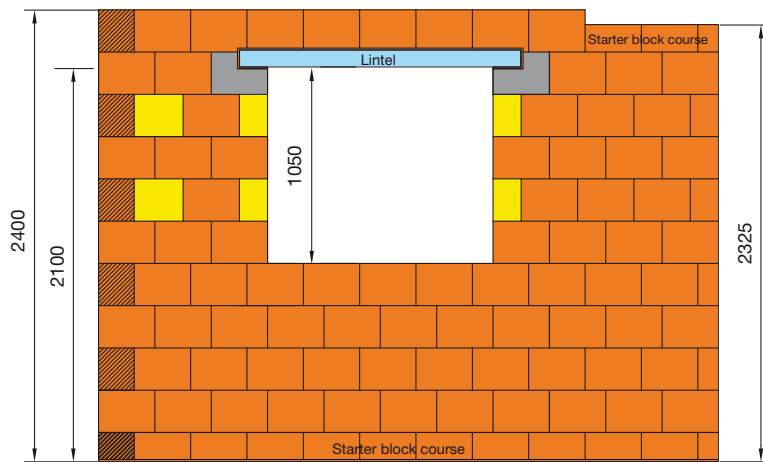
Vertical movement joints are recommended where masonry lengths exceed 20 metres and these should be designed by the structural engineer. The requirements for any joints within applied finishes should be checked with the relevant manufacturer. Deflection joints are required at the head of infill panels within concrete or steel framed structures. The advice of the project structural engineer should be sought.

Appendix 1 - Coursing details

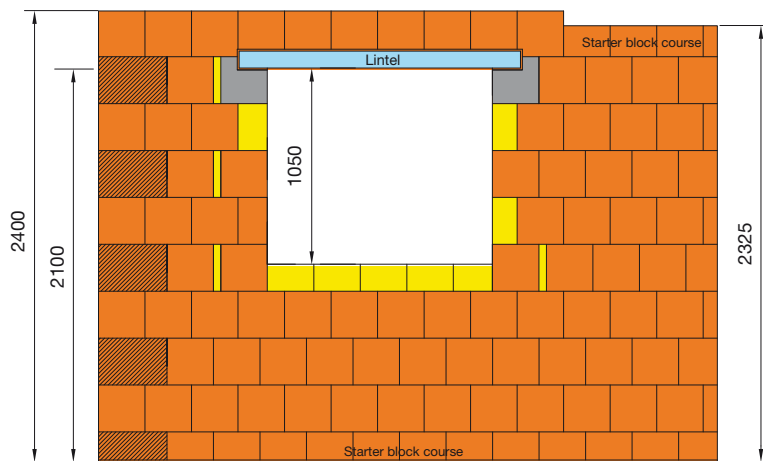




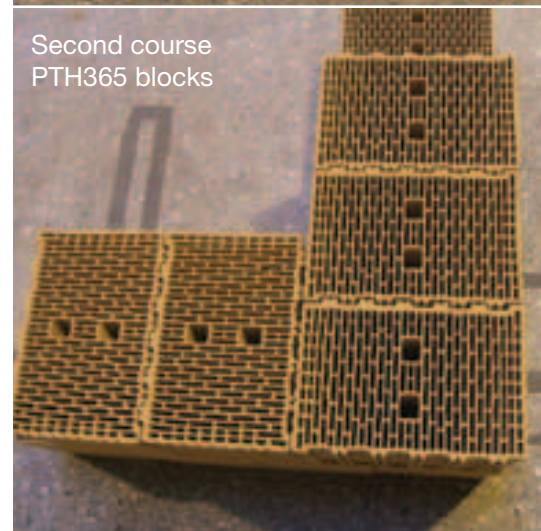
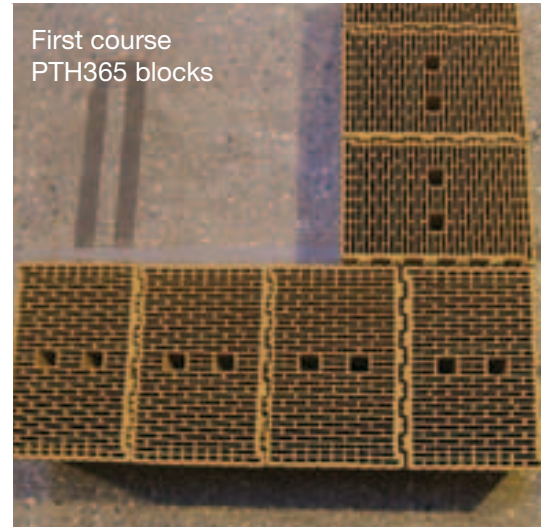
PTH140 Block



PTH190 Block



T12-365 Block





Appendix 2

Health and Safety Guidance Notes - The Safe use of Porotherm Clay Products

The Health & Safety at Work Act, Consumer Protection Act and other legislation requires us to provide relevant information in regard to our products, in respect of handling, processing, storage, transportation and disposal without causing risk to health.

Handling

Porotherm blocks are vertically perforated clay masonry units. They are manufactured from natural materials and are considered to be an inert substance, which presents no risks to safety and health through handling or use, subject to good site practice being followed. The use of Personal Protective Equipment (PPE), such as hard hats, safety footwear and gloves is strongly recommended where practicable, to reduce the risks from sharp edges and falling objects.

Clay blocks should not be hit with trowel, chisel or hammer as this may result in flying sharp fragments that may cause injury and result in damage to the external and internal structure of the products. Where cutting or shaping of blocks is required, it is recommended that suitable cutting equipment is used, according to the manufacturer's guidance. Suitable eye protection and Respiratory Protective Equipment (RPE) e.g. goggles, dust masks and ear protection should be worn when cutting Porotherm blocks. When drilling into Porotherm blocks, only rotary drilling is required.



Porotherm clay blocks are packed on wooden pallets, banded and shrink wrapped to maintain the integrity and stability of the pack and for protection of the products from the elements. Packs are heavy and great care should be taken when handling and transporting. The appropriate equipment suitable for the lifting task should be utilised and the safe working load (SWL) of the lifting equipment should always be above the total weight of the pack being lifted.

All personnel should be made aware that products are not secured to the pallet with straps. When handling the packs, this should always be done using forks i.e. pallet truck or forklift truck / crane with suitable fork attachments.

Avoid: Abnormal shocks to the packs

Sliding one pack against the face of another pack

Stacking pallets more than 2 x pallets high

Note: Security of straps can deteriorate over time

It is strongly recommended that packs should be placed wherever possible on dry, well drained, flat, solid ground, suitable for the purpose. The multiple stacking of packs is inadvisable and potentially dangerous, but in no circumstances should this be more than 3 packs high. Minimising product movement around the site will contribute significantly to safety.

Only lift by inserting tines beneath the pallet provided. It is recommended that lifting forks have a width of 90mm and a length of 1100mm. Under no circumstances should a 'side grab' device be used to lift packs of Porothersm, as this could both damage the products and lead to the pack becoming unstable.

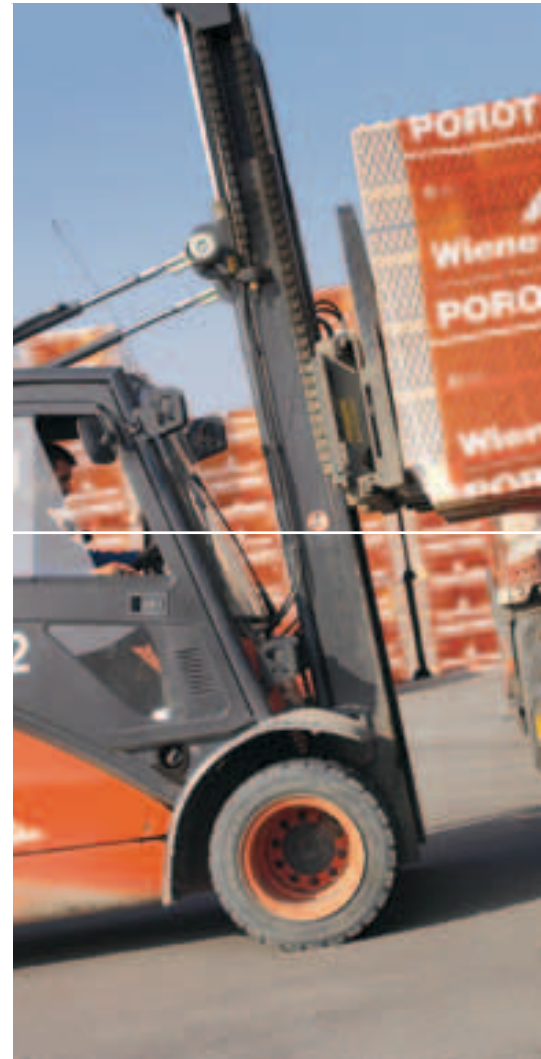
Opening the packs for use

Packaging should be removed using appropriate tools. Straps should be cut by wire cutters and not burst open by application of levered pressure. When cutting straps the operative should stand to the side of the strap being cut and not in line with that strap. Highly tensioned straps can spring away from the package when tension is released. In accordance with the Personal Protective Equipment at Work Regulations 1992, persons cutting wires under tension MUST wear suitable eye protection. Ref: BS EN 166, 167 & 168.

Strapping around packs of Porothersm has sharp edges. Suitable gloves should be used when handling this material. When straps are cut, care must be taken to protect the operative from blocks that may fall from the pack. Particularly where products may have moved during irregular transport or storage, causing them to be unstable. It is recommended that protective footwear and overalls are worn when carrying out this operation.

Disposal

As Porothersm products are considered to be inert, there are no special waste disposal requirements. This can be used as hardcore or disposed of responsibly as non-hazardous waste. Packaging should be collected daily and disposed of in an appropriate manner. The burning of waste is restricted and generally should not be carried out on site.





COSHH (Control of Substances Hazardous to Health)

In general, fired clay products typically contain between 50% - 70% silica. If standard powered tools (e.g. disc cutters) are used to cut this product, substantial levels of dust may be produced. This is significantly reduced when using an electric reciprocal saw. Depending on the environment and the method of cutting, it is possible that some respirable silica may be generated and released into the air.

The main effect in humans in the inhalation of respirable silica dust is silicosis. There is sufficient information to conclude that the relative lung cancer risk is increased in persons with silicosis. Therefore preventing the onset of silicosis will also reduce the risk of cancer. Since a clear threshold for silicosis development cannot be identified, any reduction of exposure will reduce the risk of silicosis.

Under the COSHH Regulations, the Workplace Exposure Limit (WEL) for respirable silica is 0.1mg/m³ (from October 2006). The only reliable way to ascertain the levels of individual exposure is to carry out detailed personal monitoring. Persons carrying out dry cutting operations **MUST** wear suitable respiratory protection. A suitable respirator or disposable mask meeting BS EN 149 (specification for filtering masks to prevent inhalation of particles) preferably class FFP3 is recommended. The use of suitable respiratory protection by those working near to the dry cutting operation should be considered. Our advice would be to avoid the dry cutting of blocks wherever possible. Wet cutting reduces the amount of dust generated. Cutting operations should always be carried out in a well ventilated area. Unless a reciprocal saw is available, or a bench mounted wet saw, it is recommended that off site, specialist cutting services be used.

Manual handling

There is a large range of Porotherm products available and an individual block may weigh anywhere between 6kg – 20kg. This could present a risk of manual handling injury. We recommend that the HSE Information Sheet Guidelines (Construction Sheet No. 37 – ‘Handling Building Blocks’) be followed.

It is the customer’s responsibility to obtain technical data on all materials to be used with Porotherm products.



The following guidelines are available on request from their publishers.

HSE - Handling Building Blocks

This guidance by the construction industry Advisory Committee (CONIAC) covers the safe handling of building blocks, by which the committee means all masonry units and blocks including those made of clay.

HSE - Silica

Silica occurs as a natural component of many materials used or encountered in construction activities. This information sheet deals with crystalline silica which can cause lung disease and often forms a significant proportion of clay, shale and slate.

Redco 11 MSDS - Expanded Perlite Products

This sheet details product identification, ingredients, properties, risks and safe handling associated with Perlite products.

NHBC - Good Craftsmanship Guide

This publication highlights key problems with brickwork and blockwork and gives guidance on how to avoid them. The Guide, based on the NHBC Standards, is intended for use by NHBC registered builders and inspection staff.

Safety Instructions - Bed Joint Mortar

Data Sheet according to 1907/2006/EC, Article 31

1 Identification of the substance/preparation and of the company/undertaking

Product details

Trade name: PDBM-UK POROTHERM thin bed mortar. Article number: SDB Nr. 20.102e

Application of the substance / the preparation factory dry mortar of mineral bonding agents to mix with water. Manufacturer/Supplier: quick-Mix Gruppe GmbH & Co. KG Mühleneschweg 6 D-49090 Osnabrück. Further information obtainable from: Abteilung: Technische Beratung, Telefon: +49 (0)541 601-643, EMail: info@quick-mix.de

Information in case of emergency: Giftinformationszentrum Nord (GIZ Nord) Universität Göttingen, Tel: (0551) 19240

2 Hazards identification

Hazard description



Xi Irritant

Information concerning particular hazards for human and environment: R 37/38 Irritating to respiratory system and skin.

R 41 Risk of serious damage to eyes.

Classification system: The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

GHS label elements



Danger

3.3/1 - Causes serious eye damage.
3.2/2 - Causes skin irritation.



Warning

3.8/3 - May cause respiratory irritation.

Prevention: Avoid breathing dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. **Response: IF ON SKIN:** Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell. Specific treatment (see label). If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse. **Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations. **Additional information:** Hazard designation "irritant" is not applicable to dry powder, but only after moisture/water addition (alkaline reaction). The preparation is low in chromate (in accordance with TRGS 613/ Germany). The effectiveness of chromate reduction depends on correct storage and the respect of the use-by date (pls. see point 7).

3 Composition/information on ingredients

Chemical characterisation

Description: Dangerous components: CAS: 65997-15-1 Cement, portland, chemicals

EINECS: 266-043-4  Xi; R 37/38-41 Danger:  3.3/1, 3.2/2 Warning:  3.8/3

4 First aid measures

General information: Immediately remove any clothing soiled by the product. After skin contact: Immediately rinse with water. If skin irritation continues, consult a doctor. After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor. **After swallowing:** Rinse out mouth and then drink plenty of water. Seek immediate medical advice. Information for doctor: If swallowed seek medical advice immediately and show the doctor packing or label.

5 Fire-fighting measures

Suitable extinguishing agents: Product does not burn, fire-extinguishing activities according to surrounding. For safety reasons unsuitable extinguishing agents: Water with full jet. Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

Person-related safety precautions: Avoid formation of dust. To avoid skin and eye contact. Ensure adequate ventilation



Measures for environmental protection:
Do not allow product to reach sewage system or any water course.

Measures for cleaning/collecting: Pick up mechanically.
Avoid formation of dust.

7 Handling and storage

Handling: Information for safe handling: Prevent formation of dust. To avoid skin and eyes contact. **Information about fire - and explosion protection:** No special measures required. **Storage:** Requirements to be met by storerooms and receptacles: Store only in unopened original receptacles. Keep container tightly closed. Information about storage in one common storage facility: Do not store together with acids. Further information about storage conditions: Protect from humidity and water. To avoid dispersible dust. **Storage class:** 13.

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7. Ingredients with limit values that require monitoring at the workplace: 65997-15-1 Cement, portland, chemicals (25-50%). WEL Long-term value: 10* 4** mg/m³ *inhalable dust **respirable dust.

Additional information: The lists valid during the making were used as basis. **Personal protective equipment:** General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Do not inhale dust / smoke / mist. Avoid contact with the eyes and skin. Do not eat, drink, smoke or sniff while working. Be sure to clean skin thoroughly after work and before breaks. Use skin protection cream for skin protection.



Respiratory protection:
Dust Mask



Eye protection:
Safety glasses

Protection of hands: Use gloves of stable material (e.g. Nitrile) - if necessary tricoted to improve the wearability. **Body protection:** Protective work clothing. Material of gloves - Penetration time of glove material.

9 Physical and chemical properties

General Information - Form: Like powder. **Colour:** Grey. **Odour:** Odourless. **Change in condition - Melting point/Melting range:** Undetermined. **Boiling point/Boiling range:** Undetermined. **Flash point:** Not applicable. **Self-igniting:** Product is not selfigniting. **Danger of explosion:** Product does not present an explosion hazard. **Density:** Not determined. **Solubility in / Miscibility with water:** Partly soluble. **Organic solvents:** 0.0 % **Water:** 0.0 % **Solids content:** 100.0 %

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. **Materials to be avoided:** To avoid contact with acids. **Dangerous decomposition products:** No dangerous decomposition products known at correct handling and storage.

11 Toxicological information

Acute toxicity: Primary irritant effect: on the skin: Irritant to skin and mucous membranes. on the eye: Strong irritant with the danger of severe eye injury. **Sensitisation:** Sensitisation possible through skin contact. **Additional toxicological information:** The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Irritant

12 Ecological information

General notes: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

Product: Recommendation



Must not be disposed together with household garbage
Do not allow product to reach sewage system.
Remove in accordance with local official regulations

European waste catalogue: 10 13 11 wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10 10 13 14 waste concrete and concrete sludge. **Uncleaned packaging: Recommendation:** Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID (cross-border). ADR/RID class: Item: No hazardous material as defined by the prescriptions.

15 Regulatory information

Labelling according to EU guidelines: The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.



Xi Irritant
Risk phrases: 37/38 Irritating to respiratory system and skin. 41 Risk of serious damage to eyes.

Safety phrases: 2 Keep out of the reach of children. 22 Do not breathe dust. 25 Avoid contact with eyes. 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 29 Do not empty into drains. 36/37/39 Wear suitable protective clothing, gloves and eye/face protection. 46 If swallowed, seek medical advice immediately and show this container or label. **National regulations:**

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Relevant R-phrases 37/38 Irritating to respiratory system and skin. 41 Risk of serious damage to eyes. Department issuing MSDS: Abteilung F&E. **Contact:** Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road). RID: Règlement internationale concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail). GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

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