

SPECIFICATION

General

External wall cladding to be Gebrik Insulating Brick System supplied by: -

Aquarian Cladding Systems Ltd
Eversea Business Centre
13 Gardens Road
Clevedon
North Somerset
BS21 7QQ

Tel: 0844 334 0077
Fax: 08447 550289
Email: info@aquariancladding.co.uk
Website: www.aquariancladding.co.uk

Aquarian Cladding Systems Ltd is the sole distributor of Gebrik for England, Scotland and Wales in accordance with a Distribution Agreement established with Isosystems AG

Gebrik Insulating Brick System is manufactured by: -

Isosystems AG
Industrie Park 53
B-4770 Schoppen/Amel
Belgium

Tel: 00 32 80 348000 Fax: 00 32 80 348009
Email: info@gebrik.be
Website: www.gebrik.be

Material

Brick specification

- Standardisation in conformity with CE NEN EN 771-1 Category I - HD
- Type: extruded / machine-thrown / sanded stock / waterstruck (WS)
- Measurements (l x h x t /mm): UK: 215x65x15-20; WF: 215x50x15-20, 61: 240x65/66x15-18; R6: 440x65x17; R5: 440x50x17
- Co-ordinating dimensions of bricks & mortar joints (mm): UK: 225x75mm; WF: 225x61.36; 61: 250x76.44; R6: 450x75; R5: 450x61.36
- Masonry bond: stretcher bond / stack bond / flemish bond
- Surface texture: smooth / sanded / textured / dragwire / creased / waterstruck / weathered / glazed
- Appearance: plain / shaded / multi / engobed
- Colour shade: white / cream / yellow / orange / pink / red / purple / brown / blue / grey / black / ... (approximate description).
- Frost resistance: F2 (very frost resistant)
- Average water absorption: 3% - 15% (subject to brick type)
- $\lambda = 0.5 \text{ W/mK}$
- Density (kg/m³) > 1800

Insulation

- Polyurethane hard foam, CFC free and HCFC free (propellant = n-pentane)
- Thermal conductivity A (A₀ based on EN 13165):
- $\lambda = 0.030 \text{ W/mK}$
- Insulation thickness (mm) ≥ 40
- Density (kg/m³) > 35
- European fire category (NBN EN 13501-1:2007+A1:2009): B-S1-D0

Panels

- Measurements (L x W x H): UK/WF/R5/R6: 1350 x 60 x 675 mm; 61 1375 x 60 x 688 mm
- The panels are supplied with a pre-formed channel to create a chamber for in-situ foam injection

Additional insulation

To improve thermal performance, an additional rigid layer of insulation can be factory-applied to panels or applied to the substrate prior to application of the Gebrik system. Up to 60mm of PUR ($\lambda = 0.025 \text{ W/mK}$) can be applied at the factory or up to 100mm PUR, PIR, EPS or XPS can be used provided it has sufficient resistance to compression, Additional insulating layers must be pre-attached independent of the fastening of Gebrik as follows:

When working with two layers, we recommend using the Gebrik PUR foam (PUB cans) to bond the back of the Gebrik panel to the installed insulation layer as follows:

- Additional insulation thickness <60mm: No additional bonding required.
- Additional insulation thickness ≥ 60 mm: Additional PUR bonding is recommended.
- Additional insulation thickness ≥ 100 mm: Additional PUR bonding is required.

Furthermore, we recommend that the first insulation layer should be bonded to the substrate with either adhesive mortar or PUR foam as follows:

- Additional insulation thickness <80mm: No additional bonding required.
- Additional insulation thickness ≥ 80 mm: min 40% of the surface must be glued.
- Additional insulation thickness ≥ 140 mm: min 60% of the surface should be glued.

It is also recommended that a minimum of 2no fixings/m² should be used to mechanically attach the first layer of insulation layer.

Insurance

- Gebrik is supplied with an insurance-backed guarantee of 10 years on the entire system. A copy is available upon request.
- Gebrik has been accepted for use by NHBC, Premier Insurance and Zurich but the policy holder must satisfy themselves and their insurer during the design stage that Gebrik will be covered under warranty for the intended project-specific use.

Certification

- Gebrik has a BBA certificate (no 07/4403) for application to concrete and masonry substrates >18m.
- An amendment to the existing BBA certificate is pending for application to light gauge steel, timber and SIPs framing systems <18m and for application to light gauge steel frame >18m.
- Gebrik has been tested in accordance with CWCT Standard Test Methods for building envelopes, 2005 for application to light gauge steel frame and SIPs systems.

Installer Guidance

- The manufacturer or distributor must recognise the contractor as an installer of the system.
- The contractor must follow the supplier's installation instructions.
- Prior to application of the Gebrik system, the substrate must be sufficiently flat and in accordance with the guidance within the supplier's installation manual and the BBA certificate so that work can be carried out to a high standard and will comply with the guarantee.
- Installation of the system may only be completed with materials that are part of the system.
- The panels are mechanically fixed. The fixing points must be spread evenly over the surface of the element. The number of fixing points for standard elements depends on the height of the application and wind pressure (minimum 9 fixings/m²).
- The L-shaped corners are mechanically fixed and where PU corners and corner slips are site-applied Ø60mm washers should be used with the fixings (and plugs if onto masonry). At least 2 fixings are alternately placed on each side of the corners.
- Filling the chamber with the Gebrik PUR foam ensures the system is watertight and thermally efficient. It also contributes to securing the system to the substrate.

Pointing

- Pointing can be applied traditionally or from manual/mechanical gun applicators with lime/sand/cement mortar.
- The mortar should be category M2 (cement mortar) / M3 (lime mortar) in conformity with NBN B 14001 (1985), in accordance with the processing advice of the brick and mortar manufacturer.
- Joint shade: to architects instruction subject to supplier.
- Joint type: Flush joint / raked flush joint / hollow joint / raked hollow joint / weather struck joint. NB >3mm recessed joints are not recommended
- Joint finishing: Brushed joint / polished / tapped-on joint with a hard brush / etc.

Additional construction instructions

Movement Joints

- Movement joints should follow the substrate or typically be ≤7m vertically and ≤15m horizontally.

Openings

- Cut and bonded Gebrik reveals can be supplied up to 440mm long, ie 2 bricks deep and the face length is typically 215 and 330mm long (castellated up the reveal) using FE or RE type components.
- Brick reveals can be created on site by gluing extruded/cut corner slips (type ER) and standard slips (type R) to L-shaped PU (type PUE) produced to varying lengths.
- Powder-coated aluminium or uPVC flashings/pods can be used to line openings and abut Gebrik
- Cut and bonded Gebrik lintels (type ST/RE) can be supplied to the required depth and the first brick in the soffit measures ±60mm.

External Corners

- Cut and bonded Gebrik external corners are supplied 215x330x675mm in UK/WF format (type HE1/1.5) and are castellated up the corner. For 61format, they are supplied 240x240x675mm (type HE1/1) and stacked in alignment.
- External corners can be created on site by gluing extruded/cut corner slips (type ER) and standard slips (type R) to L-shaped PU (type PUE) produced to varying lengths.

Substrate

- Assess and prepare the condition of the substrate if necessary.
 - Any unevenness under 10mm over a 2m straight edge and the surface area of which is less than 1/3 of the surface area of the Gebrik element need not be filled or removed. (In such instances wooden or plastic packers between 2mm and 10mm should be used to ensure flush panel abutment).
 - Any unevenness between 10mm and 40mm are treated by either of the following methods:
 - Render
 - Lathe and plywood or cement particle board
 - Injection of mono component PU foam
 - Use of PU or PE panels with a density greater than 40kg per metre³
 - Remove projections with appropriate tools
- a) **For concrete/clay masonry:**
- Masonry or concrete to which the cladding is fixed must be structurally sound and constructed in accordance with one or more of: the designers instructions, BS/EN codes of practice (and their respective UK National Annexes) and the Building Regulations
 - If the masonry/render finish is crumbling or the joints are porous then a bonding test should be undertaken should there be any doubt.
 - Remove any loose or flaked masonry/render.
 - Extreme rough cast render may need to be smoothed with appropriate mechanical equipment to ensure a large contact area.
- b) **For light gauge galvanized steel framework:**
- The substrate should be installed by others and must be structurally sound. It should be designed and constructed in accordance with BS EN 1993-1-3 : 2006 and its UK National Annex
 - A minimum 12mm waterproof sheathing i.e. wood/cement particle board with sufficient fixing and load resistance to carry the Gebrik system (35-40kg/m² subject to brick finish) should be installed at centres in accordance with the engineers design
- c) **For timber stud framework:**
- The substrate should be installed by others and must be structurally sound. It should be designed and constructed in accordance with BS EN 1995-1-1:2004, the UK National Annex and preservative treated in accordance with BS EN 351-1 : 2007
 - A minimum 12mm waterproof sheathing i.e. wood/cement particle board with sufficient fixing and load resistance to carry the Gebrik system (35-40kg/m² subject to brick finish) should be installed at centres in accordance with the engineers design

Handling and Storage

- Gebrik is supplied shrinkwrapped and palletised on non-returnable Standard (720x1330mm) and Euro pallets (800x1200mm).
- The maximum number of panels per pallet is 28no and maximum weight per pallet is 850kg.
- Deliveries to site are stacked flat on curtain-sided articulated vehicles, unless otherwise agreed and should be off-loaded and transported on site by fork-lift or carried vertically and handled with care to avoid damage.
- The storage area should be flat and stacks of panels should not exceed 28no high.
- The storage area should be cordoned off to protect from impact damage and kept dry, protected from precipitation, direct sunlight and ground water.
- Brick slips and returns, containers of adhesive, mortars, sealants and expanding foam should be stored in dry conditions and protected from frost and excessive heat.
- Fixings, trims and rails should be protected from damp.

Labelling and marking

All panels are marked on the edge with the following information:

- *ISOSYSTEMS*
- Technical approvals incl the number of the certificate
- Date and hour of production (at the end of the production cycle)

Each pallet contains a label including the following information:

- Contact details of Isosystems
- Various technical approvals and numbers of the certificates
- Type of packed product
- Date of packing
- Type of insulation foam
- Brand (batch of production of the brick slips)
- Customer name, order number, site reference, site address
- Quantity of items on the pallet

The rear of the label provides a brief guide to the installation of the panels

PRODUCTION QUALITY CONTROL

Gebrik components are designed, manufactured and checked with the utmost care.

All panels and cut & bonded corners are manufactured in Schoppen (Belgium).

The strict quality control, competence & know-how of the production team, fully-maintained machinery, and tried & tested manufacturing processes ensure the durability of all panels and corners.

This document outlines the production checks necessary to determine the tolerance and quality of the system. It is predominantly based on the French NF P13-307 standard applied to production of the Gebrik system.

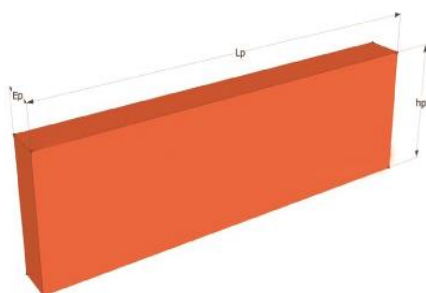
The elements are manufactured in moulds with fixed external dimensions as shown in the table below. The measurements of the manufactured brick slip series may deviate from their theoretical measurements. The following tolerances of the bricks slips are considered normal.

Table 1

Format	Nominal brick slip dimensions		Brick slip thickness	Panel Dimensions		Panel Thickness	Insulation Thickness
Tolerances	CE/FE/KI/SR -3/+1mm		± 1mm	Le : ±1.5mm		±2mm	
	VS/HW/FB -4/+1mm		±2mm	He: ±1mm			
	Lb	Hb	Tb	Le	He		
Format UK	215	65	15 to 20	1350	675	60	≥40
Format 6	240	65/66.4	15 to 20	1391	714	60	≥40
Format 61	240	65/66.4	15 to 20	1375	688	60	≥40
Format R6	215	65	15 to 20	1350	675	60	≥40
Format R5	215	50	15 to 20	1350	675	60	≥40
Format WF	215	50	15 to 20	1350	675	60	≥40
Format GC	265	127.5	15 to 20	1375	688	60	≥40

Aesthetic control of brick slips

- The brick slips are mixed in the factory in order to obtain a homogeneous colour blend.
- Some brick slips are designed to have an irregular shape to create a facade with an 'aged character'. Irregularities in the bricks or the brick surface are tolerated within the 5-10 mm per m² limits. Characteristic brick qualities such as heavy creasing, irregular arrises, colour variation (within a batch), etc. are not considered defects.



nominal dimension

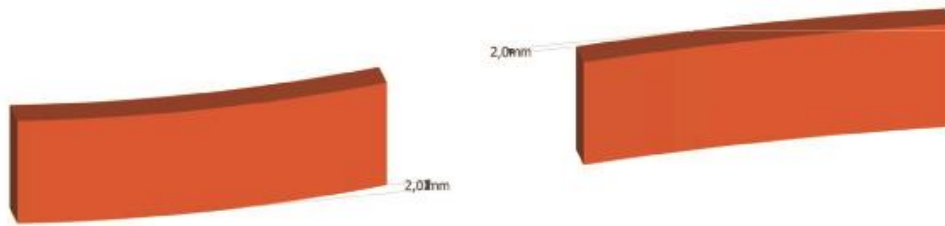
- the number of affected slips is no greater than 10% of the total number of brick slips per panel.

In this event, a request for exemption will be addressed to the customer. With its request, a panel sample can be prepared so that the customer can examine it and evaluate the aesthetical impact of the defect.

- Dimensions and tolerances on the length, the height and the thickness of the clay brick slips are indicated in Table 1 subject to the panel type

- If slips are too long they are systematically rejected as being too large for inclusion within the moulds.
- If slips are too short i.e. the nominal dimension is lower than the nominal dimension minus 2 mm, it may still be accepted if the following conditions are met simultaneously:
 - the measured dimension is no less than 4 mm of the

Flatness of the clay brick slips



- The acceptable tolerance is of a curve or torsion no greater than 2mm.

Quality Control Procedure

Prior to production, the following checks are typically carried out daily:

a) Checking the polyurethane

- Characteristic temperatures
- Density
- Mixing report
- Fire-resistance test B2 in conformity with DIN (4102 (German standard))

These values are also stated in the reports provided by the PUR supplier.

b) Checking the brick slips

- Dimensions
- Strength
- Colour
- Damage
- Flatness

The following checks are typically made of panels:

a) Internal (factory) tests

- Edges of the panels
- Thickness of the PUR
- Density of the PUR
- Percentage of closed cells
- Testing the fire-resistance of the PUR, B2 in conformity with the German DIN 4102 standard
- Lambda value of the fresh PUR, after 9 weeks and after 25 weeks
- Measurements of the panels
- Compression tests (> 400 N)
- Testing the bonding strength of the brick slips in the PUR (tensile strength > 0.1 Mpa or 0.1 N/mm²)

b) External (third party) tests

Brick slips

- Water absorption: Tests are carried out in conformity with the EN-ISO 10545-3 standard 1997 (CSTC-Limelette)
- Frost-resistance: Tests are carried out in conformity with the EN-ISO 10545-12 standard 1997 (CSTC-Limelette)

Polyurethane (CSTC Limelette; FIW MOnchen)

- Measuring the lambda value (FIW MOnchen)
- Volume mass (FIW MOnchen)
- Content of ash(FIW MOnchen)
- Percentage of closed cells (FIW MOnchen)
- Compression at 10% (FIW MOnchen)
- Analysis of the blowing agent (FIW MOnchen)

Testing the entire system

- Dimensional variations (ULG Liege)
- Tensile force of the brick slips (ULG Liege; CSTC Limelette)
- Fire-resistance in conformity with German DIN 4102 and in conformity with French CSTB standard (CSTC Marne la Vallee)
- Resistance to external shocks (CSTC Marne la Vallee)
- Resistance to downpour under pulsating air pressure (CSTC Limelette)
- Water vapour transmission (ULG Liege)
- Exterior measurements (CSTC Marne la Vallee)
- Pressure on the spots of the drilling holes (CSTC Limelette)

GUARANTEE AND MAINTENANCE

When the Gebrik system is installed correctly it is maintenance free. The brick slips will obtain a natural weathering, which will give the building more character.

The Gebrik panels are supplied with a 10-year insurance-backed guarantee provided they are installed in accordance with the manufacturer's instructions by a certified installer.

Disclaimer

The working methods described in this document are merely recommendations based on our knowledge and latest insights. These recommendations are not representations of issues and characteristics that are binding by law. We cannot be held liable for the representations in this document because there are many different types of substrate and building types. We cannot therefore accept liability for the content herein and the legal provisions for product liability do not apply.

The recommendations do not discard the buyer's and fitters own obligations and responsibilities, especially with regard to taking into consideration other important technical guidelines, local regulations and laws.

Older publications of this manual are no longer valid when a new issue of this manual is available as a result of new developments in the technical field.