benx
the future of façades

sps|envirowall

RCM
BUILDING BOARDS & FACADES

A Guide to Benx Façades

About Benx

From masonry to framed construction, high to low rise, internal to external wall linings, Benx offers a solution.

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RCM
BUILDING BOARDS & FACADES

Supertech | Render | Brick Slips | Swiss Pearl | Rockpanel | ACM | Solid Aluminium | Stone

Sheathing Boards | Insulation | Membranes | Fixings & Ancillaries | Cavity Barriers | Support Frames

Our national network of seven branches and distribution hubs allows us to provide a highly responsive service to our customers.

As a leading UK facades supplier, Benx is continuously evolving its portfolio of products and systems in line with changing legislation, new material technologies and increasingly sophisticated building designs.

Furthermore, because we have developed a complete range of products and support services, we can offer you a comprehensive range from sheathing boards, through support structures to façade finishes. A single-source “Golden Thread” for the life of the building.

Our aim is to offer you more choice while reducing your risk in choosing and designing building façades. We believe our approach is the future of façades.

Our Portfolio

Benx is unique as a designer and supplier of façade systems with a comprehensive tested and Agrèment based portfolio. At Benx, we can offer the complete through-wall solution:

- Façades panels and finishes
- Sheathing board
- Support Frame
- Rain screen insulation
- Cavity Barriers
- Airtight, fixing and ancillary solutions
- A market leader in the supply of external wall insulation
- Specialised manufacturing and fabrication facilities

Façade Range

ALUCOBOND
swiss pearl
LUXE COAT
supertech
Rockpanel
LAPITEC NATURALLY ITALIAN
RendaClad
vitradual
CS 1&2 Render
CS 1&2 Brick

Sheathing Boards

Vwall
Calcium Silicate/Fibre Cement
A1 Non-Combustible
BBA Approved

CEMBOARD
Cement Bonded Particle Board
Excellent Mechanical Strength
Excellent Acoustic Properties

Multipurpose
Cellulose Fibre Cement
A Non-Combustible
BBA Approved

DensGlass Sheathing
Fibreglass Mat with a Gypsum Core
A1 Non-Combustible
No.1 Specified Gypsum Sheathing Board in the US

Rainscreen Insulation

ROCKWOOL
KNAUFINSULATION
Kingspan

Support Frame

ALLFACE
Smart Fixing Systems

Cavity Barriers

AIM
TENMAT ADVANCED MATERIALS
Nullifire Smart Protection

Airtight Solutions

Proctor
DAFA
illbruck

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Sheathing Boards

Sheathing boards have formed an integral part of our business for well over 15 years. As one of the leading suppliers of sheathing boards to the UK construction market, we take great pride in our expertise in this field.

Unlike many companies, we do not believe that only one option is always the correct solution. At Benx, we offer - through our RCM brand - a range of industry-leading boards to meet our customers' needs.

Our boards are thoroughly tested - most offer Agrément certification - and have been used for a considerable amount of time within the applications we promote.With over 12 million m^2 of board supplied, you don't have to worry about our pedigree.

Y-wall	Calcium silicate	BBA	BS EN 12467 Cat A	**BS EN 13501 A1**
Multipurpose	Fibre Cement	BBA	BS EN 12467 Cat A	**BS EN 13501 A1**
Densglass	Gypsum	BBA Pending	Manufactured to BS EN 15283-1:2008+A1:2009	**BS EN 13501 A1**
Cemboard	Cement Particle		BS EN 634	**BS EN 13501 B-s1, d0**

Each board has its own characteristic qualities and strength. Our job is to support our customers in selecting the most appropriate solution for their project or business.

Furthermore, in house board fabrication is available to help minimise wastage and installation optimisation.

Insulation and Cavity Barriers

Insulation:

Benx has considerable experience in the use of multiple insulation types within our external wall insulation systems (EWI) incorporating both render and brick slip options.

The development of our rain screen systems is a natural evolution of this knowledge and expertise. As such, we understand the key technical criteria that need to be considered and designed into the project, including but not limited to:

Fire classification and resistance	It is important that fire classification includes the overall wall structure that the insulation is being designed into for the façade or inner wall.
Thermal and Condensation Risk Analysis	A key part of any through-wall system assessment is its impact on energy efficiency. Benx has provided these to clients for many years on our EWI systems and will shortly offer 3D thermal modelling on our rain screen systems as well.
Fixing method	Understanding substrates, sheathing boards, wind loading, building movement and fire are all key when securing insulation.

Cavity Barriers

Cavity barriers can vary considerably depending on the type of cladding system under consideration. With expertise in insulated systems such as EWI and rain screen solutions like our certified Swisspearl system, we are continuing to assess and partner with leading manufacturers to offer robust and tested solutions.

Our assessments focus on a range of factors, including

- Regulatory performance
- Fixing method
- Interface with other products such as sheathing board
- Installation details
- Test performance

We aim to offer a growing portfolio of tested solutions, working with you to mitigate risk.

Support Frame

The choice of support frame is a key consideration in façade design. It is a dynamic structure, affected by wind, thermal effects and building movement and supports the entire cladding panel system.

Features

- Mutiple solutions available
- Suitable for all substrates
- Compatible for most façade systems
- Cladding accessories available
- Variable support frame dimensions allow for different cavity depths.
- High strength aluminium
- Indicative and full design service available

Fixings

We offer a range of support frame options to accommodate different building structures, heights, locations (including marine), the type of cladding panel and cost considerations. A key design consideration is the choice of fixing method:

- Face fix cladding
- Secret fix cladding

Benx offers both these fixing methods with an extensive range of options to meet the most appropriate overall design solution.

Ancillary items

Benx works with a range of manufactures to deliver a wide selection of sealing, breather and protection products for the construction sector and industry. This wide range of products for creating airtight building envelopes include

1. Breather Membrane
2. EPDM Weather Resistant Seals
3. Vapour Control Layer (VCL) Tape ranges.

JOINT SEAL

RCM Joint Seal is a fully tested air tightness seal. It has been designed to create an air tightness seal on our external sheathing board range. RCM Joint Seal can also be used independently of RCM products.

A neutral cure silicon sealant used to seal movement joints, providing up to 4 hours fire protection while allowing a movement accommodation factor of 50%.

Fixings

Fixings are an integral part of multiple elements of any external cladding system.

- Sheathing boards
- Insulation
- Support frame
- Cavity barriers
- Trims and flashings
- External cladding panel

These elements often require variable solutions depending on various factors including building height, load, substrate, location (incl marine), fire, durability and compatibility with other corresponding components.

Benx understands the complexity of fixing specifications and the importance of correct specification and supply to all building stakeholders.

We provide reassurance that if fixings are supplied as part of our through-wall solution, they are suitable for their intended application.

Benx Through-Wall Solutions

Benx supplies complete through-wall solutions.

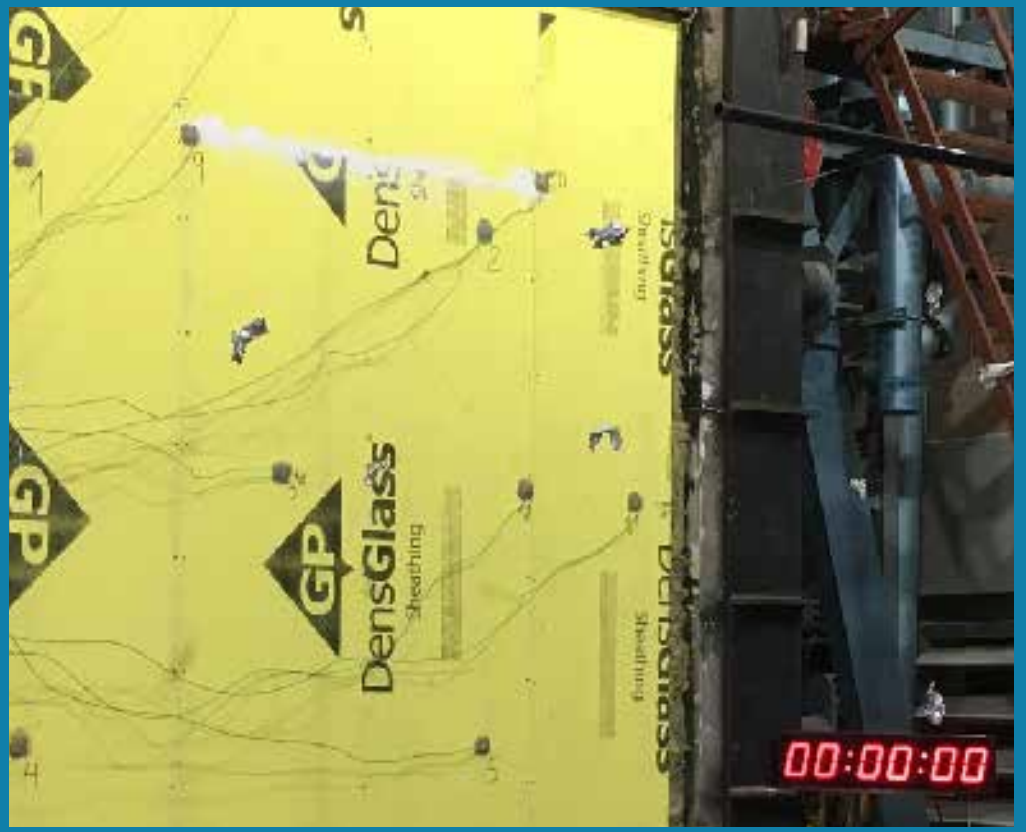
What is a through-wall solution?

The term ‘through-wall solution’ is used inconsistently across the facades industry and it is important to understand the differences between the various systems described as ‘through wall’. Through-Wall typically falls into two categories:

- **Inner Through-Wall.** Typically consists of plasterboards, VCL, fixings, fillers and tapes, inner stud metal or timber, insulation between the stud and an outer sheathing board
- **Outer Through-Wall.** Usually comprises sheathing board, membranes, EPDMs, tapes and seals, insulation, cavity barriers, support frame, cladding panels or finishes, trims, fixings and ancillaries.

Benx offers a comprehensive suite of options for **Outer** Through-wall, including both insulated solutions (such as with render or brick slip) and rainscreen solutions (e.g. with Swisspearl or Rockpanel cladding).

In addition, one of the most important tests for **Inner** wall is typically in relation fire performance under BS EN 1364 or BS EN 1365. Benx work with multiple frame and modular suppliers who have incorporated our range of sheathing boards into their test programs, as well as some of our own BS EN 1364/BS EN 1365 tests at Benx. We are therefore able to offer fully tested solutions by working in conjunction with multiple partners for **Inner** through-wall.



Working with our supply partners, Benx offers Full Through Wall solutions, by combining multiple variations of inner and outer through wall tested systems

Through-Wall and Fire Performance

Understanding the various options available and permutations for facades is daunting enough; linking it through to fire performance and testing can be even more challenging. Whilst we would not claim to have solutions for every situation, at Benx we have an extensive range of supporting tests and classification reports to support our clients.

For through-wall façades secured onto a steel or timber frame substructure, there are typically 4 fire classifications/tests that are referred to:

BS EN 1364	Fire resistance tests for non-loadbearing elements.	Walls
BS EN 1365	Fire resistance tests for loadbearing elements.	Walls
BS 8414 BR 135	Fire performance of external cladding systems.	Test method for non-loadbearing external cladding systems fixed to, and supported by, a masonry substrate.
BS EN 13501-1	Fire classification of construction products and building elements	Classification using data from reaction to fire tests.

Separate from the product or system classification under BS EN 13501-1, cavity barriers within the cladding system will typically be tested to either TGD 19 for open state cavity barriers, with principles of BSEN 1366-4 for ‘full-fill’ cavity barriers.

Other specialist fire stopping (for services, seals etc.,) may be required over and above those listed and should form part of the overall building fire safety strategy.

Benx Ltd EWI systems being successfully tested to BS 8414

Innovation in Testing: Thinking outside the box

Testing to either BS EN 1364 or BS EN 1365.

Benx has an extensive range of these tests in house and our framing partners have additional tests.

These range from 60min, 90min and 120 minutes walls, both outside to in, or inside to out

The principal of these tests normally includes the following components: plasterboard, SFS stud (which may have insulation between the studs), and an external sheathing board. For thermal performance and cold bridging additional insulation is fixed to the sheathing board. As there are many cladding variables, these are not typically included in the tests on the assumption that if the wall can achieve the fire performance without extra cladding, then this will have no adverse implication. The test is designed to achieve maximum fire load very quickly.

Simply put, if the internal wall can achieve 120 minutes, there is little if any, benefit to testing all of the wall. If you have concerns about the performance of the cladding outside BS EN 1364 & BS EN 1365 tested wall, then typically a BS 8414 test should be carried out.

As providers of through wall solutions, Benx identified that although individual products and systems are tested to specific standards, there can sometimes be gaps between the each different types of test such as the relationship between BS EN 1364 /BS EN 1365, BS 8414 and BS EN 1366-4.

Benx have completed a series of tests to substantiate performance with both cavity barriers (to demonstrate they could remain in situ), breather membrane (to demonstrate no detrimental impact on the wall) and support frame (to demonstrate that we could achieve 120 minutes through wall, even if the insulation was compromised by the support frame).

Pre Test

Post 2hr Test

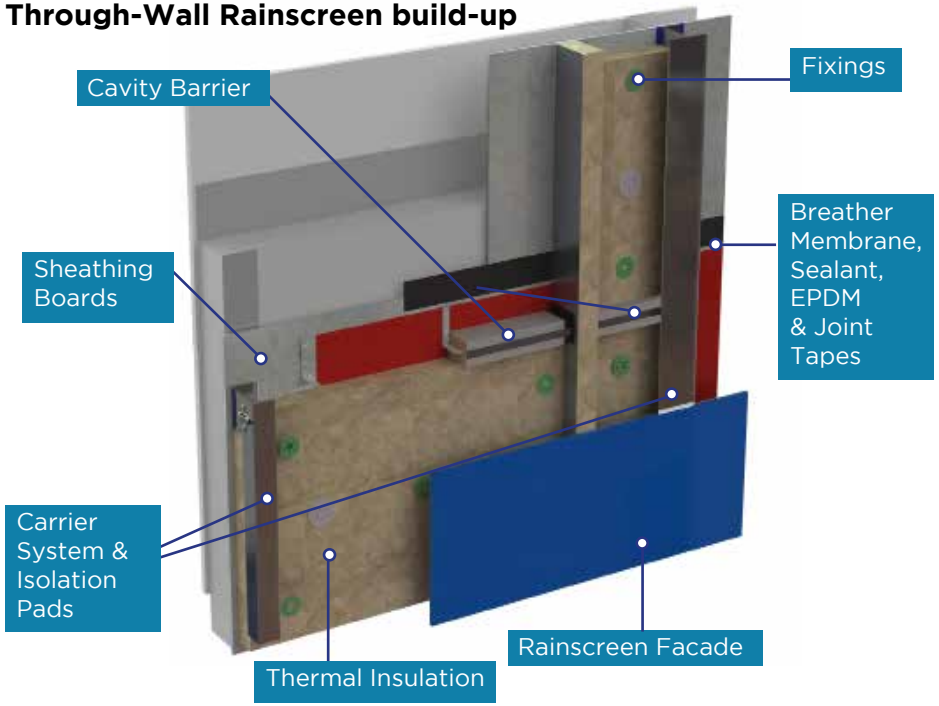
Benx Through-Wall Solutions

Benx supplies complete through-wall solutions.

Benx offers a comprehensive range of **Outer** through-wall solutions, from the relatively simple Supertech Weatherboard to the far more complex solid aluminum rain screen façade with secret fix. These systems can be offered either as discrete **Outer** systems or in conjunction with our **Inner** through-wall partners to create a **Full** through-wall solution.

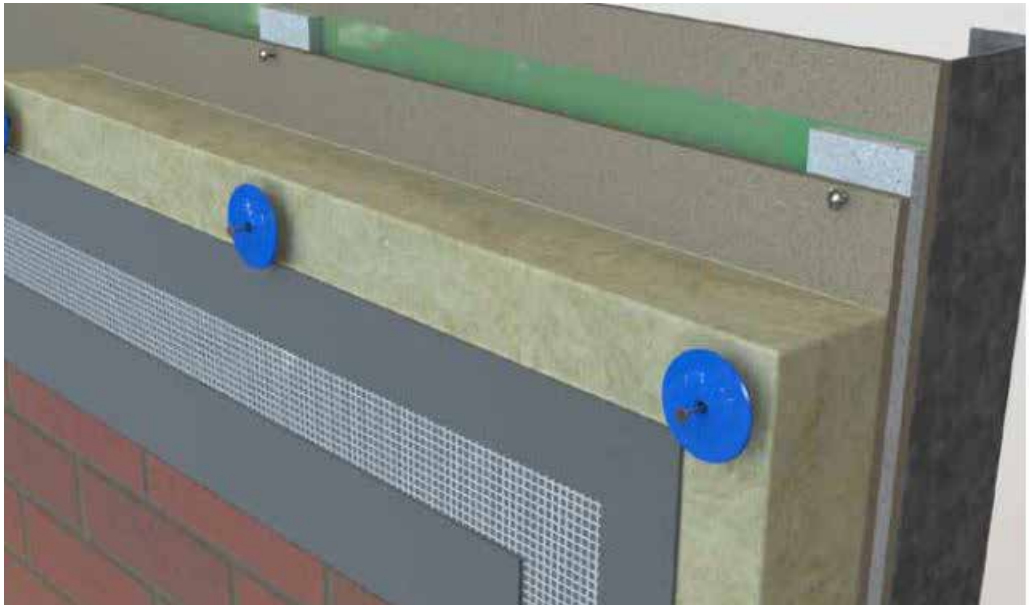
Below are two schematics showing a typical Insulated render system (Cavity System 2) and a typical rainscreen build up incorporating all of the key **Outer** through-wall components supplied by Benx.

Through-Wall Rainscreen build-up



Benx Insulated Render system example, including

- Minimum 15mm cavity using SPSE CS A1 fillets, minimum 75mm wide at maximum 600mm centres fixed through sheathing board to LSF stud.
- Fixing type and fixings centres to be project specific
- Intumescent fire break, fixed to inner sheathing board
- 2nd A1 sheathing board, optional dependant of system selected
- A1 Mineral wool insulation mechanically fixed to optional board or direct to A1 fillets
- Base coat incorporating plastic coated glass fibre reinforcing mesh
- Top coat finish of Envirominor or Envirosil
- Optional Nanosil finish to Enviromin top coat
- BrickSlip options: SPSE Speedy Slip or SPSE BrickStick



Façades Systems

Benx offers a comprehensive range of fire-rated façade systems with excellent performance characteristics and strong aesthetic appeal. Our industry-leading solutions and technical expertise and advice ensures that the specified system will meet the highest design and performance expectations.

Overview of products/systems

- SuperTech Plank
- Rendaclad
- External Wall Insulation Render
- External Wall insulation Brick
- Swisspearl
- Rockpanel
- Aluminum Cladding Panels
- Solid Aluminum Cladding
- Fabrication services

SuperTech Weatherboard

Fire Rating: A1

A simple to install, fully ventilated rainscreen cladding system which has an appearance similar to that of traditional timber cladding but the durability and strength of cellulose fibre cement.

Features

- Fire rated to EN 13501-1 class A1
- State of art, inhouse coating line, UK manufactured.
- Low minimum order quantities
- High levels of weather resistance
- Easy to install and lightweight
- Resistant to rot, fungus or insect attacks
- Colour matching service
- Low maintenance, long performance life
- Integrates with other Benx products
- BBA Certification

- Steel Frame
- Timber
- Modular/Offsite
- Masonry construction

supertech™

BBA

New A1 certification for Supertech

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RendaClad

Fire Rating: A2

RendaClad has primarily been developed to provide a seamless rendered rainscreen system to a metal or timber frame structure. It increases the speed of construction, reduces the building footprint, improves the logistics of supply and storage - all at a typically lower cost than traditional construction methods.

Features

- Extensive accreditation including BBA and BOPAS
- Fast method of construction, reducing prelims per plot
- A typical RendaClad system is 40-45mm from sheathing board, compared to approx 170mm for masonry with render.
- Crack resistant
- Less storage required onsite
- 30 & 60 year minimum design life accreditations options available
- System classified as A2-s1,d0

Steel Frame
Timber
Modular/Offsite
Masonry construction

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RendaClad

External Wall Insulation: Render/BrickSlip

Fire Rating: A1 & A2 Options

This framed modern method of construction has proven extremely popular over recent years and is now the preferred build method for mid-to-high rise structures.

SPS envirowall's Cavity Systems 1 and 2 are the next generation of this solution.

In addition to our cavity systems we offer an extensive range of insulated systems for masonry, timber and metal framed structures with a wide array of finishes and insulants.

- Steel Frame
- Timber
- Modular/Offsite
- Masonry construction

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Cavity System 1/2

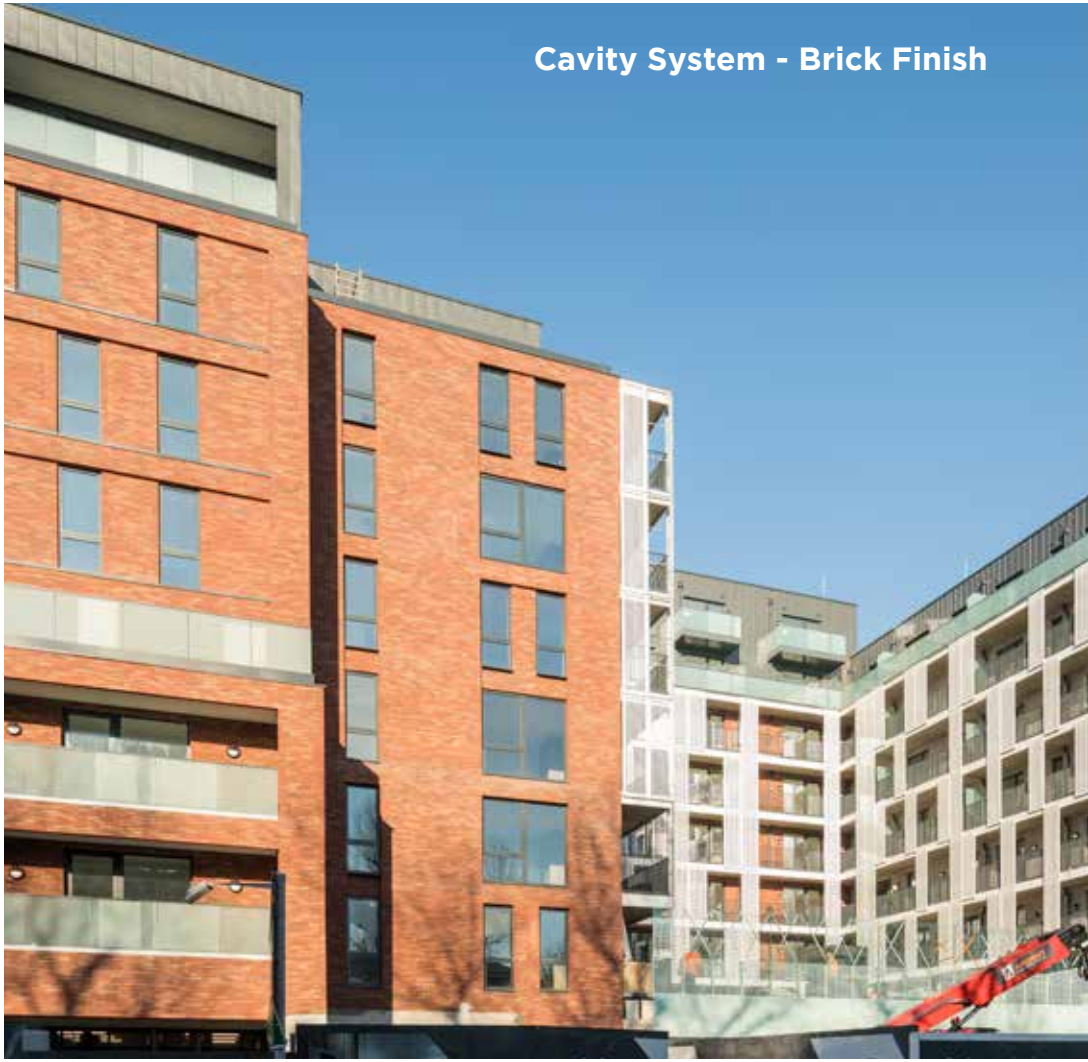
(Render)

External Wall Insulation: Render/BrickSlip (cont'd) Fire Rating: A1 & A2 Options

Benefits

- Render finishes include, mineral. acrylic, silicone and dash options
- Brick slips finishes include both clays slips and mineral/acrylic slips
- 120 minutes through-wall solutions with both CS1 and CS2 systems, multiple finishes available
- BBA and KIWA Agrément certified solutions
- Fire certification under BS EN 13501-1 available in A1 and A2 and above options.

	Steel Frame Timber Modular/Offsite Masonry construction	sps|envirowall Cavity System 1/2 (Brick)



Through Coloured Fibre Cement Panels

Fire Rating: A2

KIWA and BBA approved and fire rated to EN 13501-1 class A2-s1, d0, Swisspearl is suitable for buildings up to and over 18m. For use as external cladding, rainscreen cladding systems and interior designs these cement based panels have exceptional levels of weather resistance and durability.

Features

- High levels of weather resistance and durability
- Almost maintenance free
- Extensive colour range
- For external and internal use
- Fire rated to EN 13501-1 class A2-s1, d0
- Will not rot, crack or warp
- Can be cut to any shape
- BBA approved range
- Integrates with other Benx products

- **KIWA Agrément certification for outer through wall system.**

- Steel Frame
- Timber
- Modular/Offsite
- Masonry construction

swiss pearl®

kiwa assessed CONSTRUCTION SYSTEM

BBA

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Rock Fibre Panels

Fire Rating: A2

Rock fibre panels have the hard and durable qualities of stone but provide the advantage of a material which has the workability of wood.The panels are manufactured using compressed natural basalt and readily available and sustainable volcanic rock

Features

- Fire rated to EN 13501-1 class A2-s1, d0
- ETA certification
- Flexible
- Available in a variety of surface finishes & patterns
- Exceptional weather resistance
- Easy to install and maintain
- Integrates with other Benx products

Steel Frame
Timber
Modular/Offsite
Masonry construction

Rockpanel®

Aluminium Cladding Panels

Fire Rating: A2

Aluminium cladding panels are lightweight metal cladding ideal for external façades and rainscreen cladding systems. Versatile, easily formable and highly resistant to weather, aluminium cladding panels are a cost-effective solution to creating striking and innovative facades.

Features

- Lightweight
- Flat and uniform surface
- BBA approved ranges
- Huge choice of colours and surface finishes
- Low maintenance
- Integrates with other Benx products
- Benx only offer A2 option on these products.

Steel Frame Timber Modular/Offsite Masonry construction	ALUCOBOND®	vitrabond

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Solid Aluminium

Fire Rating: A1

Solid aluminium cladding provides an A1 rated, non-combustible, high impact-resistant solution with exceptional durability and mechanical benefits.
It provides excellent formability and outstanding durability as a result of aluminum's superb ductility and weather resistance. This means, with proper maintenance, aluminum features on buildings will retain their appearance for decades without degradation. Furthermore, aluminium's light weight and high strength-to-weight ratio make it a valuable asset for ambitious construction, while the fire reaction and insulating properties help provide safety and efficiency.
We are able to supply solid aluminium cladding as both a cassette panel and a flat sheet

Features

- Fire rated to BS EN 13501-1 class A1
- Lightweight
- Flat and uniform surface
- BBA approved range
- Huge choice of colours and surface finishes
- Low maintenance
- High levels of impact resistance
- Integrates with other Benx products

Steel Frame Timber Modular/Offsite Masonry construction	vitradual® Non-Combustible Cladding	LUXE COAT

Case Studies

Project name : Holiday Inn Express

Location : Birmingham

Building use : Hotel

Materials supplied
Aluminium support frame system, aluminium composite material panels

Key features
A unique pixilated appearance created using cladding

Fabrication
RCM supplied all panels cut to size

Other RCM materials supplied
Sheathing board and fixings

Case Studies

Project name : Premier Inn, Cardiff Bay

Building use
Hotel

Materials supplied
Speedy Slips / 160mm Mineral Wool / Wall System 1

Key features
A bespoke façade appearance brought to life by saw-toothed brick slips which creates a shadow effect across its facade, changing its appearance throughout the day.

Case Studies

Project name: Rathbone Market

Location: Canning Town

Building use: Apartments

Materials supplied
Aluminium support frame system, composite panel and coloured stainless steel cladding

Key features
The appearance of the smooth metallic finish against the rough dull brick transforms the aesthetics of this building

Fabrication
RCM supplied all panels cut to size

Other RCM materials supplied
Sheathing board, airtightness solutions and fixings

Case Studies

Project name: Millbay

Building use: Apartments

Materials supplied:
SPSenvirowall 200mm EPS was recommended to provide a thermally efficient u-value calculation of 0.13w/m2k along with RCM's Supertech Cladding.

Key features
SPSenvirowall white 2.0mm Enviromin was specified to produce the striking façade and to complement RCM's Supertech Cladding, adding variety to the façades of the building

Fabrication Facilities

Our in-house fabrication service allows customers to order both building boards and façades to exact sizes, thereby reducing construction cutting time, minimising wastage and improving environmental impact. We are able to cut, shape, drill, slot, bevel, bull nose and finish to most specifications. Machining also enhances the accuracy and consistency of the manufacturing process, improving overall quality.

We are able to supply customers with bespoke sized buildings boards and facades to meet specific project requirements direct to site. From a supplied panel list we can optimise required panels against standard sheet sizes available to provide the most efficient use of the material.

Thank you for taking the time to review our Façades brochure.
If you require any further information on our products or services, please contact us.

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