

KNAUF

Knauf Design Guide:

High-Rise Multi Occupancy



| | Knauf Stud Width (gauge) | Knauf Plasterboard (each side) | Cavity Insulation (mm) | System Width (mm) |
|-------------------------------------|---|--|------------------------|-------------------|
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm*** 'C' Stud (0.55) | 2×15mm Soundshield Plus | 2×25 KIAR* | 170 |
| | 2×50mm*** 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 2×25 KIAR* | 170 |
| SINGLE FRAME RESILIENT BAR | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 2×15mm Soundshield Plus | 1×50 KIAR* | 148 |
| | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 148 |
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm 'I' Stud (0.55) | 2×15mm Soundshield Plus | 1×50 KIAR* | 170 |
| | 2×50mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 170 |
| KNAUF PERFORMER (ACOUSTIC STUD) | 92 MW Acoustic Stud | 2×15mm Soundshield Plus | 1×50 KIAR* | 170 |
| | 92 MW Acoustic Stud | 2×12.5mm Soundshield Plus | 1×50 KIAR* | 170 |
| KNAUF PERFORMER 'C' STUD PARTITIONS | 70mm 'C' Stud (0.55) | 1×12.5mm Wallboard 1×12.5mm Moisture Panel | | N/A |
| | 70mm 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | | N/A |
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm*** 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | | 2×25 KIAR* |
| | 2×50mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | | 1×50 KIAR* |
| RESILIENT BAR | 70mm 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | | 1×50 KIAR* |

Build on us.

As a global leader in construction materials, Knauf delivers high-performing systems to help build the spaces where we live, learn and care. With robust data, industry-leading technical support, and hands-on guidance, we help reduce risk, ensuring safe, compliant, and efficient builds.

Wherever you see this symbol, please click to go to the page or link:

Example:

Project Specification
Interior solutions expertise



Build on us.

Discover how we can support you and your projects with the people, information and tools from start to finish.



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| Supporting you throughout the project | 6 |
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Technical requirements and design considerations

For your projects across the United Kingdom and Ireland see the key technical requirements that you need to consider when specifying in your high rise projects. Alongside highlighting how the key design elements are shaped by them and how they may impact your specifications.



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Knauf systems

Identify solutions for all six sides of your project across High-Rise Multi Occupancy layouts like hotels, student housing, and apartments.



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Specified floorplans

A range of typical High-Rise Multi Occupancy floorplans that have been specified with Knauf systems ensuring regulation and performance compliance.



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| Apartment Floorplan | 42 |
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Ceilings & floorings

Complete your project with ceiling and flooring solutions across your High-Rise Multi Occupancy project.



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Learn

Learn from previous Knauf projects and a full range of dedicated CPD's to support your next High-Rise Multi Occupancy project.



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Building a safer future

Following the Grenfell tragedy, the Building Safety Act (2022) introduced new regulations mandating stricter practices for all Higher-Risk Buildings, enhanced the obligations of duty holders and put a focus on competence within the industry. This represented the biggest regulatory and reformatory change to impact the construction sector in **nearly 40 years**.

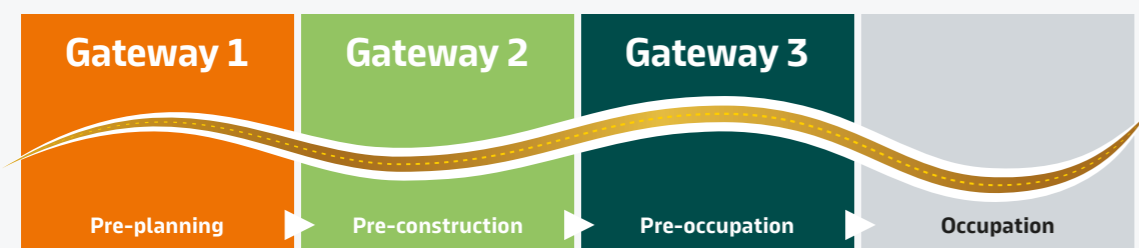
These regulations aim to enhance safety and accountability throughout the construction process, the essence of which was establishing what became known as the 'Golden Thread', whereby all designs, products and systems are tracked through the entire build process of a project, from specification through to build. Any changes made to the specification would need to be passed back up the chain of command to be approved and signed off by the original specifier and regulator.

At Knauf, we're committed to building a safer future and are strong advocates for the Golden Thread, a digital record that ensures transparency and accountability throughout a building's lifecycle. You can either specify our systems through **NBS** or our own **Systemfinder** specification tools - by using either of these you can ensure compliance with Golden Thread. Our team are also on-hand to provide guidance along the way.

It is important to note that the specific requirements and implementation of these regulations may vary across different parts of the UK and Ireland, reflecting regional governance and building control frameworks. We are well-placed to support projects across the UK and Ireland, offering expertise and tailored solutions to ensure compliance with all relevant regulations, inclusive of regional variations.

How the Golden Thread runs through construction Gateway

This innovative approach also introduces a three-stage gateway process designed to elevate fire safety standards.



Pre-planning
This initial stage focuses on providing a fire statement for the planning phase. This statement outlines key considerations such as fire service access and water supply for firefighting purposes.

Pre-construction
This stage is about ensuring that the design of the building can demonstrate conformance to and compliance with the relevant building regulation requirements. All design changes at this stage are deemed either 'Recordable Changes', 'Notifiable Changes' or 'Major Changes'.

Pre-occupation
This final stage ensures that as-built data is readily available before the building is occupied. Furthermore, all the new buildings will require a Building Assurance Certificate issued by the Building Safety Regulator (BSR) before they can be occupied.

Data and system performance warranty

Our dedication to rigorously testing complete systems to the relevant standards guarantees confidence in their safety and performance. This commitment is reinforced by our 100% Knauf System Performance Warranty, providing you with peace of mind.

In summary, all our products and systems are robustly tested by accredited third-parties, to provide customers with comfort when using them in their design.



Find out more about our **100% Knauf System Performance Warranty**



Supporting you throughout the project

Our project support is designed to assist your design team, throughout the entire project lifecycle - from conceptual design to onsite detailing. We start by delving deep into the architectural brief, aiming to fully understand your vision and requirements. With our extensive experience and access to leading solutions that ensure regulatory compliance we are confident in being able to support your project through every stage.

From the initial project brief, we aim to identify any challenges that could arise, ensuring compliance with relevant regulations and proactively addressing challenges. Our guidance extends beyond the initial design phase; we provide you with a comprehensive project pack that includes detailed specifications providing solutions specifically tailored for our systems. This approach not only aids in seamless project execution but also ensures that all aspects of the project align with regulatory requirements, facilitating clear pricing once contractors are involved and reducing the risk of non-compliance during construction.

Our commitment doesn't end there. We continue to offer support on site with visits and our on site tool box talks that help to ensure the finer details are understood. Our Project Technical Managers will support the on site team and contribute to aid input on design challenges as they occur. Our team thrives on introducing fresh perspectives and innovative ideas for surrounding detailing, ensuring your project benefits from the best possible solutions.

We possess a wealth of experience and knowledge that we actively share within our team. This collective experience is invaluable to architects and project design teams, making our partnership a clear advantage. With our support, you're not just getting a service provider; you're gaining a dedicated collaborator committed to helping your project succeed at every level. Choosing us means securing a reliable and competent partner in your projects today and tomorrow.



Your Project, Our Priority:
Contact our dedicated support teams

- Project Specification**
Interior solutions expertise →
- Exterior Project**
Exterior solutions expertise →
- Project Technical**
Project compliance on-track →
- Ceilings and Floorings**
Dedicated expertise →

Specification tools

At Knauf, we are committed to providing seamless support to architects and specifiers, ensuring that specifying our systems is as straightforward as possible. To that end, we offer two robust specification tools designed to cater to your varying needs.

Firstly, our key systems for High-Rise Multi Occupancy projects are integrated into NBS, streamlining the specification process for users of this platform. Within NBS, you will find not only our comprehensive range of systems but also all the necessary technical data sheets, BIM data and supporting documentation. This integration is designed to make specifying our systems straightforward and efficient, saving you valuable time and effort.

For those who prefer an alternative to NBS, we offer our own specification tool, Systemfinder. This versatile tool is available as a BIM plugin or a web app version, available from our website, providing flexibility to suit your workflow. Through Systemfinder, you can create detailed K10 specifications and easily request all the relevant product and performance data. Whether using our BIM plugin for enhanced integration with your digital models or the web app for quick access, Systemfinder ensures you have all the information you need at your fingertips.

These tools reflect our dedication to offering comprehensive support, equipping you with everything required to specify our systems with confidence and ease, regardless of your preferred method.



DATA YOU CAN TRUST ON THE PLATFORM YOU KNOW

[View Knauf on NBS](#) →



SYSTEMFINDER

Your tool for efficient Knauf systems search

[Try Systemfinder](#) →

A little more about us



The Knauf story began with founders Karl and Alfons Knauf, whose vision set us on the path to where we are today, growing into a global industry leader, spanning 90 countries, multiple brands and more than 41,500 global employees.

Through our people and state-of-the-art plants, we produce high-performing solutions ranging from drywall systems, plasters and insulating materials all the way to external thermal insulation composite systems. Whatever your challenge, we are there with you each step of the way to help you to constantly improve how you build.

Emissions

The Knauf Group has made a commitment to reducing our emissions in Scope 1 & 2 by 50% by 2032 (coinciding with 100 years of the Knauf Group) and reducing Scope 3 emissions by 30% by 2032 with 2021 as the baseline year. We are reducing our direct and indirect emissions by:

- Investigating the use of renewable energy
- Innovating our production processes
- Working in partnership with our suppliers on emission reduction, such as with our logistics partners

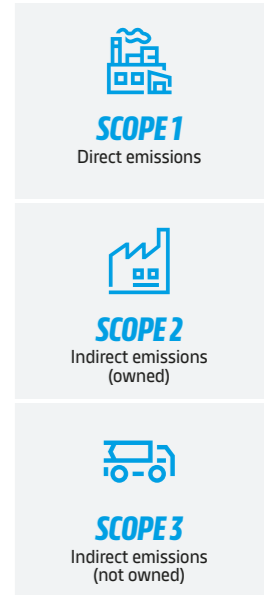
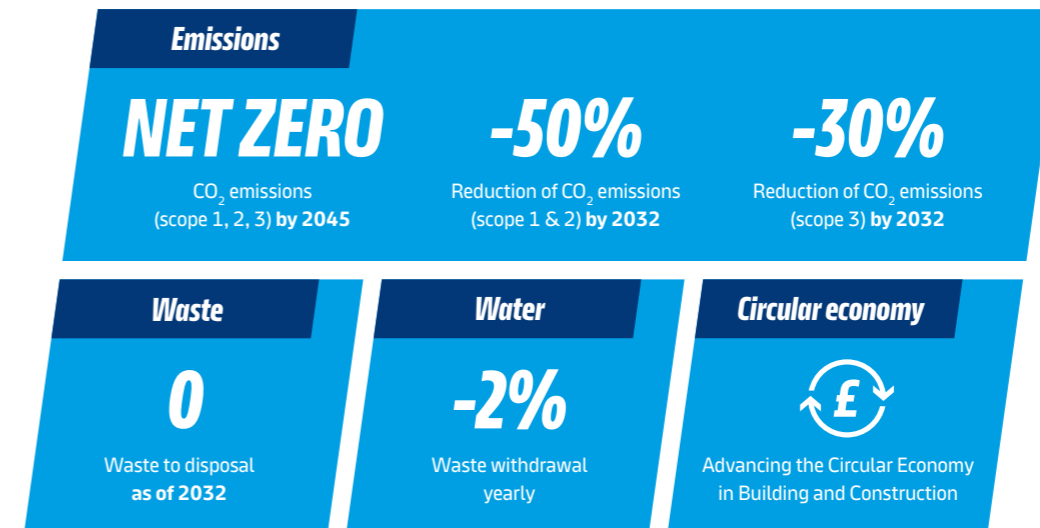
By reducing the emissions in the products and services we provide you, we can help towards meeting your Scope 3 targets.

Waste

Our target on waste reduction is an ambitious goal of zero waste to disposal, which includes both landfill and incineration, by 2032.

- We are working to the waste hierarchy in our factories
- We work with a social enterprise to give alternative end of life options to products
- We offer a Plasterboard Takeback service for our customers
- We offer a bespoke plasterboard service tailored to your project, to help you to design out waste
- We use recycled content in our plasterboard production*

* 12.64%, 2024 average by mass for all UK produced plasterboards, recycled gypsum & paper



Water

Water scarcity is an increasing global problem due to climate change, with 2.3 billion people living in water-stressed countries according to the United Nations.*

We use water in the manufacturing of our plasterboard, and our goal is to reduce our water withdrawals by 2% annually.

- We are investing in our production processes to reduce water demand
- We continually optimise our recipes to reduce water demand

BREEAM credit reference and Knauf solutions

We can help towards achieving BREEAM on projects, with a range of products, systems and services which can help achieve credits.

- Indoor Air Quality – Some of our products have certified low emissions
- Acoustic performance – Our acoustic ceilings and some partition systems can offer an enhanced acoustic performance
- Environmental Product Declarations – Most of our products have externally verified Environmental Product Declarations (EPDs)
- Responsible sourcing – Our UK plasterboard production sites have held BES 6001 ‘Excellent’ certification for over 10 consecutive years, highlighting our continued efforts in responsible sourcing
- Severe Duty Rating – Some of our systems are rated ‘Severe Duty’ as per BS 5234 for use in corridor walls

* Water Scarcity | UN-Water (unwater.org)

Take Back Scheme

The Knauf Plasterboard Take Back Scheme helps contractors reduce their waste to disposal while tracking emissions to help you achieve your goals and reduce your environmental impact.

In partnership with Reconomy Connect, who have over 30 year’s experience in working with the construction industry, we can work with you to provide a responsible and compliant total waste management service.

The reliable and responsive service includes different waste options, from skips to tonne bags, to suit limited space on site. Comprehensive reporting is BREEAM and BRE SmartWaste compliant as standard, with the scheme working to the waste hierarchy and minimising waste to landfill.

The aim is to increase circularity, by diverting plasterboard to the gypsum reprocessors we work with (where it makes environmental and economical sense) so that waste plasterboard goes back into new Knauf plasterboards.

To find out more and receive a tailored quote for your high-rise residential site, visit our Plasterboard Take Back Scheme.

[Plasterboard Take Back Scheme](#) →

TECHNICAL REQUIREMENTS AND DESIGN CONSIDERATIONS

The core performance objectives in high-rise multi occupancy buildings include the protection of life, preservation of building integrity, occupant comfort, and energy efficiency. Each of these objectives entails specific technical requirements, guidance documents, and compliance standards.

This section:

- Summarises the key technical requirements across each nation
- Highlights how each regulation affects drylining design and plasterboard selection
- Identifies specific high-rise considerations, including compartmentation, accessibility, and system performance



Technical Requirements

England →

Northern Ireland →

Wales →

Republic of Ireland →

Scotland →




ENGLAND

Technical requirements


Accessibility in High-Rise Buildings Approved Document M

Drylining Systems should support accessible layouts so everyone can move easily and safely through spaces.

 [View document](#) →

Acoustics in High-Rise Buildings Approved Document E

Drylining Systems should limit sound transfer, providing sound insulation between rooms, dwellings, and shared areas.

 [View document](#) →


Energy Efficiency in High-Rise Buildings Approved Document L

Drylining Systems should help minimise heat loss and improve thermal performance of walls for better energy efficiency.

 [View document](#) →


Fire Safety in High-Rise Buildings Approved Document B

Drylining Systems should provide fire resistance, effective linings, compartmentation, and help maintain safe escape routes.

 [View document](#) →


Safety from Falling, Collision & Impact Approved Document K

Drylining Systems should reduce risks of collision and impact near stairs, ramps, and walkways.

 [View document](#) →

Security in High-Rise Buildings Approved Document Q Overview

Drylining Systems should complement secure doors and windows, helping resist unauthorised access to dwellings.

 [View document](#) →

WALES**Technical requirements****Accessibility in High-Rise Buildings**
Approved Document M

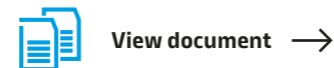
Drylining Systems should support accessible layouts so everyone can move easily and safely through spaces.

**Acoustics in High-Rise Buildings**
Approved Document E

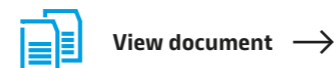
Drylining Systems should limit sound transfer, providing sound insulation between rooms, dwellings, and shared areas.

**Energy Efficiency and Thermal Performance**
Approved Document L

Drylining Systems should help minimise heat loss and improve thermal performance of walls for better energy efficiency.

**Fire Safety in High-Rise Buildings**
Approved Document B

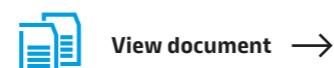
Drylining Systems should provide fire resistance, effective linings, compartmentation, and help maintain safe escape routes.

**Safety from Falling, Collision & Impact**
Approved Document K

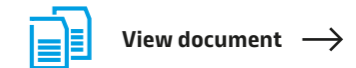
Drylining Systems should reduce risks of collision and impact near stairs, ramps, and walkways.

**Security in High-Rise Buildings**
Approved Document Q Overview

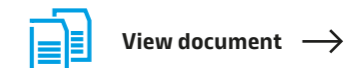
Drylining Systems should complement secure doors and windows, helping resist unauthorised access to dwellings.

**SCOTLAND****Technical requirements****Accessibility & Inclusive Design**
Scottish Building Standards –
Section 4: Safety

Drylining Systems should support accessible layouts so everyone can move easily and safely through spaces.

**Energy Efficiency & Thermal Performance**
Scottish Building Standards –
Section 6: Energy

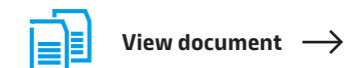
Drylining Systems should help minimise heat loss and improve thermal performance of walls for better energy efficiency.

**Fire Safety in High-Rise Buildings**
Scottish Building Standards –
Section 2: Fire

Drylining Systems should provide fire resistance, effective linings, compartmentation, and help maintain safe escape routes.

**Protection from Falling, Collision & Impact**
Scottish Building Standards –
Section 4: Safety

Drylining Systems should reduce risks of collision and impact near stairs, ramps, and walkways.

**Sound Insulation in High-Rise Buildings**
Scottish Building Standards –
Section 5: Noise

Drylining Systems should limit sound transfer, providing sound insulation between rooms, dwellings, and shared areas.

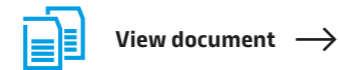


NORTHERN IRELAND

Technical requirements

Accessibility & Inclusive Design Technical Booklet R – Access to and Use of Buildings

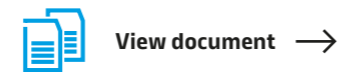
Drylining Systems should support accessible layouts so everyone can move easily and safely through spaces.



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Energy Efficiency & Thermal Performance Technical Booklet F1 – Conservation of Fuel and Power

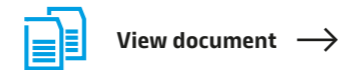
Drylining Systems should help minimise heat loss and improve thermal performance of walls for better energy efficiency.



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Fire Safety in High-Rise Buildings Technical Booklet E (Fire Safety)

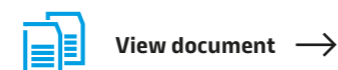
Drylining Systems should provide fire resistance, effective linings, compartmentation, and help maintain safe escape routes.



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Protection from Falling, Collision & Impact Technical Booklet H – Stairs, Ramps, Guarding and Protection from Impact

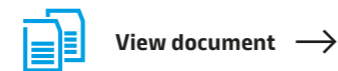
Drylining Systems should reduce risks of collision and impact near stairs, ramps, and walkways.



[View document](#) →

Sound Insulation in High-Rise Buildings Technical Booklet G – Sound Insulation

Drylining Systems should limit sound transfer, providing sound insulation between rooms, dwellings, and shared areas.



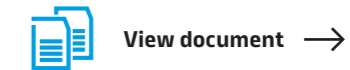
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REPUBLIC OF IRELAND

Technical requirements

Accessibility & Inclusive Design TGD Part M – Access and Use

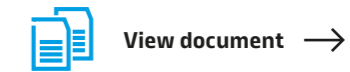
Drylining Systems should support accessible layouts so everyone can move easily and safely through spaces.



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Energy Efficiency & Thermal Performance TGD Part L – Conservation of Fuel and Energy

Drylining Systems should help minimise heat loss and improve thermal performance of walls for better energy efficiency.



[View document](#) →

Fire Safety in High-Rise Buildings TGD Part B – Fire Safety

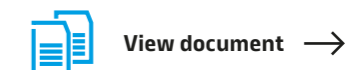
Drylining Systems should provide fire resistance, effective linings, compartmentation, and help maintain safe escape routes.



[View document](#) →

Protection from Falling, Collision & Impact TGD Part K – Stairways, Ladders, Ramps and Guards

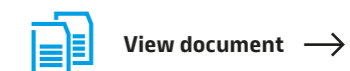
Drylining Systems should reduce risks of collision and impact near stairs, ramps, and walkways.



[View document](#) →

Sound Insulation in High-Rise Buildings TGD Part E – Sound

Drylining Systems should limit sound transfer, providing sound insulation between rooms, dwellings, and shared areas.



[View document](#) →

Building Safety Act: Golden Thread

The Building Safety Act is described by government as ‘the biggest improvement to building safety in nearly 40 years’.*

Its implementation has provided clear accountability for construction services and products to ensure consistent compliance. The Building Safety Act now extends criminal liability in relation to the design and construction process and building safety, not just for Higher-risk buildings (HRBs), but for all buildings. As part of this, there is a legal obligation for all individuals and organisations to be competent to ensure compliance with the Building Regulations in both design and construction.

Our focus is clear in fulfilling the objectives of the Building Safety Act and supporting our partners to do the same alongside the associated Code for Construction Product Information. Our processes and systems have been and developed and evolved to ensure they support the objectives of the new regulations.

* Gov.uk (2020), Landmark building safety law to keep residents safe. Available at: <https://www.gov.uk/government/news/landmark-building-safety-law-to-keep-residents-safe>



**DOWNLOAD THE KNAUF
WHITEPAPER ON THE
GOLDEN THREAD
BUILDING SAFETY ACT**

Download our whitepaper →

Design Considerations

In the design and construction of high-rise multi occupancy buildings, safety, comfort, and performance must be at the forefront.

These structures—home to hundreds of residents or workers—present unique challenges that require advanced, coordinated solutions across fire safety, acoustics, and thermal performance. Beyond structural considerations, regulations mandate strict compliance to ensure these environments are not only efficient and comfortable, but also resilient in the face of risk.

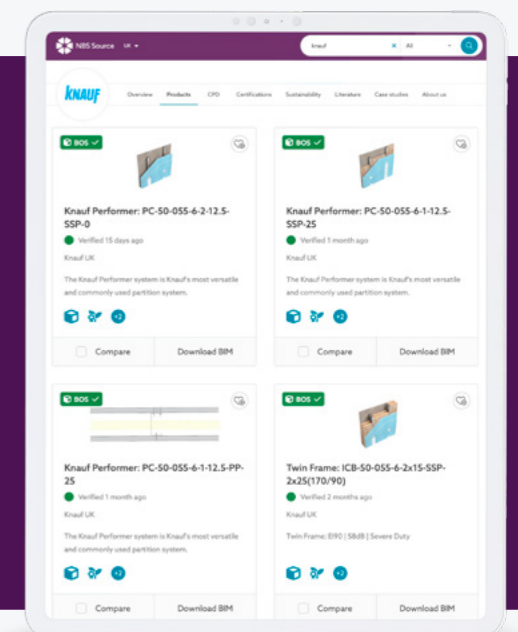
These pillars of high-rise performance are not standalone—they are interconnected. For example, a fire-rated wall must also meet acoustic expectations. An airtight system must still allow for ventilation. And the materials selected must meet the combined demands of safety, sustainability, and durability.

Pillars of high-rise building performance:

-  **Fire Safety**
-  **Acoustics**
-  **Thermal Performance**
-  **Duty**

**FIND THE SYSTEM
DATA YOU CAN TRUST
ON THE PLATFORM
YOU KNOW.**

View Knauf on NBS →



Fire Safety

From compartmentation to evacuation strategy, passive and active fire protection are critical. The correct use of fire-tested systems, compliant with BS and EN testing standards, ensures both protection and peace of mind.



Passive Fire Protection (PFP) in High-Rise Buildings

Passive Fire Protection (PFP) plays a vital role in high-rise multi occupancy buildings, as it is designed to automatically contain or slow the spread of fire, allow for evacuation, and minimise damage to property. PFP systems are built into the building's structure, such as fire-resistant walls, floors, ceilings, and fire doors, and are essential in fire compartmentation. Compartmentalisation divides the building into fire-resistant zones, limiting the fire's spread and enabling occupants to evacuate to safer areas. In high-rise buildings, the risk of fire spreading quickly between multiple floors or units is high, making fire compartmentation a critical design requirement. Partitioning and horizontal floor systems divide the building into fire-resistant compartments ensuring that a fire in one area does not spread to other parts of the building, reducing the risk of widespread damage.

Active Fire Protection (AFP)

While passive fire protection provides structural fire resistance, active fire protection systems such as sprinklers, alarms, and fire extinguishers are essential to actively suppress or control a fire once it has started. In high-rise buildings, these systems are particularly crucial because of the challenges of combating fires at height. Sprinkler systems, for example, can quickly suppress a fire before it spreads, buying valuable time for evacuation. The fire detection and alarm systems should be integrated into the building's design to ensure that occupants are alerted in time to evacuate safely. In addition, fire dampers can be used in ventilation systems to prevent the spread of smoke and fire through the air ducts.

Fire Test Standards

To ensure high-rise multi occupancy projects meet the highest fire safety standards, it is important that system solutions are fire tested in accordance with updated, relevant testing standards, cited in regulations. Below are the key EN fire testing standards applicable to supporting the development of interior and exterior systems:

- **BS EN 1363-1:** Fire resistance tests. General requirements
- **BS EN 1364-1:** Specifies a method for determining the fire resistance of non-loadbearing walls
- **BS EN 1365-1:** Specifies a method for determining the fire resistance of loadbearing walls
- **BS EN 1365-2:** Specifies a method for determining the fire resistance of loadbearing floors and roofs
- **BS EN 1364-2:** Specifies a method for determining the fire resistance of non-loadbearing ceilings
- **BS EN 15254-3:** Supports the extended application of results from fire resistance tests. Non-loadbearing walls - Lightweight partitions

Additionally, **BS EN 13381-4** outlines the specific procedures for assessing the fire resistance of structural elements when fire protection materials, such as sprays or boards, are applied.

These standards are essential in designing buildings with appropriate fire-resistant materials and systems to protect occupants, minimise fire spread, and allow safe evacuation. By adhering to these fire test standards, designers can be assured of the fire safety of high-rise multi occupancy, safeguarding both lives and property. It is important to note that BS 476: 20-23,

are also relevant testing standards, cited in regulations, however, they will be withdrawn from England in 2029, replaced by the aforementioned EN standards.

Below are the BS fire testing standards applicable to supporting the development of interior and exterior systems:

- **BS 476-20:** Fire tests on building materials and structures. Method for determination of the fire resistance elements of construction
- **BS 476-21:1987:** Fire tests on building materials and structures. Methods for determination of the fire resistance of load bearing elements of construction
- **BS 476-22:1987:** Fire tests on building materials and structures. Methods for determination of the fire resistance of non-load bearing elements of construction
- **BS 476-23:1987:** Fire tests on building materials and structures. Methods for determination of the contribution of components to the fire resistance of a structure

Evacuation and Fire Safety for Occupants

The design of high-rise buildings must account for the safe evacuation of occupants in the event of a fire. Fire exits should be strategically located to ensure that all building occupants can quickly reach safety. Fire-resistant stairwells and evacuation routes should be designed to withstand the fire long enough to allow safe evacuation. In high-rise multi occupancy buildings, fire safety also includes zoning for different occupancy types, ensuring that residential, commercial, and common areas have appropriate fire resistance ratings. Evacuation systems should be clearly marked, and fire doors and smoke control systems should prevent the spread of fire and smoke into escape routes.

Importance of Design Coordination

In high-rise building design, fire safety is not just the responsibility of the building owner but also of architects, designers, contractors, developers, fire engineers and consultants. Every element of the building must be carefully coordinated to ensure that both passive and active fire protection systems are integrated into the design. This includes selecting appropriate fire-resistant materials, ensuring compliance with fire safety regulations, and implementing strategies for effective fire compartmentation and evacuation.

Fire Safety Summary

Fire safety in high-rise multi occupancy buildings requires a holistic approach, integrating both passive and active fire protection systems. The design must adhere to relevant fire testing standards with an emphasis on fire compartmentation and safe evacuation routes. Effective fire safety measures, including fire-resistant materials, sprinklers, alarms, and fire dampers, work together to protect occupants and property. With careful planning and adherence to regulations, high-rise buildings can provide a safe and secure environment for all occupants, minimising the risks associated with fire hazards.

Acoustics

Sound insulation between units, common areas, and structural elements is fundamental to occupant wellbeing. Regulatory requirements and acoustic design standards ensure that high-rise living is as peaceful as it is practical.

Sound Transmission and Impact Sound

Sound Transmission refers to how sound travels through building materials. Effective sound insulation aims to minimise this movement by using materials that absorb or block sound. For instance, partition wall systems and resilient flooring can reduce noise between apartments or floors.

Impact Sound, such as footsteps or furniture movement, can be particularly disruptive in multi-storey buildings. Strategies to reduce impact sound include using floating floors or resilient underlayments that absorb vibrations and reduce noise transmission.

Key performance units in Acoustic Design

Several methods are used to assess the soundproofing performance of building elements:

- **Sound Reduction Index (SRI):** This method tests how well a partition or floor, blocks airborne sound. High values of R_w (Weighted Sound Reduction Index) indicate better sound insulation. This is critical for ensuring that noise from one apartment or unit doesn't disturb adjacent spaces.
- **Decibel (dB):** The decibel is a unit used to measure the intensity of sound. It is a logarithmic scale that quantifies sound levels relative to a reference point, typically the threshold of human hearing. Higher dB values indicate louder sounds, while lower values represent quieter sounds. In building acoustics, dB is used to express the effectiveness of sound insulation and the level of noise reduction achieved by various materials and construction methods. Understanding dB levels is essential for designing spaces that meet acoustic performance standards and ensure occupant comfort.
- **Rw:** It is a laboratory measured value to identify the airborne sound insulation performance of a building element. Because it is a laboratory-tested level then the R_w does not consider any flanking noise paths which would occur on site.
- **Dw:** There are two parameters that are used to describe the sound insulation of a partition – D_w and R_w . D_w is a term that relates to the sound insulation between rooms on-site. Put simply, it is the noise level in the source room minus the noise level in the receiving room, the level difference as it's termed. This is a performance standard used to describe final site requirements. There are variations on a level difference, including the D_nT_w . A D_nT_w normalises the D_w to account for the reverberation time – or echo – in the receiving room. This allows us to compare measured sound insulation results between different rooms and at different times, irrespective of the amount of echo in the receiving room. In theory, the D_nT_w sound insulation performance should remain the same when testing between a pair of rooms when they are unfurnished compared to tests when the rooms have been furnished and carpeted. Within high-rise multi occupancy in England and Wales, specify requirements in terms of $D_nT_w + C_{tr}$. The C_{tr} is an adjustment which is used to account for low frequency noise.
- **Ctr:** The C_{tr} adjustment is a correction factor applied to sound insulation measurements to account for low-frequency noise, such as traffic or bass-heavy music, which can be particularly disruptive in residential and multi-occupancy buildings. It is often used in conjunction with other acoustic parameters, such as D_nT_w , to provide a more accurate representation of how a building element performs in

real-world conditions. By addressing low-frequency noise, the C_{tr} adjustment ensures that sound insulation solutions meet regulatory requirements and provide effective noise control, enhancing occupant comfort and compliance with building standards.

- **Impact Sound Pressure Level ($L'_{nT,w}$):** In multi-occupancy buildings, floors are particularly vulnerable to impact noise from above or below. The $L'_{nT,w}$ test evaluates how well floors and ceilings reduce impact sound, ensuring that residents experience minimal disturbance from everyday activities, such as walking or moving furniture.
- **Sound absorption:** The international standard BS EN ISO 11654:1997 defines sound absorption in varying degrees of detail. The Sound Absorption Coefficient (α_s) and Practical Sound Absorption Coefficient (α_p) both describe how sound is absorbed at different frequencies. The sound absorption coefficient indicates a material's capacity to absorb sound energy on a scale of 0 to 1 – with 1 denoting complete sound absorption (no reflection), and 0 representing perfect sound reflection. Materials with higher absorption coefficients are better at minimising sound wave reflection, therefore reducing reverberation and improving the overall acoustic conditions in a room. Sound absorption coefficients are significant because they show how sound behaves in different settings. By selecting materials and surfaces based on their specific sound-absorbing qualities, it's possible to manage and reduce unwanted sound.
- **Reverberation Time Measurement (RT60):** While more relevant for larger public spaces, RT60 can also be used to assess the acoustics of common areas within a high-rise, such as lobbies or meeting rooms. By managing reverberation, architects can enhance speech clarity and overall acoustics in these spaces.

Acoustics Summary

Acoustics play a crucial role in the design and functionality of high-rise buildings with multiple occupancies. The effective management of sound is essential to ensure comfort, privacy, and health for the residents. Poor acoustics in high-rise multi occupancy buildings can lead to disturbances, stress, and reduced quality of life due to unwanted noise from neighbouring apartments, common areas, or external sources. The design and layout of a high-rise building must prioritise noise control. This includes strategic placement of rooms like bedrooms and living areas away from noisy spaces such as elevators, stairwells, and communal areas. Additionally, creating buffer zones with corridors or service areas can help minimise sound transmission between apartments. The importance of material selection, leading to acoustic system solutions are key.

Regulatory Compliance: Acoustic Test Standards

BS8233:2014 provides comprehensive guidelines for the design and assessment of acoustic environments in buildings. Its primary aim is to help professionals manage and reduce noise to create comfortable and functional living and working spaces.

The standard is aimed at architects, engineers, and building designers—guiding architects in integrating acoustic considerations into building designs, supporting engineers in developing effective noise control solutions, and helping building designers ensure regulatory compliance and enhance occupant satisfaction.

- **BS EN ISO 10140-1:** Laboratory measurement of sound insulation of building elements. Application rules for specific products
- **BS EN ISO 10140-2:** Acoustics. Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation
- **BS EN ISO 10140-3:** Acoustics. Laboratory measurement of sound insulation of building elements. Measurement of impact sound insulation
- **ISO 140-4:** Measures sound insulation of building elements, such as walls and floors
- **ISO 717-1:** Converts test results into ratings for sound insulation.

Thermal Performance

Meeting energy efficiency targets and achieving thermal comfort in tall buildings demands considered insulation, airtightness, and passive design strategies—all shaped by robust regulations and sustainability goals.



Energy Efficiency and Carbon Emissions Reduction

Thermal standards are fundamental for achieving energy efficiency in high-rise buildings. Since these buildings often have a large surface area exposed to external temperature fluctuations, maintaining proper thermal insulation helps reduce heat loss in winter and heat gain in summer. This minimises the need for heating and cooling systems, thus reducing overall energy consumption. In the context of multi-occupancy buildings, efficient thermal design can lead to significant cost savings for residents while also contributing to reducing carbon emissions from reduced operational energy demand. Given the urgency of achieving climate goals, adhering to thermal standards ensures that energy use is minimised, thereby lowering the building's carbon footprint.

For example, solar gain is a key consideration. In winter, solar radiation can provide free heat, reducing the need for mechanical heating, whereas in summer, excessive solar gain could increase cooling demands. Effective shading strategies, window orientation, and the use of high-performance glazing are essential in managing solar gain in multi-storey buildings.

Occupant Comfort and Health

In high-rise multi occupancy buildings, ensuring thermal comfort for residents is vital. High-rise structures can face issues such as drafts, temperature fluctuations, and poorly regulated indoor environments, making thermal insulation and temperature control critical. By adhering to thermal performance standards and using the right insulation materials (e.g. glass or mineral wool), and systems (e.g. external walls), the building can prevent discomfort caused by heat loss in winter and excessive heat gain in summer.

Moreover, airtightness plays a crucial role in thermal performance. Proper sealing of a building's envelope minimises unwanted drafts and heat loss, which directly affects the comfort of inhabitants. This is especially important in high-rise multi occupancy buildings where minimising energy loss from a common building fabric leads to both environmental and cost benefits for residents. Mechanical ventilation with heat recovery (MVHR) systems can maintain air quality and reduce energy use while ensuring comfort.

Compliance with Regulations

In the UK, compliance with thermal standards is mandatory for high-rise multi occupancy buildings. Regulations such as the Building Regulations and the associated technical standards are designed to ensure that new and existing buildings meet the minimum standards for thermal performance. For instance, the U-value for building elements like walls, windows, and floors must meet specific requirements to ensure efficient thermal performances.

Thermal Bridging and Insulation

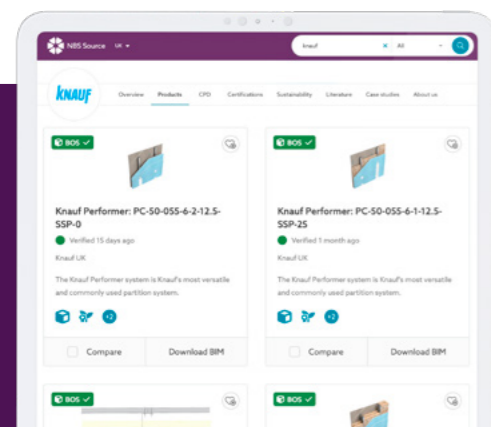
One common challenge in high-rise buildings is thermal bridging. Thermal bridges occur when parts of the building (e.g. structural elements like steel beams or poorly insulated joints) allow heat to pass through more easily, reducing the building's overall thermal efficiency. In multi-storey buildings, where thermal bridges are more likely to occur due to the use of materials like steel, special care must be taken to insulate these areas properly to prevent energy loss and moisture problems.

Long-Term Durability and Cost-Effectiveness

Proper thermal insulation and adherence to thermal standards not only improves energy efficiency and occupant comfort but also increases the long-term durability of the building. Thermal protection helps avoid thermal damage to materials, reducing the need for costly repairs and maintenance over time. Additionally, energy savings from better thermal design can significantly reduce operating costs in multi-occupancy buildings, benefiting both developers and tenants.

Passive Design Strategies

In the context of high-rise multi occupancy buildings, passive design strategies are especially effective. For instance, strategically placed thermal mass can absorb and store heat, helping to regulate indoor temperatures and reduce reliance on heating and cooling systems. This can be particularly useful in high-rise residential buildings where external temperature fluctuations might otherwise result in uncomfortable living conditions for occupants. Passive design also emphasises maximising natural ventilation and leveraging solar gain through efficient building orientation and the selection of materials with good thermal properties. These strategies help reduce the need for mechanical systems, making the building more energy-efficient.



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THE PLATFORM YOU KNOW.**

View Knauf on NBS →



Thermal Performance Summary

In high-rise multi occupancy buildings, thermal performance directly affects energy efficiency, carbon emissions, occupant comfort, and long-term sustainability. By carefully considering key terms such as U-values, thermal insulation, solar gain, and airtightness, architects and engineers can design buildings that meet stringent energy standards while providing a comfortable and cost-effective environment for residents. With a focus on passive design and thermal regulation, buildings can be optimized for minimal energy use, contributing positively to both the environment and the quality of life for occupants. Compliance with national building codes ensures that high-rise buildings not only meet regulatory requirements but also help achieve broader climate goals.

Duty

Internal partitions in high-rise developments must meet demanding strength, durability, and impact resistance standards. BS 5234 outlines performance expectations, ensuring that wall systems are suitable for high-traffic, high-use environments.



BS 5234 British Standard

BS 5234 is a British Standard that provides guidance on the design and construction of internal partitions, linings, and shaft walls. It's primarily concerned with the performance requirements of these elements, ensuring they meet structural, acoustic, fire safety, and durability standards. The standard is divided into two parts:

Part 1

The code of practise for design and installation of partitions (including matching linings).

Part 2

The specification for performance requirements for strength and robustness including methods of test. This standard also covers stiffness, crowd pressure, impact resistance, anchorage fixings and door slamming.

Partition Grades

Partitions are given grades. These relate to the level of activity in adjacent spaces and the degree of care the partition is likely to receive. Grades are defined by the strength and robustness of a sample partition when tested by the methods described in BS 5234-2. A summary of performance criteria for grades of partitions is given below:

Light Duty (LD)

Adjacent space only accessible to persons with high incentive to exercise care. Small chance of accident occurring or of misuse.

Example: Domestic accommodation

Medium Duty (MD)

Adjacent space moderately used primarily by persons with some incentive to exercise care. Some chance of accident occurring and of misuse.

Example: Office accommodation

Heavy Duty (HD)

Adjacent space frequently used by the public and others with little incentive to exercise care. Chances of accident occurring and of misuse.

Example: Public circulation areas, Industrial areas

Severe Duty (SD)

Adjacent space intensively used by the public and others with little incentive to exercise care. Prone to vandalism and abnormally rough use.

Example: Major circulation areas, Heavy industrial areas

Test Methodologies

The test methodologies conducted are:

Annex A (normative) Determination of partition stiffness

Annex B (normative) Determination of surface damage by small hard body impact

Annex C (normative) Determination of resistance to damage by impact from a large soft body

Annex D (normative) Determination of resistance to perforation by small hard body impact

Annex E (normative) Determination of resistance to structural damage by multiple impacts from a large soft body

Annex F (normative) Determination of the effects of door slamming

Annex G (normative) Determination of resistance to crowd pressure



Dedicated Support.

Our expert teams are here to assist with design, specification, technical requirements, and product selection.

Call us on **0800 521 050**
or visit **knauf.com**



KNAUF SYSTEMS

Exteriors, interiors, flooring and ceilings all from one source. We are able to support all six sides of your High-Rise Multi Occupancy building specification.

- **Exteriors**
 - ThroughWall
 - AQUAPANEL® Cement Board Outdoor
 - AQUAPANEL® Soffit
- **Interiors**
 - Isolator systems
 - Performer systems
 - Performer - Resilient Bar system
 - Shaftwall systems
 - 'I' Stud lining systems
 - Performer 'MW' Acoustic Stud Partitions
- **Ceilings and Floorings**
 - Corridor 400 - Acoustic Ceiling
 - Hugo - Flooring Panel
 - MF Ceilings



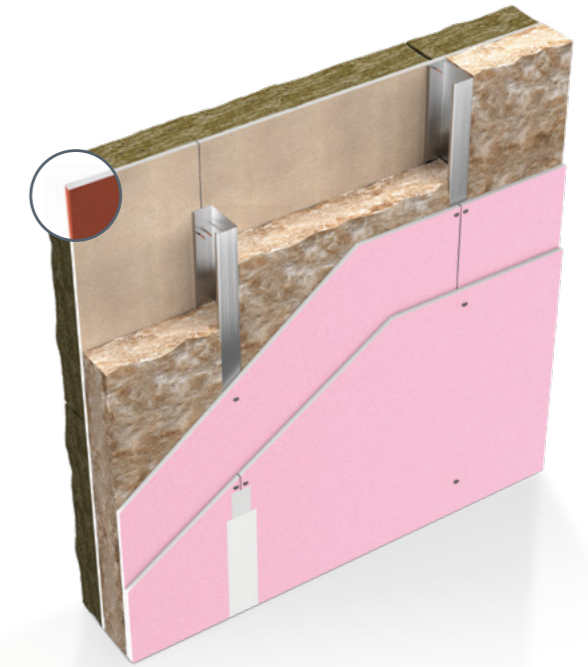
EXTERIORS

Our exterior systems have been developed in conjunction with the construction industry to offer simple and effective solutions. This includes the accredited and innovative ThroughWall system, Knauf SFS metal components, Knauf coated metal and external boards such as AQUAPANEL® Cement Board Outdoor.



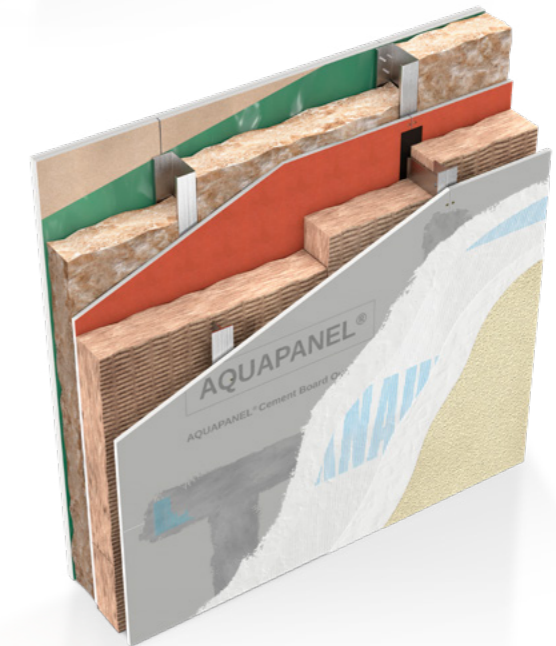
ThroughWall System

Traditionally, external infill solutions comprised of components drawn together from across different suppliers and brands. Aside from compromising design integrity, this approach burdens designers and contractors with complexity. Our ThroughWall system is different. Each component perfectly complements the rest of the system.



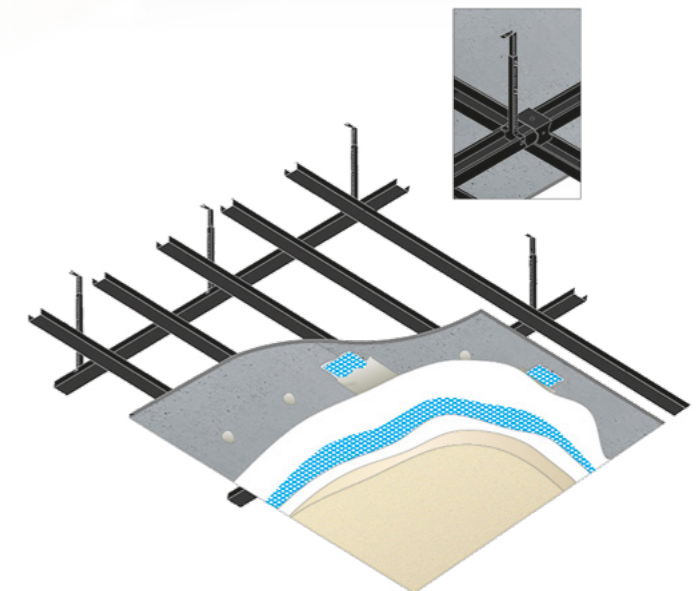
AQUAPANEL® Cement Board Outdoor

AQUAPANEL® Cement Board Outdoor is an innovative way to build exterior walls and façades. The board is the ideal exterior render substrate and can be used for many other surface finishes, such as paint or brick slips. It is a robust, non-combustible building panel and helps to form equally strong but significantly thinner structures, which provides more interior space in buildings.



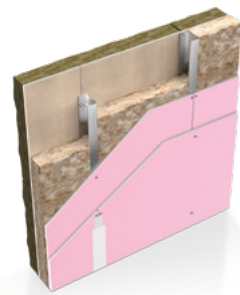
AQUAPANEL® Soffit




Knauf AQUAPANEL® Exterior Ceiling System is a high-performance, economical and sustainable solution for dry lining style construction of exteriors.





ThroughWall System

Knauf ThroughWall is a one-manufacturer solution that provides the integral parts of an exterior wall system. It is designed to meet required building performance while allowing a flexibility of external finishes to be applied, such as rainscreen cladding and brickwork.



-  **Fire Resistance**
90–120 min
-  **Sound Insulation**
53-61dB
-  **U-Value**
0.18 -0.32 Wm²k

 To specify **ThroughWall**, please contact us 

NOTES:

Vapour control/barrier layers may be required. This is determined by condensation risk analysis and project requirements.

Acoustic performance based on combination of all Knauf ThroughWall products types and sizes.

System performance based on impermeate system. Where openings, service penetrations are installed, this will need to be independently assessed.

Knauf Insulation
Rocksilk
Rainscreen Slab

Knauf Windliner

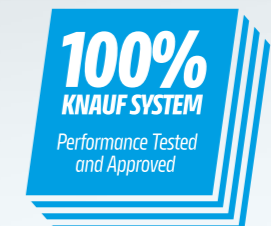
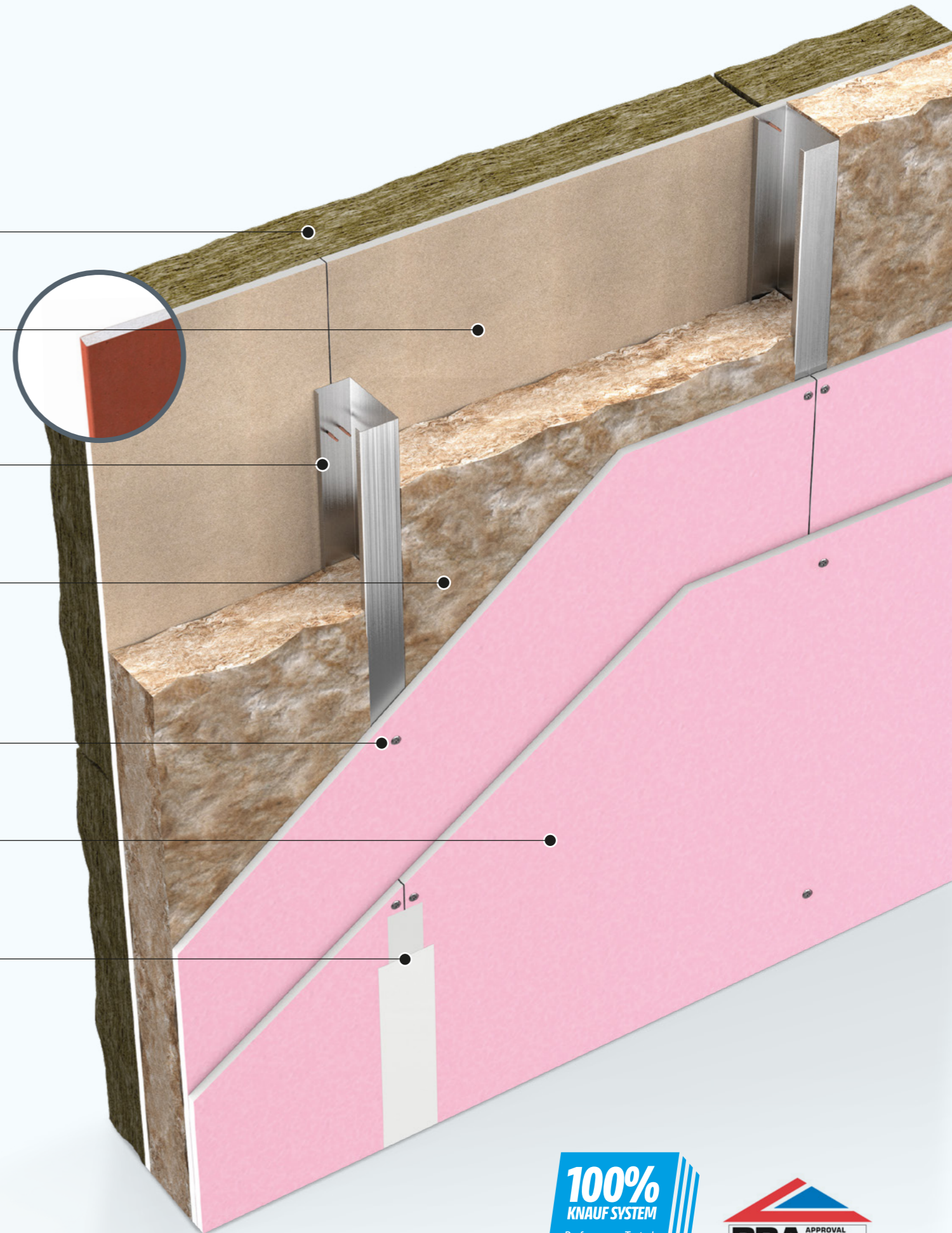
Knauf SFS

Knauf Insulation
Omnifit® Slab 35
or OmniFit Roll 34

Knauf Fixings
and Accessories

Knauf Fire Panel
(Plasterboard)

Knauf Jointing



For illustrative purposes only

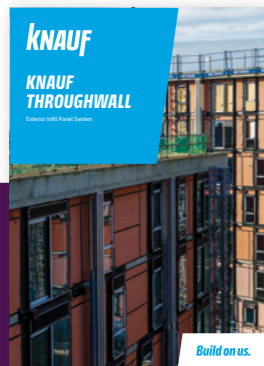
AQUAPANEL® Cement Board Outdoor

Knauf AQUAPANEL® Cement Board Outdoor is an ideal substrate for directly applied render finishes and can be used for exterior walls in drained and ventilated systems, exterior ceilings and soffits. It provides a solid, dry base that can withstand the extreme weathering effects of wind, rain and snow and can be easily curved, allowing for striking architectural features to be formed.

NOTES:

Consult Knauf Technical Services to ensure system is checked for suitability of project.

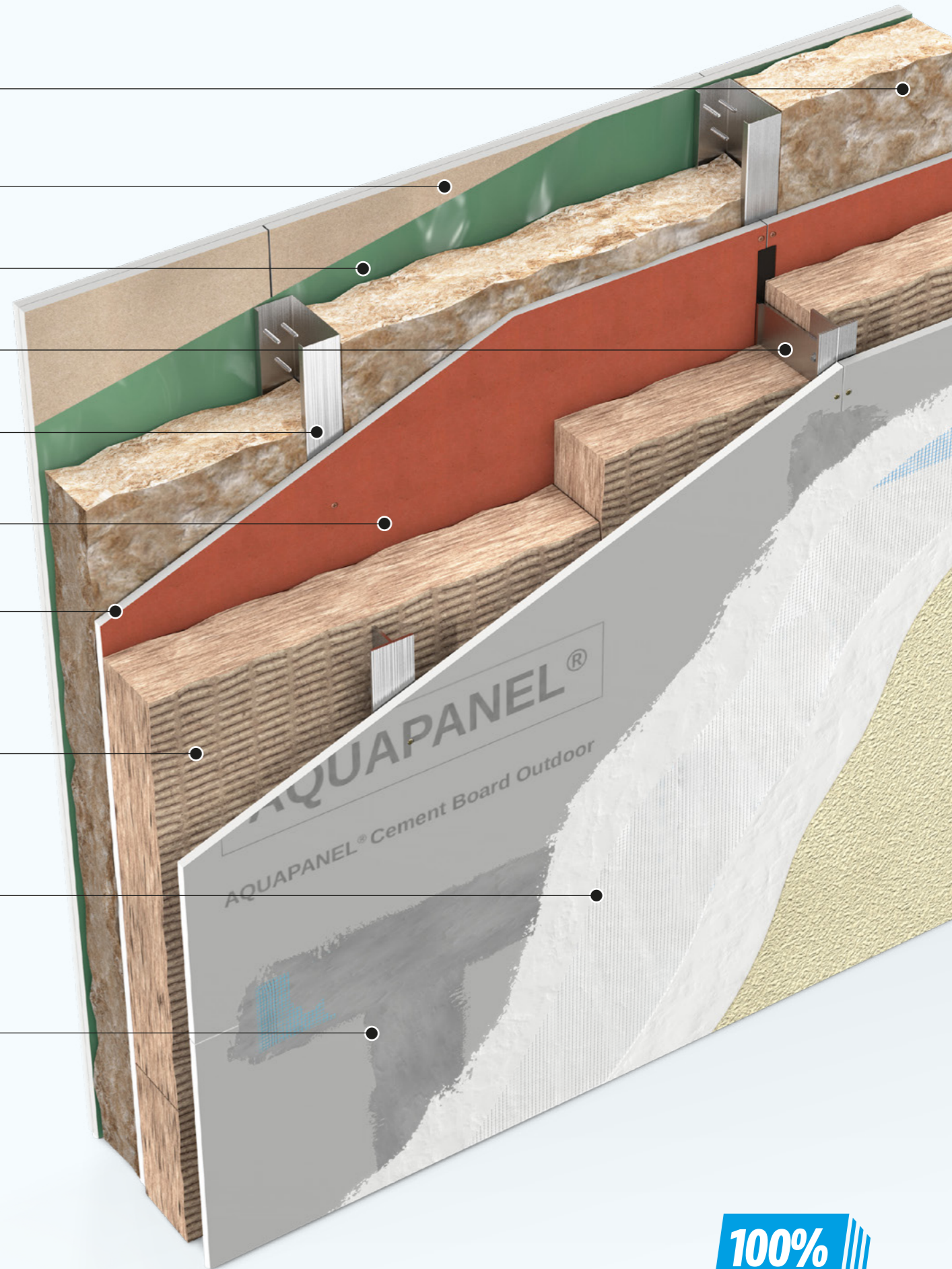
The various cladding and associated components must be checked to ensure the required testing and regulatory conformity are met. Knauf ThroughWall data and approvals are based upon the properties of Knauf elements. As brick tie channel systems and rainscreen cladding systems sit outside of the system, guidance should be taken from the manufacturers of these systems in terms of structural performance.



**CLICK HERE FOR MORE ON
AQUAPANEL® CEMENT
BOARD OUTDOOR**

View on NBS →

- Knauf Insulation Omnifit® Slab 35
- Knauf Plasterboard
- Vapour control layer
- Helping hand bracket
- Knauf SFS frame
- Knauf Windliner
- Knauf Windliner Tape
- Knauf Insulation Rocksilks® RainScreen Slab
- Thin Coat Render finish
- AQUAPANEL® Cement Board Outdoor



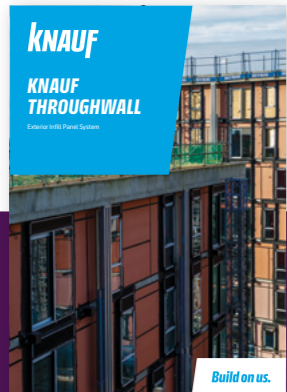
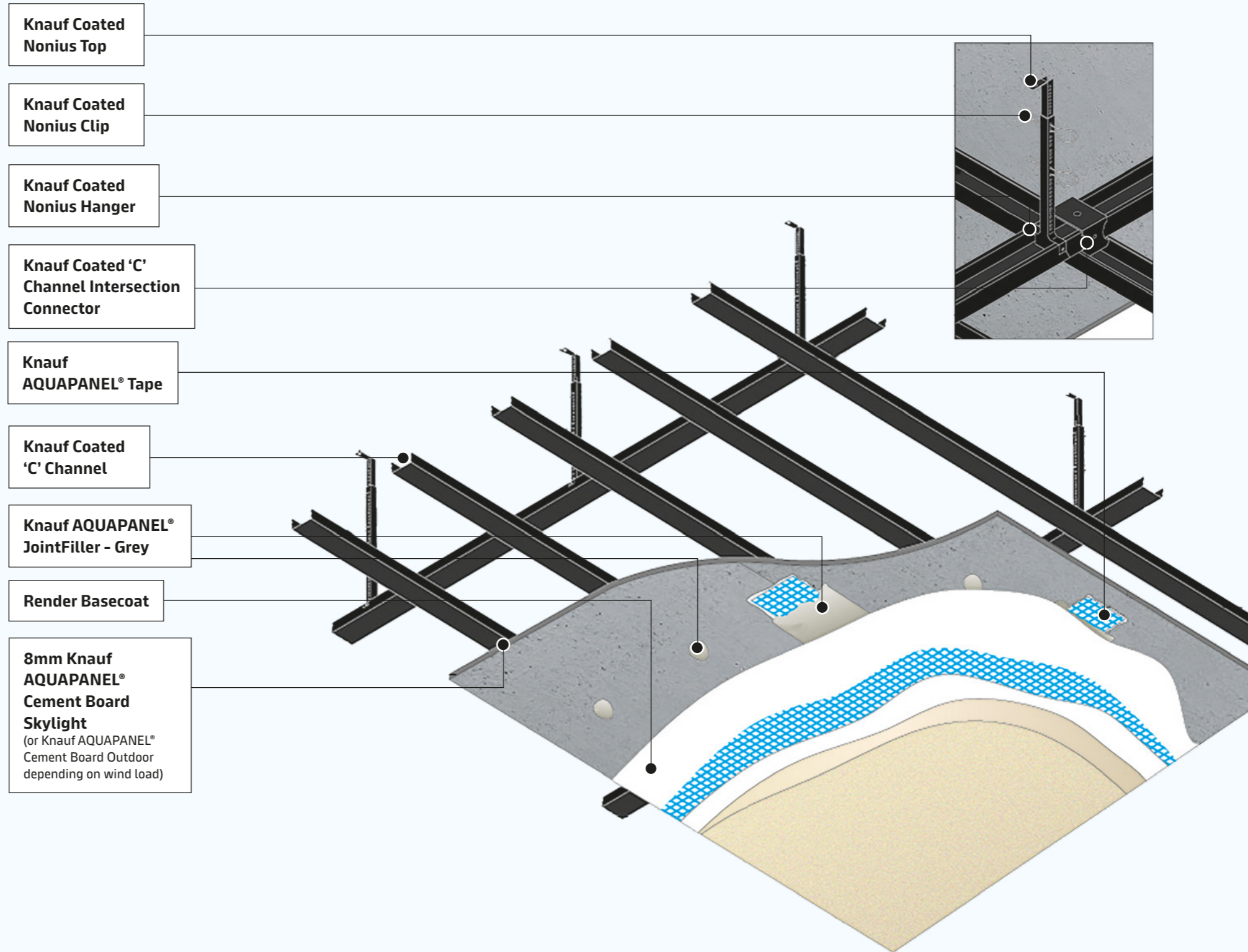
For illustrative purposes only



AQUAPANEL® Soffit

Knauf AQUAPANEL® Exterior Ceiling System is the perfect solution for ceilings exposed to moisture, wind loading and coastal environments. All components are designed and tested to achieve the highest performance of construction.

Knauf AQUAPANEL® Cement Boards are water-resistant and made of inorganic materials, which prevents mould from forming and spreading. Our suspended ceiling structure features a protective coating achieving a C5 class for corrosion resistance, making it suitable for outdoor areas from urban and industrial atmospheres, with moderate sulphur dioxide pollution to coastal areas with associated salinity. And finally, the complete system can be specified to withstand any UK based wind load.



CLICK HERE FOR MORE ON AQUAPANEL® SOFFIT

View on NBS →

For illustrative purposes only



INTERIORS

Carefully designed to match your requirements, from fire safety to tile support, our drywall partitions are adept at meeting the needs of modern construction, underpinned by years of testing and development. Specify your partitions with confidence, knowing you'll receive support from concept to site.

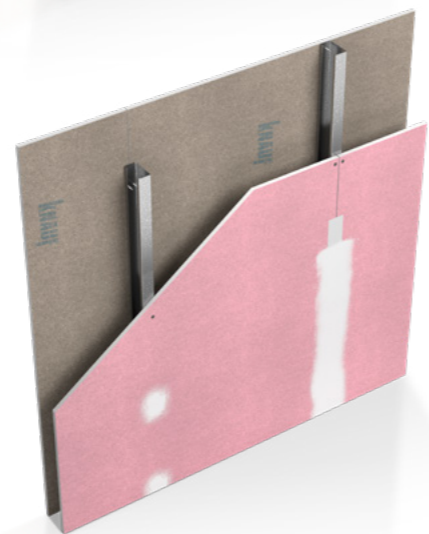
Isolator (Twin Frame) Partitions

The Knauf Isolator system is typically used to divide habitable dwellings. The twin stud build up, combined with our high performance plasterboards, maximises acoustic performance in order to comply with building regulations, technical handbooks and guidances for sound insulation.



Performer 'C' Stud Partitions

The Knauf Performer system is our most versatile and commonly used partition system. It is constructed using a single row of our metal studs with our plasterboards to both sides in order to meet fire, acoustic, moisture and impact requirements. The Performer system is lightweight, simple to construct and should be used in conjunction with our finishing solutions range.



Performer 'C' Stud Partitions with Knauf Resilient Bar

Knauf Resilient Bar can be added to both or one side of certain Knauf Performer systems. This additional component improves the acoustic sound reduction performance of the system in order to meet higher acoustic requirements.

Shaftwall

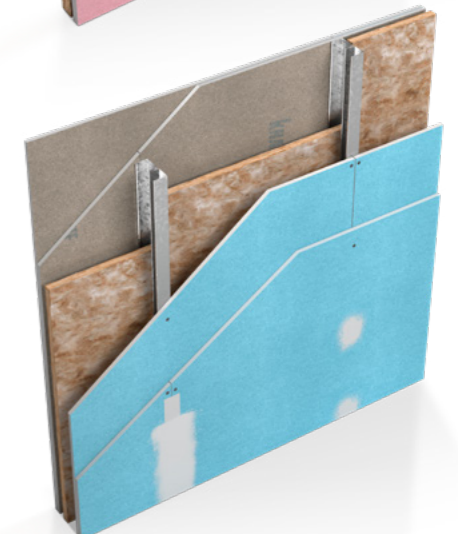
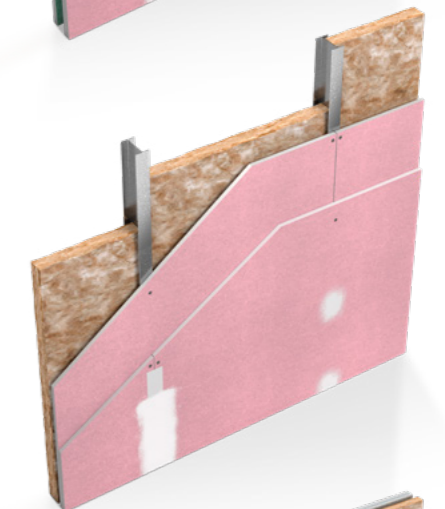
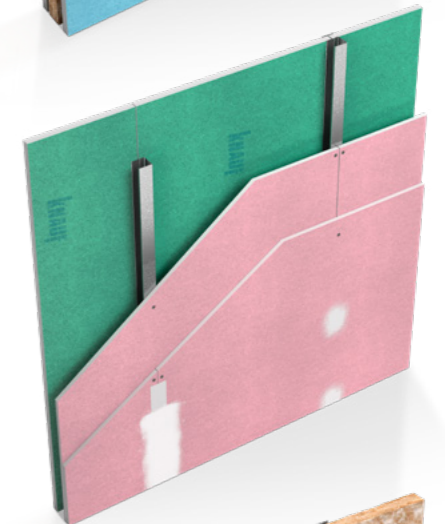
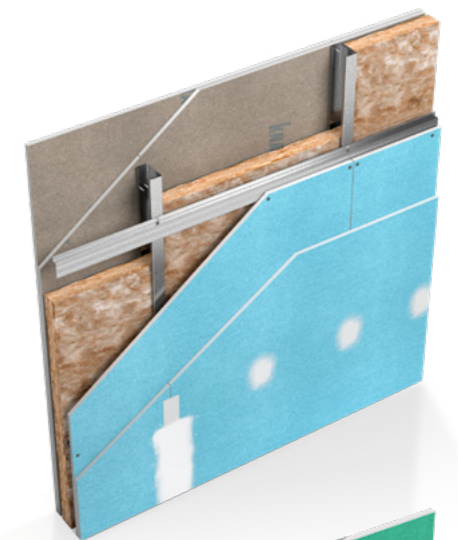
Knauf Shaftwall is our innovative system to form enclosures around service and lift shafts while working from one side. The unique Knauf 'C-T' Stud makes this possible with a minimum of components. The system can provide a high level of fire resistance performance to meet the requirements of your project.

'I' Stud Linings

Knauf Independent 'I' Stud is a fully independent wall lining system that can be used in all building types to upgrade the acoustic, fire and thermal performance of an existing masonry wall and to deal with any irregularities. Due to the system using a Knauf 'I' Stud, there is no requirement for the lining system to be fixed back into the structure behind.

Performer 'MW' Acoustic Stud Partitions

Knauf MW Performer is a versatile partition system using a single row of Knauf MW acoustic metal studs to enhance acoustic sound reduction performance without increasing wall width. Designed with Knauf plasterboards on both sides, it meets fire, acoustic, moisture, and impact requirements. Lightweight and simple to build, it integrates with Knauf finishing solutions.



SPECIFIED FLOORPLANS

A range of typical High-Rise Multi Occupancy floorplans that have been specified with Knauf systems ensuring regulation and performance compliance.

- **Apartment Floorplan**
- **Student Accommodation Floorplan**
- **Hotel Floorplan**
- **The Core Floorplan**



Apartment Floorplan

This floorplan showcases our systems that will ensure you meet the regulatory standards[†] within a typical apartment. Simply click the arrow on your desired system to specify it within your project.

Our full **EN and BS performance tables** are available here [→](#)

| | Knauf Stud Width (gauge) | Knauf Plasterboard (each side) | Cavity Insulation (mm) | System Width (mm) | Fire Resistance ¹ (mins) | Max Height (mm) | Acoustics ² dB Rw (dB Rw+ctr) | Spec on NBS |
|-------------------------------------|--------------------------|--|------------------------|-------------------|-------------------------------------|-----------------|--|----------------------------|
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm 'I' Stud (0.55) | 2×15mm Soundshield Plus | 1×50 KIAR* | 200 | 60 | 2900 | 62 (56) | → |
| | 2×50mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 200 | 60 | 2900 | 62 (56) | Contact us |
| | 2×60mm 'I' Stud (0.55) | 2×15mm Soundshield Plus | 1×50 KIAR* | 220 | 60 | 3300 | 62 (56) | → |
| | 2×60mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 200 | 60 | 3300 | 62 (56) | Contact us |
| | 2×70mm 'C' Stud (0.55) | 2×15mm Soundshield Plus | 2×25 KIAR* | 230 | 60 | 3000 | 65 (60) | → |
| | 2×70mm 'I' Stud (0.70) | 2×15mm Soundshield Plus | 1×100 KIAR* | 250 | 60 | 4000 | 66 (61) | → |
| KNAUF PERFORMER 'C' STUD PARTITIONS | 2×70mm** 'C' Stud (0.55) | 2×15mm Soundshield Plus | 2×25 KIAR* | 214 | 60 | 6000 | 60 (53) | → |
| | 70mm 'C' Stud (0.55) | 1×12.5mm Wallboard | N/A | 97 | N/A | 3600 | 35 | → |
| | 70mm 'C' Stud (0.55) | 1×12.5mm Wallboard | 1×25 KIAR* | 97 | 30 | 3600 | 42 | → |
| | 70mm 'C' Stud (0.55) | 1×15mm Soundshield Plus | N/A | 102 | 30 | 4000 | 40 | → |
| | 70mm 'C' Stud (0.55) | 1×12.5mm Wallboard 1×12.5mm Moisture Panel | 1×25 KIAR* | 97 | 30 | 3600 | 42 | → |
| | 70mm 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | N/A | 102 | 30 | 4000 | 40 | → |
| | 70mm 'C' Stud (0.55) | 1×12.5mm Moisture Panel | N/A | 97 | N/A | 3600 | 35 | → |
| | 70mm 'C' Stud (0.55) | 1×15mm Performance Plus | N/A | 102 | 30 | 4000 | 40 | → |

NOTE: Maximum height is based on studs at 600mm centres. System width measurement excludes finishes.

* Knauf Insulation Acoustic Roll
** Bracing using Knauf Flat Plate at 1500mm centres

1 See Appendix 2 See Appendix † See page 4, paragraph 4

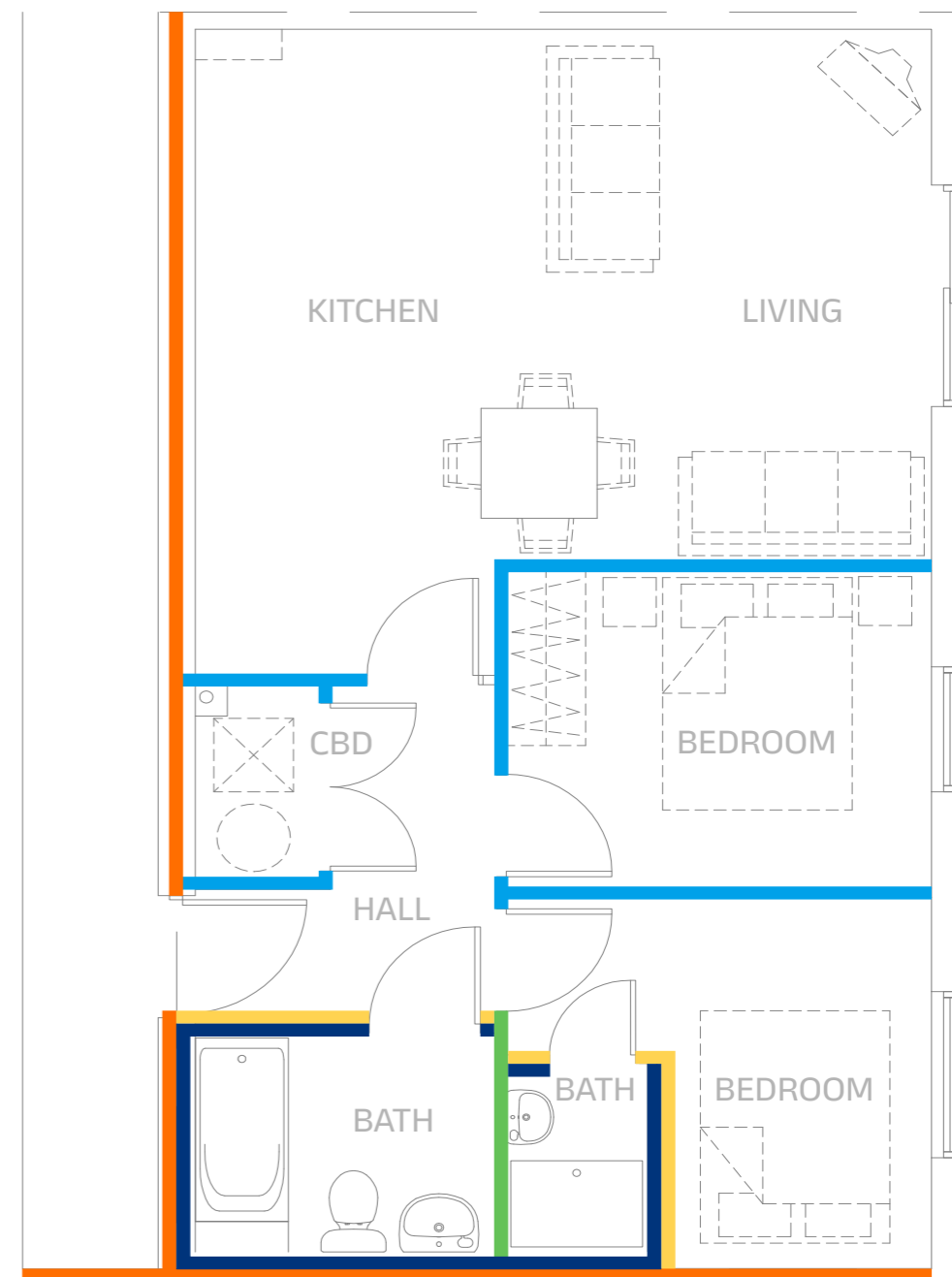


Diagram for illustrative purposes only.

DIAGRAM KEY:

- Party wall (Dry/Dry)
- Party wall (Dry/Humid)
- Internal wall
- Internal wall (Humid/Humid)
- Internal wall (Dry/Humid)
- External wall

Got a question?
Call us on **0800 521 050** or visit **knauf.com**

Student Accommodation Floorplan

This floorplan showcases our systems that will ensure you meet the regulatory standards* within a typical student accommodation setting. Simply click the arrow on your desired system to specify it within your project.

Our full **EN and BS performance tables** are available here →

| | Knauf Stud Width (gauge) | Knauf Plasterboard (each side) | Cavity Insulation (mm) | System Width (mm) | Fire Resistance ¹ (mins) | Max Height (mm) | Acoustics ² dB Rw (dB Rw+ctr) | Spec on NBS |
|-------------------------------------|---|--|------------------------|-------------------|-------------------------------------|-----------------|--|-------------|
| SINGLE FRAME RESILIENT BAR | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 2x15mm Soundshield Plus | 1x50 KIAR* | 148 | 60 | 3000 | 62 (64) | → |
| | 2x50mm** 'C' Stud (0.55) | 2x15mm Soundshield Plus | 2x25 KIAR* | 170 | 90 | 4000 | 58 (51) | → |
| KNAUF EQUALATOR (TWIN FRAME) | 2x50mm 'I' Stud (0.55) | 2x15mm Soundshield Plus | 1x50 KIAR* | 200 | 60 | 2900 | 62 (56) | → |
| | 2x50mm 'I' Stud (0.55) | 1x15mm Soundshield Plus 1x15mm Performance Plus | 1x50 KIAR* | 200 | 60 | 2900 | 62 (56) | Contact us |
| KNAUF PERFORMER (ACOUSTIC STUD) | 92 MW Acoustic Stud | 2x15mm Soundshield Plus | 1x50 KIAR* | 154 | 90 | 5000 | 62 (55) | → |
| | 92 MW Acoustic Stud | 2x12.5mm Soundshield Plus | 1x50 KIAR* | 144 | 60 | 5000 | 60 (54) | → |
| KNAUF PERFORMER 'C' STUD PARTITIONS | 70mm 'C' Stud (0.55) | 1x12.5mm Wallboard | 1x25 KIAR* | 97 | 30 | 3600 | 42 | → |
| | 70mm 'C' Stud (0.55) | 1x15mm Soundshield Plus | N/A | 102 | 30 | 4000 | 40 | → |
| | 70mm 'C' Stud (0.55) | 1x12.5mm Wallboard 1x12.5mm Moisture Panel | 1x25 KIAR* | 97 | 30 | 3600 | 42 | → |
| | 70mm 'C' Stud (0.55) | 1x15mm Soundshield Plus 1x15mm Performance Plus | N/A | 102 | 30 | 4000 | 40 | → |
| | 70mm 'C' Stud (0.55) | 1x12.5mm Moisture Panel | 1x25 KIAR* | 97 | 30 | 3600 | 42 | → |
| | 70mm 'C' Stud (0.55) | 1x15mm Performance Plus | N/A | 102 | 30 | 4000 | 40 | → |

NOTE: Maximum height is based on studs at 600mm centres. System width measurement excludes finishes.


* Knauf Insulation Acoustic Roll 1 See Appendix † See page 4, paragraph 4
 ** Bracing using Knauf Flat Plate at 1500mm centres 2 See Appendix



Diagram for illustrative purposes only.

DIAGRAM KEY:

-  Party wall (Dry/Dry)
-  Party wall (Dry/Humid)
-  Internal wall
-  Internal wall (Humid/Humid)
-  Internal wall (Dry/Humid)
-  External wall

 **Got a question?**
 Call us on **0800 521 050** or visit **knauf.com**

Hotel Floorplan

This floorplan showcases our systems that will ensure you meet the regulatory standards[†] within a typical Hotel setting. Simply click the arrow on your desired system to specify it within your project.

Our full **EN and BS performance tables** are available here [→](#)

| | Knauf Stud Width (gauge) | Knauf Plasterboard (each side) | Cavity Insulation (mm) | System Width (mm) | Fire Resistance ¹ (mins) | Max Height (mm) | Acoustics ² dB Rw (dB Rw+ctr) | Spec on NBS |
|-------------------------------------|---|--|------------------------|-------------------|-------------------------------------|-----------------|--|----------------------------|
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm*** 'C' Stud (0.55) | 2×15mm Soundshield Plus | 2×25 KIAR* | 170 | 90 | 4000 | 58 (51) | → |
| | 2×50mm*** 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 2×25 KIAR* | 170 | 90 | 4000 | 58 (51) | Contact us |
| SINGLE FRAME RESILIENT BAR | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 2×15mm Soundshield Plus | 1×50 KIAR* | 148 | 60 | 3000 | 62 (64) | → |
| | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 148 | 60 | 3000 | 60 (55) | Contact us |
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm 'I' Stud (0.55) | 2×15mm Soundshield Plus | 1×50 KIAR* | 200 | 60 | 2900 | 62 (56) | → |
| | 2×50mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 200 | 60 | 2900 | 62 (56) | → |
| KNAUF PERFORMER (ACOUSTIC STUD) | 92 MW Acoustic Stud | 2×15mm Soundshield Plus | 1×50 KIAR* | 154 | 90 | 5000 | 62 (55) | → |
| | 92 MW Acoustic Stud | 2×12.5mm Soundshield Plus | 1×50 KIAR* | 144 | 60 | 5000 | 60 (54) | → |
| KNAUF PERFORMER 'C' STUD PARTITIONS | 70mm 'C' Stud (0.55) | 1×12.5mm Wallboard 1×12.5mm Moisture Panel | N/A | 97 | N/A | 3600 | 35 | → |
| | 70mm 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | N/A | 102 | 30 | 4000 | 40 | → |
| KNAUF ISOLATOR (TWIN FRAME) | 2×50mm*** 'C' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 2×25 KIAR* | 170 | 90 | 4000 | 58 (51) | → |
| | 2×50mm 'I' Stud (0.55) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 200 | 60 | 2900 | 62 (56) | → |
| SINGLE FRAME RESILIENT BAR | 70mm 'C' Stud (0.55) (Knauf Resilient Bar one side) | 1×15mm Soundshield Plus 1×15mm Performance Plus | 1×50 KIAR* | 148 | 60 | 3000 | 60 (55) | → |

NOTE: Maximum height is based on studs at 600mm centres. System width measurement excludes finishes.

* Knauf Insulation Acoustic Roll 1 See Appendix † See page 4, paragraph 4
 ** Bracing using Knauf Flat Plate at 1500mm centres 2 See Appendix

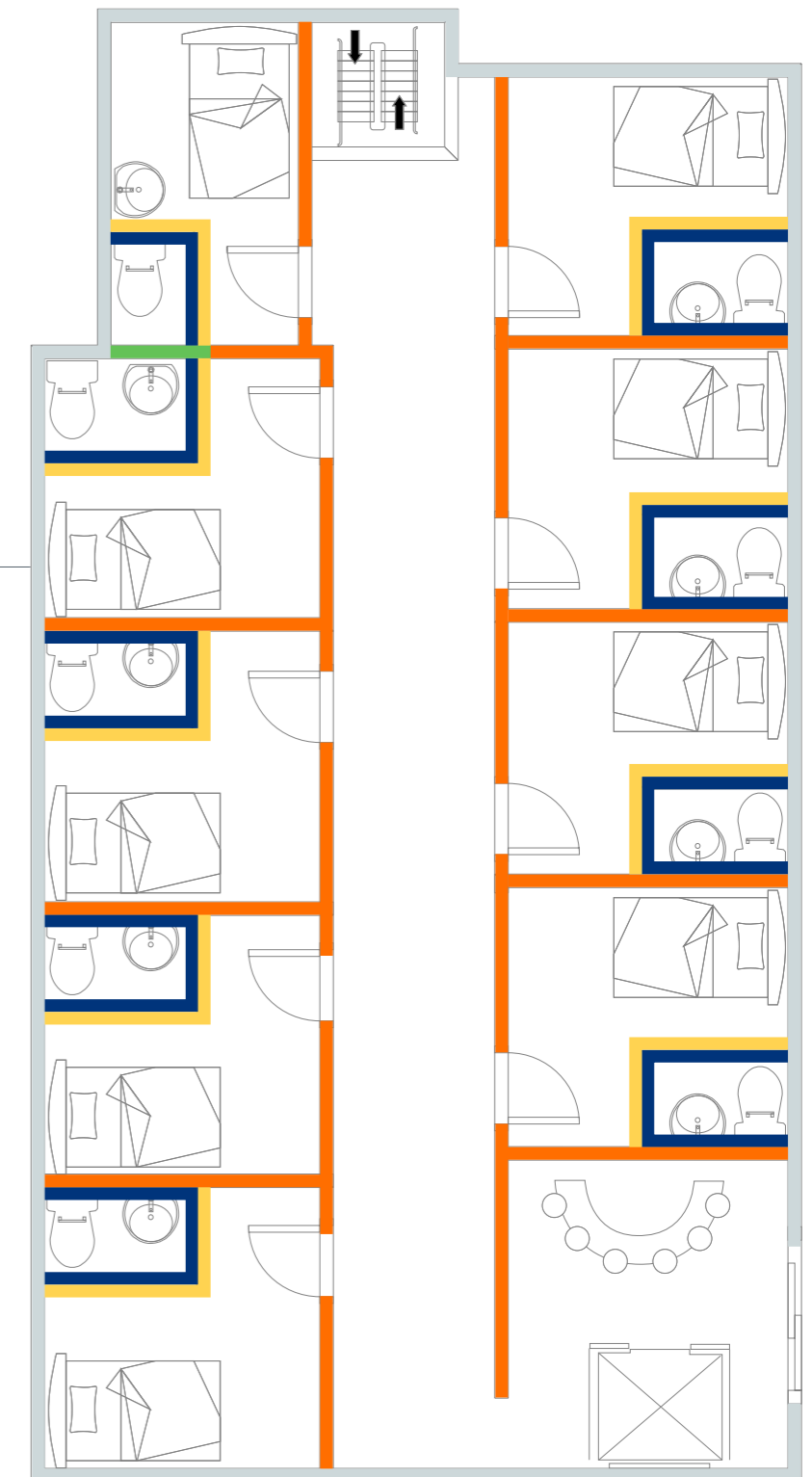




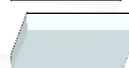


Diagram for illustrative purposes only.

Knauf ThroughWall is a one-manufacturer solution that provides the integral parts of an exterior wall system.

[Find out more about ThroughWall](#) [→](#)

DIAGRAM KEY:

-  Party wall (Dry/Dry)
-  Party wall (Dry/Humid)
-  Internal wall (Humid/Humid)
-  Internal wall (Dry/Humid)
-  External wall

Got a question?
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The Core Floorplan

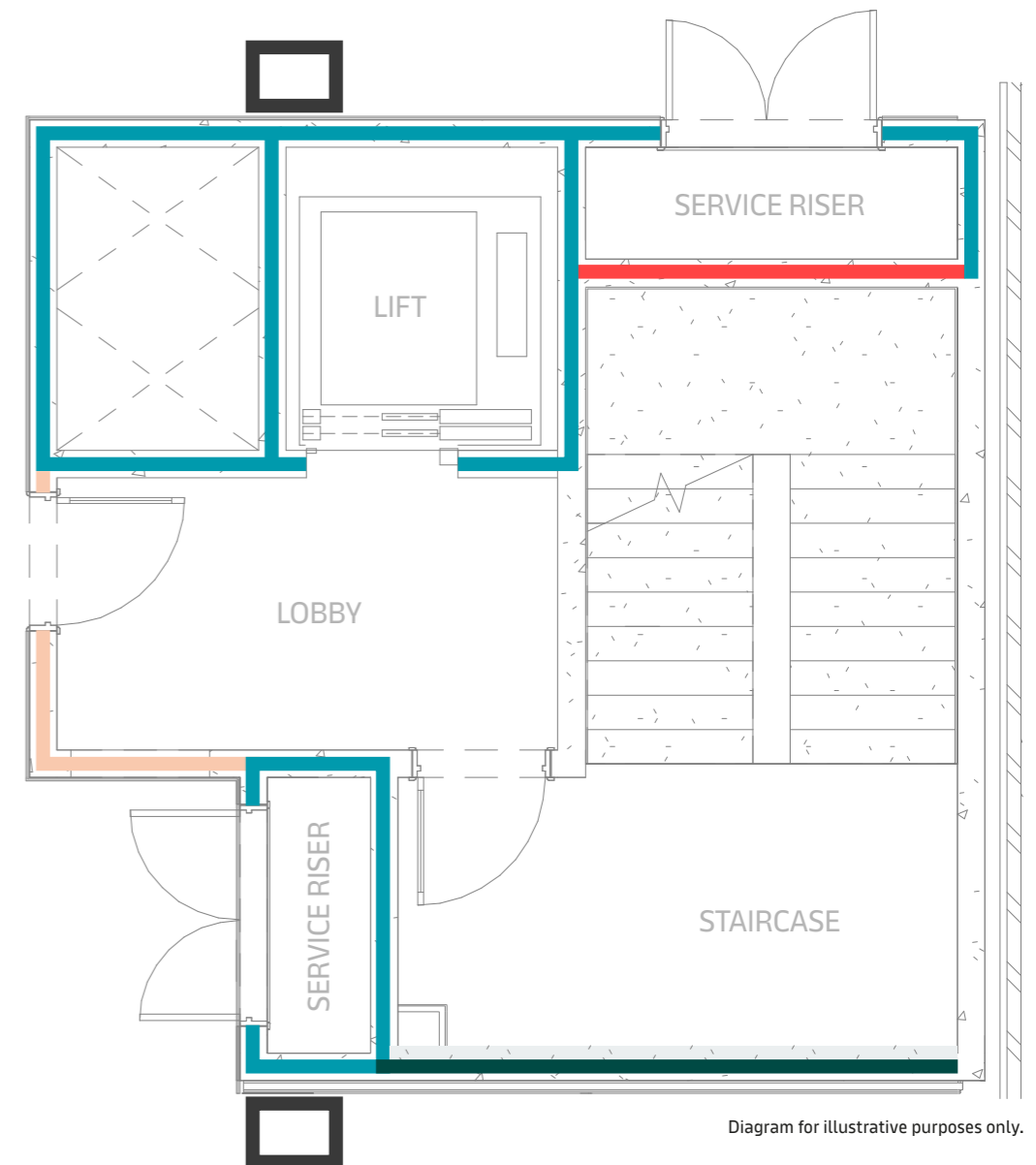
This floorplan showcases our systems that will ensure you meet the regulatory standards* within a typical high rise core (stairwell). Simply click the arrow on your desired system to specify it within your project.

Our full **EN and BS performance tables** are available here [→](#)

| | Knauf Stud Width (gauge) | Knauf Plasterboard (each side) | Cavity Insulation (mm) | System Width (mm) | Fire Resistance ¹ (mins) | Max Height (mm) | Acoustics ² dB Rw | Spec on NBS |
|---------------------------------------|--------------------------|---|------------------------|-------------------|-------------------------------------|-----------------|------------------------------|----------------------------|
| KNAUF SHAFTWALL | 60mm 'CT' Stud (0.92) | 2×12.5mm Fire Panel 1×19mm Coreboard | N/A | 87 | 60 | 4000 | N/A | → |
| | 60mm 'CT' Stud (0.92) | 2×15mm Fire Panel 1×19mm Coreboard | N/A | 92 | 90 | 4000 | N/A | → |
| | 60mm 'CT' Stud (0.92) | 3×15mm Fire Panel 1×19mm Coreboard | N/A | 107 | 120 | 4000 | N/A | → |
| | 60mm 'CT' Stud (0.92) | 3×15mm Fire Panel 1×19mm Coreboard | 1×25 KIAR* | 107 | 120 | 4000 | 50 | Contact us |
| | 92mm 'CT' Stud (0.92) | 3×15mm Fire Panel 1×19mm Coreboard | 1×25 KIAR* | 139 | 90 | 5000 | 50 | → |
| | 146mm 'CT' Stud (0.92) | 3×15mm Fire Panel 1×19mm Coreboard | 1×25 KIAR* | 193 | 90 | 5000 | 50 | Contact us |
| | 92mm 'IC' Stud (0.92)*** | 3×15mm Fire Panel 1×19mm Coreboard 1×19mm Coreboard Rip | 1×25 KIAR* | 158 | 120 | 6000 | 46 | → |
| KNAUF 'I' STUD LINING FIRE RESISTANCE | 70mm 'I' Stud (0.70) | 2×12.5mm Wallboard (To one side) | N/A | 97 | N/A | 4000 | N/A | → |
| | 70mm 'I' Stud (0.70) | 2×15mm Fire Panel (To one side) | 1×50** | 102 | 60 | 4000 | N/A | → |
| | 92mm 'I' Stud (0.90) | 2×15mm Fire Panel (To one side) | 1×50** | 124 | 60 | 5000 | N/A | → |
| KNAUF PERFORMER 'C' STUD PARTITIONS | 70mm 'C' Stud (0.55) | 2×12.5mm Fire Panel | 1×25 KIAR* | 122 | 120 | 4000 | 52 | Contact us |
| | 70mm 'C' Stud (0.55) | 2×15mm Wallboard | 1×25 KIAR* | 132 | 60 | 4800 | 54 | → |

NOTE: Maximum height is based on studs at 600mm centres. System width measurement excludes finishes.

* Knauf Insulation Acoustic Roll 1 See Appendix † See page 4, paragraph 4
 ** Knauf Insulation Rocksil® RS60 2 See Appendix
 *** This System based on 300mm Centre Studs



Fire Encasement Systems

Find out more about **Fire Encasement Systems** [→](#)

DIAGRAM KEY:

- Knauf Shaftwall
- Knauf 'I' Stud Lining Fire Resistance
- Knauf Performer 'C' Stud Partition
- Knauf 'I' Stud Lining

Got a question?
 Call us on **0800 521 050** or visit **knauf.com**

CEILING AND FLOORINGS

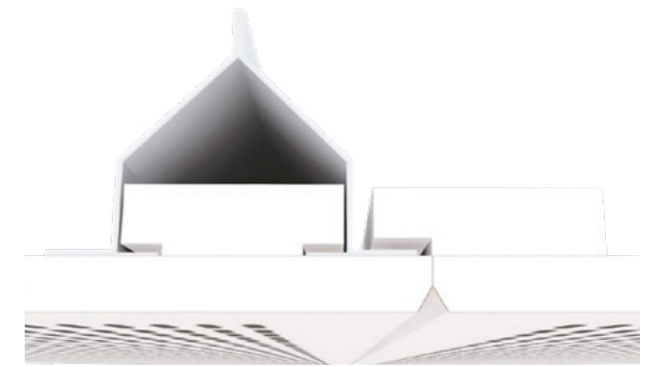
We provides ceiling and flooring solutions, including acoustic ceilings, modular systems, raised access floors, and screed systems. These products ensure durability, sound insulation, and aesthetic appeal, catering to diverse architectural and functional requirements in modern construction.



Corridor 400 – Acoustic Ceiling

Corridor 400 acoustic ceiling is a unique ceiling solution for narrow rooms and corridors. The gypsum ceiling with its distinct and unified look is installed without any cross runners or suspension hangers, on a self-supporting system with a flex runner. Therefore, a Corridor 400 acoustic ceiling is extremely quick to install; up to 3 times faster installation than a traditional T-grid ceiling in a corridor. The acoustic ceiling planks are free spanning between the walls, and can span up to 2.4m.

Specify on NBS →



Hugo - Flooring Panel

Dry screed flooring panel made from gypsum fibre available in two thicknesses. Quick and easy to install; tongue & groove edges to be bonded to form a monolithic layer floating fully supported on levelled substrate.

Specify on NBS →



MF Ceilings

Versatile and easy to install. Deep voids are easily created to hide services and the ceiling can be used to provide fire protection to the soffit above. Familiar to contractors who will easily be able to form openings, bulkheads and coffer.

View MF Ceilings on NBS →



KNAUF CASE STUDY SPOTLIGHT

Be inspired by real world success stories.

Our case studies offer tangible examples, revealing dedication and innovation. Gain valuable insights and actionable lessons to inspire your ventures.

→ West Bar, Sheffield

A major new mixed-use development with sustainability at its heart, covering 1 million sq. ft. and forming part of a £300 million regeneration scheme.

[Download more Knauf case studies](#)



CASE STUDY

West Bar, Sheffield

Principle Architect:

5plus Architects

Delivery Architect:

5plus Architects

Main Contractor:

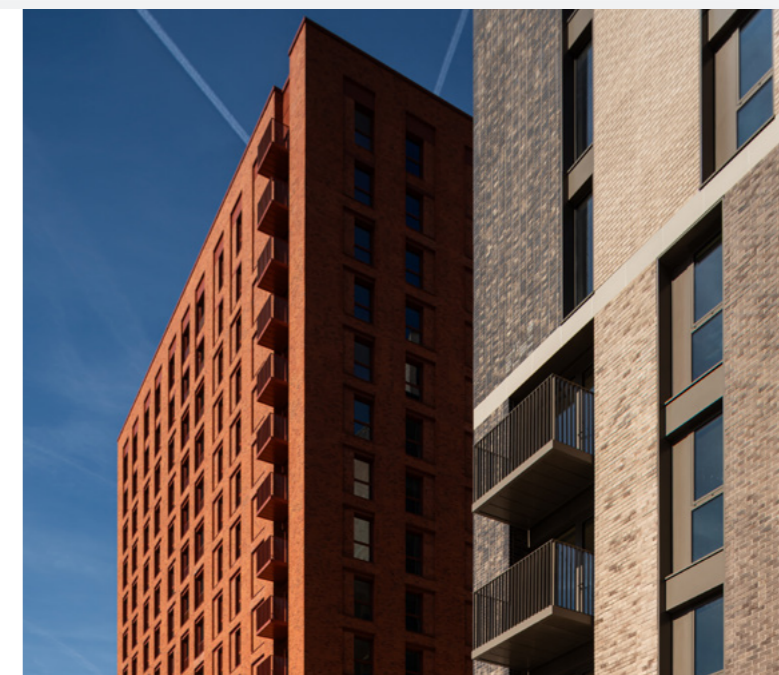
Bowmer and Kirkland Ltd
(Jonathan Gisborne)

Subcontractor:

K10 Systems Ltd

Products used:

Knauf Corridor 400, Knauf SFS, Knauf Windliner, Knauf Partitions, Knauf Airless Finish and Knauf jointing and accessories



West Bar Sheffield is a major new mixed-use development located in the heart of Sheffield's Business District. Covering 1 million sq. ft. and forming part of a £300 million regeneration scheme, the development will include offices, retail, leisure facilities, a hotel, residential space and integrated parking, helping to reshape the city centre.

Sustainability is central to the West Bar vision. The £3.6 million Grey to Green initiative has already transformed the surrounding area through extensive planting of wildflowers, trees and grasses, alongside improved pedestrian and cycling routes. Together, these measures aim to create an attractive, environmentally responsible destination that supports businesses, workers and visitors throughout the day and night.

By integrating Knauf's comprehensive range of products and receiving technical support throughout the build, the development team was able to deliver on their vision for a dynamic, eco-friendly urban space.

Main contractor Bowmer and Kirkland Ltd, working with 5plus Architects, specified Knauf's full system of plasterboard, drylining, jointing and accessories across the project. Knauf Corridor 400 provided a fast, efficient solution for narrow corridors, while Knauf SFS offered a lightweight, durable alternative to timber framing for external walls.

Jonathan Gisborne, Contract Manager at Bowmer and Kirkland Ltd explained the choice: "[We] decided to use Knauf's products as they gave us a better cost perspective, and we knew we would get better support throughout the design process."

Building materials were supplied by CCF Sheffield and installed by K10 Systems Ltd. Callum Connor, Commercial Manager at K10 Systems, praised Knauf's technical support: "Knauf were extremely attentive and supportive from the very get go, and they were often present on site. Whenever we, or Bowmer and Kirkland needed any help, they were on hand straight away. Using the full-system from Knauf helps in this respect, because they are invested in supporting heavily and are able to provide good technical support for each product."

Mark Hubbard, Director at Wing Plastering, who was responsible for the application of Knauf's Airless Finish on the West Bar project commented on the ease of the product: "West Bar was our client's first project in the region using Knauf Airless Spray. We had only used it once before, however, the outstanding results soon overcame any initial scepticism. This directly led to a further job at Whitehall Riverside, where we are on track to deliver 500 high-quality apartments in a little over six months, an unbelievable rate of efficiency".

As it moves toward completion, West Bar is poised to become a thriving hub for businesses, residents, and visitors alike.

[View case study](#)



CPD COURSES

Our CPDs are designed to enhance your expertise and equip you with solutions that integrate insulation, gypsum, and ceiling solutions into modern architectural designs.



Fire Foundations In High-Rise Multi Occupancy (HRMO) Buildings

Non-RIBA Approved →



RIBA Approved →



Fire – Advanced Insight for High-Rise Multi Occupancy (HRMO) Buildings

Non-RIBA Approved →

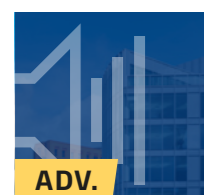


Acoustic Foundations In High-Rise Multi Occupancy (HRMO) Buildings

Non-RIBA Approved →



RIBA Approved →



Acoustic – Advanced Insight for High-Rise Multi Occupancy (HRMO) Buildings

Non-RIBA Approved →

APPENDIX

Knauf Partitions

1. Fire resistance period

Tested in accordance with BS EN 1364-1.

Fire resistance period is inclusive of both fire integrity and fire insulation.

Fire resistance performance must be reviewed against Knauf specifications, standard details, with inclusion of deflection head arrangement.

Systems that denote N/A indicate that system has not been fire resistance tested.

2. Acoustic sound insulation

Tested or assessed in accordance with BS EN ISO 10140-1 & BS EN ISO 10140-2.

Acoustic sound insulation performance based on studs at 600mm centres only and non-deflection head arrangement.

The maximum height stated is for the fire resistance of the system to meet project requirements in accordance where EN compliance is required. The stated maximum height figure is the lower value between the cold state height, calculated structurally to limiting deflection of $L/240 @ 200Pa$ and the fire state height, as outlined in accordance with BS EN 1364-1 and BS EN 15254-3.

Note 1. Systems that require fire resistance and/or acoustic sound insulation performance must have all outer joints taped and filled in accordance with Knauf recommendations. Systems are tested as imperforate.

Note 2. Systems designed to accommodate up to -25mm or +/-12.5mm deflection allowance. Please refer to Knauf Fire Rated Deflection Head document for detailed information on design and specification.



Customer Service

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Eire Tel: 01 4620739
Email: cservice@knauf.com

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technical-uk@knauf.com
(excluding Public Holidays)

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www.knauf.ie