

**Engineering progress
Enhancing lives**

Future Homes Standard: Preparing UK housing for 2025

Research into market readiness and the fenestration industry's role in a new era of building regulations.

www.rehau.uk/intheframe
enquiries@rehau.com
Tel: 01989 762600



Contents

- 03** I. Introduction – Why clarity is pivotal for the next 18 months
- 06** II. Research results – How is the housing market tracking against the future homes standard timeline?
- 10** III. Correcting the course – What's next for housing providers?
- 15** IV. Conclusion – Moving housing forward

I. Introduction – Why clarity is pivotal for the next 18 months

What the future homes standard (FHS) seeks is clear; how housing providers actually get there less so.

It's a problem brought into focus by Kevin McCloud, who notes how far the UK market still is from achieving parity on decarbonisation when compared to other nations. "For a government policy," he writes, "the Future Homes Standard is not a bad stab. The strategy is on par with European policies ... except most other European countries wrote their policies years ago. Ours is way overdue."¹

This delay is concerning given the complexity of the FHS. Reaching a point where all new homes produce between 75%-80% less carbon emissions than previous standards is a huge challenge, though clearly necessary if the UK is to have any chance of achieving net zero by 2050 – a target that is now legally binding.² It will require coordination across the supply chain, as well as the input of expert manufacturers and suppliers to achieve desirable outcomes.

The UK's position is also concerning because the FHS comes into force in less than two years. To date, discussion has understandably been dominated by the new build market. But there's a need for the housing industry to consider how existing properties can be improved. First, because there is a huge amount of legacy building stock that will remain occupied for the foreseeable future. Secondly, because the feasibility of net zero rests in part on addressing the retrofit challenge. Oft-quoted research finds 80% of the buildings that exist today will still be used in 2050.³ All of these will require refurbishing with high-performance materials.

Larger challenges aside, it's clear a more detailed examination of the market is now required for the crucial months ahead. Where do housing providers see themselves on the FHS pathway? What challenges stand in their way? Is it possible to get ahead? If so, how? These are the key questions examined in REHAU's latest piece of market research, which surveyed 200 industry professionals working across the housing market.

¹ <https://www.granddesignsmagazine.com/kevin-mccloud/future-homes-standard/>

² <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

³ <https://www.propertyweek.com/analysis/80-of-the-buildings-that-will-exist-in-2050-already-exist-bringing-net-zero-to-the-masses/5114832.article>

By looking at preparedness, attitudes and priorities, we can build a clearer picture of the current playing field and identify areas where immediate gains can be made. This is key because the FHS is not dependent on 'future' materials or practices. It can be achieved with products that are available on the market today; it's just a matter of understanding how they're fitted to comply with the latest regulations.

As a provider of high-performance window and door systems, REHAU is well placed to support the sector through upcoming changes. It's widely accepted the de facto standard for window U-values in new homes will be $0.85 \text{ W/m}^2\text{K}$ – a large drop from the current level of $1.2 \text{ W/m}^2\text{K}$ – so it's vital for housing providers, contractors and specifiers to get ahead while they can.



This research provides a steer on what's needed to raise the standard of today's homes, but it's also focused on the future so that the sector is better prepared for the inevitably more ambitious regulations to come. In this sense, the coming months present an exciting opportunity to develop homes that deliver lasting value for both people and planet. – **Martin Hitchin, CEO, REHAU UK**



Who Did REHAU Survey?
200 decision-makers for building products, including:

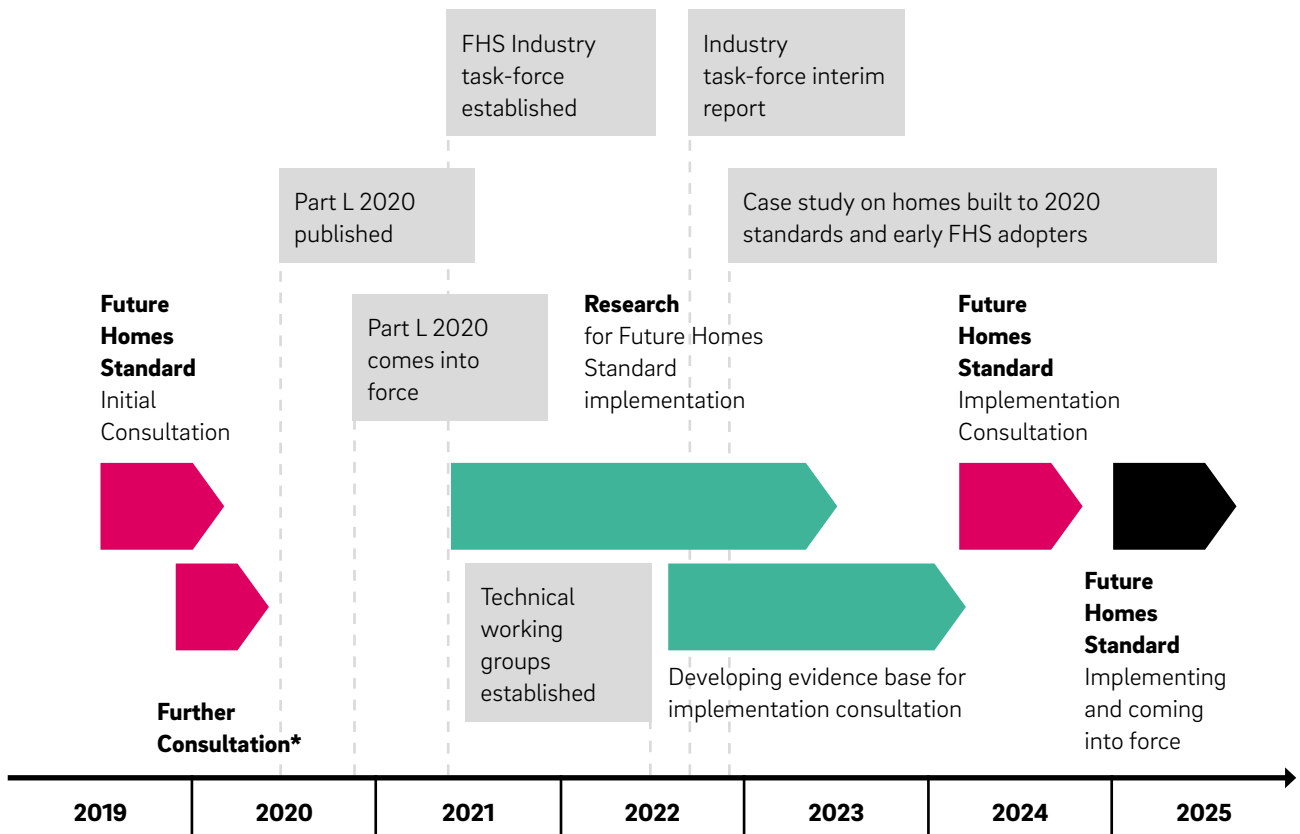
- Local authorities
- Housing associations
- Social housing
- Housebuilding

Research was conducted March 2023

A moving picture: The future homes standard timeline

Roll-out of the FHS is well underway, following uplifts to Part F and L of building regulations in 2022. However, the finer details are still yet to be confirmed with a technical consultation on the proposed specification due in Spring 2023. Phase two will see an implementation consultation in 2024, ahead of enforcement in 2025.

The uplift to Parts F and L were designed as an intermediate measure to improve the efficiency of homes in preparation of the FHS. Some industry figures have raised concerns these measures lacked ambition and could have gone further to target greater emissions savings. Debates aside, it's clear that what was once considered is now insufficient, not least once intermediate measures are replaced with the FHS proper.



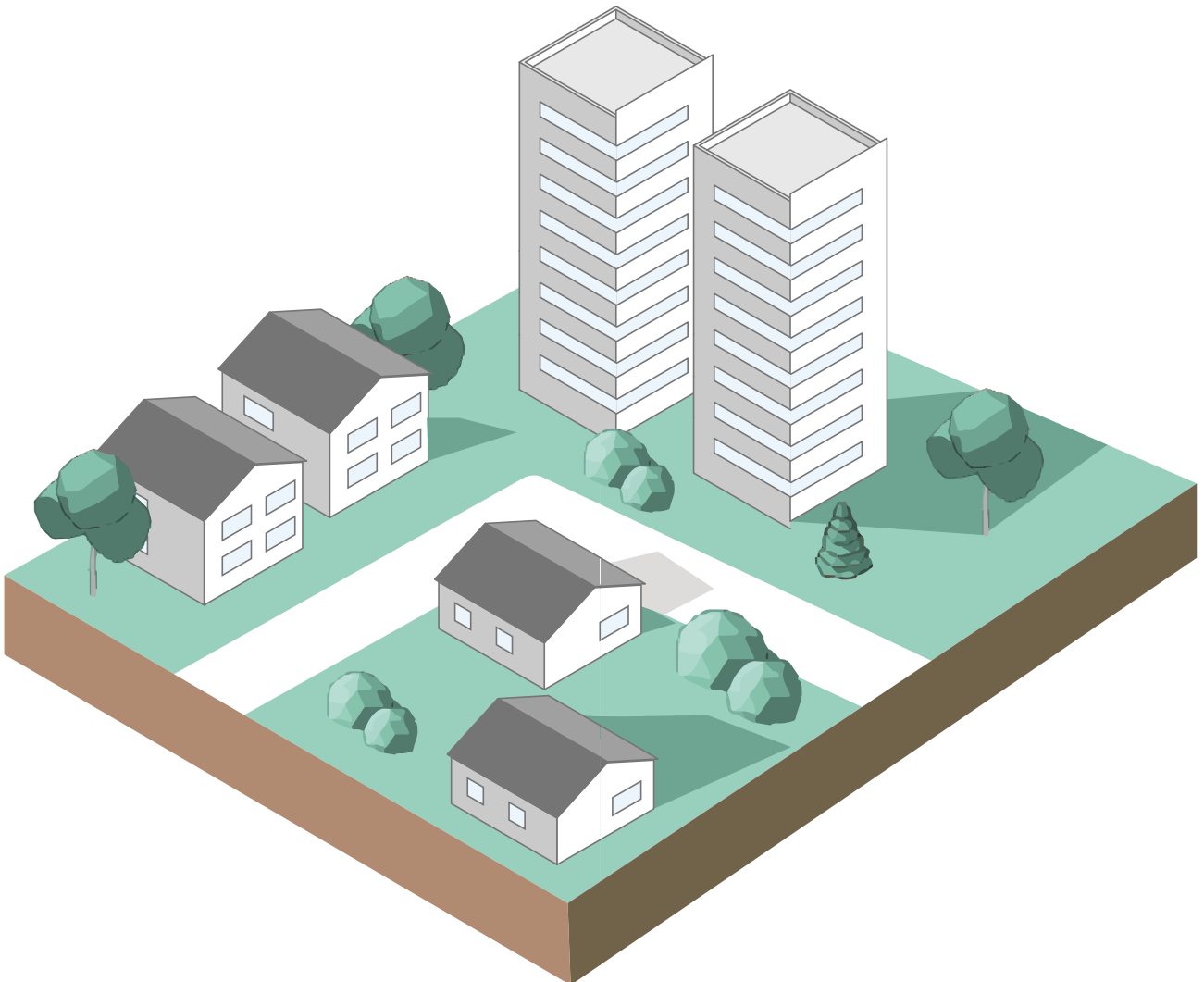
Indicative timeline

*Further consultation to incorporate work on:

- Work to existing buildings
- Overheating in new dwellings
- New non-domestic buildings

II. Research results – How is the housing market tracking against the future homes standard timeline?

A clear picture of the housing market is incomplete without some understanding of its main challenges and priorities, especially with new, potentially disruptive legislation pending. Keeping pace with the FHS timeline depends as much on the suppliers of compliant products as it does on housing providers' desire to put necessary changes in place. It's for this reason REHAU's research sought the views of those in charge of materials as well as those responsible for providing homes.





Preparedness

Just over half of all respondents said they felt 'somewhat prepared' when asked about their organisation according to the FHS timeline.

- The new build market recorded slightly higher for preparedness when compared to those involved with retrofitting properties – 86% and 81% respectively.

31%
said they were
'very prepared'
for FHS 2025

Despite a strong sense of preparedness for some, 79% still said they were finding it either 'somewhat challenging' or 'very challenging' to meet the FHS timeline.

- Just 21% said it was 'not challenging' to keep pace.
- 81% of respondents in the new build market said they were finding it challenging; 19% said they were not.
- 75% of those in the retrofit market said they were finding it challenging; 24% said they were not.

Almost 80% said it would be either 'somewhat challenging' or 'very challenging' for the construction sector as a whole to meet the FHS timeline.

- 76% of those in the new build market said it would be challenging; 24% said it would not.
- 82% of those working on retrofit projects said it would be challenging; 18% said it would not.

Even with concerns about timings, respondents ranked 'supply chain issues', 'insufficient technical understanding' and 'cost' as the main challenges for complying with the FHS.

- 'Insufficient technical understanding' was the main concern for those in new build; 'supply chain' issues was top for retrofit.





Impact of the FHS

'Failure to comply with building regulations' was the main impact for respondents when adhering or preparing to adhere to the FHS. This was followed by 'significant cost' and 'project delays'.

- Similar results were seen when examining responses between new build and retrofit.
- Similar level of enquiries was experienced across new build and retrofit.

At 44%, most respondents said they were spending between three and five hours extra per month to comply with the FHS; 33% were spending between six and eight hours extra.

- The majority of those in new build were spending between three and five hours extra; it was between six and eight for retrofit.

62%

of respondents receive between 5-15 enquiries a month



Carbon neutrality

Just under 60% of respondents described their building products as 'somewhat carbon friendly'. Perhaps most concerning, only 30% said they were 'very carbon friendly' and 12% said 'not very friendly'.

- Results for new build and retrofit were largely similar to the overall findings.



Priorities

When asked to pick the top priority when specifying windows, there was a clear difference between fitting in new-build homes and retrofitting. For example:

- Those fitting in new builds ranked 'longevity' and 'sustainability' as their top priority, with 'install time' last.
- Those installing retrofit windows ranked 'efficiency' as the top priority, while 'longevity' and 'install time' were last.

36%
said efficiency
was top priority
when specifying
windows



Materials

The preferred window material was aluminium at 30%, followed in close second by timber at 26%, then composites at 25%. PVCu was last at 20%. These results were mirrored across both new build and retrofit.

'Cost-effectiveness' was the main driver for material selection, with 'safety features' in close second, and 'thermal efficiency' in third.

- Durability, 'low maintenance', 'sustainability' and 'aesthetics' were lower priorities.

New build fitters ranked 'safety' and 'low maintenance' as their top two reasons for material selection, with 'sustainability' last.

Those retrofitting properties ranked 'durability' and 'sustainability' as their top two reasons for material selection, with 'aesthetics' last.



U-Value

No one knew of a window system offering a FHS U-value of 0.85 W/m²K.

Most respondents said they were currently specifying windows with a U-value between 1.1 and 1.4 W/m²K.

- 9% were still specifying windows above 1.4 W/m²K.
- Retrofit properties had a slightly lower mean U-value score than new build.

65%
not aware of
window system
offering a FHS
U-value of 0.85
W/m²K

III. Correcting the course – What's next for housing providers?

Why do these findings matter?

With only 18 months from full implementation, it would be fair to assume that the majority of the market is on track to develop and refurbish homes in line with the FHS. Results show this is not the case.

Perhaps the most telling finding is the differing degrees of preparedness across the market. Less than a third are ready to comply with new regulations, even with the interim uplift to Parts F and L that were designed to ease the burden. This uncertainty will be increasingly untenable over the coming months, when most businesses should be putting measures in place to deliver homes that perform at a significantly higher level than what's currently deemed acceptable.

The disconnect between perception and action is best seen in the large numbers of respondents who, despite feeling at least somewhat prepared, admitted the FHS timeline would be challenging to meet. Supply chain problems and a lack of technical knowledge are clearly influencing this situation. These issues will need addressing, not least because so many organisations are now receiving a number of enquiries each month relating to the FHS. It's safe to assume these will increase as the deadline draws nearer, leaving those without a complete understanding at risk of lost revenue or, worse still, liable to penalties for negligence.

If anything, the results reveal an overriding lack of awareness. Misconceptions about window material continue to linger across the market, with many overlooking the role of PVCu frames. REHAU, for example, can deliver exceptional thermal performance without compromising design or finish. This is a significant oversight for housing providers given how far some lag behind the current timeline. If the sector is to have any chance of correcting its course within the next year a reappraisal of suitable materials will be key, especially as none knew of a window system house that offered a frame with a U-value of 0.85 W/m²K.

This figure is ideally what the sector should be aiming for today, giving developers sufficient time to coordinate all the different building materials necessary to develop a compliant, well-functioning property. However, the results show the majority are still aiming for only what's required against current regulations, specifying windows with a U-value between 1.1 and 1.4, rather than the more ambitious 0.85.

It would be unfair to direct these shortcomings at one part of the market. Regulatory change is complex and involves many moving parts to achieve desirable outcomes. What's considered best practice is set to change significantly – windows included – so it's unsurprising that some are finding it difficult to keep pace. For this reason, it's essential housing providers, architects and specifiers begin working with fenestration specialists, such as REHAU, from the earliest stages of a build.



PVCu Profile

Aluminium Profile

Q. How can housing providers get ahead today?

A. Research the current market to establish a reliable supply chain for the products you'll need for a typical development. It's important to collate information and certification from manufacturers like REHAU – which already has several products ahead of the regulatory curve – while also accounting for the uplift in cost when moving away from traditional windows and doors. Higher performance inevitably comes at a price, though most stakeholders will be aware of this as the regulations are formalised. It's also helpful to consider using co-extruded profiles that not only improve thermal performance but also lower a project's environmental impact by using recycled polymer.

Q. Why do some 'high-performance windows' fail to meet the requirements set out in the FHS?

A. There are several reasons why high-performance windows that are compliant on paper might fail. Poor surveys that overlook the building structure and removal of existing frames is one area that could lead to errors. Fitting the window with too much tolerance is another – this will create gaps that have to be sealed excessively at the perimeter. Lack of ventilation, inadequate fixings and poor reinforcement are also potential culprits, though window positioning is arguably the most important factor. Poor positioning can cause cold bridging, which leads to drastically reduced thermal performance.

Q. What are the key considerations for windows in retrofit projects?

A. Existing housing stock may have a number of energy-saving methods applied. External sills will need to be incorporated beyond the final face of the building if windows and doors have been replaced and external wall insulation has been added. This may involve the use of aluminium sills. Perimeter seals will also need to be considered to bring the window up to current building regulations, with the introduction of vertical air and water membranes to achieve the best thermal performance. This will slow the installation of new windows and may require additional training for colleagues.

Q. What are the main differences between commonly used window materials?

A. The table below, provides an overview of the key differences

	Expected Working Life (Data from BRE)	Maintenance Cycle	Thermal Break	Recyclable?
PVCu	Minimum 35 years	Wash down and light oil on hardware every six months	Not required	Yes, with correct processing
Aluminium	Minimum 35 years	Wash down and light oil on hardware every six months	Required	Yes, with correct processing
Timber	Up to 60 years, providing maintained regularly	Repaint or reseal every six years depending on local climate	Not required	No, treated wood is unable to be recycled

Q. Are there size and weight limitations for high-performance windows?

Is the U-value impacted by the property's dimensions?

A. Due to its third pane of glass, triple glazing is heavier than traditional double-glazed windows and should be noted during installation. The window's U-value is not impacted by the property's dimensions. U-values are calculated on a per-window basis, rather than the total glazed area of the property.

Q. Is there a limit on the design, finish and style of FHS-compliant windows?

A. Some windows, such as 'heritage' vertical sliding options, will not reach the FHS due to sealing issues. Requirements should be discussed between stakeholders at the design stage to achieve an ideal finish and performance.

Q. Is it possible to achieve 0.85 W/m²K using double-glazed windows?

A. Vacuum insulated glass would be required, which would drive up cost and the supply chain is presently limited.

Case study – Lutley Windows and Midland Heart Housing Association

Established in 2014, Lutley Windows is a double-glazing installation specialist and repair window fabricator. Midland Heart housing association approached Lutley in 2022, enquiring about triple-glazed windows for several of its Dartmouth Street properties in need of EPC upgrades.

The success of this project resulted in Lutley using REHAU products exclusively across all of its contracts. Mark Taylor, the company's founder, explains the events that led to this decision. He was joined by Robert Kraska, Head of Maintenance at Midland Heart.



Q. Mark, why did you approach REHAU following Midland Heart's request?

Mark: Midland Heart asked for windows that could achieve a U-value of 0.8W/m²K, as this would allow the properties to achieve a higher EPC rating. Our supplier at the time could not meet this figure, so I contacted Luke Boban at REHAU to consult on the delivery at Dartmouth Street. We knew REHAU windows were exceptionally well made and used across a number of high-standard builds, so it made sense the company would likely be able to support with a novel triple-glazing project.

Q: Robert, how did this project come about?

Robert: We knew the properties on Dartmouth Street needed some significant improvements, but we also wanted to make sure any work we did was fit for the future. That's why we were interested in fitting triple-glazed windows. I had seen them discussed before but was unsure whether they had been fitted in buildings of this type.

Q. What did the process involve once Lutley engaged REHAU?

Mark: REHAU worked with us on a bespoke design and carried out extensive modelling of thermal transmittance. This level of detail was really impressive given Midland Heart had requested such an ambitious figure. Following this, we fabricated and installed five windows in a trial run at a tenant's home in May 2023. This trial proved we could hit the U-value, paving the way for installation at the remaining properties.

Robert: Just to add to Mark's point. I think this is an important process given the difference in cost between traditional double-glazed windows and new triple-glazed designs. You want to know you're getting the level of performance you're paying for as this will likely save money in other areas in need of remedial work. The trials proved this principle.



Q. Mark, you now use REHAU products for all your work. When did you decide to make the switch?

A. Once the trial run ended. It became clear REHAU's products are a step above the competition when it comes to thermal performance, but they also have a wide range of designs that make it easier for us to meet a diverse list of customer requests. This was very much a new area for us – and the market as a whole – so whatever we used needed to be ahead of the curve. I pictured there would be some challenges along the way, but the service has been

Q: Robert, will you be using triple-glazed windows at other Midland Heart sites?

A. Certainly in areas where we need to improve the EPC rating or need exceptional thermal performance. But I imagine they will eventually become standard given they improve a dwelling so significantly that it saves on other maintenance costs. The cost of a triple-glazed unit is far cheaper than cavity wall insulation, for instance, yet you see a similar level of improvement. Government funding is generous but budgets may be adjusted at some point in the future, so it's important to know where savings can be made without sacrificing comfort or performance.

Q. There are some big changes for the fenestration industry on the horizon. Is Lutley now in a better position following this project?

A. Absolutely. From day one, REHAU were so invested in getting this trial over the line, which has given us the confidence to take on other challenging briefs using the company's products. It's great to work with a dedicated supplier and know we're fitting well-made windows that improve people's lives. This has put us in a stronger position heading towards 2025.

IV. Conclusion – Moving housing forward

There is a clear divide between today's developments and where housing needs to be by 2025. This is unsurprising given the FHS is still a moving picture and the finer details are yet to be confirmed by government. Nevertheless, REHAU's research has shown there is still more work to be done before housing providers are in a position to build and refurbish homes that are consistent with net zero.

Windows and doors are one part of a property, though critical for achieving a level of thermal performance expected from 'future homes'. They are usually the biggest 'hole' in a property's façade and the element most often exposed to outdoor conditions. This presents a unique challenge for those without the right knowledge of the latest building materials and how they work within a larger structure. Failure to acknowledge these challenges will inevitably lead to oversights and poor energy efficiency, undermining the FHS's intention to improve the built environment as a whole.

Access to the right suppliers and technical advice will be essential for moving the housing sector forward – not least because REHAU's research shows many developments are still specifying windows with a U-value that's likely to be outmoded come 2025. Now is the time to begin working with experts like REHAU, not only as its range is ahead of the curve but also because the company can address several of the key barriers proven to be holding the sector back.

Get your portfolio on track, visit www.rehau.uk/intheframe





Follow us
[@REHAUwindows](#)



Find us
[REHAU.UK](#)



Look for us
[REHAU_UK](#)



See us
[REHAULtd](#)



Connect to us
[REHAU](#)

© REHAU Ltd
Hill Court, Walford,
Ross-on-Wye, HR9 5QN

This document is protected by copyright. All rights based on this are reserved. No part of this publication may be translated, reproduced or transmitted in any form or by any similar means, electronic or mechanical, photocopying, recording or otherwise, or stored in a data retrieval system.

07.2023