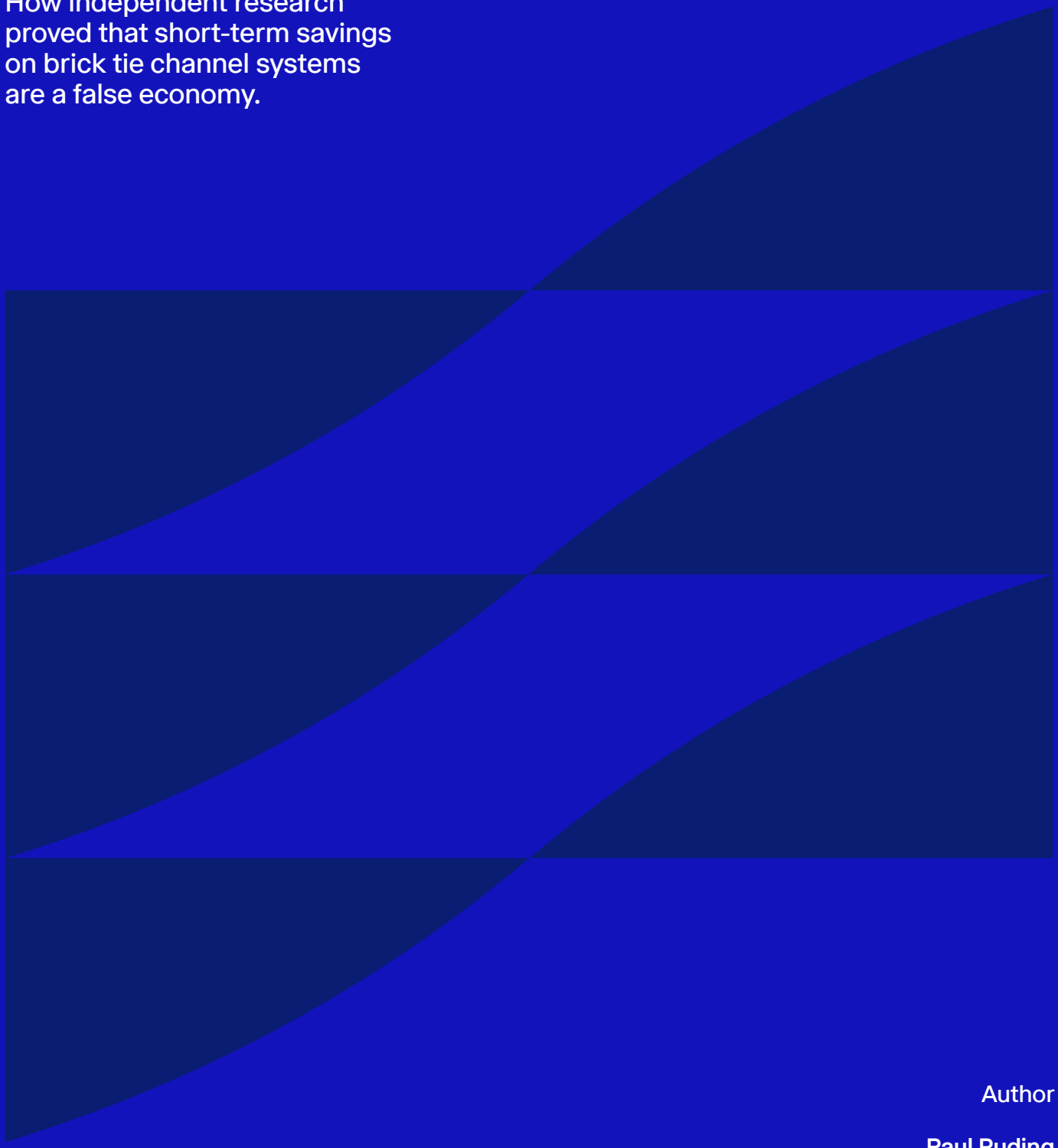
ACS

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Why long-term quality trumps short-term savings

How independent research proved that short-term savings on brick tie channel systems are a false economy.



Author

Paul Ruding
Strategic Specification Director

Sandberg Report

Independent research experts Sandberg looked into some key questions about choosing high quality brick tie channel systems (such as the ACS Framefix Ultra Channel system) over cheaper auxiliary alternatives. Our in-house expert engineer Paul Ruding gives his views on their report.

For a building to stand the test of time it needs solid foundations.

But, when it comes to investing in brick tie channel systems, that simple principle can be lost in the battle for cheap prices.

Brick tie channel fixings restrain the masonry against significant wind loads, which put the products under significant design stress. Yet too many contractors mix and match channel, wall ties and fixings, reducing the design life and increasing the risk of failure. And many don't understand the important benefits of using compression sleeves.

SANDBERG

Sandberg found answers to 3 key questions.

I've worked as a senior engineer in the construction industry for the past 9 years, and I'm constantly asked 3 key questions:

1. Are compression sleeves necessary in mineral wool insulation?

2. Should stainless steel screws be used in brickwork cavities?

3. How can we reduce thermal transfer across the cavity?

I wanted to get independent answers. So I commissioned Sandberg to complete testing and relevant research. They're the world's most respected construction material consultancy, with over 160 years' experience in testing the quality and performance of materials. Here's what they found out...

Sandberg Report

Question 1

Are compression sleeves necessary in mineral wool insulation?

Finding 1

When installing type 1 and type 2 wall ties, compression sleeves are essential.

"To achieve type 1 or type 2 performance compression sleeves are essential in ALL thicknesses of mineral wool insulation which means sleeves MUST be used on all residential buildings over 15m."

Paul comments:

Sandberg's research proves the benefits of investing in compression sleeves. It ensures mineral wool insulation is secured by the channel and wall ties are embedded correctly.

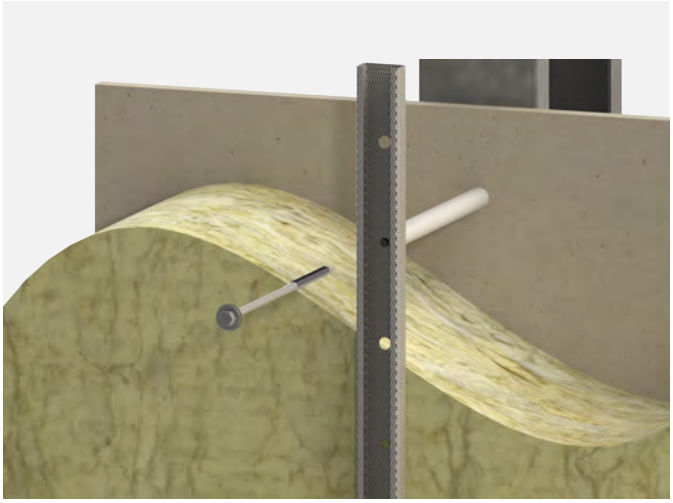
On a busy site it can be challenging to install fixings straight. But if a fixing is out even by just 3 degrees, the head of the fixing can be up to 9mm from its design position. This can cause bending that the fixing is not designed for, which can cause costly issues further down the line.

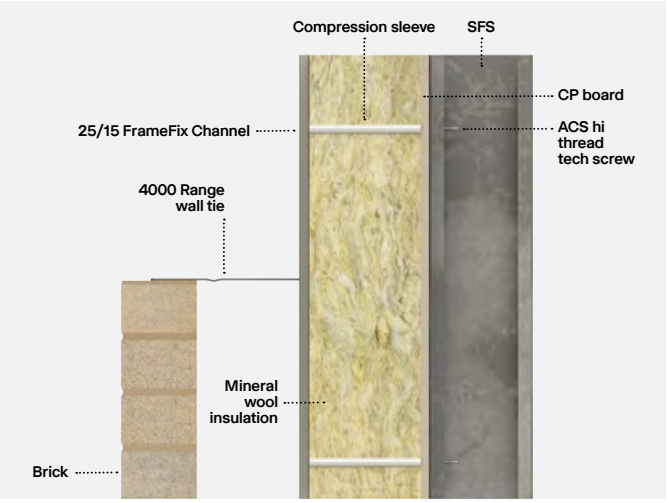
Insulation crushing is another potential failure point if compression sleeves aren't used. Without sleeves, the insulation is vulnerable to crushing from fixings being screwed too far into the light gauge steel frame. This makes the insulation less effective and compromises the wall's U values, as designed by the architect.

How the ACS Framefix Ultra Channel system can help:

— Includes compression sleeves as standard.

— Allows for 33% less fixings than alternatives, saving on upfront costs and installation times.





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Question 2

Should stainless steel screws be used in brickwork cavities?

Finding 2

Fixings materials should be limited to stainless steel

"To achieve any reasonable design life (60 years), stainless steel screws must be used in all types of brickwork cavities in the UK."

Paul comments:

NHBC require all buildings to have an indicative design life of at least 60 years. Yet many cheap, non-stainless-steel fixings on the market are sold with only a 25-year warranty. Using fixings that don't meet NHBC requirements doesn't seem like a smart choice to me, as the financial and public safety risks are huge.

Just look back to 2006 at Oxgangs Primary School, where 9 tons of masonry collapsed during a storm due to poor wall tie installation. Why take such a big risk for minor short term financial gains?

How the ACS Framefix Ultra Channel system can help:

— We only supply fully tested stainless steel fixings.

— These fixings have a 60-year warranty (vs 25 years from competitors).

— We only supply these fixings as part of the full ACS Framefix Ultra Channel system, ensuring components are 100% compatible.



Oxgangs Primary School collapse

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Sandberg Report

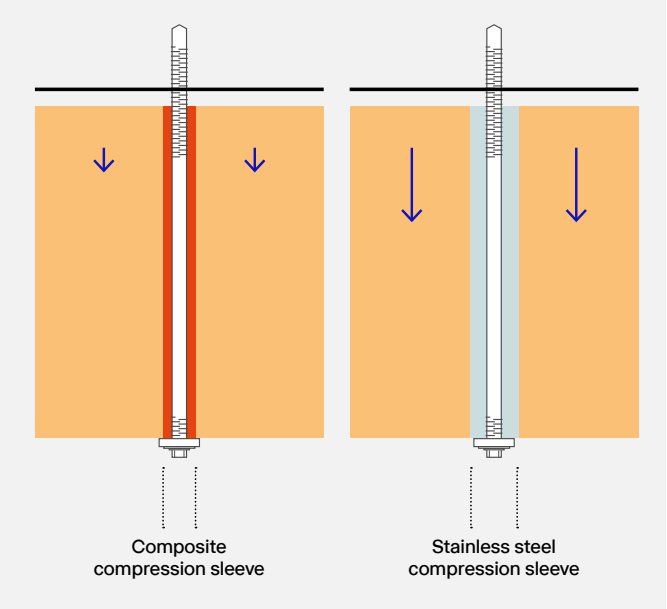
Question 3

How can we reduce thermal transfer across the cavity?

Finding 3

The use of stainless-steel sleeves over composite material will add to thermal transfer across the cavity.

"The updated thermal regulations within the industry (Approved Document L) encourage a move to more thermally efficient products. To adhere to these new regulations, the Sandberg report states that compression sleeves should ideally be made from a composite material, not stainless steel."



Paul comments:

Sandberg's report confirms that using composite sleeves has a minimal effect upon the heat loss of the wall. This is a big advantage in a time of uncertain energy prices. It helps in terms of conforming with regulations and is also a win for property owners and residents.

It's also important to note that fixings and compression sleeves need to be manufactured so they work in harmony. If they're not (for example, a stainless-steel sleeve with a zinc screw), then the presence of water can result in bimetallic corrosion, which is a potential failure point.

How the ACS Framefix Ultra Channel system can help:

— Our compression sleeves are made from composite material which results in a significant reduction in heat loss compared to a stainless sleeve.

— Fixings and compression sleeves work together to avoid corrosion.

Sandberg Report



Paul Ruding
Strategic Specification Director



ACS FrameFix Channel System

Paul's concluding thoughts:

The Sandberg report helped to provide clear answers to our 3 commonly-asked questions. These findings should change the industry's attitude towards short term savings over quality and should inform better buying decisions in future.

Long term compliance, compatibility, and safety should take priority. All too often, I hear reports of contractors purchasing cheap auxiliary products as a short-term solution that are not compatible. Later, they suffer the financial consequences when faults occur.

The NHBC will soon be cracking down on products with short warranties. I'm certain the NHBC will increasingly be moving to stop the use of products with short warranties and the use of individual auxiliary products (wall ties, channel, fixings, and compression sleeves) that aren't part of a well-designed, compatible system. I witnessed this happen recently, when the NHBC refused to sign off on a project.

Also, post-Grenfell, asset owners and insurance providers are keen to ensure that buildings perform exactly as designed. Regrettably, current buying and installation practices leave them with liability risks they may be unaware of.

Buy smart first time with ACS. Talk to the ACS teams to learn about the ACS Framefix Ultra Channel system. With composite compression sleeves as standard and fully tested stainless steel fixings, it sets the standard with an industry-beating, 60-year warranty.

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