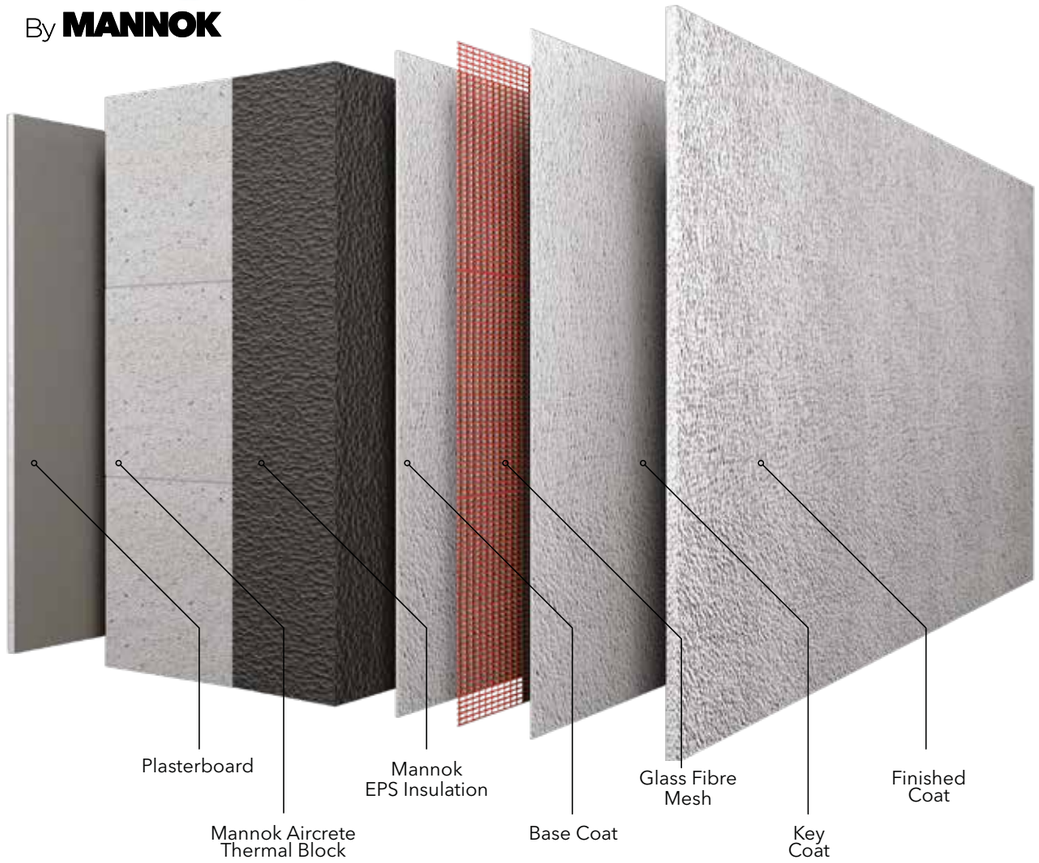
SIMS

By MANNOK

SUPER INSULATED MASONRY SOLUTION

WHAT IS SIMS By MANNOK



SIMS by Mannok is a unique offering which ultimately delivers an end product which is a step above the major alternatives on the market in terms of thermal, structural and fire performance.

SIMS (SUPER INSULATED MASONRY SOLUTION) is a modern method of masonry construction combining the benefits of Mannok Aircrete thermal blocks with a certified external insulation system.

It is a straightforward construction method which utilises the simplicity of single leaf construction whilst enhancing the thermal performance and weather tightness of the building.

The wall consists of a 215mm wide Mannok Aircrete thermal block built using either traditional sand and cement mortar or thin joint mortar, externally finished with an approved external insulation system and internally finished with plasterboard on dabs.

The insulation thickness will depend on the U-value required.

U-Value	External Insulation
0.18W/m²K	140 mm EPS
0.15W/m²K	170 mm EPS
0.13W/m²K	200mm EPS
Guide is based on Mannok EPS Pearl Insulation	

BUILD WITH

EASE

BUILD WITH

SPEED

BUILD WITH

CONSCIENCE

BUILD WITH SIMS By MANNOK

EXCELLENT THERMAL PERFORMANCE

The combination of Mannok Aircrete thermal blocks and external insulation minimises heat loss directly through the wall and at junctions, making nZEB standards easily achievable.

SUPERIOR FIRE PERFORMANCE

Up to 4 hours fire resistance easily achievable

ENHANCED AIRTIGHTNESS

Airtightness of the wall can be significantly improved with SIMS, making regulatory standards easily achievable.

COST EFFECTIVE

Save up to £7,500 versus timber frame on a pair of typical semi-detached houses.

RAPID BUILD

Single leaf construction, quick setting mortar, and faster weatherproofing. Up to 60% faster construction than traditional cavity wall construction.

ZERO CONDENSATION RISK

Interstitial and surface condensation completely eliminated.

EASE OF BUILD

Main Contractor/Developer's workload reduced through the SIMS supply and fit package. Expert guidance and a range of technical services included in our Premium Technical Support Package for Developers and Contractors.

CONSTRUCTION METHOD

COMBINING HIGH PERFORMANCE ELEMENTS TO DELIVER A SUPERIOR BUILDING SOLUTION

SIMS by Mannok combines the benefits of each building element to work together effectively in a way that is superior to the alternative methods.

This construction method is well established and widely used throughout Europe, with most houses in Germany, Belgium, France, Finland, Italy, the Netherlands and more built using the same methodology.

As the Irish construction industry adapts to the challenges of increasing demand for rapid build housing coupled with more stringent energy efficiency requirements, the adoption of this best practice construction method from Europe will become more widespread.

THE MASONRY STRUCTURE

BUILD USING MANNOK AIRCRETE, IRELAND'S MOST SUPERIOR THERMAL BLOCK

The single leaf masonry structure is built using Mannok Aircrete thermal blocks, the best performing thermal blocks available on the market in Ireland for combined thermal and structural performance.

The unique composition and technically advanced manufacturing method produces blocks which meet the requirements of Technical Guidance Document A for structure and offer superb insulation properties, with significantly better thermal performance than any other comparable block.

The 215mm blocks used can be built using traditional sand and cement mortar, so the method is very easily adopted by Irish builders using existing skillsets. The blocks can alternatively be built using thin joint mortar, a quick setting adhesive which reduces mortar joints to 2-3mm and can further increase speed of build.

MANNOK AIRCRETE THERMAL BLOCKS

- Insulates 10 times better than standard concrete blocks
- Reduces heat loss through thermal bridging by up to 80%
- More thermally efficient than lightweight aggregate blocks
- Achieves up to 200% better Psi values than other thermal blocks, such as lightweight aggregate blocks
- Mannok Aircrete thermal blocks' unique properties achieve a far superior level of comfort for the residents of finished buildings. The blocks' inherent thermal mass helps regulate daytime heating and night time cooling, making the home a more comfortable place to live all year round

EXTERNAL INSULATION SYSTEM

BUILD BETTER PROTECTED, BETTER PERFORMING WALLS

SIMS incorporates an External Thermal Insulation Composite System (ETICS) that has been used in mainland Europe since the 1960s and has become increasing popular in Ireland in recent years. SIMS uses an Agrément certified ETICS system and offers excellent thermal performance and design flexibility.

ETICS SYSTEM

- Achieve excellent thermal efficiency with an ETICS system that wraps the external building envelope in a continuous layer of insulation, providing an effective solution to heat loss through thermal bridging
- Flexibility in design with various external finish options and no limit to insulation thickness, making it easy to meet or exceed building regulation standards
- Offers protection to masonry façade against climate and wind driven rain, increasing durability

MAJOR BENEFITS TO CONTRACTORS & DEVELOPERS

BUILD WITH SIMS

	SIMS	TIMBER FRAME	TRADITIONAL CAVITY
SPEED OF CONSTRUCTION	Rapid	Rapid	Slow
THERMAL PERFORMANCE	Excellent	Good	Fair
STRUCTURAL PERFORMANCE	Excellent	Fair	Good
FIRE PERFORMANCE	4 hrs	30 mins	2 hrs
COST	Best Value	Most Expensive	Least Expensive

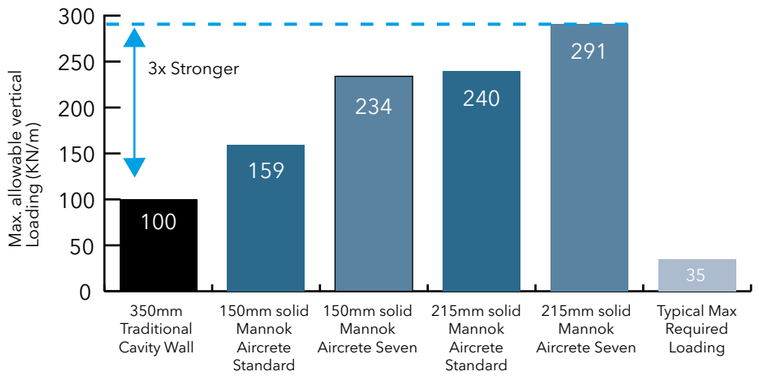
BUILD WITH SPEED

- Much faster build
- Up to 60% faster than traditional cavity wall construction & comparable with timber frame
  - 50% less blocks to build
  - 20% quicker build method if using thin joint mortar
  - No wall ties, DPCs or insulation to slow the block layer down
  - No outer leaf to be constructed
- Brickwork or external cladding removed from the critical path permitting access for finishing trades much sooner in the build schedule
- Pair of semi-detached houses ready for roof in 10 working days including installation of precast concrete first floor

BUILD WITH EASE

- Less labour-intensive build with lighter blocks, half the volume of blocks required and no need for wall ties, DPCs or insulation
- Reduced Contractor workload with the SIMS supply and fit package
- Reduce the potential impact of skills shortages
- A more cost-effective build: Saves up to 20% on construction costs versus timber frame with no large up-front deposits

ALMOST
3X STRONGER
THAN TRADITIONAL CAVITY WALL CONSTRUCTION



Based on gable wall of typical two storey semi-detached house built using thin joint mortar

Up to
60% Faster
than Traditional Cavity Wall Construction

Up to
80% Less
Heat loss through Thermal Bridging

Up to
20% Cheaper
than Timber Frame

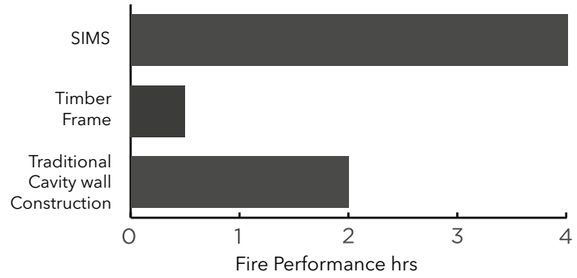
8 X Better
Fire Performance than Timber Frame

BUILD FOR PERFORMANCE

- A far superior building in terms of thermal, structural and fire performance
- Thermal performance – Extremely efficient with no risk of thermal looping and thermal bridging is addressed almost by default, with thermal bridging heat loss reduced by up to 80%
- Structural performance – almost three times stronger than traditional cavity wall construction if built using thin joint mortar
- Excellent fire performance

MANNOK AIRCRETE BLOCK

- Reaction to fire, Class 1A
- Non-combustible
- Easily achieve or exceed regulatory standards, particularly nZEB
- Close the performance gap. With SIMS, the performance of the finished building is much closer to that specified in the plans. With other methods, U-values can be as much as 60% worse in reality versus design.



BUILD WITH CONSCIENCE

- A more sustainable, modern method of construction whilst utilising traditional skill set
- The finished building has lower energy consumption with lower carbon emissions, resulting in less environmental impact
- SIMS can easily achieve stringent regulatory requirements which demand superior performance in relation to energy consumption, such as nZEB standards.
- Mannok Aircrete blocks are made from up to 80% recycled materials
- Mannok Aircrete are among the first products in Ireland to have published Environmental Performance Declarations (EPDs)
- Mannok Aircrete blocks are manufactured using locally and responsibly sourced raw materials

BUILD FOR LIFE

BUILD FOR LIVING, BUILD FOR PERFORMANCE, BUILD FOR THE FUTURE

BENEFITS FOR HOMEOWNERS

BUILD FOR LIVING

- Far superior comfort levels with a super insulated home.
- No drafts
- No damp / mould, so healthier living environment
- Long term energy savings
- More economical to run with reduced heating costs
- Mannok Aircrete blocks have optimal thermal mass to ensure internal comfort. So the occupant enjoys a more rapid response to heating than heavier forms of construction, whilst ensuring the internal temperature is better regulated by reducing the risk of overheating in hotter weather and rapid cooling at night

BUILD FOR PERFORMANCE

- Thermal performance: Heat loss through breaks in insulation reduced by up to 80%
- Structural performance: Almost 3x stronger than traditional cavity wall construction when built using thin joint mortar
- Fire performance: 4 hours fire resistance versus 30 minutes for timber frame and 2 hours for traditional cavity wall construction
- Enhanced weather tightness, improving energy efficiency, eliminating drafts and improving durability by protecting the masonry wall structure
- Zero condensation risk, eliminating damp and mould

BUILD FOR THE FUTURE

- The homeowner can enjoy lifelong comfort and savings
- SIMS' superior structural and thermal performance results in a home which is a long-term investment for any new homeowner
- The combination of high-performance construction elements ensures SIMS houses can easily meet and exceed stringent regulatory requirements, such as nZEB, which focus on the long-term energy efficiency of the dwelling. It is a construction method which makes it easy to go beyond current standards to achieve passive house or energy neutral building standards.
- Enjoy a more sustainable home, with reduced environmental impact thanks to the lower energy consumption and carbon emissions. Mannok Aircrete blocks are also made from up to 80% recycled materials, using locally and responsibly sourced raw materials.

PREMIUM TECHNICAL BY MANNOK PACKAGE

FOR CONTRACTORS AND DEVELOPERS USING SIMS BY MANNOK FOR THEIR DEVELOPMENT

PRE-DESIGN CONSULTATION

Our experts will be on hand to discuss your specific self build project, to advise on design choices and offer recommendations on which construction method, products and services are suitable for you.

BESPOKE PRODUCT SPECIFICATIONS

Working together with you and your architect, our technical experts will provide bespoke product specifications for your building design.

U-VALUE CALCULATIONS

U-value calculations are essential to assess the thermal performance of your building design by calculating the effectiveness of the building materials as insulators. We will provide these calculations to your architect, or advise how to achieve the best thermal performance using Mannok products.

PRECAST BESPOKE DESIGN SERVICE

Full bespoke design service to create unique precast products to meet your specification requirements, with all precast units manufactured on custom built moulds.

PRECAST INSTALLATION

Our award winning Precast installation teams can ensure safe and secure fitting of all precast units. Fitting service includes initial risk assessment and reliable delivery service to ensure products are where and when you need them.

THERMAL MODELLING & THERMAL BRIDGING FACTOR CALCULATIONS

Building regulations are driving the requirement for certified thermal bridging calculations, which are calculated by analysing the building fabric to assess and calculate localised heat loss through thermal bridges, or breaks in insulation. Commissioning thermal modelling can be costly, but we can provide this service as part of your bespoke package with our in-house NSAI Accredited Thermal Modellers. We will provide certified thermal bridging calculations, which are essential to achieving the best energy rating for your building design. Psi values or Y-factor calculations are provided, dependent on requirements for your region.

PRODUCT VOLUME ESTIMATES

One of the challenges for self builders is calculating the volume of products they will need to estimate their overall costs. Our Technical by Mannok team will help by estimating the volume of Mannok products required based on your plans and providing an overall cost estimate for your Mannok products.

ON-SITE SUPPORT SERVICES

Our dedicated Engineer can provide on-site guidance for your builder on building with thin joint construction, including on-site training if required.

TALK TO ONE OF OUR EXPERTS ABOUT USING SIMS IN YOUR NEXT PROJECT

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