

# SIMS



By **MANNOK**

**SIMS (SUPER INSULATED MASONRY SOLUTION)**

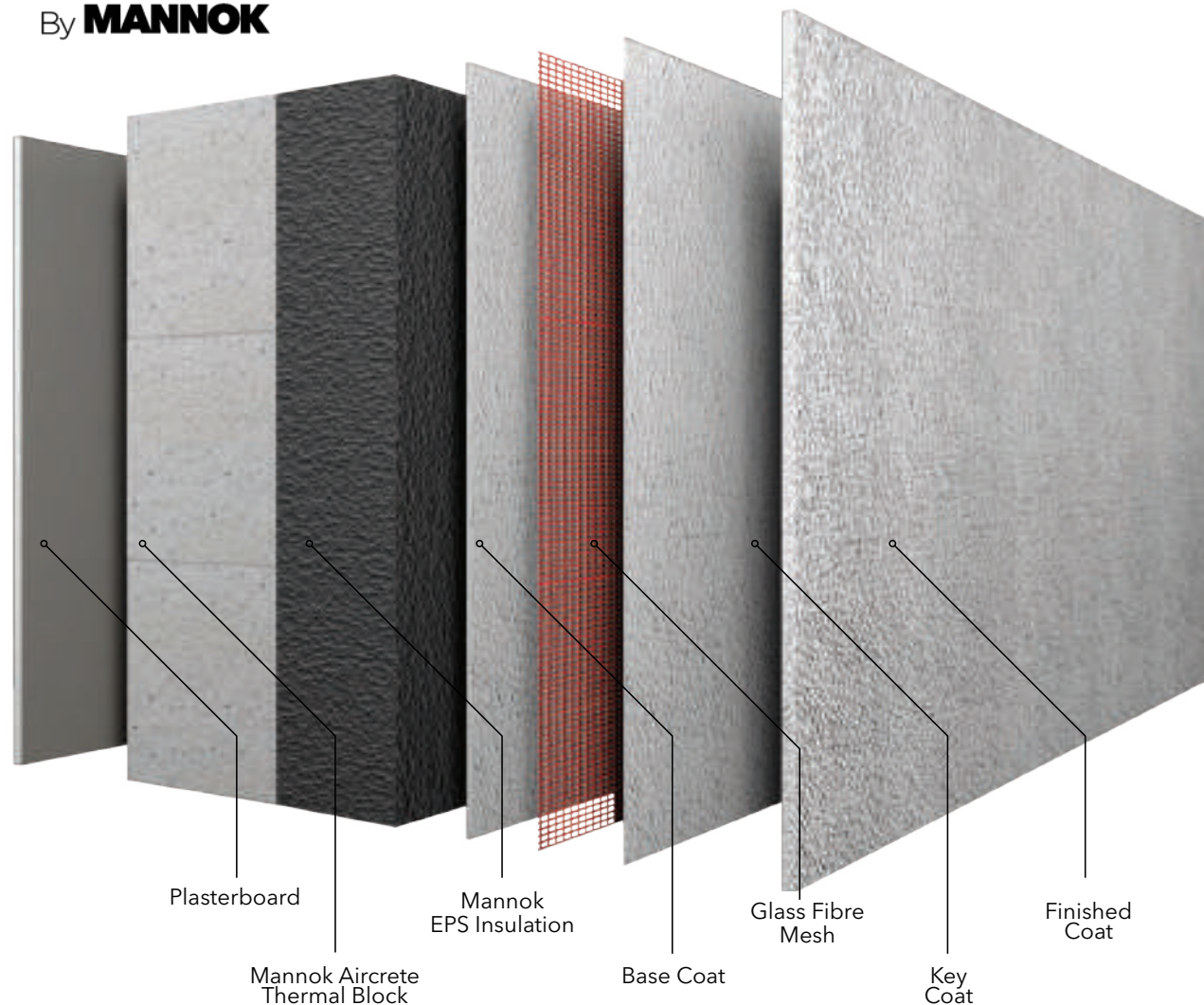


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**BUILD WITH CONFIDENCE; BUILD WITH CONSCIENCE.  
IT'S MANNOK MADE.**

# 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/m <sup>2</sup> K	140 mm EPS
0.15W/m <sup>2</sup> K	170 mm EPS
0.13W/m <sup>2</sup> K	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.



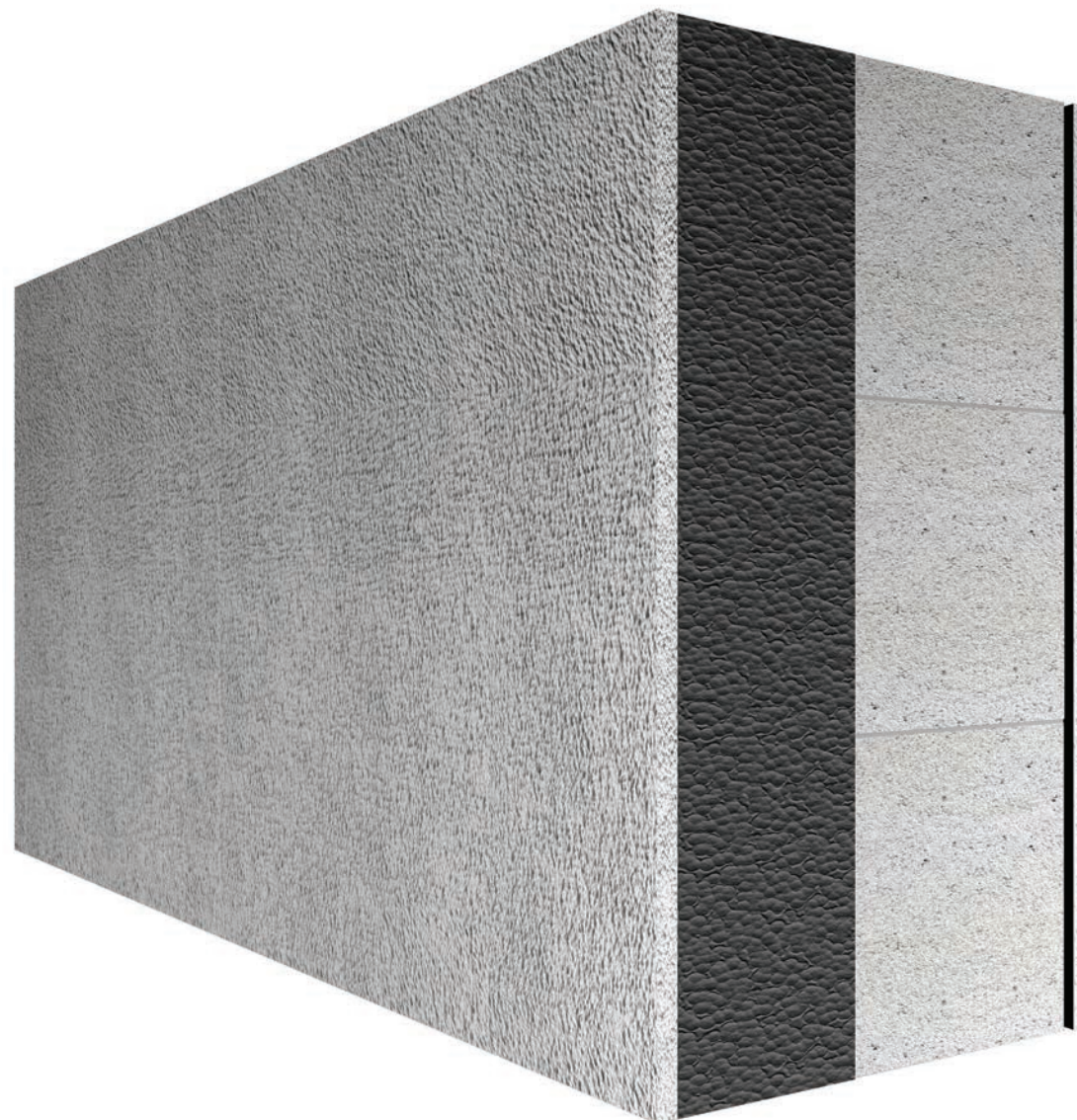
# CONSTRUCTION METHOD

## 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 increasingly 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

Up to  
**60% Faster**  
than Traditional Cavity  
Wall Construction

Up to  
**20% Cheaper**  
than Timber Frame

Up to  
**80% Less**  
Heat loss through  
Thermal Bridging

**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

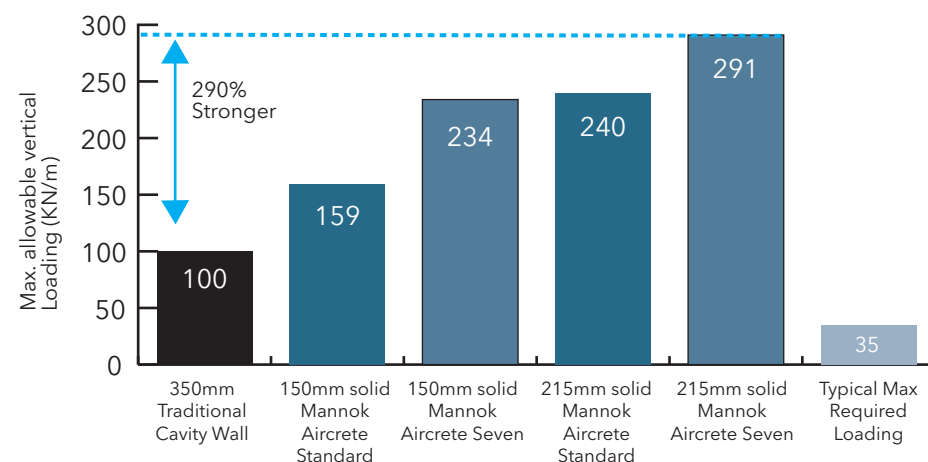
## BUILD WITH CONSCIENCE

- 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

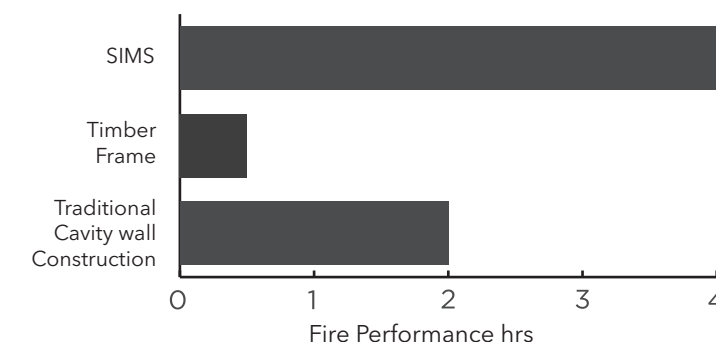
## MANNOK AIRCRETE BLOCK

- 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.

ALMOST  
**3X STRONGER**  
THAN TRADITIONAL  
CAVITY WALL  
CONSTRUCTION



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







# 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.



# SIMS SUPPLY AND FIT PACKAGE

for Developers and Contractors

## WE WILL:

- Work with your design team to help develop plans and detailed drawings specific to SIMS
- Provide full technical support with our built-in Premium Technical by Mannok Package for Developers and Contractors
- Supply & fit block work from slab level, including mortar, lintels, party wall ties etc.
- Supply and fit External Wall Insulation System, including brick slips if required
- Provide project supervision of SIMS element of construction process
- Provide precast concrete flooring if required
- Provide certification and warranties
- 3rd Party Agrément certified AAC Thin Joint Block work
- 3rd Party Agrément certified External Wall Insulation System
- Ancillary Certificates at relevant stages
- Accepted by all major warranty scheme providers



## PREMIUM TECHNICAL BY MANNOK PACKAGE

for Contractors and Developers using SIMS by Mannok for their development

## PREMIUM PACKAGE INCLUDES

- Pre-Design consultation
- Product specifications guidance to maximise performance
- U-value calculations
- Thermal Modelling services from our in-house NSAI accredited thermal modellers, including project specific Psi values and Y-value calculations
- Off plan BER/SAP calculation consultation service
- On-site support with our SIMS supply and fit package, including regular site visits by our dedicated Construction Engineer
- A prompt response from our expert in-house Technical by Mannok team

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

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