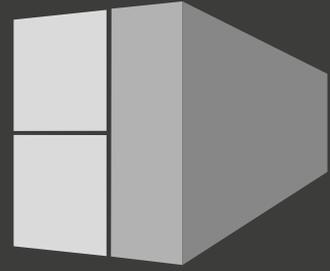


A GUIDE TO

SIMS



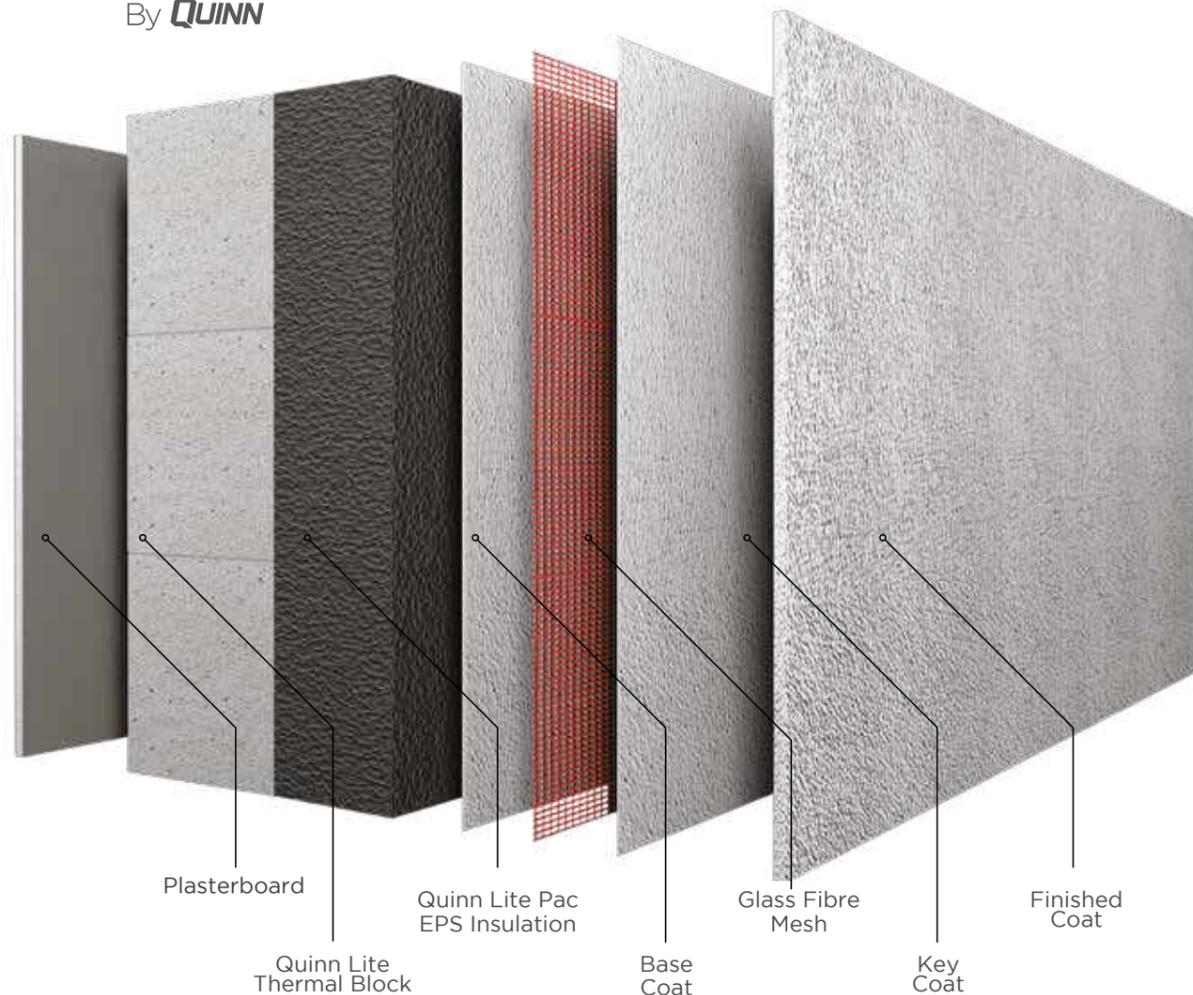
By **QUINN**



COST EFFECTIVE, RAPID BUILD

WHAT IS SIMS

By **QUINN**



SIMS by Quinn 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 Quinn Lite 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 Quinn Lite 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 ² K | 140 mm EPS |
| 0.15W/m ² K | 170 mm EPS |
| 0.13W/m ² K | 200mm EPS |
| Guide is based on Quinn Lite Pac Pearl EPS Insulation | |

BUILD WITH

EASE

BUILD WITH

SPEED

BUILD WITH

CONSCIENCE

BUILD WITH

SIMS

By **QUINN**



EXCELLENT THERMAL PERFORMANCE

The combination of Quinn Lite 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 Quinn 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 QUINN LITE, IRELAND'S MOST SUPERIOR THERMAL BLOCK

The single leaf masonry structure is built using Quinn Lite 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.

QUINN LITE 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
- Quinn Lite 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 |

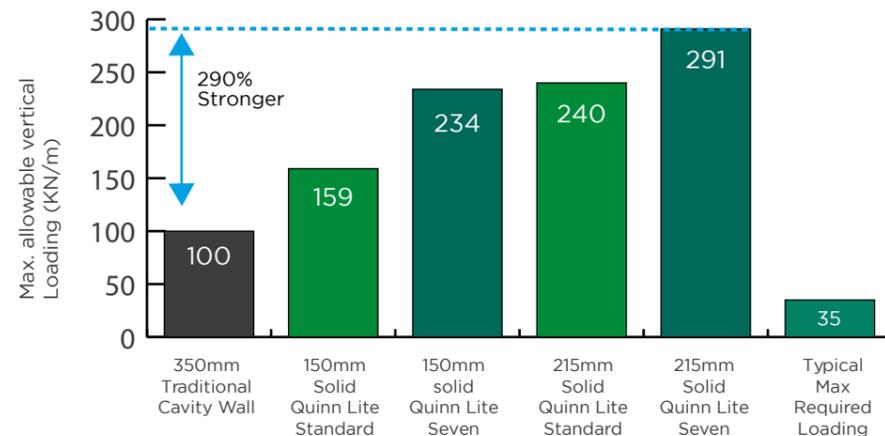
BUILD WITH SPEED

- 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

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

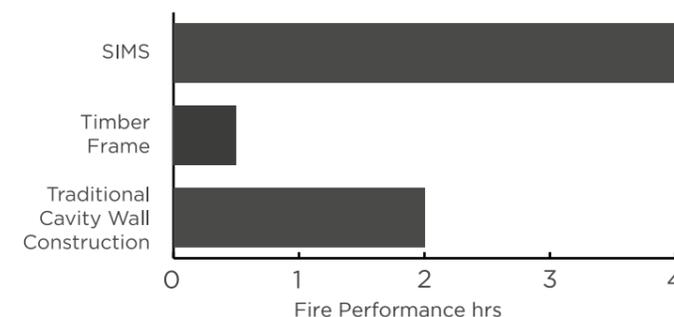
8 X Better
Fire Performance than
Timber Frame

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

QUINN LITE 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.
- Quinn Lite blocks are made from up to 80% recycled materials
- Quinn Lite are among the first products in Ireland to have published Environmental Performance Declarations (EPDs)
- Quinn Lite 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
- Quinn Lite 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. Quinn Lite 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 Quinn 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

CERTIFICATIONS

- 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 QUINN PACKAGE

for Contractors and
Developers using SIMS
by Quinn 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 Quinn team

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

+44 28 67748866

technical@quinn-buildingproducts.com

QUINN BUILDING PRODUCTS

CONTACT US:

 technical@quinn-buildingproducts.com

 +44 28 67748866

 quinn-buildingproducts.com

