



Solid System

**NEXT GENERATION
BUILDING SOLUTIONS**



Index

7	Introduction
8	Products
12	Solid System, our system
22	Advantages
26	Versatility
28	Sustainability and efficiency
29	Norms and certification



Asociación Nacional para la Arquitectura Sostenible

About us

Solid System SL has dedicated years of research to develop products and solutions for the building industry with the aim of improving the construction standards and the quality of traditional materials.

Our commitment to quality goes beyond improving the performance and characteristics of materials and systems but also includes the concepts of sustainability and efficiency as basic guidelines on which we establish the technological development of our products.

Insulterm 600

thermal-acoustic conglomerate

The Insulterm 600 is a conglomerate for the realization of walls and partitions, suitable both for new buildings and renovations; it can be easily applied on any masonry surfaces and features high thermal-acoustic performance, fire and water resistance. Especially designed to be applied with mortar pumping machines, it can also be used manually.

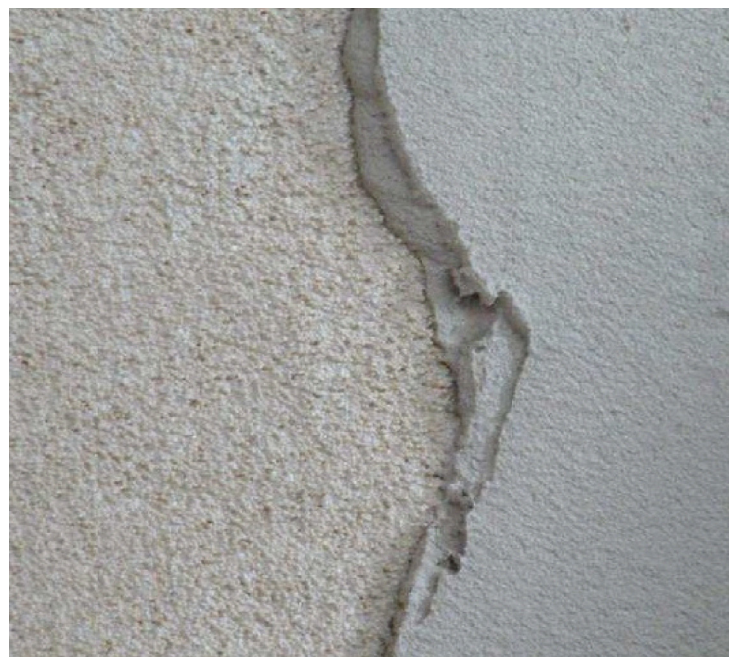
Thermal Conductivity: $\lambda = 0,138 \text{ W/mK}$



Myca 63

one-coat external mortar

The Myca 63 is a mortar for external cladding, reinforced with fiber and resins, featuring high mechanical strength, suitable both for new buildings and renovations; it can be easily applied on any masonry surfaces or our INSULTERM 600. It's waterproof to rainwater yet highly permeable to water vapor. It can be used both manually or applied using mortar pumping machines.



Pro 58

finishing gypsum plaster

The Pro 58 is a hemihydrate gypsum and resins based plaster for interior finish featuring high mechanical strength, suitable both for new buildings and renovations; it can be easily applied on any masonry surfaces or our INSULTERM 600. It can be used both manually or applied using mortar pumping machines.

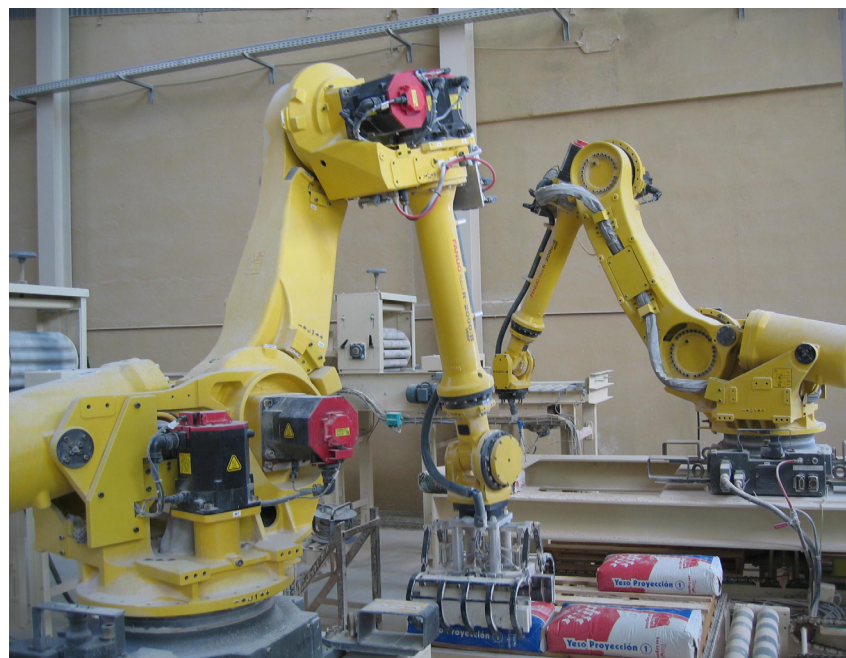


C 71

self-levelling mortar

The C71 is a self-levelling mortar featuring high planarity and high mechanical strength, suitable for both new buildings and renovations.





All our range of high performance products is produced under strict quality control in our factories and complying with the rules of European approval .



Solid System. our system

Quality architectural design must be performed with quality materials and systems that can satisfy any requirements and overcome the challenges we face today.

Our goal is to provide more effective building solutions by offering better performance than any traditional systems without increasing the costs and time and without affecting sustainability.

Solid System offers a range of new generation building solutions based upon a different way of perceiving and approaching the construction process whose optimal results are guaranteed by a more professional and detailed planning of all of the construction phases and the higher quality of the materials involved.



Solid System offers a range of building solutions for external walls and internal partitions whether loadbearing and not and includes the following systems:

structural system

steel framing

vertical cladding system

facade cladding

vertical partition system

Partitioning

coating system

plastering, coating and one-coat plaster

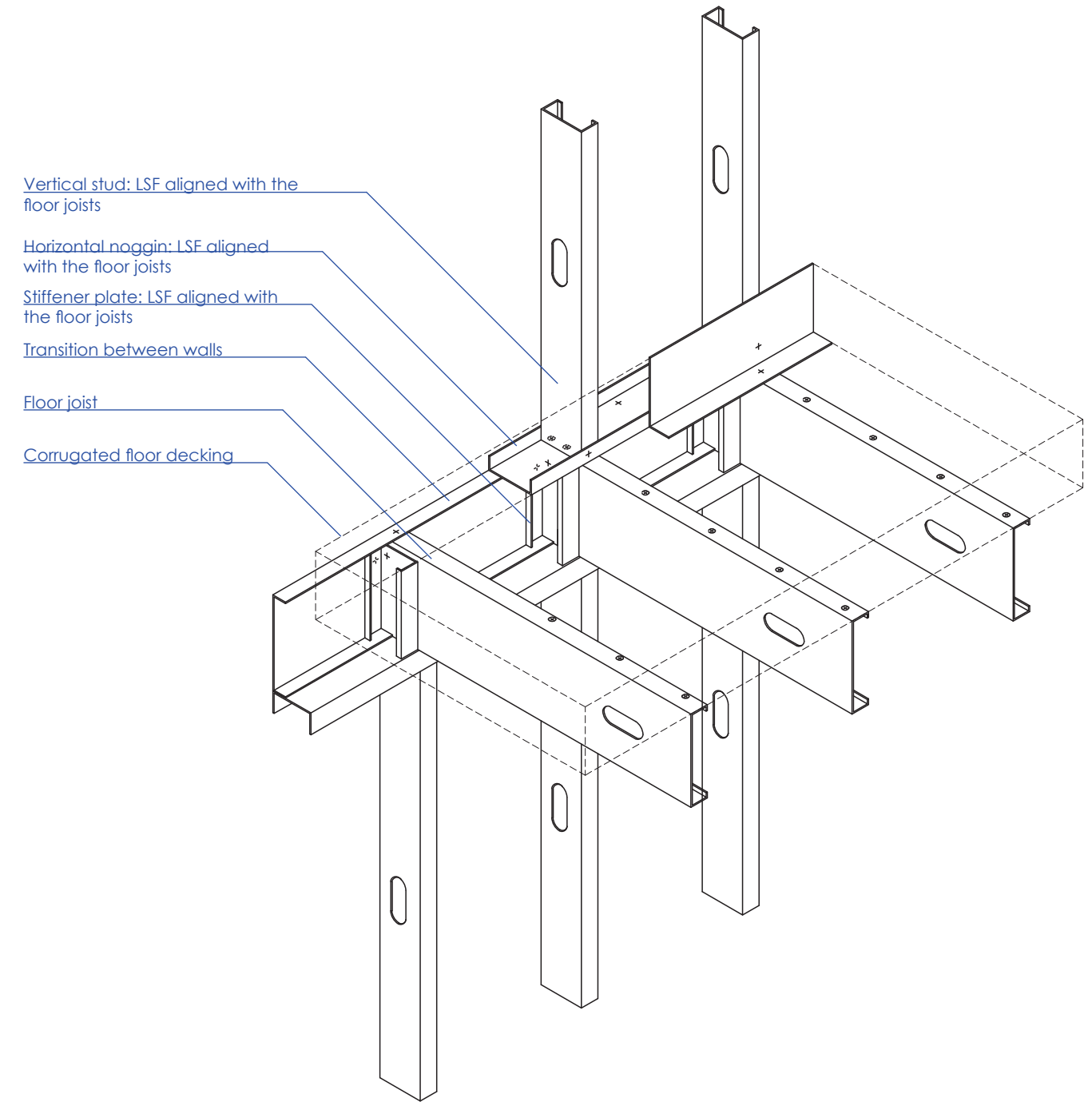
Structural System. steel framing

The Light Steel Framing technology (LSF), as it is known World-wide, is a structural system that consists of cold-formed "C" shaped galvanized steel profiles that are being assembled to compose structural wall panels, beams, trusses and other components or sub-structures. Being an industrialized system, Light Steel Framing allows manufacturing and erecting a dry-wall building very fast.

To ensure that the system performs at its best, the sub-structures need to be correctly interrelated and the materials involved must be adequate.

Skilled labor and a properly planned work are essential elements to achieve an optimal process schedule.

It is also necessary that the dimensioning and calculation of the structures are carried out by Professional Technicians in order to ensure that the building can resist all efforts and stresses to which it is subjected.





Main advantages of using Light Steel Framing technology as a structural system in building construction:

- The elements constituting the system are standardized and industrially produced, where the raw material used, the manufacturing process and technical characteristics undergo strict quality control.
- Durability and service life of the structure, thanks to the galvanizing process of the sheets from which the profiles are obtained.
- Ease of supply, installation, operation, transport and installation on site thanks to the low weight of the elements.



- High speed construction; the pre-assembled frames can be delivered to the building site ready for erection.
- Great flexibility in the architectural design, with no limits to the Architect's creativity.
- Sustainable system:
 - Greater dimensional accuracy and optimization of the structure with minimum waste.
 - Steel can be recycled without losing its properties.
 - Dry construction, thus minimizing the use of natural resources.

Sistema envolvente vertical. cerramiento de fachada SSE 180

Formado al proyectar una o varias capas de INSULTERM 600 y aislamiento térmico, según prestaciones requeridas al sistema. Una vez fraguado el conglomerado las instalaciones y la estructura quedarán ocultas y protegidas, creando un elemento monolítico de baja densidad, alta resistencia, con excelentes propiedades térmicas, acústicas e ignífugas.

Se puede prescindir de la capacidad portante del sistema en el caso de que sólo se requiera su función como cerramiento exterior, en ese caso podrá emplearse perfilaría galvanizada no portante.

total
thickness 18cm

Fine-grained (internal finishing)

PRO 58

INSULTERM 600

LSF vertical stud

PVC electric wire pipe

INSULTERM 600

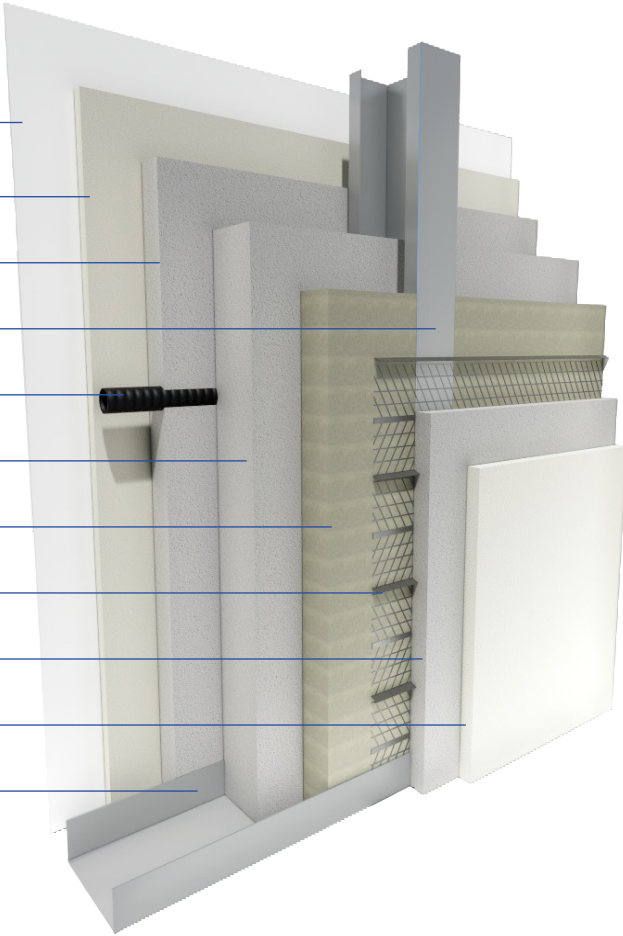
Rockwool insulation

Mesh Placner

INSULTERM 600

MYCA63 spraying render for external

LSF horizontal noggin



CLADDING COMPARISON							
Building Technology	Purpose	Thickness (mm)	Density (Kg/m3)	Acoustic Isolation	Thermal Performance		Fire Resistance
				RA (dBA)	R (m².K/w)	U (w/m².K)	
Brick masonry walls + concrete pillars	Facade cladding + Steel Frames	≥ 300	890	48	≤ 1,74	≥ 0,57	R 180
SSE 180	Facade cladding + Steel Frames	180	584	58	2,04	0,49	EI 240

With a thickness less than 12 cm and less than half the weight, the building solution SS 180 gives better acoustic isolation, greater thermal insulation and increased fire resistance.

Vertical partition wall system.

internal partitions SSE 120 and SS 100

This kind of solution is obtained by spraying one or more layers of INSULTERM 600. Once the conglomerate has dried up, the wiring and plumbing and the mesh will be hidden and protected, creating a low density monolithic element assuring high strength, excellent thermal-acoustic and fire-retardant performance.

total
thickness 12cm

Fine-grained (internal finishing)

PRO 58

LSF vertical stud

INSULTERM 600

PVC electric wire pipe

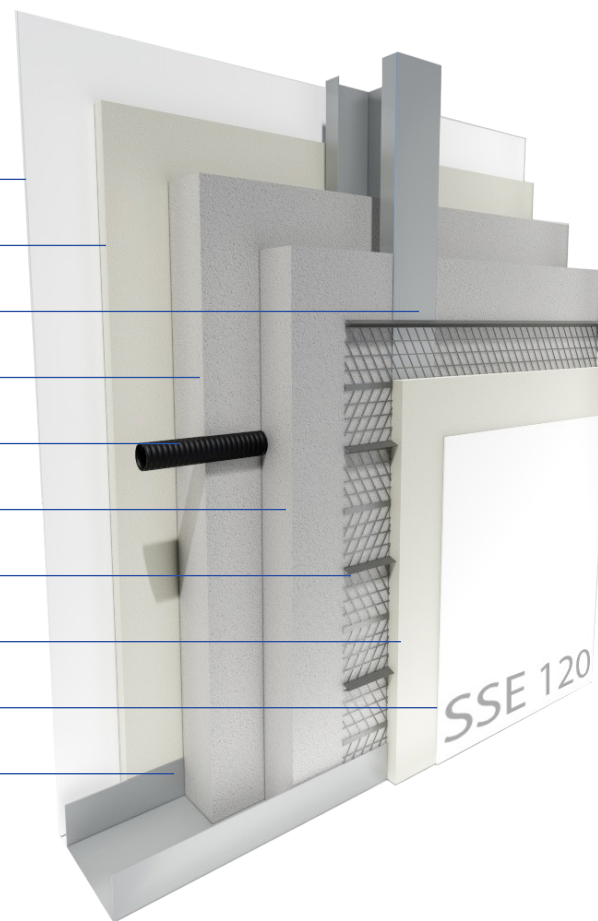
INSULTERM 600

Mesh Placner

PRO 58

Fine-grained (internal finishing)

LSF horizontal noggin



total
thickness 10cm

PRO 58 prefab slab

LSF vertical stud

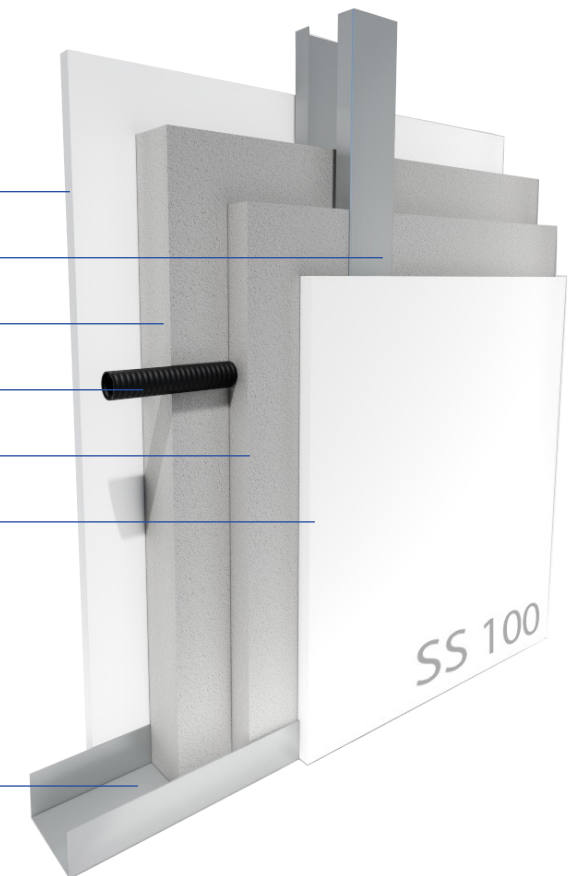
INSULTERM 600

PVC electric wire pipe

INSULTERM 600

PRO 58 prefab slab

LSF horizontal noggin



PARTITION WALLS COMPARISON

Building Technology	Purpose	Thickness (mm)	Density (Kg/m3)	Acoustic Isolation	Thermal Performance		Fire Resistance
				RA (dBA)	R (m².K/w)	U (w/m².K)	
Hollow brick 7cm thick + coating on both sides	Internal Partition	100	890	36	0,21	4,76	EI 90
SS 100	Internal Partition	100	690,93	39,10	0,72	1,38	EI 240

Advantages of using Solid System



property developer benefits

1. TIME SAVING

Construction times are dramatically reduced compared to any traditional systems thanks to:

- The main structure and the cladding are built simultaneously unlike with traditional systems where it's not possible starting the cladding works until the main structure is completed, thus eliminating formwork building and stripping times.

- An accurate work planning reduces or even eliminates the risk of unexpected events on the building site.

- No additional masonry work required for wiring and plumbing installation.

2. COST REDUCTION.

Indirect costs (tool shed rental, warehouse, machinery, overhead during construction, etc.) and financial expenses are reduced by reducing construction time for the reasons described in the previous section. Furthermore, also the direct costs are reduced:

- No need to use auxiliary means for handling heavy loads.

- No need for extended areas for material assembly.

- Significant reduction of waste and labor costs for containers moving and landfill fees.

- Lower specific weight of our mortar decreases the foundation costs as a lighter structure generates a reduced dead load on the ground, so lower amounts of concrete and iron are required.

3. YOU CAN HAVE BUILDINGS WITH EXCELLENT ENERGY RATING

4. IMPROVED STRUCTURAL BEHAVIOUR

Solid System forms a monolithic and stable structural framework of with excellent earthquake resistance, producing a more uniform distribution of loads.

customer benefits

1. MORE COMFORTABLE HOUSES

Walls and partitions with increased thermalacoustic insulation.

2. REDUCED ENERGY BILLS

Direct consequence of more efficient houses.

3. INCREASED NET INTERNAL AREA

An increased usable area is the direct consequence of thinner (yet better) walls and cladding.

4. AESTHETICS

No cumbersome columns and pillars.



construction phases

During the early stages of the work, earthworks and foundations, you can prepare the coldformed steel frames in a warehouse so that, once assembled, you will only have to move them to the building site to be erected.

Solid System does not use or need to wait for formwork setting times of concrete building construction as our structures are self load-bearing.

Any additional masonry works for wall chasing are eliminated: no need to cut walls for cable channels and fill them up afterwards, thus saving time and labor.

In short and as expressed in the graph, Solid System saves time in the execution of the structure and the house cladding more than 50% compared to traditional systems.



CONSTRUCTION PHASES OF THE STRUCTURE AND CLADDING OF A SINGLE FLOOR FAMILY HOUSE																																	
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17	
TRADITIONAL SYSTEM	EARTHWORKS AND FOUNDATION WORKS			CONSTRUCTION OF PILLARS					UPPER FLOOR JOIST CONSTRUCTION					CLADDING, WIRING AND PLUMBING CONSTRUCTION																			
				Formwork installation	Rebar reinforcement	Concrete	Concrete drying time	Formwork stripping	Formwork installation	Laying of blocks and rebar	Concreting	Concrete application time	Formwork stripping	Cladding application	Wall chasing for wiring and plumbing	Wiring and plumbing installation	Filling the channels																
SOLID SYSTEM	STEEL FRAMES CONSTRUCTION			CLADDING WITH SS 180					SAVINGS ON INDIRECT BUILDING COSTS AND EXPENSES																								
	Profile production at the factory	Frames assembly at the factory	Ready frames delivered to building site	Placement and erection of wall frames	Laying of thermal insulation	1ª Spraying of Insulterm 600	Installation of pipes for wiring and plumbing	2ª Spraying of Insulterm 600																									
	EARTHWORKS AND FOUNDATION WORKS				FIRST FLOOR JOST CONSTRUCTION																												
					Corrugated metal roofing installation	Rebar reinforcement	Concrete layer	Concrete drying time																									

Versatility

no limits in design creativity

Solid System technology does not limit the design creativity thanks to the use of very versatile materials: lightweight steel frames, flexible insulation packs and spraying mortar.



compatibility with other systems

As previously illustrated, Solid System offers a perfect solution for load-bearing structures as well as for the cladding but can be used for non structural purposes too. Therefore, in the event that the building is constructed with traditional materials such as reinforced concrete, hot-rolled steel or timber, Solid System can be the ideal cladding and finishing solution, providing its excellent thermal, acoustic and fire-retardant qualities.



quality doesn't necessarily have to be at odds with economy

Solid System offers as a range of quality solutions, contributing to improved comfort, thermal and acoustic efficiency yet without increasing the costs and giving more sustainable solutions. The quality of our building solutions on one hand and reduced costs involved on the other, allows Solid System to have the necessary versatility for both luxury housing and social housing applications.

Sustainable and efficient architecture



We can define efficiency as the relationship between the resources used for a purpose and their achievement. It is commonly agreed that you have efficiency when it takes less resources possible to achieve a specific goal or, in other words, when you achieve more goals with the same or even less resources.

The range of solutions offered by Solid System allows reducing the resources involved in the building process, i.e. labor, additional tools and means, etc. yet achieving higher quality and more comfortable buildings in less time.

Furthermore, better thermal qualities and the elimination of thermal bridges help improving the energy efficiency of the buildings.

Sustainable architecture demands a construction system that is effective and minimizes the use of natural resources. Solid System is very user-friendly, simplifying the construction process without generating waste and limiting the use of machinery and consequently reducing CO2 emissions.



Norms and certification



BRE CERTIFICATION LIMITED

CI/SfB	81	(28.6)	Hh2	(E4)
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We operate all over the World

operating in all 5 continents
with more than 10 years of
experience.

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