

**Euphoria®**

# AVRASYA

## COMPOSITE BUILDING SYSTEM

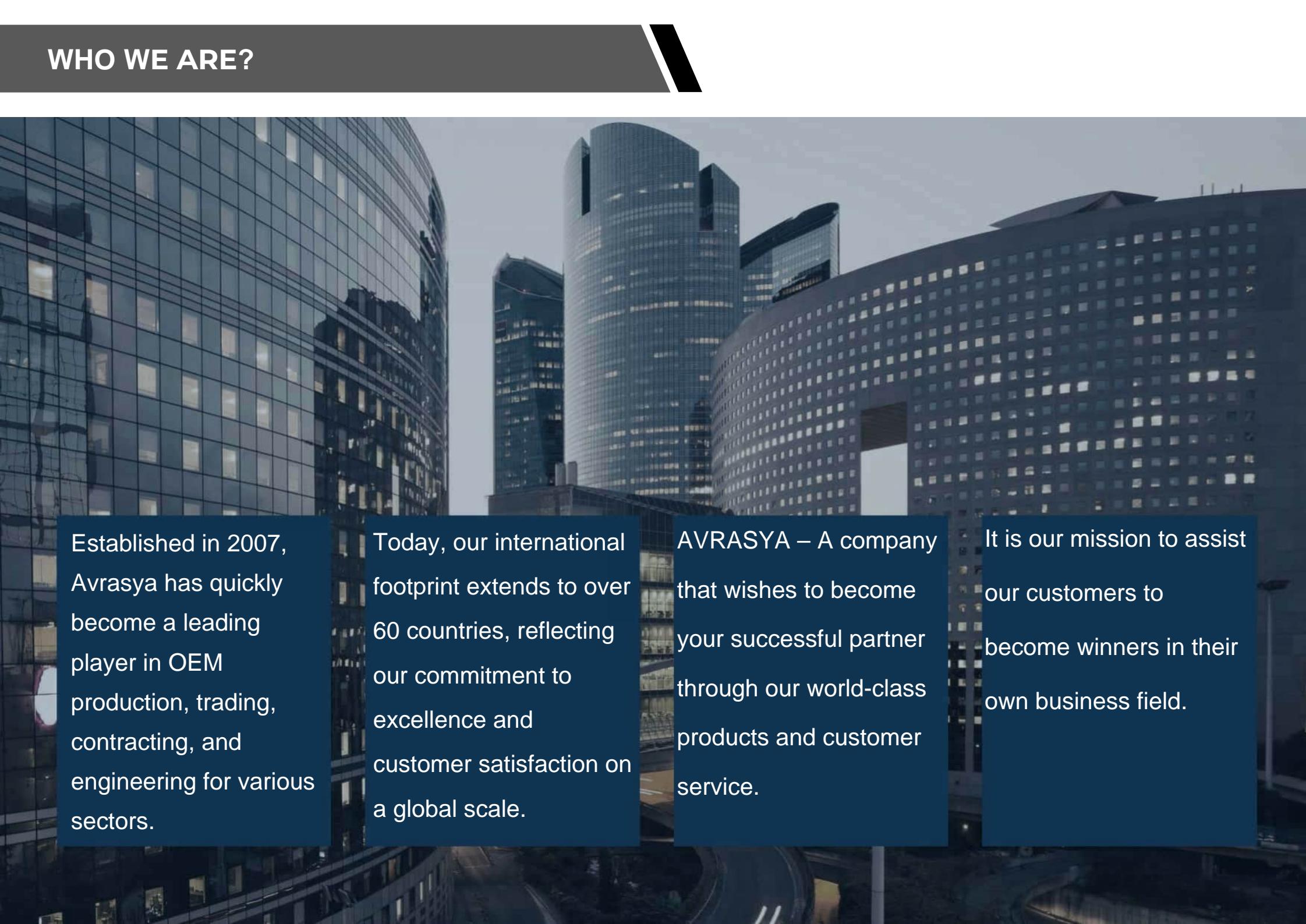
COMPANY PRESENTATION  
[www.avrasyaexport.com](http://www.avrasyaexport.com)



"A professional partner in the construction industry since 2007..."



# WHO WE ARE?



Established in 2007, Avrasya has quickly become a leading player in OEM production, trading, contracting, and engineering for various sectors.

Today, our international footprint extends to over 60 countries, reflecting our commitment to excellence and customer satisfaction on a global scale.

AVRASYA – A company that wishes to become your successful partner through our world-class products and customer service.

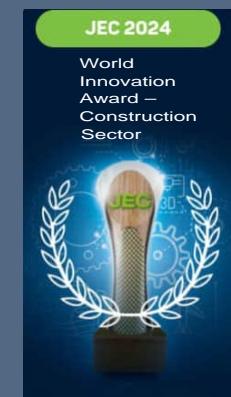
It is our mission to assist our customers to become winners in their own business field.

# COMPOSITE BUILDING SYSTEM

## COMPOSITE BUILDING SYSTEM



A patented product  
made from natural,  
recycled materials.



# COMPOSITE BUILDING SYSTEM

## COMPOSITE BUILDING SYSTEM



## WHAT IS A COMPOSITE BUILDING SYSTEM?

With a composite building system, the foundation and structural frame of a five-story building can be constructed without the use of steel or concrete. Blocks, lintels, and beams made of fiber-reinforced composite materials are easily and rapidly assembled using an interlocking construction system, forming the building's load-bearing frame.

What differentiates this system from conventional construction technologies is its simplicity, speed, cost efficiency, structural strength, environmental sustainability, lightweight nature, and patented technology.

Simplicity and rapid installation significantly reduce construction time and allow projects to be completed with fewer skilled workers. This enables much faster delivery of residential and commercial developments and accelerates the overall construction process.

Cost efficiency is achieved through reduced labor requirements and lower overhead costs. Compared to traditional construction methods, the system requires less manpower and offers clear economic advantages across all building types.

Structural strength results from both the material composition and the unique interlocking assembly technique. All components within the system exhibit consistent load-bearing performance, and when assembled, they form a monolithic structure. In seismic zones, structural vibrations are evenly distributed throughout the building and efficiently transferred to the foundation.

Environmental sustainability is ensured through the use of natural and recycled materials in the manufacturing process. Lightweight construction minimizes the need for heavy equipment such as cranes and large machinery during transportation and installation.

The system comprises a range of products protected by 10 registered patents.

# COMPOSITE BUILDING SYSTEM

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## HOW IS THE COMPOSITE STRUCTURAL SYSTEM USED?

A reinforced concrete foundation (substructure) is constructed in accordance with the structural design, which is calculated based on the soil classification and the number of floors of the planned building. The first row of walls, designed according to the architectural project, is fixed to the foundation using composite base elements secured individually with anchor bolts.

Following the installation of the base elements, composite wall blocks are assembled while allowing for door and window openings. The wall blocks are installed in an alternating pattern using both an interlocking system and special adhesives, continuing up to the beam bearing level. High-strength composite lintels are installed above all door and window openings.

Composite beams are then fixed to the load-bearing walls at predetermined intervals. To ensure structural rigidity, connecting rods—used throughout the composite system—are also installed within these beams. Finally, a composite floor deck is screwed onto the assembled beams in a perpendicular direction, forming the floor slab.

This construction process is repeated for each subsequent floor, up to a maximum of five stories, depending on the design requirements.

Since heavy materials such as steel and concrete are not used in the superstructure (excluding the foundation), the total structural weight is approximately ten times lighter than that of a conventional reinforced concrete building. As a result, loads transferred to the ground are significantly reduced.

In earthquake-prone regions, rapid delivery of housing is essential to minimize human suffering. In this context, the composite structural system offers a seismically resistant and fast-to-construct solution. All composite structural elements have successfully undergone earthquake, fire, and strength testing, demonstrating their reliability against potential risks.

This composite load-bearing system enables construction across all geographical and climatic conditions. As no concrete is used in the superstructure, construction can continue even in cold winter conditions.

The system can be applied not only to multi-story residential buildings, as demonstrated in the sample project, but also to a wide range of building types, including schools, rural housing, villas, factories, warehouses, and hotels.

# COMPOSITE BUILDING SYSTEM

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## HOW FAST CAN CONSTRUCTION BE COMPLETED WITH THE COMPOSITE BUILDING SYSTEM?

A five-story building consisting of 20 apartments (4 units per floor) can be assembled in just 10 days by an 8-person team, using composite structural elements. By increasing the number of teams, multiple blocks can be constructed simultaneously.

Thanks to the lightweight materials and the elimination of formwork and scaffolding, construction is safer and faster. (Foundation and infrastructure works are excluded, as they depend on soil conditions and site topography.)

### WHAT IS THE STRUCTURAL COST?

Depending on the project, the average structural (shell) cost of a 5-story, 20-unit building is approximately USD 280/m<sup>2</sup>. Finishing costs vary according to material quality and design preferences.

### WHERE HAS THE SYSTEM BEEN USED?

The Composite Building System has been successfully implemented in Turkey, Russia, Azerbaijan, Iraq, Nigeria, the Netherlands, the United Kingdom, and the USA, delivering residential, social housing, educational, healthcare, and commercial buildings.

### WHO DEVELOPED THE SYSTEM? PRODUCTION CAPACITY

The system was developed through a partnership between Yeşil Holding (Turkey) and Coastal Construction (USA). Production facilities operate with advanced robotic technologies:

Manisa, Turkey: capacity of 5,000 housing units/year

Florida, USA: capacity of 9,000 housing units/year

### CERTIFICATIONS AND APPROVALS IN THE USA

After an 8-year testing process and 440 ANSI-standard tests, the Composite Building System has been approved in all U.S. states. It is officially recognized as the 4th structural construction system, alongside reinforced concrete, steel, and timber.

The system is approved for buildings of up to 5 stories in the USA.

# COMPOSITE BUILDING SYSTEM

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We provide a wide range of renewable composite turnkey solutions for various applications, including but not limited to:

Low-, middle-, and high-income housing

Disaster relief and emergency housing

Schools and educational facilities

Office buildings

Industrial and factory buildings

Government and administrative buildings

Restaurants and food service facilities

Warehouses and storage facilities

Retail stores and shopping centers

Police stations and gas stations

Medical and healthcare facilities

Aircraft hangars

Bulletproof guard cabins

Military camps

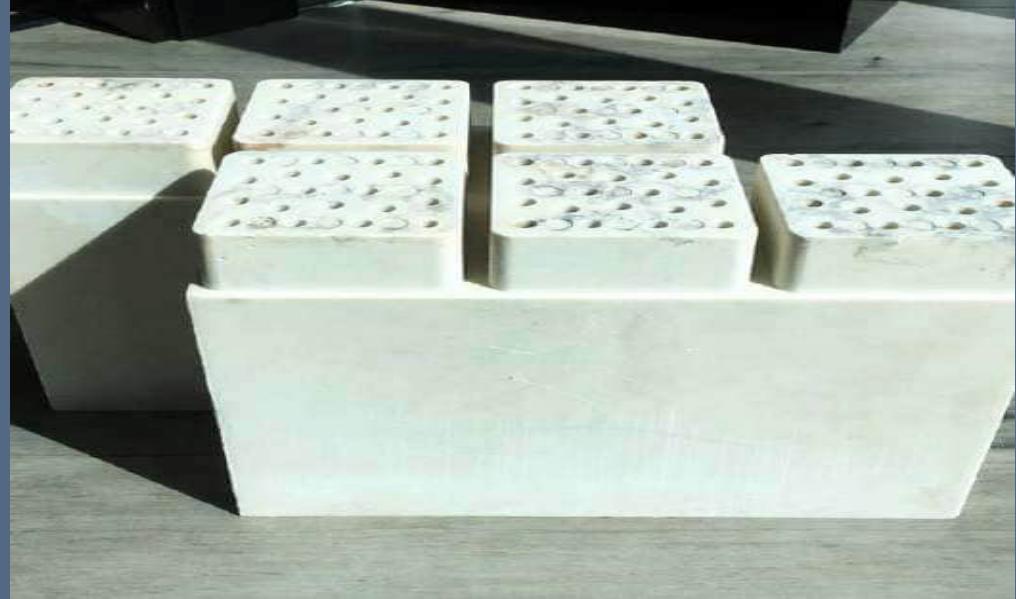
Farmhouses, forest houses, and village housing

Multi-story buildings

If you want, I can also:

# COMPOSITE BUILDING SYSTEM

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## KEY FEATURES

Cost-effective, patented, revolutionary products are environmentally friendly and eliminate the need for intensive consumption of natural resources such as timber or raw materials used in concrete production. This enables fast and easy design, development, manufacturing, assembly, and installation of residential and commercial buildings of various types and sizes in a wide range of locations.

Affordable cost

Exceptional design flexibility

Ideal resistance to strong earthquakes

Resistant to tornado and hurricane winds up to 225 km/h

Energy efficient

Creates fully watertight structures

Fire resistant

Immune to termites and unaffected by mold, fungi, algae, water, or osmosis; suitable for flood-prone areas

Fast and easy assembly

Withstands snow loads exceeding 150 kg/m<sup>2</sup>

Low maintenance costs

Excellent sound insulation

# COMPOSITE BUILDING SYSTEM

## COMPOSITE BUILDING SYSTEM



## COMPARISON OF COMPOSITE BUILDINGS WITH REINFORCED CONCRETE STRUCTURES

### COMPOSITE CONCRETE-BRICK

#### WALLS ARE MONOBLOCK ELEMENTS

Therefore no plaster work is required.

#### WALLS ARE MADE OF BRICKS.

Walls require plaster work.

#### HEAT INSULATION INDEX IS HIGH

The material itself is heat insulating.

No irregularities.

Coefficient of thermal conductivity,  $\lambda=0,05$  w/MK Ts825  
Water vapor transmission properties TS EN 12086 < 0.3%

#### THERMAL SHEATING IS REQUIRED FOR HEAT INSULATION.

Building operating costs substantially increase without thermal sheathing.  
Reduced living comfort in the building decreasing the life of the building.

#### PAINT AND COATING APPLICATIONS CAN BE PERFORMED ON THE WALLS DIRECTLY

#### PLASTER WORK IS REQUIRED BEFORE PAINTING THE WALLS.

Walls require plaster work.

#### NO STRUCTURE DEFORMATION

As wall elements of the structure are monoblock, no different work or irregularities occur on the structure composite buildings are lightweight structures. They add only a small amount of load on the ground.

#### DOES NOT AFFECTED BY ULTRAVIOLET RAYS

ASTM-D 4329 AND ASTM-G-53

#### NO IRREGULAR DEFORMATION ON THE STRUCTURE

Since concrete-brick buildings are heavy structures, they add more load on the ground. Cost of foundation ground increases with soil improvements.

#### DOES NOT AFFECTED BY ULTRAVIOLET RAYS

### COMPOSITE CONCRETE-BRICK

#### FIRE-RESISTANT FIRE-PROOF

Horizontal Burning Speed Type A

Inflammability: UL 94 V0

Hot Wire Ignitability Temperature : 750 °C

TS EN 60595-2-3.

#### REINFORCED CONCRETE STRUCTURES LOSE THEIR SUPPORTING PROPERTIES TO FIRE

Concrete is subject to structural deterioration due to fires at the building. Loses its supporting properties.

#### PRODUCT LIFE

100 YEARS ON A THEROTICAL BASIS

Humidity – corrosion - proof

No maintenance required to prevent wear and deterioration.

#### PRODUCT LIFE

60-70 THEROTICAL BASIS

The building is affected by humidity, resulting in substantially decreased building life. Repair is required.

#### INSTALLATION TIME : 3 days / 100 m<sup>2</sup>

Can be completed and taken into service within a shorter period compared to regular prefab structures of the same size.

#### INSTALLATION TIME

Production time of a structure with same architecture of a composite structure is APPROXIMATELY : 25 days / 100 m<sup>2</sup>

#### HORIZONTAL LOAD RESISTANCE

Building does not experience any cracks or deformation due to earthquake or wind loads and therefore no damage requiring repair takes place.

#### HORIZONTAL LOAD RESISTANCE

The building is earthquake and wind resistant; however, increased building load results in substantially higher levels of earthquake load of building. Earthquake loads increase in parallel to the load of the building.

#### SNOW LOAD CALCULATION

As the composite material has a high level of strength, the roof is designed considering a snow load of 150 kg/m<sup>2</sup>

#### SNOW LOAD

Designed for 75 kg/m<sup>2</sup> and 150 kg/m<sup>2</sup> loads in concrete and brick buildings, respectively.

**BOTTOM LINE:** Composite buildings are lightweight, fast to install, and offer excellent thermal and fire resistance, along with a long service life. In contrast, reinforced concrete and brick structures require longer construction times, place higher loads on foundations, and need additional thermal insulation, resulting in higher overall costs and longer project timelines.

# COMPOSITE BUILDING SYSTEM

## COMPOSITE BUILDING SYSTEM



## COMPARISON OF COMPOSITE BUILDINGS AND PREFABRICATED STEEL STRUCTURES

### COMPOSITE      LIGHT STEEL PREFAB

#### WALLS ARE MONOBLOCK ELEMENTS

#### WALLS ARE COMPOSED 3 LAYERS

#### HEAT INSULATION INDEX IS HIGH

The material itself is heat insulating.  
No irregularities.  
Coefficient of thermal conductivity,  $\lambda=0,05 \text{ W/MK}$  Ts825

#### HEAT INSULATION

(Achieved through additional heat insulation coating.)  
Wall requires work.  
Depends on the properties of the additional material to be used.

#### NO STRUCTURE DEFORMATION

As wall elements of the structures are monoblock, no different work or irregularities occur on the structure.

#### IRREGULAR DEFORMATIONS CAN BE SEEN ON THE STRUCTURE IN TIME

Subject to different kinds of deformations inside as the structural elements are composed of 3 layers.

#### DOES NOT AFFECTED BY ULTRAVIOLET RAYS

ASTM-D 4329 and ASTM-G-53

#### AFFECTED BY ULTRAVIOLET RAYS

Since concrete-brick buildings are heavy structures, they add more load on the ground. Cost of foundation ground increases with soil improvements.

#### FIRE-RESISTANT FIRE-PROOF

Horizontal Burning Speed Type A  
Inflammability: UL 94 V0  
Hot Wire Ignitability Temperature: 750 °C  
TS EN 60595-2-3

#### PRODUCT LIFE

100 YEARS ON A THEORETICAL BASIS  
Humidity - corrosion - proof  
No maintenance required to prevent wear and deterioration.

#### INSULATION MATERIALS USED IN THE BUILDING ARE FLAMMABLE AND PRODUCE SMOKE

The building starts to deteriorate and decay depending on how fast the protective materials used against the harmful effects of humidity, water and air on the structural materials that lose properties.

### COMPOSITE      LIGHT STEEL PREFAB

#### INSTALLATION TIME : 3 days / 100 m<sup>2</sup>

Can be completed and taken into service within a shorter period compared to regular prefab structures of the same size.

#### HORIZONTAL LOAD RESISTANCE

Building does not experience any cracks or deformation due to earthquake or wind loads and therefore no damage requiring repair takes place.

#### CONDENSATION DUE TO HEAT DIFFERENCE

Problems such as humidification, condensation, etc. which may take place due to hot-cold differences do not occur, as composite materials coefficient of heat conductivity is too low.

#### SNOW LOAD CALCULATION

As the composite material has a high level of strength, the roof is designed considering a snow load of 150 kg/m<sup>2</sup>.

#### FLOOR NUMBER

Number of floors can be increased upon request, to the extent allowed by the material geometry and strength.

#### INSTALLATION TIME : 15 days / 100 m<sup>2</sup>

Can be completed and taken into service within a shorter period compared to regular prefab structures of the same size.

#### HORIZONTAL LOAD RESISTANCE

Building does not experience any cracks or deformation due to earthquake or wind loads and therefore no damage requiring repair takes place.

#### SUBJECT TO CONDENSATION DUE TO HEAT DIFFERENCE

Humidification and condensation problems may be experienced due to monoblock material.

#### SNOW LOAD

Regular prefab structures are designed for 75 kg/m<sup>2</sup> layers.

#### FLOOR NUMBER

Usually made in maximum 2 layers.

#### NOISE INFORMATION IN THE BUILDING

As composite is an environment-friendly and warm material, no disturbing noise (creaks, buzzing, etc.) is formed during the use of the building by people.

#### NOISE INFORMATION IN THE BUILDING

Since the sheet plates used in the prefab structures are ultra thin, sometimes noise can be heard (creaks, buzzing, etc.) due to wind or other factors. This noise may reach disturbing levels for the people living in the building.

## CONCLUSION

Composite buildings provide superior durability, enhanced thermal and fire performance, excellent acoustic comfort, and significantly faster construction compared to traditional prefabricated buildings. As a result, they represent a more efficient, reliable, and cost-effective solution for long-term use.

# COMPOSITE BUILDING SYSTEM

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## COMPOSITE BUILDING SYSTEM



COMPOSITE BUILDING SYSTEM

HOMES

COMPOSITE BUILDING SYSTEM



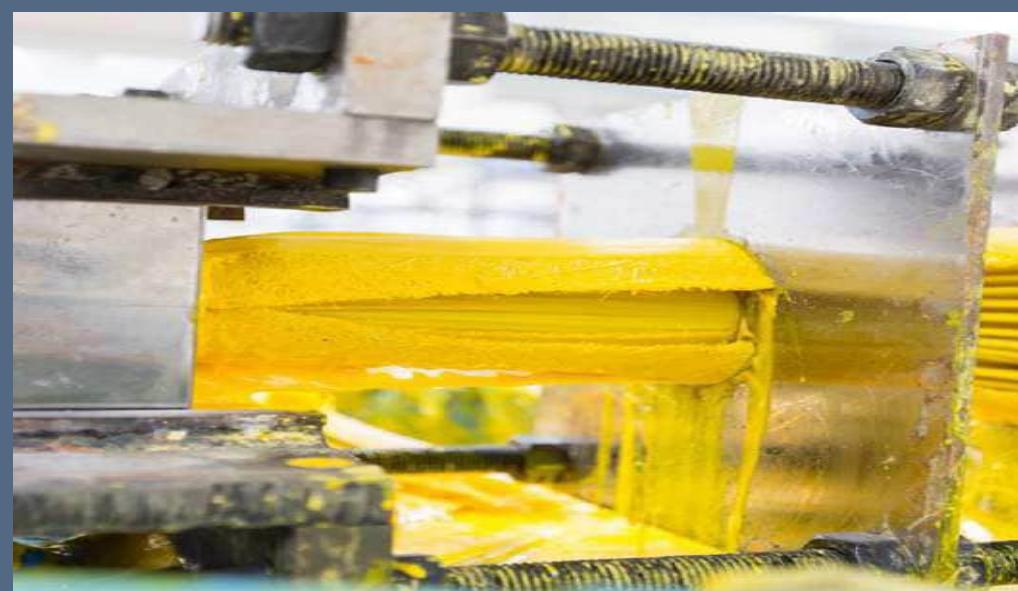
## SOCIAL & GOVERNMENT STRUCTURES



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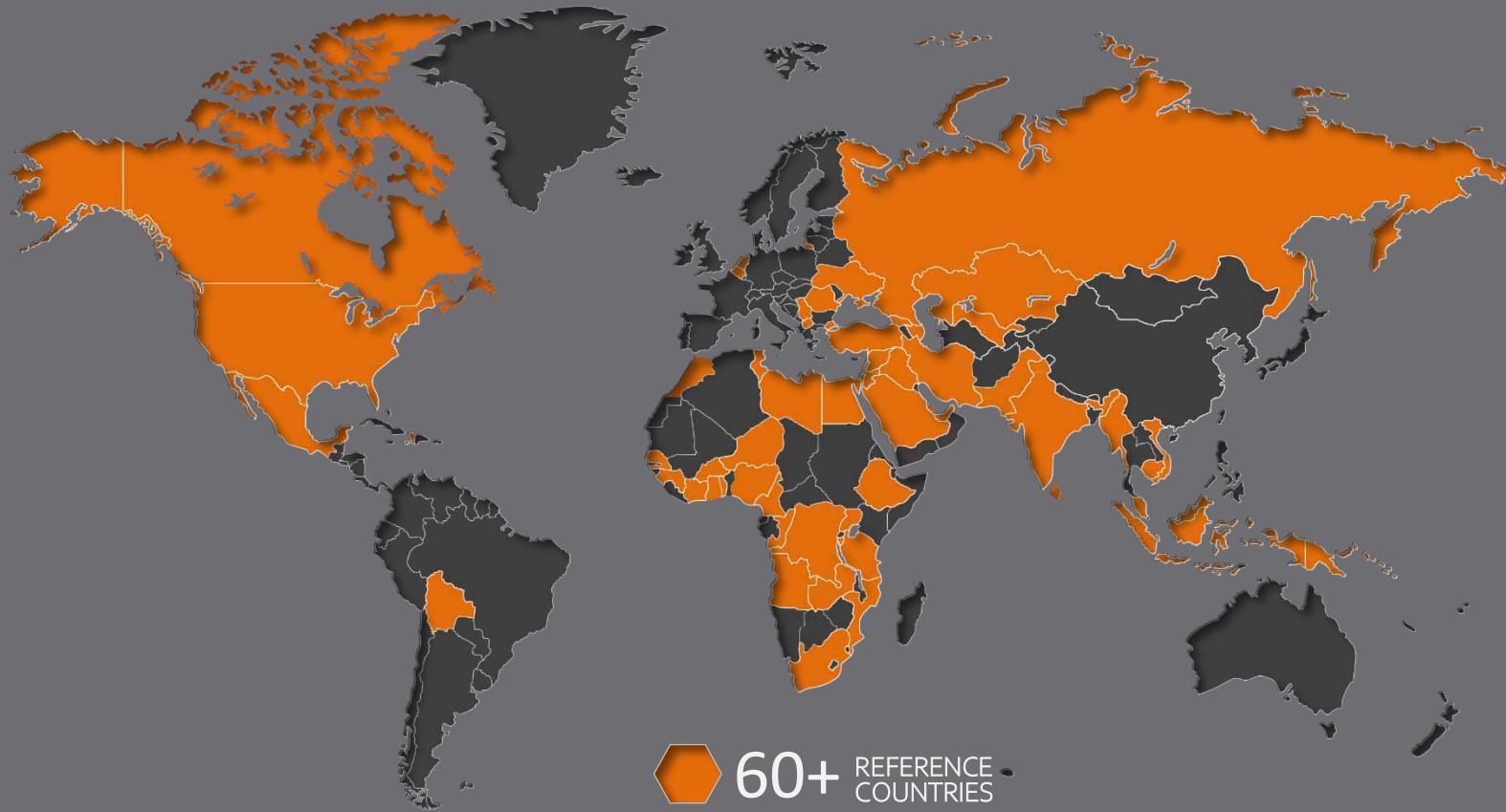


## MANUFACTURING ENTERPRISES



## MANUFACTURING ENTERPRISES





60+ REFERENCE COUNTRIES

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