STARMODUL

SELF-ASSEMBLY KIT

INDUSTRIALISED HOMES

FRAME AND CONNECTORS | CLADDING | ROOFING



READY-TO-BUILD FRAME

EFFICIENT CLADDING

COMPLETE ROOF

FAST ASSEMBLY

At **STARMODUL** we present our **new KIT for industrialised homes:** a comprehensive, customisable solution that includes the structure, cladding and roof, made to measure and prepared for **quick and easy assembly**.

All components are supplied cut, machined and labelled, with the bolted connectors and assembly drawings. This makes **self-assembly** easier, reduces work on site and allows you to **build in phases**, spreading the investment and reducing the need for initial financing.



GET TO KNOW OUR STARMODUL KIT FOR INDUSTRIALISED HOUSING

THE STARMODUL SYSTEM

INDUSTRIALISATION, PRECISION AND DRY ASSEMBLY

StarModul is an industrialised building system based on a galvanised steel structure, made to measure and prepared for fast, clean and controlled assembly.

1 MADE TO MEASURE

Galvanised steel tubular sections, cut, machined and labelled to suit each project for precise assembly on site.

2 BOLTED CONNECTIONS

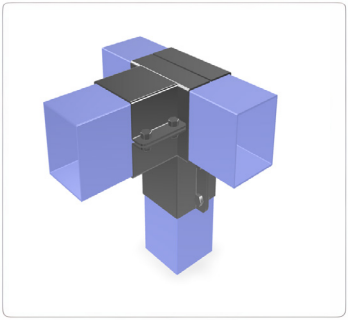
Precise dry assembly with no welding needed on site, optimising time and construction control.

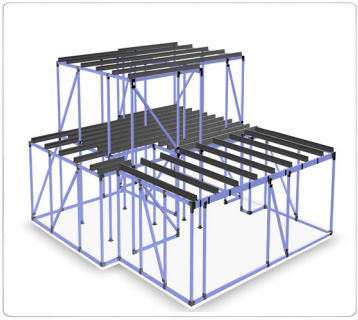
3 INDUSTRIALISED SYSTEM

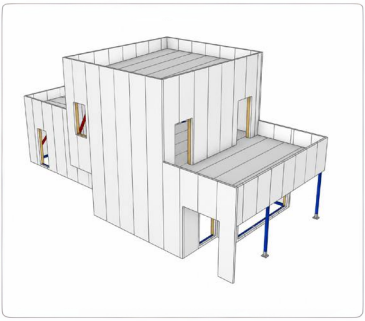
Greater control over quality, timescales and costs, with more predictable execution and a cleaner site.

INDUSTRIALISED HOMES

- Compliance with the Spanish Technical Building Code (CTE), subject to calculations and design.
- A system adaptable to different layouts, finishes and levels of fit-out.
- Optimised construction thanks to off-site manufacturing and dry assembly.







3 DAYS STRUCTURE
3 DAYS CLADDING

2 DAYS ROOF
U 0.155 WALLS

U 0.128 ROOF
100% DRY ASSEMBLY

WHY STARMODUL?

The building system designed so you can assemble your project quickly, methodically and efficiently.

01

FLEXIBLE DESIGN

Homes, offices, modules, porches, industrial buildings and bespoke projects.

02

FAST ASSEMBLY

Machined, cut and pre-assembled parts, ready to put together quickly.

03

COMPLETE SELF-ASSEMBLY KIT

We ship the kit fully disassembled, cut to size and labelled for easier assembly.

04

LOWER INITIAL INVESTMENT

The option of carrying out the project in phases, adapting it to your needs.

05

STRUCTURE + CONNECTORS + CLADDING

Includes the steel structure, bolted connectors and façade and roof cladding in a single delivery.

06

HIGH EFFICIENCY

Insulation solutions for façades and roofs, designed to improve comfort and performance.



WE SHIP WORLDWIDE

We export our kits to Europe, the Americas, Africa, Asia and Oceania. Your project, wherever you need it.

- Optimised packaging
- Assembly documentation
- Clearly identified parts
- Technical advice

EVERYTHING READY TO ASSEMBLE

Every part is delivered disassembled, cut to size and labelled for quicker and easier self-assembly.



STRUCTURE

+



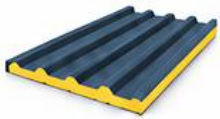
CONNECTORS

+



FAÇADE CLADDING

+



ROOF

UNLIMITED APPLICATIONS

Homes · Offices · Modules · Porches
Industrial units · Warehouses · Bespoke projects

CUSTOMISABLE FINISHES

ETICS · Ceramic · Panel · Ventilated façade
Decorative · Hardware · Efficient orientation

WHAT'S IN OUR KIT?

A complete, optimised solution so that you can build your **industrialised home** quickly, easily and efficiently.

01 STEEL STRUCTURE READY TO ASSEMBLE

The structure is **made to measure** for each project using **galvanised steel** tubular sections. All sections are supplied **cut, machined and labelled** for easy identification and assembly.

Assembly is carried out using **patented bolted connectors**, with no welding required on site. The KIT includes the connectors, fixings and assembly drawings needed for customers to install it with their own team or hire local professionals.

Main advantages:

- Fast, simple dry assembly.
- Suitable for self-assembly.
- Less adaptation work on site.
- Fewer errors and less material waste.
- Structure designed and engineered specifically for each project.



02 CLADDING WITH THERMAL INSULATION

The cladding is made with **sandwich panels cut to measure** and labelled so that the assembly drawings are easy to follow. This solution allows the building envelope of the home to be completed quickly, providing continuous, robust cladding with a **high level of thermal insulation**.

Panel thicknesses, finishes and performance are selected according to the needs of each project.

Main advantages:

- Panels ready for installation.
- Fast assembly with less trimming on site.
- Good thermal performance.
- High durability and easy maintenance.
- Option of adding different exterior finishes.



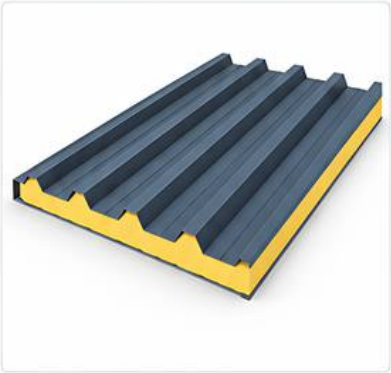
03 COMPLETE ROOF, MADE TO MEASURE

The roof includes the **substructure required to form the slopes**, the sandwich panels cut to measure and the flashings and trims specified in the quotation.

All components are supplied **prepared and labelled** to simplify assembly, improve the precision of junctions and reduce construction time on site.

Main advantages:

- Easy assembly following the drawings supplied.
- Good thermal insulation and weather protection.
- Fewer cuts, adjustments and less waste on site.
- A solution adapted to the geometry and loads of each project.
- Gutters, flashings and accessories included when expressly stated in the quotation.



BUILDING SYSTEM COMPLIANT WITH THE CTE

Speed of construction: building envelope assembled in approximately **15 days**.

Bespoke design: adaptable to the dimensions and needs of each project.

Simple, weld-free assembly: a system of bolted connectors that makes self-assembly easier and reduces specialised work on site.

Kit ready to assemble: structure cut, machined and labelled, supplied with detailed assembly drawings.

High thermal insulation:

- StarModul walls: **U = 0.155 W/m²·K**
- StarModul roof: **U = 0.128 W/m²·K**

Reaction to fire: B-s1,d0 classification.

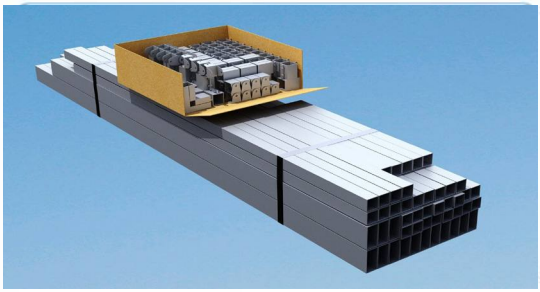
Weathertightness: high protection from air leakage and moisture absorption.

Structural strength: system calculated for each project to withstand seismic actions, high winds and adverse weather conditions.

Industrial precision: made-to-measure manufacturing that reduces errors, waste and construction time on site.

Lower financing needs: fast assembly and the option of self-assembly help to reduce labour costs and shorten investment periods.

Extendable and demountable system: makes future modifications, extensions or reuse of the structure easier.





MATERIALS INCLUDED IN THE KIT

StarModul bolted steel structure

The main StarModul structure is built with **100 × 100 mm SHS square tubes**, in wall thicknesses of **2, 3 or 4 mm** depending on the loads and the specific calculations for each project.

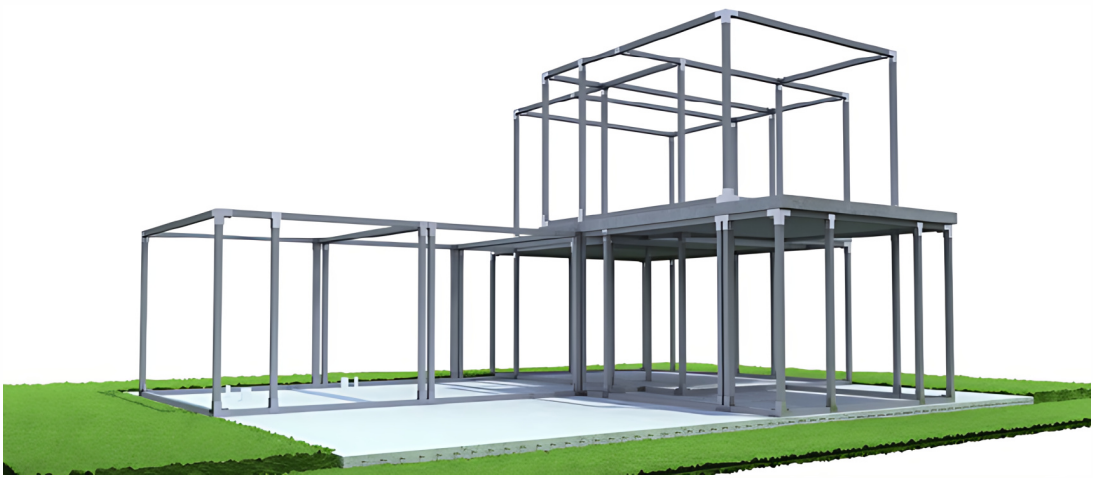
The tubes are made from **S355JR structural steel**, with a nominal yield strength of **355 N/mm²** and **galvanised protection** against corrosion. They are supplied **cut and labelled**, ready for assembly.

The sections are joined with **patented StarModul connectors**, made from 3 mm thick S275JR steel and **verified by tests** carried out by the LERMA laboratory of the Universitat Politècnica de Catalunya.

Depending on their position and the loads they carry, the connectors are reinforced with:

- **6.3 × 25 mm** self-drilling screws.
- **M10 or M12** structural bolts, property class **8.8**.
- Foundation anchors sized specifically for each project.

The KIT includes the tubes, the StarModul connectors, all the necessary fixings and the assembly drawings. The result is an industrialised structure, **fully bolted with no welding on site**, calculated in accordance with the **CTE**, the Spanish Structural Code and the applicable European standards.



MATERIALS INCLUDED IN THE KIT

Façade cladding and top cover

The exterior cladding and the top cover of the home are made with **cold-store sandwich panels** of variable thickness, defined according to the thermal and technical requirements of each project. The solution StarModul normally uses is the **80 mm panel**, although the available range covers thicknesses from 60 to 200 mm.

The panel consists of two **0.5 mm S250GD steel sheets**, manufactured to EN 10346 and protected by an organic lacquered coating. Between the two sheets is a **rigid insulating core of polyurethane (PUR) or polyisocyanurate (PIR)**, with a density of 40 kg/m³ ± 10 % and a thermal conductivity of **0.022 W/m·K**.

Performance of the standard 80 mm panel:

- Thermal transmittance: **U = 0.29 W/m²·K**
- Approximate weight: **10.7 kg/m²**
- Effective width: **1,000 mm**
- Reaction to fire: **B-s2,d0** for PUR/PIR and **B-s1,d0** for PIR-HI
- Ribbed exterior finish

The panels are supplied **cut to size** and feature a **tongue-and-groove joint** that gives continuity to the cladding. The KIT includes all the fixings needed to secure them to the structure.

Manufactured to **EN 14509**, the panel provides a lightweight, weathertight and durable building envelope with **high thermal insulation**.



MATERIALS INCLUDED IN THE KIT

Steel substructure and roof

The StarModul roof is built on a **made-to-measure steel substructure**, sized to form the necessary falls and direct water towards the **concealed gutter**. This solution creates a **double roof** over the top cover of the home.

The system is available with two finishes:

Option 1. Sandwich panel with joint covers

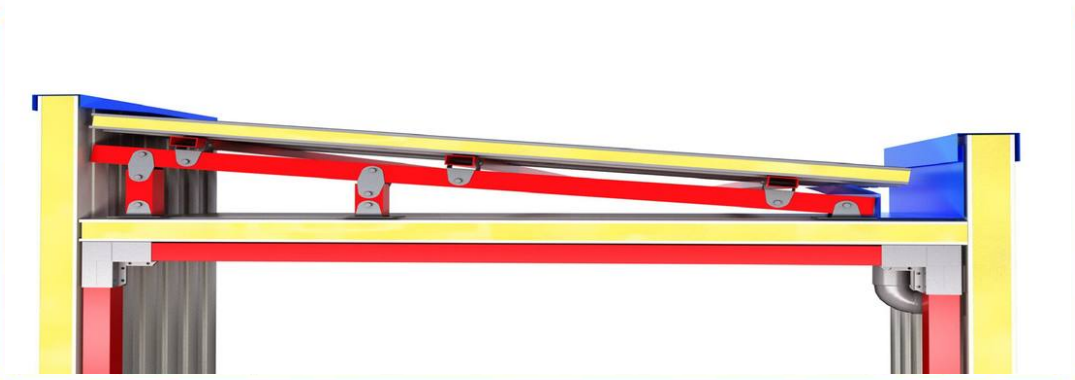
Four-rib roof panel of variable thickness, usually **30 mm**. Joints and fixings are protected by **metal joint covers**, improving the weathertightness of the roof. It requires a **minimum pitch of 5 %** and includes the specific sheet-metal flashings for edges, junctions, parapets, ridges and gutters.

Option 2. Smooth panel with waterproofing membrane

The joint-cover panel is replaced by a façade sandwich panel with a smooth exterior finish and no ribs, creating a continuous surface on which a **waterproofing membrane** is laid. The membrane adapts to joints, perimeters, parapets, junctions and drainage points, making it possible to build roofs with cleaner geometry or special junctions.

Both panels are manufactured to **EN 14509**, with **S250GD** steel sheets and a **PUR or PIR** insulating core with a thermal conductivity of **0.022 W/m·K**.

All sections and panels are supplied made to measure. The KIT includes the **concealed gutter**, the fixings, the butyl tape and the flashings or accessories required for the selected roof solution.



MATERIALS INCLUDED IN THE KIT

Assembly drawings and accessories

Before manufacturing begins, the StarModul KIT is developed using a **three-dimensional BIM model** that integrates the steel structure, the bolted connectors, the façade cladding and the roof solutions.

This model is used to prepare the documentation needed to organise and facilitate assembly:

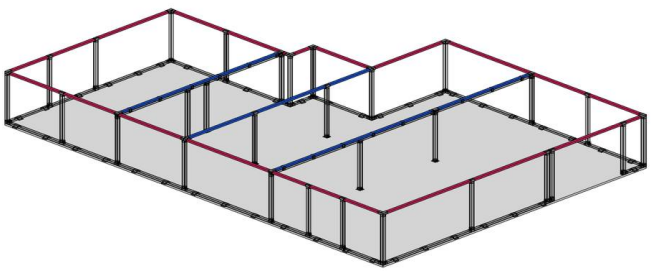
- General layout drawings of the structure.
- Assembly drawings for columns, beams, reinforcements and bracing.
- Details of the different StarModul connectors.
- Installation drawings for the façade and roof panels.
- Identification of openings, junctions, flashings and special details.
- Supporting 3D images to help interpret the whole assembly.

All tubes are supplied **cut, machined and labelled** with an individual reference that links them directly to the drawings. The sandwich panels are also delivered **cut to size and identified** according to their position in the home.

The documentation is supplied in **PDF format**, so it can be consulted easily throughout the assembly process.

The KIT includes the **structural bolts**, self-drilling screws, butyl tape, fastening elements, flashings and accessories for the selected configuration.

This planning system **reduces measuring and cutting work on site**, makes self-assembly easier and cuts errors, waste and construction times.



OPTIONAL MATERIALS IN THE KIT

StarModul ventilated raised floor - OPTIONAL

The StarModul ventilated raised floor is built using an industrialised system that is **fully bolted and dry-assembled**. Its configuration separates the home from the ground and creates an underfloor space for routing and accessing services.

The main structure consists of **100 × 100 mm SHS** square tubes, with wall thicknesses of **2, 3 or 4 mm** depending on the calculations for each project. The tubes are made of **S355JR** structural steel and are joined using the **patented StarModul connectors**.

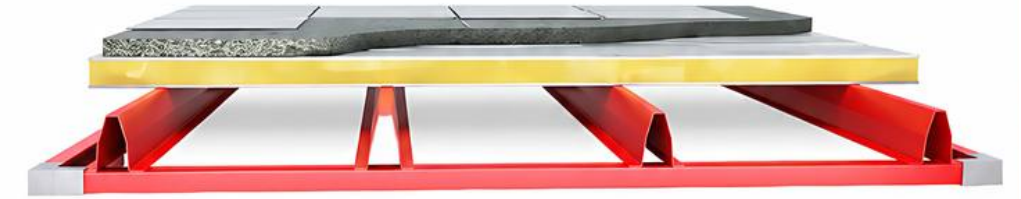
Cold-formed **Gran Omega 200 × 2.5 mm** sections are used as joists, made of **S280GD+Z** galvanised steel with a yield strength of **280 N/mm²**. According to the reference structural calculations, they are spaced at a maximum of **710 mm**.

Connections, fixings and overlaps are made using:

- **M10 class 8.8** structural bolts.
- **6.3 × 25 mm** self-drilling screws.
- StarModul connectors and reinforcing elements as defined in the drawings.

An **80 mm cold-store sandwich panel** is installed on top of the omega sections, made of 0.5 mm S250GD steel sheets with a **PUR or PIR** insulating core. The panel has a thermal transmittance of **0.29 W/m²·K** and creates a continuous, insulated base ready to receive the specified floor finish.

All sections and panels are supplied **cut, machined and labelled**, together with the fixings and assembly drawings.



OPTIONAL MATERIALS IN THE KIT

Timber sub-frames - OPTIONAL

Door and window openings are prepared using **GL24h homogeneous glued laminated timber sub-frames**, with a typical cross-section of **60 × 160 mm**. Their dimensions and layout are adapted to the window and door frames specified in each project.

The sub-frames act as the **secondary structure of the opening** and provide a regular, strong and stable base for the subsequent installation of windows, doors and glazed enclosures.



Exterior frames - OPTIONAL

Metal window sub-frames, made from 2 mm galvanised sheet steel, with a lacquered finish in **any colour from the RAL chart**.

Perimeter surround system that provides **complete closure of the window**, including sills, jambs, head, roller shutter box, concealment of the shutter guides and other necessary trims.



OPTIONAL MATERIALS IN THE KIT

StarModul modular staircase - OPTIONAL

The StarModul staircase is made up of **modular components of our own design**, assembled using a **fully bolted** system. Joining the modules in sequence forms the two side stringers on which the treads rest.

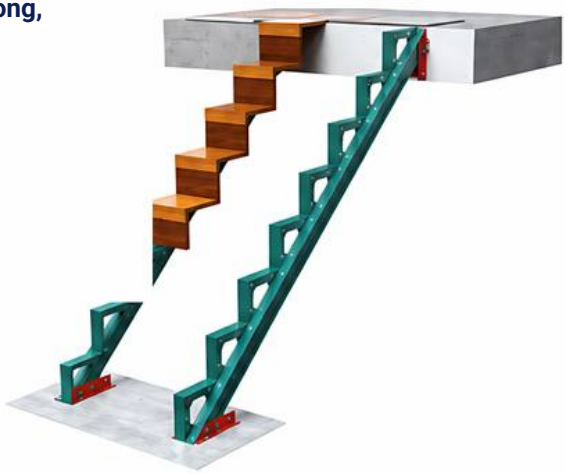
The system allows the geometry of the staircase to be configured to suit the characteristics of each project, adapting:

- The total floor-to-floor height.
- The number of steps.
- The tread and riser dimensions.
- The angle of inclination.
- The clear width and the available length.
- The position of the landings, where required.

Each staircase is **made to measure** so that it integrates correctly into the structure of the home and meets the **safety, accessibility and comfort** requirements set out in the applicable regulations.

The components are supplied **cut, machined and ready** for assembly, together with the fixings and the corresponding drawings. The system accepts different tread finishes, such as timber, sheet metal, composite or other materials specified in the project.

Its **dry assembly, with no welding on site**, reduces installation times and makes future modifications or replacements easier. The result is a **strong, precise and fully customisable** staircase.



INTERIOR DETAILS OF THE SYSTEM





COMPLETED PROJECTS







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