

# ACS

**BUILDING SYSTEMS**

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**The Product** – by ACS Building Systems Ltd is a closed timber frame panel system, with a factory produced external weatherproof finish.

This is the building system which the construction industry has been waiting for. The product has a built in flexibility that allows for both pre designed or bespoke homes to be quickly constructed in a controlled factory environment and delivered to site ready for fast assembly. The product complies with current building regulations to obtain local authority building and planning consent.

These include:

- High energy efficiency (SAPS formula compliant)
- High insulation properties, 'U' value in excess of current building regulation requirements
- Acoustically sound
- Fire resistance
- Impact resistance
- Very low maintenance
- Non absorption properties
- Mould resistance
- Corrosion resistance
- Durable >60 years

This system is the fastest and most cost-effective technique currently available for creating homes.

The reason for this is that the sections are structurally sound, insulated and weatherproof using a unique closed timber frame panel system with high quality materials and quality control methods to ensure that each panel leaves the factory ready for instant site use.

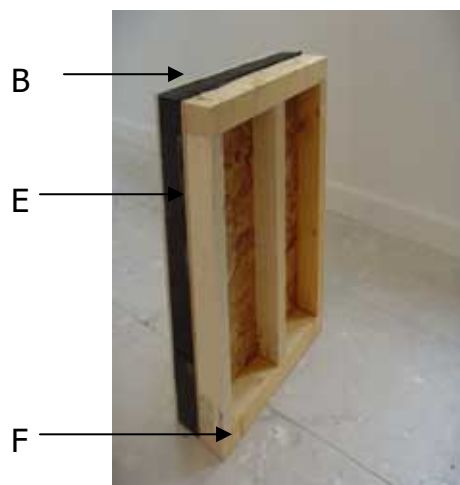
Unlike all other SIPs (Structural Insulated Panels) this product does not require an outer finish to be applied at site. The system totally removes the need for lengthy and costly outer brick or render finishes to be applied. These construction methods usually account for a large percentage of traditional build budgets and can take up to 50% of the time frame allowed for each building project (weather permitting).

The system can have an outer finish chosen by the customer to include for the following effects : brick, render, pebbledash and timber. It will be pre applied at the manufacturing stage. In fact, most external finishes can be replicated. If required windows, doors and external venting systems can all be pre fitted at the factory to save time on site assembly.

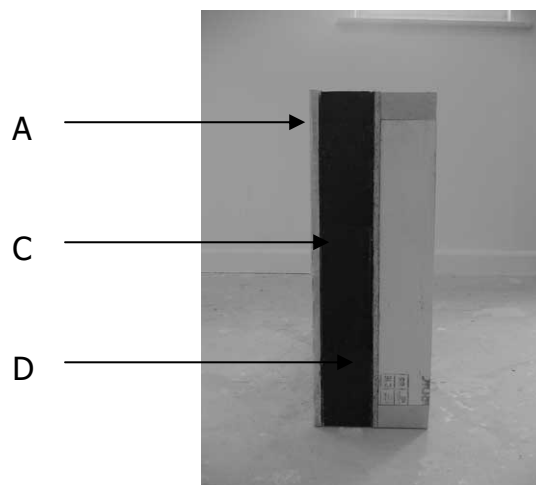
With the ACS building system no external work is required. As each panel is erected it provides an insulated structurally sound weatherproof section. The panels have non-permeable external finishes that are instantly weather tight. The only work left to do is the internal fit-out.

In essence the ACS building system offers a rapid build, low cost, building system. ACS panels can be used in any configuration and up to three floors in height without the need for extra framing. Site preparation and disturbance is kept to a minimum due to the panels' relatively lightweight sections. This will greatly assist on sites that suffer from reduced access or shared rights of way. External maintenance is all but eradicated due to the unique external finish, requiring nothing more than the occasional clean.

## **CLOSED TIMBER FRAME PANEL SYSTEM**



- A external finish 6mm
- B MDF 12 mm acoustic membrane
- C Backing 2 mm



- D Foamglas® insulation to specified 'U' value required under local building regulations
- E OSB 19 mm anti racking panel
- F Tanalised Timber Frame 100 x 50 mm to BS standard 5268-1 & 5268-6.1

## Example of external finishes



Brickwork



Rough Render



Smooth Render



Marble



Textured Sand  
Stone



Smooth Sand  
Stone

## **Foamglas® Wall board Insulation**

Foamglas® insulation meets the requirements of Building Regulations, Part L, 2002 with regard to air tightness of the building, the avoidance of cold bridging and sustainable construction. Foamglas® is totally non-combustible and cannot contribute to a fire nor give off toxic fumes or smoke; it is also

totally free from HCFC, HFA and pentane. Foamglas® holds BBA Agreement Certificate No 97 / 3408 / C

## **OSB Wall Board**

### 19mm Wall Board used to Prevent Racking

OSB (Orientated Strand Board) is a high performance wood based product, which has largely replaced plywood in the construction industry.

OSB is made only from virgin timber, approximately 90% being pine with the remaining 10% being Spruce or Douglas fir, bound together with a phenolic resin. Therefore the product is inherently low in formaldehyde and is labelled E1.

OSB has high load bearing capabilities, good cross-dimensional stability, making it ideal for construction use. Long thin timber flakes (strands) are used in 3 cross-oriented layers. The core strands are arranged in cross orientation. This method of panel production achieves dimensional stability and very high mechanical performance. In addition when used as a panel they achieve high rigidity, resisting deflection and bending.

OSB (Orientated Strand Board) is CE marked and conforms to EN 13986 (the harmonised standard for wood panels) and EN 300 (the standard for OSB). The product is also independently verified by Wilhelm Klauditz Institute (WKI) under certificate number: 0765-CPD-0355.

## **Timber frame tanalised 'soft wood'**

### Properties

Tanalised timber has been impregnated under pressure to drive tanalith oxide preservative deep into its cellular structure. This preservative is designed to protect the timber against all forms of degradation, including wet rot, dry rot, woodworm, termites and other insects.

### Certification

Tanalised timber conforms to BS 4072

## **Gyproc standard Internal Wallboards**

The standard 12.5mm Gyproc wallboard conforms to BS 1230:Part 1 1985 specification for plasterboard excluding materials submitted for secondary operation. All British Gypsum boards are manufactured under BS EN ISO 9002, a quality assurance system approved by the BSI. Plasterboard is designated class O (for the purpose of national building regulations)

### **Fire classifications**

Fire performance is rated under BS 476: Part 7 1997 surface spread of flame. The test showed Class 1 for both sides.

## **Roof**

The ACS Building System is capable of bearing a traditional style roof of slate, tile or modern DECRA® roofing systems. This system offers a strong versatile tile at a very low weight and follows the build philosophy which is :

- Easy handling
- Fast installation
- Exceptional durability
- Low maintenance



## **Base (to include for drains, electrical, gas & water supply prior to house assembly)**

Foundations will have to comply with local authority Building Regulation requirements.

Wall panels to be built on to a factory produced nylon ring beam accurately positioned on top of foundation footings. To ensure the building is assembled accurately from the foundations upward, it is essential that care is taken with the ring beam levels and setting out. We can provide for an expertly trained team to advise and assist with this important stage of the build.

## **Internal Finish**

The internal finishes are entirely up to the customer. Each ACS Building System panel has an internal finish of tanalised timber studding at 400 mm centres and will accordingly support any approved wallboard. The internal void does not require any further insulation, and makes an excellent space for both wiring and plumbing. These services can be installed prior to the fitting of the wallboards or internal cladding, thus greatly speeding up the internal fitting-out.

We recommend that ground floors are finished using Foamglas® floorboards for maximum thermal efficiency and can be complemented by the running of an under floor heating system. These components are then sealed by the application of a polyethylene membrane and a finishing screed. Other boarding methods can be used.



Design stage : to client choice

## Erection sequence using the ACS Designs Building System



Stage One: construction of base to include for drains, electrical, gas and water supply to the appropriate positions prior to house assembly



Stage Two: first corner panel



Stage Three : fitting gable and corner panels



Stage Four: continuation of wall panel erection *\*note windows & doors already fitted in position.* NB : Stages 2, 3 & 4 were completed in 1 working day by 2 men using mechanical lifting equipment



Stage Five: assembly of roof trusses



Stage Six: internal timbers and foundation raft. NB all sections are bolted to each other and down to the foundation raft



Stage Seven: application of Tyvek membrane over OSB boarding to make the house watertight and windproof prior to final tiling



Stage Eight: floor surface has been completed incorporating under floor heating if required



Stage Nine: internal fit-out in conjunction with external works in clean insulated working conditions



Stage Ten: guttering and mouldings around doors now fitted to complete external structure. From start to finish, with 2-3 men, this building was completed to this stage, including internal fit-out, in a little over two weeks, with minimal disturbance to the surrounding area thus maximising the original investment in the land.

## **PRICES**

Please contact us to discuss your individual requirements, plans and designs, in order that we can best advise the most cost effective way of incorporating our system into your own project :

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