

### Fibre reinforced polymers (FRPs) for house builders

Fibre reinforced polymers (FRPs) are amongst the most versatile materials available to the modern house builder. From simple cills to sophisticated soffits, the benefits of low weight, high strength, corrosion resistance and flexible finish can be used to save money, cut time and improve appearance.

Some products are designed to replicate traditional materials such as slate, lead and timber whilst others offer the clean clinical finish of a smooth single surface.



The advantages of FRP components include:

- Low weight – savings in transport and lifting, and load on support structure
- Fast erection – minimal temporary works, ease of handling
- Durability – low maintenance and ability to survive harsh environments
- Strengthening and refurbishment – application to existing structures
- Tailor-made properties – for high performance applications
- Good fire performance – able to meet Class 0 Building Regulation Standard
- Formability – ability to fabricate complex shapes
- Appearance – where a particular colour or texture is required

In Europe and elsewhere, particularly the USA and Japan, the application of FRP components in housing is developing fast.

### **Housing sector challenge**

The social and private housing sectors are facing similar challenges. The following factors affect the current situation and require innovation in a traditional industry:

- the dramatic increase in the number of single homebuyers, single parent families and the need to produce more affordable properties
- the need to provide more energy efficient housing – for both social and private markets
- the need to provide cost effective solutions for the whole life cycle of housing – particularly in the social housing sector where many housing associations are looking for 30-year whole life costs
- improvements in the construction process required by recent government reviews – e.g. Egan report – cleaner, faster more flexible construction technologies
- insufficient skilled labour for traditional construction
- performance problems with existing products manufactured from ‘traditional materials’ for example roof coverings, fascias, soffits, rainwater goods, windows and doors.



Many of these requirements point to prefabrication where possible. Fibre reinforced polymer (FRP or ‘composite’) components facilitate the move to offsite factory produced lightweight components that can:

- ease skill shortages
- ensure better quality control
- improve site safety
- increase productivity
- increase flexibility.



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