



PRECAST FLOORING FEDERATION

technically sound solutions

Article from Housing Association, June 2007

PRECAST - the future of home building

Phil Harris, Chairman of the Precast Flooring Federation's Marketing Committee, looks at how the precast flooring industry is providing solutions for today's and tomorrow's construction challenges.

Precast concrete flooring can provide highly effective solutions to a myriad of construction concerns raised by designers, developers, builders and ultimately the homeowners. Not only is its versatility second to none, but in an age where build time is precious and quality is paramount, precast concrete is considered by many to outperform all other forms of construction.

Flexibility of design:

Precast floors can generally span greater distances than timber or steel, supporting higher loads with reduced floor depths; this impacts significantly on the overall design of supporting structure and foundations; while allowing flexibility in layout and adaptability. Members of the PFF can provide a complete service from conceptual design stage to installation of an approved structural solution on site.

This package approach is already established in the commercial sector where speed and span are valued. Safe simple techniques enable up to 230 square metres of beam-and-block or 350 square metres of hollowcore to be installed each day with a safe working platform for following trades created as work progresses. The precast flooring industry has invested over £100 million in new factory facilities and equipment over the past 18 months with many floor specifications available within days rather than weeks.

Fire resistance:

Precast flooring can offer 'stand alone' fire resistance of 30 or 60 minutes depending upon the specification. This 'stand alone' fire resistance (during construction and adaptation) is currently very topical in the light of some high-profile fires on building sites. Additional fire protection can be added if required by applying suitable finishes.

Thermal insulation:

Changes to Part L as of April mean flooring element for dwellings must improve from $0.25\text{W/m}^2\text{K}$ to $0.22\text{W/m}^2\text{K}$ with members of the PFF able to offer insulated floor solutions exceeding these requirements, at the same time integrating underfloor heating. The thermal mass created can furthermore assist with regulating both winter and summer temperatures.

Certainly, precast flooring has blossomed in recent years. John Duffy of Hanson Building Products unearthed a 1979 article by Charles Rackham, then chairman of the Federation of Concrete Specialists, in which he forecast the use of precast concrete floors at ground level would become commonplace during the next few years. In fact the 5% market share precast ground floors had in the seventies has rocketed to 70% today.

Acoustic performance:

Domestic noise is a major source of concern to occupants and this was acknowledged with the introduction of Part E to the Building Regulations. The precast flooring industry quickly responded and developed two Robust Detail (RD) solutions for beam-and-block flooring. The systems were awarded RD status having been checked by the strict RD testing procedure and found to give consistently sound test results that exceed the performance standards in Approved Document E by the significant margin

of 5dB. As Tony Collier of Collier & Henry Concrete (Floors) Limited puts it, "Looking back, what initially may have seemed a setback for concrete floors when Part E was announced turned out to be shot in the arm for the precast flooring industry, as evidenced by the Precast Flooring Federation's data sheet recommending concrete beam-and-block floors for use at first-floor level in domestic housing to create a quiet home for the benefit of occupants." It is conceivable that over the next ten years there will be a significant increase in the use of precast concrete floors at first floor level within domestic housing.

Durability:

According to the Barker report, at our current build rate a house would have to last 380 years before it would be replaced. Responsible planning would therefore dictate that we specify the forms of construction that have the proven longevity to attain the longest life span, with consideration given not only to wear and tear but also to resistance to fire and flood.

George Pickard, sales director at Litecast Homefloors, says "I am a great fan of concrete and can appreciate its benefits in providing a high standard of living. However, because so much of it is covered up, it tends to hide its light under a bushel, as it were, and as a result is taken for granted. Before you ask, yes, I do have a precast concrete floor at home and would recommend buyers of new houses to consider that this form of construction before purchasing." Members of the PFF can offer friendly advice on all of the technical issues raised in this article, the products themselves have been thoroughly tested, proven and meet the standard required by the NHBC.