



EUROPEAN AUTOCLAVED AERATED CONCRETE ASSOCIATION
ASSOCIATION EUROPEENNE DES FABRICANTS DE BETON CELLULAIRE
VERBAND DER EUROPÄISCHEN PORENBETONINDUSTRIE

Sustainable Construction

The question whether a building is sustainable or not is not easy to answer. So far there are no International standards concerning sustainability. However different models of assessing sustainability already exist in most European countries. Most people think sustainability only includes environmental aspects. But most models assessing sustainability have a broader approach and also assess economic, technical, and social aspects.

The choice of the right building material is one of the key factors for sustainable buildings. Autoclaved aerated concrete is a building material which offers considerable advantages over other construction materials. Autoclaved aerated concrete's high resource efficiency gives it low environmental impact in all phases of its life cycle, from the processing of raw materials to the disposal of AAC waste.

Environmental Performance

Resources

AAC is made from naturally occurring materials that are found in abundance - lime, fine sand, other siliceous materials, water and a small amount of aluminium powder (manufactured from a by-product of aluminium). Some process also use industrial by-products. Furthermore the production of AAC demands relatively small amounts of raw materials per m³ of product, and up to a fifth as much as other construction products. Its high resource efficiency results into a low environmental impact in all phases of its life cycle.

Environmental impact during production

No raw materials are wasted in the production process and all production offcuts are fed back into the production circuit. Even with some processes where a small amount of surplus material is left over after curing, this is ground and recovered for other uses.

The manufacture of AAC requires less energy than for all other masonry products, thereby reducing use of fossil fuels and associated emissions of carbon dioxide (CO₂). Industrial-quality water is used and neither water nor steam are released into the environment. No toxic gases are created in the production process.



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Environmental impact during use

AAC's excellent thermal efficiency makes a major contribution to environmental protection by sharply reducing the need for space heating and cooling in buildings.

In addition, AAC's easy workability allows accurate cutting that minimises the generation of solid waste during use. Unlike other building materials AAC does not need to be used in combination with insulation products, which increase the environmental impact and cost of construction.

Reuse, recovery and disposal

Throughout the life cycle of AAC, potential waste is reused or recycled wherever possible to minimise final disposal in landfill. Where AAC waste is sent to landfill, its environmental impact is minor since it contains no toxic substances.

Technical Performance

Fire Resistance

Autoclaved aerated concrete provides the highest security against fire and meets the most stringent fire safety requirements. Due to its purely mineral composition, AAC is classified as a non-combustible building material. It is both resistant to fire up to 1200°C and, unlike other construction materials, heat-resistant.

Structural Performance

Autoclaved aerated concrete is extremely strong and durable despite its lightweight. AAC's solidity comes from the calcium silicate that encloses its millions of air pores and from the process of curing in a pressurised steam chamber, an autoclave. Its excellent mechanical properties make it the construction material of choice for earthquake zones.

Sound Insulation

AAC has excellent sound insulation properties compared to other building materials with the same weight.

