

Gypsum-Fibreboards Construction biology

Follow-up product test Report No. 02/02/08

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FERMACELL GYPSUM-FIBREBOARDS

Building boards available in standard thicknesses 10, 12.5, 15 and 18 mm

After full consideration of all the available information. The Austrian Institute of Construction Biology and Ecology (IBO) has awarded the IBO test mark to the above-named product. These products may be accordingly designated as "tested by the Austrian Institute of Construction Biology and Ecology".



Initial product test	25.09.1990
1 st Follow-product test	01.09.2002
Next Follow-up product test	01.09.2003

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Construction biology.

General appraisal.

Description of product.

FERMACELL building boards are gypsum-fibreboards made from burned gypsum (either natural and/or recycled gypsum recovered from industrial desulphurisation plants) and cellulose fibre, which are obtained by a recycling process. The boards are impregnated with an aqueous coating based on a mixture of starch and silicone. The boards are damp-proof and fire resistant.

The Boards are available in the standard thickness from 10 to 18 mm and are suitable for use as a lining to walls, ceilings and floors, particularly where the construction is required to meet a performance specification for acoustic insulation and fire resistance.

Results of the tests. Toxicity.

On the basis of the tests and investigations carried out by IBO, FERMACELL gypsum-fibreboards can be classified as non-toxic. The use of FERMACELL Jointstik is not recommended by IBO, given the significant health hazard posed during the manufacture and use of this product by the diphenylmethane-4,4-diisocyanate which it contains. A non-toxic and non-hazardous alternative is available from the manufacturer in form of FERMACELL Joint Filler.

Physical, technical and mechanical properties.

The published reports of various authorised materials testing establishments were consulted as part of the appraisal process. These reports indicate that the product complies with all current standards and regulations in respect of the performance parameters for which it was tested (diffusion of water vapour, fire resistance, mechanical strength).

Radioactivity.

Since no measurable increase in radioactivity levels was detected, the product does not constitute a radiation hazard of any kind. It should be stressed that this finding also applies to FERMACELL gypsum-fibreboards containing recycled gypsum from industrial desulphurisation plants. The product is constantly checked and monitored for radioactivity under the manufacturer's quality assurance program.

Heavy metal content.

Concentration of heavy metal pollutants are below the permitted threshold values. The in Germany manufactured boards are specifically monitored for their chrome, nickel, mercury, cadmium and zinc content. Again, the company's ongoing quality assurance measures ensure that the product does not contain harmful concentrations of these substances, and as such provides a practical and useful way of recycling waste paper and gypsum recovered from desulphurisation plants.

Ecological credentials.

The product is manufactured using ecologically sound methods. The primary products used in its manufacture, i.e. waste paper and gypsum recovered from industrial desulphurisation plants, both of which are subject to a strict regime of quality control, represent a positive contribution towards the environmentally-friendly production of building materials.

Dextrine, a natural derivate from potato starch serves as dust bonding agent. All waste accruing during production is recovered and reused 100% in the manufacturing process. The same applies to waste water from the production process, which is treated on the premises and then recycled. In theory, correctly sorted gypsum-fibreboards are a 100% recyclable product. In Germany the product is shipped from the works by road for the most part, although a rail network is available and a more extensive use of rail transport could be made.

Fixing and jointing.

The products FERMACELL Plaster and FERMACELL Joint Filler contain gypsum for the most part and the ancillary cellulose ether (methyl cellulose) in low quantities.

The FERMACELL Jointstik, an adhesive made of polyurethane, should not be applied.

Product developments and innovations

– Requirements to the manufacturer Primary products.

The transport of the process materials by road and road tank cars should be reorganised. Principally, the transport by train should continue to be intensified and be made more attractive for the traders to enable a reorganisation from road to train transport.

Packing.

The delivery should be made on principal without packing material on return pallets for which a pawn can be taken. This system has been partly introduced in Germany, it should still be extended to the private customer.

Recycling.

FERMACELL gypsum-fibreboards dispose of a high quality and can be recycled for manufacturing. The return of residual building materials should be extended.

Gypsum recovered from desulphurisation plants.

The quality assuring measures to guarantee the environmental friendliness of the recycled product from the waste gas purification, have to be maintained in the future. The annual controls regarding heavy metals and radioactivity of the plaster stucco (cf. annex) enable the environmentally-friendly application of gypsum recovered from desulphurisation plants.

Jointstik.

The manufacturer should try to develop adequate alternative products which do not contain any ancillary products contained in the MAK-list. He should provide the information that the application of Jointstik is reserved to professionals.

Recommendations to the consumer

FERMACELL Jointstik.

The FERMACELL Jointstik contains diphenylmethane-4,4'-diisocyanate. This substance may irritate the mucous membrane, skin and eyes. The MAK-list from 1993 classifies the substance to be sensitizing. The Austrian Institute of Construction Biology and Ecology can therefore not recommend the application of the FERMACELL Jointstik. Alternatively, the FERMACELL Joint Filler can be applied. Constructions requiring the applications of FERMACELL Jointstik should be avoided.

Does the customer decide, however, to apply the Jointstik, a professional should be consulted. A sufficient aeration has to be provided. Please pay attention to information on hazards!

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