

MDF & formaldehyde

In essence, Medium Density Fibreboard is a wood-based panel made from wood fibres under heat and pressure with the addition of an adhesive. Medium Density Fibreboard, or MDF, is often seen as a wonder material by its users because of the myriad uses to which it is put in houses, offices, factories and public buildings.

Total polyvalence

Through the manufacturing process, it is possible to exactly shape the board's characteristics to meet whatever specification is needed. Structural strength, stability, durability, moisture resistance, flame retardance, decorative appeal, cutting, shaping and profiling properties can all be tweaked to meet the exact needs of the architect, designer or do-it-yourself enthusiasts that use them. This is what makes MDF such a highly desirable material.

No MDF without formaldehyde

Formaldehyde is a raw material for most of the resins used to bind the wood fibres in MDF. Formaldehyde thus plays a vital role in ensuring that a versatile range of MDF products are fit for their individual purposes. Formaldehyde-based resins are used in minute, entirely safe quantities well within the European standards mandated by the EC's Construction Products Directive.

Today, most buildings make significant use of wood-based panels. The standard type is used for interior fixtures, modern or reproduction furniture, room extensions and repairs. These are all uses where stability in dry conditions is the desired characteristic. The moisture-resistant type is commonly fitted in kitchens and bathrooms. Flame retardant panels are widely used as wall linings, partitions, display panels and ceilings. Exterior MDF panels are used for shop fronts, signs, exterior mouldings or garden furniture; and higher density boards are used in laminated flooring, a rapidly growing market.

The ultimate architectural material

Furniture remains a prominent destination for MDF, since it can be surfaced with a wide choice of wood veneers laminates and melamine overlays.



See above: Copenhagen Opera House – mainly constructed with wood elements.

But perhaps the ultimate encounter with MDF is in modern cultural complexes. MDF can easily be designed for safety, shape, acoustics and visual impact. Critically acclaimed new buildings that make very extensive use of MDF include the Scottish Parliament building, Dublin's Mahoney Concert Hall or Copenhagen's new Opera House (see picture).

For any of these multitudes of uses, the choice of the right resin is crucial, and virtually all these resins are formaldehyde-based. Formaldehyde plays a hidden but highly influential role in the performance of these panel products.

MDF, in common with other wood-based panels, demonstrates all the environmentally sustainable credentials of solid wood, in addition to its workability and its aesthetic appeal.

About Formaldehyde

Formaldehyde is an essential metabolic intermediate in all living cells. It is produced during the normal metabolism of serine, glycine, methionine, and choline and also by the demethylation of N-, S-, and O-methyl compounds, and is a starting point for the metabolic pathway leading to purines, thymidine, and amino acids.

Formaldehyde is also an important industrial chemical used in a wide range of applications, including building materials, furniture, paints and coatings, textiles and pharmaceuticals.

Formaldehyde is broken down within a few hours by sunlight and by bacteria, and it metabolizes quickly in the body. Formaldehyde, therefore, does not accumulate either in the body or in the environment.

About FormaCare

As a sector group of Cefic (the European Chemical Industry Council), FormaCare represents key European producers of formaldehyde, aminoplast glues and polyols. FormaCare aims to promote the sustainable use of formaldehyde and formaldehyde based products among its members and their customers, with due regard to health and environmental care.

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