Wood-based materials

As a renewable material, wood is of high ecological value provided it comes from a sustainable forestry source; for this reason, “ÖkoKauf Wien” requires a relevant proof of origin. The main sources of indoor hazardous substance emissions are formaldehyde (from the binders), wood preservative (an additive) and terpenes (from the wood). “ÖkoKauf Wien” has defined criteria for formaldehyde emissions (“E 0.5”, “E1/2”).

The following notes are based on Criteria List 08014 Wood-based materials and pertain to services listed in various different Service Groups, as set out in the specifications for building construction.

Classification of wood-based materials

Wood-based materials (as opposed to solid wood) refers to all materials produced from small pieces of wood, usually by binding them together with an adhesive, but also by mechanical means. A distinction is made between materials based on conventional wood (e.g. laminated wood and plywood), veneer board, chipboard/particleboard, fibreboard (e.g. MDF and HDF) and composite materials. The most important category in terms of use and impact on the indoor air are the fibreboards, and the two most important materials are chipboard/particleboard and waferboard (or OSB).

Ecological assessment

Providing it comes from a sustainable forestry source, wood is a renewable material and earns a top rating. However, the complete reverse applies to wood from non-sustainable sources (clear-felling, non-sustainable plantation management). “ÖkoKauf Wien” therefore requires proof of origin for the wood fraction, the main purpose being to prevent the use of tropical timber from non-sustainable production. Tropical timbers are therefore required to bear the so-called FSC label, while non-tropical timbers must be shown to be sourced from countries committed to sustainable forestry, or bear the FSC and/or PEFC label.

Emissions of hazardous substances from wood-based materials

Wood-based materials have three main sources of hazardous substances: emissions from the binding agent, from additives and from the wood itself. The most important category of binding agents are phenol-formaldehyde resins. These and other formaldehyde-based adhesives give off formaldehyde, a toxic, caustic, allergenic gas which several years ago was also classified as a carcinogenic substance by the World Health Organization. A series of different additives are used, e.g. flame retardants, water repellents and hardeners; the most important in terms of their health impact are biocides (primarily wood preservatives), the best-known of these being PCP (pentachlorophenol), which has now been banned. Wood itself (especially coniferous wood) can give off a large number and indeed considerable quantities of volatile organic compounds (VOCs), chiefly terpenes, a group of natural aromatics that are predominantly emitted by the resin and many of which have irritant and even allergic properties.

→ For further information, see the “ÖkoKauf Wien” information sheets “VOCs”, “Tropical timbers” and “Biocides”