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RECYCLED MATERIALS

In order to conserve our resources of raw materials, which are becoming increasingly scarce, waste substances must now be regarded as a new source of raw materials. The creative idea behind this need not just be driven by the need to salve the individual conscience or to observe new regulations. More important is to discover and to exploit the technological and design potential which is contained in new developments in the recycling of materials. The future is represented by innovative concepts which bring together industry, the environment and planners as allies. The selected products which are described here are newly developed materials, materials which are given a new identity and new characteristics by the recycling process. Recycling that is applied in a targeted way as an aesthetic factor can give an industrial product a unique identity again, whose appearance changes with the composition of the basic materials used and can accordingly be adapted to customer requirements. Of particular interest in this respect are secondary materials which are derived from the packaging and synthetics industry: thermoplastic synthetics are easily recyclable and recycling them makes a major contribution to savings in primary energy resources. The process of manufacturing these materials should, as far as possible, be without further additives or binding agents, which will help to give them the necessary purity of grade and makes it possible to recycle them further.

Panels from Boots and Phones
These panels are distinguished by their special aesthetic properties. The composition of the initial products determines their colour and structure. Old mobile phones, wellington boots and toothbrushes from industrial surplus stocks are processed to form panels. The initial products remain visible in melted form, recognisable but distorted. The material is heated and then compressed into panels. No additives or resins are used. Discarded children's wellingtons give the panels a soft, rubbery surface which is pleasant to the touch and is suitable for waterproof mats for the bathroom or kitchen or as coverings for stools and tables. The panels can be recycled.
The dimensions of the mobile phone panels are: 1200 x 800 x 9 mm,
wellington panels: 1200 x 800 x 3 mm.

Drink-Carton Board

The product is made from recycled drinks cartons. The boards consist of 75% paper fibre, 20% polyethylene and 5% aluminium. The raw material is shredded into particles which are sized approx. 5 mm, heated and then compressed. The polyethylene content in the material melts, which gives the board stability and resistance to moisture. No further adhesives or additives are used during production. Applications range from trade fair and interior panelling to surfacing for furniture and product design. The board is available in thicknesses ranging from 3 – 25 mm. The material is impermeable to steam, can be used in damp locations, has good sound and heat insulation properties and can be sawn and drilled just like wood.

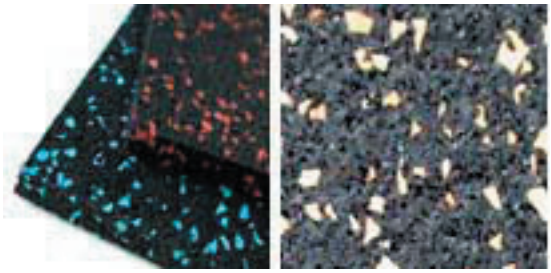
Wood-Based Synthetic Material

This thermoplastic material is made of the wood components lignin and cellulose fibres, which are produced as waste in paper manufacturing. The material is delivered in pellet form and has similar thermal properties to natural wood. However, it can be shaped like plastic by injection moulding. The raw material can be coloured, and when hardened it can be sanded and painted. The expansion factor is similar to that of wood, which makes the material the ideal basis for veneers. In addition it has a high level of resistance to fire and distortion, and is bio-degradable.

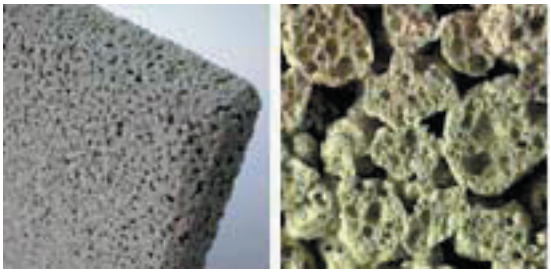
Mobile Flooring System

This paving made of recycled HDPE synthetics is used for outside flooring which is universally applicable, robust and quick to lay. It can be laid out on uneven ground without the need to prepare the surface in advance. The paving is laid manually and the neatly fitting shapes make sure that a stable flooring base is created. The surface is easy to clean, anti-slip, resists ultra-violet discoloration and flame retardent. In addition it can be fully recycled again. The paving can be used for the audience area at major events and has a load-bearing capacity of up to 5 tonnes per slab, which means that it can even bear the weight of lorries or buses.

Sisal-Fiber Laminate
The sisal fibres which are mixed into the surface of the laminate are obtained from recycled sacks that originally contained coffee and vegetables. The fibres are in part coloured, which is derived from the printing on the original sacks. The laminates consist of 60% paper and 30 – 40% phenolic and melamine resins, which are compressed under high pressure. These resins cannot be recycled again. The panels have a thickness of 0.8 mm and are sized 355 x 130 cm. A flame retardant version is also available.



Car-Tire Flooring
The product is made from rubber pellets which are derived from the recycling process of car tires. Polyurethane is used as a fixing agent and the embedded coloured elements are based on synthetic rubber. The material is available in six standard colour shades, but special colour mixtures can be produced on request. This permanently elastic material is available in lengths or as squares, and is suitable for all applications which require sound and vibration insulation combined with mechanical durability. The material is permeable to water and steam, UV resistant and can be recycled. It is supplied in standard thicknesses of 6 – 12 mm and can be adapted as required. The lengths are 1250 mm wide, and the size of the squares is 500 x 500 mm.



Foamed Recycled Glass
The material is made of over 90% used glass and can itself be fully recycled. It is light in weight, mechanically robust, does not burn and absorbs sound. The basic material is a mouldable mass of expanded glass granules which is sintered. This creates stable bindings of molten glass where the individual pellets come into contact with one another, and this gives the material a high degree of mechanical durability. No binding agent is needed during production. Depending on the degree of sound proofing or insulation required, the shape and size of the pores can be modified appropriately. Mechanical processing is easy and the material can be sawn and drilled.


Recycled Glass Ceramics

Glass ceramics consist of recycled float glass. The glass is heated until it melts again and is formed into panes. No additives are used during production, which means that the material can be fully melted down again and recycled. The surface is polished on one side and the maximum size of the panes is 2500 x 1200 x 23 mm. The material is only available in light blue – turquoise, which is the colour of the initial window glass material. So far the recycled glass has been used for kitchen worktops and for washstands.