

Valchromat pros and cons



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This is our report on our exploration of a manufactured board known as Valchromat. Valchromat is a unique and high quality wood fibre board that is coloured throughout. There is another product similar to it called Fibracolour but this does not match up to the many qualities of Valchromat which we will explore later. We have chosen this topic for several reasons. It is interesting and unheard of to many people while it also relates to two of our learning outcomes in that it is a versatile material that can be used in furniture construction and that it can be used as an architectural woodworking component.

A brief description of Valchromat

It comes in 8 colours and 7 different thicknesses. Valchromat is made from forest waste, residue from timber mills and recycled pine. <http://www.valchromatsa.com/pics/product/10.jpg><http://www.valchromatsa.com/pics/product/1.jpg><http://www.valchromatsa.com/pics/product/8.jpg><http://www.valchromatsa.com/pics/product/6.jpg><http://www.valchromatsa.com/pics/product/4.jpg><http://www.valchromatsa.com/pics/product/16.jpg><http://www.valchromatsa.com/pics/product/12.jpg>

Its manufacturing process is extremely environmentally friendly. Its production site has zero carbon Emissions. It is manufactured using organic dyes and a specially formed binding resin that ensure exceptional physical and mechanical characteristics while keeping a natural appearance. It is also approved by the British Standards association for safe use in the manufacture of children's toys. <http://www.valchromatsa.com/pics/product/14.jpg>

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It sounds like the perfect manufactured board but can it really be that good?

Brief History Of Valchromat

Valchromat was created in the research department of valbopan in Portugal as they wanted to improve and develop new and existing wood related products.

There was a gap in the market that called for a product combining colour and the features that could already be found in manufactured boards.

It was first introduced in Paris in 1998 at the Aprofal fair where it won the technological innovation prize and the display prize. It then hit the market in 1999 through distribution channels in France Switzerland and Belgium.

Over the past 30 years MDF has never been completely accepted by specialists as an adequate product for different finishes and decorative processes. Valchromat has broken this taboo.

Valchromat is apparently 30 % stronger and more stable than MDF board and can be completely moisture resistant with the right finish. It also increases the lifespan of tools due to a lubricant agent in its composition. But if Valchromat contains all these qualities, then surely most other manufactured boards will also?

Manufacturing of Valchromat

The wood pigments and glues are carefully selected.

The wood is peeled from the bark and torn into small chips. Then the chips are run through a powerful magnet to remove 99% of metals. They are then

washed to remove 80 - 90% of sand which according to the manufactures will " reduce the wear and tear on tools".

The chips are then sorted into similar sizes and steam cooked. This makes the chips soft and eaier to isolate the fibres. The organic pigments and glue are then added to the fibres. When this mixture has dried the valchromat is pressed in a large press forming large sized sheets.

It is then cut to size and assessed in quality control.

Properties of Valchromat

The Advantages and Disadvantages

Valchromat has many advantages above standard MDF. These include strength, wear and tear, machining, environmental and health aspects, variety and finish choices.

Strength:

During processing special resins are added to the wood fibres bonding them together causing Valchromat to be 30% stronger than ordinary MDF. Due to the strength of Valchromat it can be used in areas of construction requiring high strength material such as, counter tops, table tops, ceilings and walls. Standard MDF would be unsuitable in some cases of these areas of construction as bowing over a large span can be an issue.

- Wear and tear:

Unlike standard MDF, Valchromat is soaked all the way through with organic colour die allowing scratches difficult to detect. Sanding and re-lacquering is all that is required to bring Valchromat panels back to their finished state.

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- Machining:

Contained in the special wood fibre bonding resin used in Valchromat is an organic base chemical called melamine. This chemical has lubricated properties which allow the blades of cutting tools to glide through the wood free from friction. It has been verified that blades of cutting tools used for cutting only Valchromat have a life span of four times longer than blades used for cutting standard MDF.

Environmental and health aspects:

Valchromat is an environmental friendly non-toxic substance made from recycled pine wood and mill waste. Valchromat panels are manufactured using waste wood such as branches and chips from softwood forests. In using waste wood Valchromat helps to sustain forests and minimize carbon emissions given off from felling machinery. Also the carcinogenic odorless chemical gas known as formaldehyde which is found in the wood fibre bonding resin used in standard MDF is absent in Valchromat where a special organic non-toxic wood fibre bonding resin is used allowing Valchromat safe to be used in the manufacture of kids toys. Valchromat also use the same colour dye used in fabric. This dye is organic and non-toxic.

Finishing choices

All finishes such as lacquer, wax, oil, fire retardant and glossy will give an immense finish when applied to Valchromat.

Valchromat is set to take the place of MDF as the standard manufactured panel board used in furniture construction due to its superior strength, moisture resistance and adaptability. Valchromat can take just about any

finish required unlike MDF and it surpasses most standard required for furniture construction. <http://www.iscsupply.com/id172.html>

Standards

“ Valchromat® is classified E1 (very low formaldehyde) and has been approved by the British Standards Association for the safe

use in the manufacture of children’s toys.” <http://www.valchromatsa.com/product/index.html>

Valchromat holds many certificates aswell as their own extremely high standards

SGS Certificate

Factory production Control certificate

Conformity Declaration Certificate

Uses of Valchromat

Valchromat is leading the field in manufactured boards. It is mostly used in high end furniture construction at the moment but is sure to work its way down to the small workshop because of its superiority to other manufactured boards.

Valchromat is used by the leading designers and manufacturers in the furniture industry. Its adaptability means it is used for different furniture projects from table tops, kitchens, Bathrooms, shelving, wall cladding and

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other things. Valchromat has won numerous awards and has been on show in many prestige's exhibitions.

“ Tent London will host a dramatic pop up cafe & bar pavilion designed by award-winning London design studio, Vonsung. From 23-26 September 2010, visitors to Tent London will have the opportunity to experience Vonsung's striking pop-up cafe & bar. Commissioned by Tent London the pavilion will provide a unique dining and bar space for the duration of the event.

A fast build, the primary structure will be constructed from materials loaned from Vonsung's existing project sites. The cladding material, which will encase the floor and ceiling, is Bolon, a world leader in woven vinyl material. The walls will be Valchromat®, an innovative, award-winning engineered coloured wood, used by architects, designers and decorators. The whole structure will be illuminated by both skylight and dramatic indoor lighting, forming shadows and silhouettes, it will create a compelling feature within Tent London's design event.” http://tentlondon.blogspot.com/2010_08_01_archive.html

Interlam is one of the leading manufacturers of carved wooden panels and one of its main materials is Valchromat alongside other materials.

INTERLAM® was established in 1985 as an Italian High pressure laminate distributor. Over the past 23 years we have grown to become a leading manufacturer of sculpted wall panels and expanded our line of architectural components. INTERLAM® is a designer and manufacturer of high-end SCULPTED WALL PANELS, CARVED WALL PANELS, DECORATIVE WALL PANELS, ORNAMENTAL WALL PANELS and components based in the United <https://assignbuster.com/valchromat-pros-and-cons/>

States and exporting to all corners of the globe. The cornerstone of our business is creating and supplying products to the A&D community that add significant value to their individual projects.

“ Water resistant, Ecological and Strong; just some of the words used to describe Valchromat from Interlam. Valchromat uses Special resins that are added to the wood fibre during processing which bonds the fibre together. This causes Valchromat to be 30% stronger than standard MDF. Add to that the fact that Valchromat can be used as. Walls, cabinets, seating, tables, ceilings, counters, and general millwork as well as counter tops, table tops, store fronts, and high moisture areas.” <http://www.interlam-design.com/Products.cfm>

The TazCorporation is a another major user of Valchromat in furniture manufacture for both local and international markets

Valchromat was created to address the need to overcome the limitation of the existing wood fibre materials in the marketplace. For a few decades, MDF has never really been accepted by specialists as an adequate product for different finishes and decorative purposes. Valchromat has broken this convention by introducing a new aesthetic concept of its own while complying with the chemical and mechanical specifications of the MDF. In addition, Valchromat has been awarded for its significant technical innovation ever since its introduction in the Appropal Fair, Paris in 1998. The material has since undergone different industrial tests before its full-fledge distribution in Europe in 1999.

Future Possibilities

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At the moment the future of Valchromat looks very healthy. With new designs available with every advancement in technology. It is already used in Kitchens, Bathrooms, and many other household rooms and offices and is making serious inroads in the children's toys industry.

Whatever route furniture construction takes in the next few years Valchromat is bound to be a part of it for a long time

When it comes to choosing the best kind of fibreboard there are many options from LMF, MDF, HDF and now valchromat. http://t2.gstatic.com/images?q=tbn:ANd9GcSQ_K-zGBck77HtTSqEp_vF27qWscAnGc_PWYB80vx1wTD0RWrhRQ

The most frequently used fibreboard from knowledge would be MDF (medium density fibre).

It's method of manufacture is simple, softwood wood fibres glued under heat and pressure.

It has a lot of advantages over solid wood as very little shrinkage and expansion occurs. It is available in large sheets 8x4 and 9x5, its Dense, flat, stiff, free of knots, grain not distinguished and very easily machined such as cutting, drilling, filed etc.

It can be finished with a variety of solutions such as water based paints, oils, varnishes, lacquers or it can even be laminated.

Paint Oil Varnish Lacquer Laminate

Along with the advantages of MDF there are also disadvantages, because MDF contains a large amount of glue, this cause blunting to tooling very quickly. Probably the main disadvantage would be the health risks caused by the dust produced from MDF, this is because the fibres are bonded together with formaldehyde resins.

Formaldehyde is a toxic chemical and is continuously being released from MDF unless sealed, which can cause irritation to the eyes, nose, throat and mucous membrane. It can also cause irritation to the skin and is cancerous.

A new product on the market now is valchromat. It is based on the same principles as MDF but in many ways it is much better. Valchromat unlike MDF is moisture resistant and is recommended to be used in areas with high moisture and humidity, where as MDF will tend to swell and expand when in contact with moisture.

The wood fibres come from forest waste and there is no formaldehyde added to the product which makes this product non-toxic and more environmentally friendly unlike its rival MDF.

Valchromat is available in a variety of colours due to organic dyes being infused into the wood fibres, these dyes penetrate the wood fibres so that the colours are uniform throughout the board. The dye is also resistant to fading when exposed to UV rays from artificial light. These dyes are non toxic, and they are similar to dyes used in fabrics.

Special resins are used to bond the fibres together which along with the organic dyes, make valchromat 30% stronger than standard MDF.

Because valchromat comes in coloured panels it is ready for production without the need to be painted, finishes maybe added to deepen the colour of the panel such as lacquer, varnish etc.

HDF (high density fibreboard) is another form of fibreboard and in many ways it is much better than MDF. It is manufactured using similar principles as MDF, wood fibres glued together under heat and pressure except, HDF is made from exploded wood fibres and is put under much more pressure than MDF produce a higher quality board.

Is HDF a better solution than valchromat?

In terms of strength and density Yes, as HDF is 75% denser than MDF (depending on manufacturer), where as valchromat is only 30% denser than MDF.

In terms of resistance to moisture and environmental impact
. No, HDF incorporates the same moisture problems and dangers as MDF, moisture causes the panel to swell and expand, and danger through formaldehyde which can cause health problem such as cancer.

Conclusion

From doing this report we have definitely met the two learning outcomes stated in the introduction. Valchromat is without a doubt a versatile woodworking material and can be used for many architectural components.

We also feel that valchromat , even though it is so versatile, it still would not be our choice for certain jobs like making jigs and other practical items. We have already decided to use it ourselves in some project at some stage in our woodworking careers.