



Commercialisation and production of modified wood in Portugal

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ABSTRACT

This work intended to present the state of commercialisation and production of modified wood in Portugal and also show how modified wood is being used in Portugal. There are mainly four companies selling modified wood in Portugal and a few more using or reselling modified wood acquired from the others. The marketing of modified wood in this country has started about 10 years ago but only in recent years the sales became significant. Treated wood is sold both in rough or profiled. The main applications are cladding, decking and flooring. Modified wood commercialised with Thermowood[®] treatment is mostly Nordic pine, fir and birch and with Kebony[®] is Nordic pine, *Acer*, birch and SYP (southern yellow pine). Wood treated in Portugal is mainly maritime pine but also some Ash. Tests are being made to allow the treatment of eucalypt wood. Some of the companies selling modified wood have done quite a few projects, some of which were awarded several prizes.

INTRODUCTION

In general, three types of wood modification processes have reach commercial importance in Europe, those based on thermal modification, chemical modification, and impregnation, though surface modification that alters the surface properties of wood can be considered as a fourth type. Thermal modification seems to be, so far, the most successful particularly due to Finnish Thermowood[®] but also due to Perdure[®] process that has evolved since PCI industries from Canada purchased the intellectual property rights for this technology. Among the other processes, acetylation (chemical modification) commercialised with the name Accoya[®] and furfurylation (impregnation modification) named Kebony[®] are also well established in the European market.

Commercialisation in Portugal

The marketing of modified wood in this country has started about 10 years ago but only in recent years the sales became significant. There are presently four companies selling modified wood in Portugal and a few more using or reselling modified wood acquired from the others.

It is not clear which company was the first to sell modified wood in Portugal but the companies Jular and Banema both started the commercialisation in 2003 and the last couple of years have seen an exponential growth of the sales (Neves 2013).

The company Banema started the marketing of thermally modified wood (Thermowood®) imported from the company Lunawood in Finland (Neves 2013) and Jular also started selling Thermowood® imported directly from Finland (undisclosed provenience). The company Multiplacas started to sell Thermowood® a little later, around 2004. Carmo Industries joined this group when it started selling Thermo modified wood from Plato in 2009. More recently, in 2010 the company Santos & Santos belonging to the Catarino Group started the commercialisation of heat treated wood imported from Estonia but due to the high market prices, the company decided to produce their own heat treated wood and the production begun in 2012 (Mendes 2013). This new brand is called Atlantic Wood®.

In the early 2000s the amounts of modified wood sold were very small. In accordance with Banema (Neves 2013) only around 2009 the sales increased significantly (Figure 1). Multiplacas stated that even at the moment, due to the relative high prices of these materials, sales number are still very low.

Nevertheless, the company Santos & Santos is happy with the choice to produce its own material and claims an increase in sales of around 40 to 50% every year (Santos 2013). With the growth of the market; other small companies are starting to sell modified wood, as for example the companies Spring or Madeivouga which started commercialisation in 2013. Some other companies just use modified wood in his projects or re-sell modified wood, as for example, J. Pinto Leitão or Natura.

Thermowood® is by now fully established in Portugal though other wood modifications do not show exactly the same pattern. The marketing of furfurylated wood began only in 2011 with the introduction of Kebony® by the company Banema. There is no record of any company selling acetylated wood in Portugal but in 2011, Accoya signed a contract with a company in Spain, Primawood, which would be responsible for the commercialisation of acetylated wood in Portugal, Spain and Morocco (Accoya 2013). No further data is available on this subject.

It is very difficult to track the evolution of modified wood trade in Portugal since companies have not officially made available the amounts of wood sold in the last years. Banema was the only company that released enough data to allow some sort of comparison between products (Figure 1). Thermowood® sales have increased in the last years and, as the 2013 data is only from the first six month, the values are expected to keep growing. Only in 2012, Kebony® represented a significant share of Banema's market.

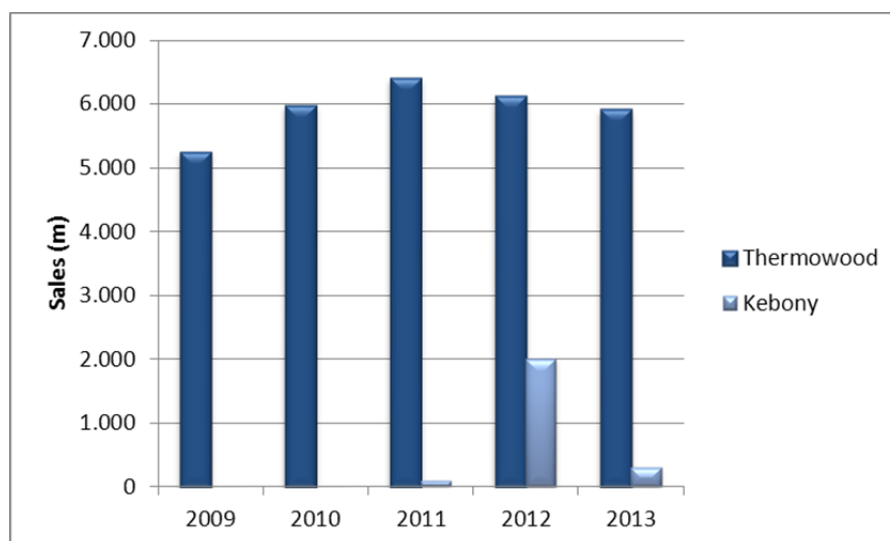


Figure 1: Modified wood sales from the company Banema.

Species and applications

The wood species commercialised with Thermowood® treatment imported from Finland are mostly Nordic pine, fir and birch. Santos & Santos is treating mainly maritime pine; the most common species in Portugal, and also some ash but tests are being made to allow the treatment of blue gum wood which is considerably cheaper. Wood species commercialised with Kebony® are Nordic pine, *Acer*, birch and SYP (southern yellow pine).



Figure 2: Example of Cladding and Decking applications from Santos & Santos.

Treated wood is sold both in rough or profiled. The main applications described by Santos & Santos are cladding, decking and flooring (Figure 2) but there are other exterior applications like pergolas, terraces or balconies and interior applications like saunas or roofs. Jular stated that sales of modified wood are mostly for decks (approx. 70%) and cladding (approx. 30%).

Data from Banema (Figure 3) show that decking is clearly the product that has a higher increase in sales in the last few years as cladding sales have been approximately constant.

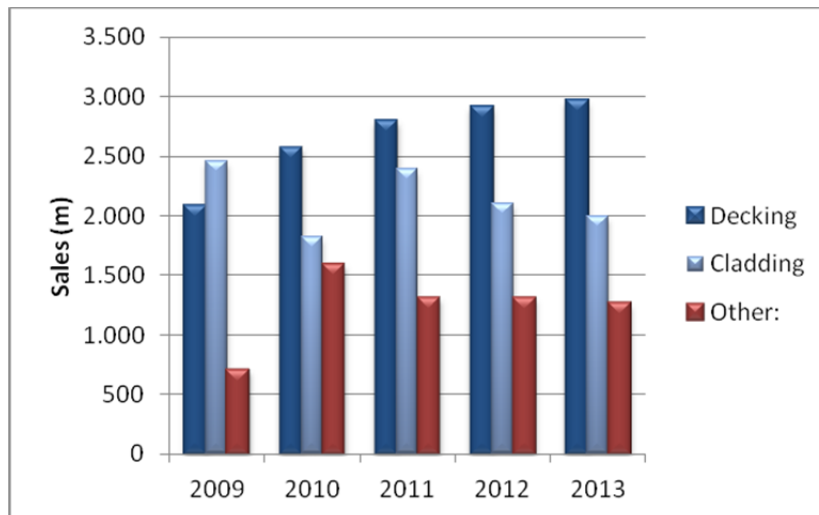


Figure 3: Products sold by Banema with modified wood.

Projects

To introduce these new products in the Portuguese market some of the companies selling modified wood had to work very closely with architects and engineers and helped the development of a number of interesting projects some of which were awarded international prizes.

The most emblematic projects with Thermowood® made by Banema were a house in Vale Bem (Figure 4) awarded with the The Best Architecture (Single Unit) Portugal 2010 and the Best Architecture (Single Unit) Europe 2010 in the European Residential Property Awards or a thematic Park in Madeira Island (Figure 5).



Figure 4: House in Vale Bem made with Thermowood®



Figure 5: Thematic Park in Madeira Island

In Mértola, in the South of Portugal, the renovation of an Amphitheatre was also made with a Thermowood® deck (Figure 6). On the other hand, one of the projects that involved higher quantities of Thermowood® was done in the Northern part of the country, the school centre of Mouriz, where the entire facade was made with modified wood (Figure 7).



Figure 6: Amphitheatre in Mértola



Figure 7: School Centre facade in Mouriz

Jular has also been working with Thermowood® for several years and developed module wooden houses called Treehouse® that can be made with Thermowood® (Figures 9 and 10). The biggest project developed by Jular was an Ecocamp Resort in Zambujeira do Mar (Alentejo) called Zmar (Figures 10 and 11) but this company has made several other relevant projects like the Hotel-Bar Convento do Espinheiro (Figure 8).



Figure 8: Hotel-Bar Convento do Espinheiro



Figure 9: Treehouse@in Douro region



Figure 10: Treehouses@ in Zmar



Figure 11: Zmar in Alentejo

Though involving less amounts of wood other projects done with heat treated wood from Plato® were developed by Carmo Industries like the deck pictured in figure 12.



Figure12. Deck Buçaquinho (Plato®)

Projects using Kebony® have been so far less and usually smaller. Nevertheless, one of the biggest projects made with Kebony® wood by Banema was the renovation of the Penafiel Municipality swimming pools (Figure 13).



Figure 13. Swimming pools in Penafiel (Kebony®)

Some of the companies have also some projects with modified wood abroad. One of the most emblematic projects with the recently created Atlantic wood is the Tamuda Bay Resort, one of the newest resorts of Sofitel (Accor Group) in Morocco, where Santos & Santos is responsible for all interior floors, walls and ceilings, facade and decking.

CONCLUSIONS

The marketing of modified wood in Portugal is growing and will continue to grow in the next years. Nevertheless, the evolution of sales is and will be very difficult to follow due to the difficulty to obtain this information from selling companies. Treated wood is sold both in rough and profiled. The main applications are cladding, decking, and flooring. Modified wood commercialised with Thermowood® treatment is mostly Nordic pine, fir and birch and with Kebony® is Nordic pine, *Acer*, birch and SYP (southern yellow pine). Wood treated in Portugal is mainly maritime pine but also some Ash. Tests are being made to allow the treatment of eucalypt wood. Some of the companies selling modified wood have done quite a few projects, some of which were awarded relevant prizes.

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