

From the
TECHNICAL DESK

with Richard Schaffner, WESPINE Senior Engineer and Dave Evans, WESPINE Management Systems Coordinator.



Fasteners for CCA-treated timber

When nailing and fixing CCA-treated timber, it is most important that the correct choice of material is made.

Both the nails and fasteners should be compatible with the timber treatment and the level of exposure to the elements.

The options

The most common material used in nail manufacture is cold drawn, low carbon steel ("bright wire" nails). Other (more expensive) materials include aluminum, copper, brass, silicon-bronze, and stainless steel. Aluminum nails are generally used for fixing aluminum sheeting and fittings. The others are used in boat building and where especially corrosive environments exist, for example swimming pools.

Various special coatings and treatments also increase nail-holding power and some provide corrosion resistance. These treatments include:

Electro-plating

Nickel and cadmium are the most commonly used electroplating treatments for nails. They mostly improve appearance but also provide slightly improved corrosion resistance. Electroplated finishes applied to screws include zinc, zinc-chromate, cadmium, nickel and chromium. Again, they improve appearance more than corrosion resistance

Polymer and other coatings

Manufacturers also coat nails (primarily for pneumatic driving) with plastics that are claimed to improve both insertion and

withdrawal resistance. These coatings are activated by the friction heat generated during the driving. In addition to plastics coating, a process called phoscoating is also used, in which the nail surface is etched with an iron phosphate coating. This roughens the surface and enhances withdrawal resistance. These coatings do not provide corrosion resistance.

Hot dipped galvanising

Hot dipped galvanised nails and screws provide a high level of corrosion resistance. Hot dipped galvanising involves the application of a relatively thick sacrificial zinc coating by hot dipping in a zinc bath. The process leaves a rough surface with enhanced withdrawal and corrosion resistance characteristics.

The application

In exterior applications, the metal in some nails may react with extractives in the wood and form stains. For example, uncoated steel nails can cause black stains. The solution to this problem is to use galvanised nails (other options include copper or aluminium nails).

Galvanised nails and fixings should also be used in CCA structures that are exposed to the elements.

Recent tests (refer to Autumn 03 Frame of Reference) have confirmed that conventional nails (low carbon steel or "bright wire") can be used in CCA that is **not exposed** (i.e. internal wall framing, roof trusses etc), however, the timber **must** be supplied dry (WESPINE CCA H2 and H3 is clearly marked "Dried after Treatment" for your assurance).

BORAL AND WESPINE anything but a retiring combination

An impressive retirement village in Albany has become the first building in Western Australia to feature the innovative BORAL PartiWALL System.

The builders of the RAAF Retirement Village attribute the quick construction to the use of this new lightweight and efficient building system; a system that incorporates the use of WESPINE timber.

WA Country Builders (formerly J-Corp) project supervisor Kevin Draper estimated that for each of the duplexes that will comprise the village, one week in building time will be saved. "And in the building industry - five days is very significant," he said.

When completed, the village will feature 110 units, in duplex configuration, and a common central facility.

The units are being sold off the plan, and Mr Draper said that when the demonstration unit was opened to the public just days ago, the response was very good.

He stressed that the PartiWALL system was definitely not a sub-standard way of building - rather, just a different way.

"In terms of construction cost, the BORAL PartiWALL system is about on par with traditional bricks and mortar," he said.

"It is because it is much quicker and easier to build with the PartiWALL system than bricks and mortar that the savings are made."

"And on top of that, a person with minimal training on the product can install PartiWALL - it really is easy to use."

BORAL PartiWALL comprises a membrane consisting of steel H studs and BORAL's fire-rated plasterboard Shaftliner which sits in between a WESPINE timber double stud wall. The internal faces of the timber studs on this project have been lined with a BORAL Unispan 10mm plasterboard.

Mr Draper explained that with the demonstration unit at Albany, a pre-fabricated timber frame was stood up, followed by the PartiWALL and then the second timber frame on the other side.

Although the retirement village was originally specified with double cavity double brick walls, it was an on-site



WESPINE timber is an integral component of the innovative BORAL PartiWALL system used in the construction of the RAAF Retirement Village in Albany.

demonstration by WESPINE and BORAL that convinced WA Country Builders to be the first in WA to try the BORAL PartiWALL system.

"Yes, I was impressed," Mr Draper, said.

"Boral's representative with the help of one assistant took less than four hours to complete part of the construction that would have taken three days if we chose to use the double brick alternative".

"Even the bricklayers on site were impressed with the ease and speed of the installation - particularly as it saved them work chasing the walls!"

He added that by using the BORAL PartiWALL system, installing services would also be much simpler and faster than having to chase brickwork. Further, because each unit was isolated, there was no need to fire proof pipes and electrical services.

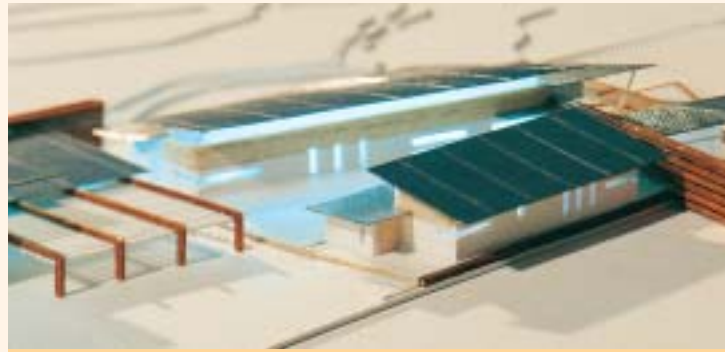
Mr Draper anticipated that erection of firewalls would be even faster as the project progressed and trades became more familiar with the system.

J-Corp was also insulating the PartiWALL to provide further sound proofing for occupier privacy, using Insulation Solutions product, Noise Control Batts.

Mr Draper said the fact the BORAL PartiWALL system incorporated WESPINE timber was a bonus because of its ease to work with.

"It is certainly much easier to work with timber (Pine) than Jarrah or Karri - its lighter, a consistent product and comes in particular lengths."

TIMBER - perfect choice for iconic marine centre



Timber will be a key feature of the multi-million dollar Batavia Coast Marine Centre.

Harsh coastal location conditions have made timber an obvious choice for incorporation into the proposed Batavia Coast Marine Centre.

An added bonus is the natural beauty and aesthetic appeal of timber and its sustainability.

To be located at Separation Point, Geraldton, the multi-million project is expected to become a centre for training and research for local, national and international groups.

Architect Bret White, an associate with Cox Howlett Bailey and Woodland, said the centre was essentially designed to work in harmony with the coastal environment.

Essentially a series of shed-like buildings with simple roof forms, the project will comprise three stages - a TAFE aquaculture, education, training and research facility, Department of Fisheries administration and research building and a Marine Interpretive Centre.

“Our aim has been to weave a building into that environment - a building that really hugs the environment,” Mr White said.

“But it is a harsh environment - the sun, the wind, the water, the cold winds and mainly sand - all needed to be taken into account.”

He said timber was a natural choice to incorporate into the centre, not only because of its ability to withstand such trying conditions, but also because of the emotion it evolved when people thought about the Western Australian coastline.

“For many people, there is a natural association between timber, particularly old timber, and the ocean,” he said.

Treated timber would form a significant contribution to the project, being used both internally and externally and both for function and simply aesthetics.

Don Phillips, principal of noted Perth engineering firm Connell Mott McDonald, said the centre was an ideal opportunity for industry to showcase the durability and aesthetic appeal of timber. The fact it was a renewable resource was an added bonus.

He particularly liked working with timber when harsh environmental conditions were a factor, as unlike steel, it did not corrode and was easy to maintain.

“With the right choice of timber you don’t have to come back for a long time to paint because the structure is right next to the sea.”

“In fact, part of the attraction of timber used in this project will be its unique ability to age gracefully.”

However, despite its superior properties, Mr Phillips was still concerned that its full potential was often not realised.

“I really do believe timber is a product that is under utilised by architects and engineers because I don’t think a lot of people really understand how to use it effectively,” he said.

“With this project, we have relied a lot on WESPINE marketing manager Gary Kiddle and the Timber Advisory Council to guide our decisions and perhaps most significantly, ensure that what we select will be available and in the quantities we require.”

Mr Phillips - who has worked on a number of high profile projects featuring timber, said he relished the opportunity to work in collaboration with architects and industry to produce outstanding timber projects.

The centre has been designed to work in harmony with the environment.



Pine cladding is proving very popular for exterior use on homes.

404 - Ideal for exterior use

The versatility of WESPINE’S preservative treated exterior “404” cladding makes it a popular choice for people both renovating and extending.

“Pine cladding - pressure preservative treated to resist decay and insect attack - is an attractive, highly durable building material ideally suited for exterior use on homes, including renovations and extensions,” WESPINE marketing manager Gary Kiddle said.

Mr Kiddle said that before the cladding is installed, it was essential that a vapour permeable sarking was fixed to the outside face of the wall frame so that the building remained watertight.

The sarking acted as a barrier to water but still allowed the rear surface of the cladding to “breathe” with changes in temperature and humidity.

He warned against the use of vapour-impermeable sarking as it could cause the cladding to cup as the exposed face dried during hot, dry weather.

To adequately support 404 cladding, boards should also be double face nailed through their full thickness to noggings or studs at 600mm centres.

And where a door or window was not well protected by eaves, flashing should be fitted immediately above the frame to drain water away. Securely fixed at least 25mm behind the cladding, flashing should also extend over the edge and ends of the frame to be effective.

Mr Kiddle said that without a surface finish, treated cladding - like all exposed timber - faded to a grey colour, developed face checks, and on exposed walls could cup unacceptably.

It was therefore necessary to apply a suitable protective finish that was water repellent - such as a good quality pigmented stain or paint system. He added that application should also always be in accordance with the manufacturer’s instructions.