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Fax to :- Mr Ted Stubbersfield, OSA
Date :- 8 th September 2005
RE :- SPOTTED GUM DECKING

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The advantages of spotted gum *Deckwood* as decking material.

Comparison

It is understood that the alternative timber proposed is tallowwood. The following is a comparison between tallowwood and spotted gum.

- The strength group is identical while the joint strength of dry spotted gum is one class stronger reflecting the slight degrade of tallowwood during seasoning.
- In both seasoned and unseasoned states spotted gum is tougher than tallowwood enabling it to carry impact loading better.
- Spotted gum is about 20% harder than tallowwood in being able to resist concentrated loads without damage.
- Shrinkage and density of both species are identical.
- Both have lyctus beetle susceptible sapwood. The sapwood of both species is typically preservative pressure treated and this does the double duty of improving the durability of the sapwood (which otherwise is non-durable for both species).
Spotted gum has a thicker sapwood.
- Tallowwood develops checks readily (cracks between the fibres) when exposed to the weather and this fact reduced its application as railway sleepers.

Availability of tallowwood is more restricted than spotted gum and therefore it is more difficult to obtain appearance grade material which is required for decking. That is, it is likely that the tallowwood will have more defects in the surface which will lead to mechanical degrade.

Spotted gum has one of the highest pH values of all the hardwoods (4.6 to 5.0). This means that bolts corrode more slowly than in other hardwoods.

The (ground embedded) durability of tallowwood is rated class 1 and is the only attribute that is better than spotted gum (Class 2). CSIRO has now undertaken rating of timbers in above ground exposed use and in that application (which is applicable to normal decking) these two timbers rate equally. Tallowwood is better than Spotted gum for termite resistance but the envelope preservative treatment given to the timber may make up for this slight deficiency.

What is often more important for decking is an extended period without maintenance. For exposed decking, physical deterioration (splitting, twisting, splintering & opening of defects) have to be considered along with rotting and termites.

Timbers approved for bridge construction in Brisbane (MRD 1955 specification Timber Species No1 District) include spotted gum for decking, handrails, bracing and girders. Of course, by and large, the decking of these bridges would have been covered with plant mix (asphalt) but handrailing and bracing would have been exposed to the weather/UV.

The Brisbane City Council has used **Deckwood** from OSA on a number of projects including Nashville Lagoon Boardwalk, Boondall Wetlands, Nudgee Beach boardwalk, Forest Lake Stage, Tinchi Tamba (and many others) as well as quite a few footbridges decked with this material. The standard trussed steel pedestrian bridges used by the Brisbane City Council are being re-decked with *Deckwood*.

Some of OSA's bridges have now been in service for eighteen years and provide tangible evidence as to the longevity of spotted gum, produced and installed to OSA's Quality Assurance programme.

Over time, OSA's product has evolved and improved. The special OSA profile assists drying, reduces accumulation of leaf litter and reduces cupping. The CN Oil reduces the uptake of moisture and so improves the weathering characteristics of the decking. It also inhibits fungal growth. The DPC reduces the voids under the decking controlling moisture movement and protects the joists.

In conclusion, spotted gum is a strong durable hardwood, suited to exposed deck construction and this fact is supported by many recent examples.

Please contact me if you need further assistance with timber structures.

Regards

JAMES PIERCE

for *JAMES PIERCE & ASSOCIATES*

James Pierce & Associates

This consulting practice specialises in structural timber design and timber technology and as such is unique in this state. It undertakes regular work for TIMBER QUEENSLAND as well as design work for specific buildings including rehabilitation and is on the BCC's panel of Consulting Engineers for timber design. James Pierce is an Associate Member of the Institute of Wood Science (London).