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To whom it may concern,

Re: Practicality of supplying H6 sawn hardwood for H3 application

I wish to address a query regarding the supply of H6 sawn hardwood for a H3 application. The table below outlines the requirements for treating H6 as per TUMA and AS1604.

**SCHEDULE 6
APPROVED PRESERVATIVE TREATMENTS FOR H LEVEL H6**

[This Schedule sets out details of approved preservative treatments for timber to which the H level, H6, is assigned. Timber treated with these approved preservative treatments is suitable for marine use, in prolonged contact with the sea, where very severe decay hazard and marine borer hazard may exist.]

Column 1	Column 2		
Preservative [nominated preservative element or compound for expressing retention]	Minimum retention in the analytical zone (Note (a)) and Penetration Pattern Code (shown in bold type) of nominated preservative element or compound in treated timber		
Dual CCA/creosote (Notes (b) & (j)) [% total active element (%Cu+%Cr+%As) + % creosote]	conifer	2.0% (Note (c)) + 40%	G
	hardwood	1.20% (Note (c)) + 15%	
Creosote (Note (j)) [% creosote]	conifer	40.0%	
	hardwood	22.30%	

Penetration Pattern G : The sapwood cross-section of the piece, plus any heartwood zone required to be penetrated to meet the preservative distribution requirements described in Schedule 8.

**SCHEDULE 8
PENETRATION PATTERN CODES**

Product Sawn & Round	Preservative distribution code	Description of Penetration Pattern				H-levels involved
		Heartwood Durability Class (Note (s))				
		Class 1	Class 2	Class 3	Class 4	
	G	All sapwood		All sapwood and not less than 20mm from any surface.		H5 & H6



These tables show that the requirements for treating to H6 involve a dual treatment of CCA and Creo. H6 specification is for timber to be used in a marine application. This level of treatment is unsuitable for a H3 application such as a boardwalk. The chemical registration authority (APVMA) has specified that decking boards are not to be treated with CCA and in addition they would not look kindly on excessive chemical use in the subcomponents.

Outdoor Structures uses Durability class 1 and 2 hardwoods. The above tables show that these timbers only require sapwood penetration. The heartwood of these classes is naturally durable and reaches the H6 specification without penetration of chemical (note they cannot be penetrated anyway).

The treatment specification for H3 requires for same penetration requirement for DC 1&2 except the sapwood would have a lower retention requirement. Sawn hardwood has very little sapwood left on it (<10%). Treatment of this sapwood to H3 meets the requirements for a H3 application. Tanalith E treatment is a robust Chrome and Arsenic free timber preservative that is suitable for H3 applications.

Outdoor Structures treat to the requirements of H3 treatment but in most cases the level of protection far exceeds that of H3 because no or very little sapwood is present. In addition to treatment OSA provide further protection by offering robust timber maintenance protection by application of either Copper Napthenate Oil or Tanacoat. These products further protect the timber from UV degradation, splitting and checking.

Example

Pressure impregnation deposits chemicals deep into the sapwood and in round hardwood timbers this produces a protective envelope which prevents entry of marine organisms. This thick sapwood is important.

Marine piles (H6) are protected from entry of organisms at the ends due to the method of construction in that one end is embedded in the seabed whilst the other is above high tide range.

If end entry were possible attack would occur in the unpenetrated inner heartwood only.

A surprising example of this resulted by chance when the double treated (H6) pile off-cut was dropped into the harbour and left after the installation. When extracted and examined eleven years later the Teredo worm attack of the heartwood is clearly illustrated in the adjacent photograph below. If the sapwood band were not present i.e. as in sawn timber, the H6 specification would not have been achievable.



I trust that you will find this information satisfactory. Please call me if you have any questions.

Regards

Steven Koch
Technical Representative