



Outdoor Structures Australia

Practical solutions that enhance community design projects

Phone - 1300 762 443

EXTERNAL TIMBER DESIGN NOTE

No. 5 July 2005 (rev 2) – 150x150 HARDWOOD IN LANDSCAPING



If specifying timber to get what you expect was not enough of a challenge, it has now become even harder. If you are not worried about appearance and performance of weather exposed timber don't read on. If this is of vital concern you will need to get your mind around something very complex. The 2007 revision to Australian Standard 2082 needs designers requiring high performance, appearance grade hardwood to carefully consider allowances for heart-in material.

The earlier standard only allowed boxed heart in sections greater than 175x175 in structural hardwood. This meant that a conforming 150x150 had to be supplied free of heart. The new standard, (clause 2.2.2. (e) (B) (ii)) now allows heart in many of the commonly available species from Queensland so long as it does not exceed one ninth of the cross sectional area for Structural Grade 2, i.e. for an F17 150x150 the heart, which can now be at the edge cannot exceed 28mm in diameter.

But, what is heart? AS-NZS 4491 (Timber, Glossary of terms in timber related standards) defines it as "timber adjacent to or including the pith that is within 50mm of the centre of the pith", i.e. a section 100mm boxed about the heart. That is simple and is in keeping with our experience and rules out any heart in a 150x150. The problem is that AS2082 redefines the meaning of "heart". In clause 1.4.4 it is now "The growth centre (pith) of the tree and/or timber adjacent to the growth centre of the tree that exhibits fungal attack, brittle heart and compression failure". Despite being a miller for 25 years and a qualified grader I do not know how to interpret that clause.

The Note to the clause mentioned says "The allowance in item (ii) only relates to the primary structural properties of the timber. **For applications where appearance or other serviceability issues are important it may be appropriate to restrict inclusion of heart, pith and heart shakes** (emphasis ours). That means the responsibility lies with us as the supplier if we know the application and performance expectations as well as you the designer, to ensure material fit for use is received. In practical terms there is much more opportunity for unsuitable material to be supplied and it will be more difficult shift responsibility to a producer who will simply say he was not made aware the higher expectations.


We recommend designers not specify structural 150x150 apart from a few feature pieces. We recommend that for structural timbers 150x100 be used in preference. Bollards should be either 125x125 which can be supplied free of heart (but will need to be specified that way) or 175x175 heart centre (better still use our pioneer post) with a metal cap. This is

better use of a very limited resource and also will virtually eliminate the possibility of the substitution of an inappropriate use of heart in material and the awarding of the contract to “conforming” but unsuitable timber. The visual effect will be very similar. Where the client is adamant that 150x150 is required for a large quantity of bollards, AS2082 should be abandoned and heart centre material be accepted but with the addition of a cap. Grading and species are still extremely important but lower performance must be accepted.


Please keep talking to us about your landscaping needs and now be even more cautious of the lowest tender.

Ted Stubbersfield,
Director.

RevNo	Revision note	Date	Signature	Checked
A	REDRAWN	30/01/2003		




225mm MINIMUM FOR
150x150 PINE




410mm MINIMUM FOR
200x100 HARDWOOD

expected unsound
heart is 125x125




275mm MINIMUM FOR
175x175 HARDWOOD
with heart centre

with heart in, use a
galvanized nail plate
over the heart.




350mm MINIMUM FOR
100x100 HARDWOOD

expected unsound
heart is 100x100




350mm MINIMUM FOR
200x75 HARDWOOD

expected unsound
heart is 112x112



510mm MINIMUM FOR
150x150 HARDWOOD

unsound heart is
minimum of 150x150

	 <p>Outdoor Structures Australia Practical solutions that enhance community design projects</p> <p><small>Old College Road, Gotton, Queensland, Australia PO Box 217, Gotton, Queensland, Australia 4343 Ph: (07) 5462 4255 Fax: (07) 5462 4077 Email: timber@osau.net.au Website: www.outdoorstructures.com.au</small></p>	<p>Date: 30/01/2003</p> <p>Drawn: J MILLARD</p> <p>Approved: F.M.S.</p>	<p>CUTTING PATTERNS FOR PINE AND HARDWOOD</p> <p>Scale: N.T.S.</p> <p>Job No: OSA</p>	<p>Description: CP1</p> <p>Drawing No: CP1</p>
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PLEASE CONTACT TED IF YOU REQUIRE FURTHER TECHNICAL INFORMATION ON EXTERNAL TIMBER STRUCTURES OR VISIT OUR WEBSITE - www.outdoorstructures.com.au