



# Outdoor Structures Australia

*outlasts and outperforms*

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## EXTERNAL TIMBER DESIGN NOTE

### No. 7 July 2006 – Durability Ratings and AS 5604 – Get it right!!



Timber Queensland (TQ) have confirmed Outdoor Structures concerns that AS5604 is still being misinterpreted. The following is a TQ update to their Technical Bulletin of June 2004.

“Timber Queensland still have concerns relating to the interpretation and application of **above ground** durability ratings now given for species listed in AS 5604.

In some quarters, the new above ground durability ratings given in this standard are being used to justify permanent, long term, above ground weather exposed applications (H3) for species where previously these species (based upon in-ground ratings) were not considered appropriate for long term application.

AS 5604 has a table that links the in-ground and above ground durability rating of species to a probable life expectancy as shown below.

Table 1 - NATURAL DURABILITY - PROBABLE LIFE EXPECTANCY\*

Class	Probable in-ground life expectancy (years)	Probable above-ground life expectancy (years)
1	Greater than 25	Greater than 40
2	15 to 25	15 to 40
3	5 to 15	7 to 15
4	0 to 5	0 to 7

- The ratings in this Table are based on expert opinions and the performance of the following test specimens: -In-ground: 50 x 50 mm test specimens at five sites around Australia. -Above-ground: 35 x 35 mm test specimens at eleven sites around Australia
- As further reliable evidence becomes available, these ratings may require amending. The heartwood of an individual piece of timber may vary from the species' nominated classification. Above-ground conditions equate to outside above-ground subject to periodic moderate wetting when ventilation and drainage are adequate.

As can be seen from this table, the in-ground life expectancies for each class are the same as they have always been and, the historical expectation was that species with an **in-ground rating** of Class 1 or 2 would have above ground life expectancies of around 40 years plus which when coupled with appropriate maintenance etc, satisfies the implicit performance expectations of our current building regulations.

Within AS 5604, as can be seen from the following table, many species that are rated Class 2 or better in-ground are rated Class 1 above ground and species rated Class 3 in-ground are rated Class 2 above ground, whilst other species ratings do not change.

Species	Heartwood - In Ground Durability Class	Heartwood - Above Ground Durability Class
Ash, silvertop	3	2
Blackbutt	2	1
Gum, blue, Sydney	3	2
Gum rose	3	2
Gum, spotted	2	1
Ironbark	1	1
Jarrah	2	2
Kapur	3	2
Kwila	3	1
Stringybark, brown	3	2

It is obvious from the above table that is extracted from AS 5604 and the Table above it, that just because species are now rated Class 2 above ground, does not mean that they will now perform any better than they have historically e.g. rose gum.”

It should be noted that for Qld, under the BCA, that Technical Pamphlet No 1 is still “the law”. This document has recently been extensively revised and updated to reflect current standards and the implicit BCA durability performance life expectancies and has been re-published as ‘Construction Timbers in Queensland’(CTIQ). This new document can be purchased from Timber Queensland by faxing back the attached order form.

It is expected that CTIQ will be called up by BCA 2007 to replace Technical Pamphlet 1.

As important specifiers and users of timber, Outdoor Structures encourages you to use our current recommendations which reflect the above, together with TQ’s recently updated Technical Data Sheets. You should also be updating your libraries with CTIQ which is expected to become the ‘law’ in the very near future.

To join TQ as a Professional Member and be able to access all the latest timber advice and recommendations, including the monthly Technical Update see [www.timberqueensland.com.au](http://www.timberqueensland.com.au)

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Director.

***PLEASE CONTACT TED IF YOU REQUIRE FURTHER TECHNICAL INFORMATION ON EXTERNAL  
TIMBER STRUCTURES OR VISIT OUR WEBSITE - [www.outdoorstructures.com.au](http://www.outdoorstructures.com.au)***