



March 2010 Newsletter

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Timber sizes can be difficult

Over the years we have found that many specifiers have trouble with timber sizes and it is not surprising as they can be very complicated. The following will make the matter somewhat clearer. I have used 150x50 spotted gum as the example.

Rough Sawn Green Off Saw.

This can best be understood as an approximate size only. AS2082 allows hardwood, on the day of milling, to be cut with a tolerance of + or - 3mm. This means that 150x50 can be supplied anywhere between 147x47 to 153x53. Remember, these measurements are on the day of milling only. Shrinkage then takes place as the timber seasons. This can vary between 6% (spotted gum) to 13% (turpentine). Specifications that just say F14 etc. are of no assistance as they do not refer to shrinkage, or other critical performance criteria including durability, stability or effectively deal with appearance. Our Deckwood and Joistwood specification takes into consideration both performance and appearance factors.

Sized Green Off Saw.

This is the same product as above except that it has passed through a planer and all been reduced to the minimum size allowed under the AS2082 i.e. 3mm undersize. A tolerance of +/- 0.5mm applies. The timber is frequently sized for height only but at the clients request can be machined on a face and edge. This is not dressed timber as a side and an edge are left undressed, The timber is all 147x47. Shrinkage still occurs.

Dressed Green Off Saw.

The timber is dressed on all four sides (DAR) and would not have pencil round edges unless specified (DPR). It is normally finished 5mm under the nominal size. If you specify 150x50 dressed, the timber will normally be supplied as 145x45. If you nominate 145x45 the producer will understand this to be the finished size. It is not generally possible to have fractional sizes cut i.e. cut slightly oversize so you can finish 150x50. What has always frightened me is that an overzealous compliance office will one day come around and measure the timber and realize that it is 2mm outside of AS2082 and condemn the lot. Dressed timber should be of a higher grade (F22) than structural so it is not a real problem. Ensure that you do your calculations on 145x45.

Dressed Seasoned.

This is where the biggest problems come in as, very often, the dressed green off saw sizes are nominated and it is simply not possible to produce them. As well, some designers use the letters KD (the abbreviation for kiln dried) almost as a throw away line e.g. 200x200 KD. Firstly, it is impossible to economically dry anything beyond 50mm thick and secondly, unless you are prepared to wait years for the sun to season the timber, it is not very environmentally friendly to kiln dry. Kiln drying involves creating a lot of green house gasses. Talk to us about whether to kiln dry or not

The way we calculate the finished size is as follows; deduct the sawing tolerance +/- 3mm, then deduct the shrinkage for the species, (spotted gum is 6%) and then a further 2mm for dressing e.g. 150mm +/- 3mm tolerance = 147, less 6% shrinkage = 138mm then allow 2mm for dressing = 136mm. The machining tolerance of 0.5mm applies. The table below should be helpful.

STANDARD SIZES OF AUSTRALIAN HARDWOODS WITH 6% SHRINKAGE				
	SAWING TOLERANCE	GREEN SIZED	GREEN DAR*	DRESSED SEASONED
25	+/- 3 mm	22	20	19
38	+/- 3 mm	35	33	31
50	+/- 3 mm	47	45	42
75	+/- 3 mm	72	70	66
100	+/- 3 mm	97	95	90
125	+/- 3 mm	122	120	113
150	+/- 3 mm	147	145	136
175	+/- 3 mm	172	170	160
200	+/- 3 mm	197	195	183

We know that the normal definition of shrinkage is the percent change in cross section (not length) for a piece of timber from green off saw to 12% moisture. Kiln drying introduces something few are aware of - *Unit Shrinkage*. This is the percentage change in cross section for each percentage change in moisture content and you can expect the timber to fluctuate by 3% during the year. This is the same for new or 100 year old recycled timber. Unit shrinkage is a critical figure when dealing with flooring but of no consequence with decking. An air conditioned environment may lower the moisture content by a further 3% which is why acclimatization is critical. Unit shrinkage for spotted gum is 0.38%. So the calculation for a nominal 150 wide board KD and dressed to 136 is as follows - 136 wide x 3% moisture content change over the year x 0.38% = 1.55mm fluctuation in dimension over the year. This is why we strongly advise against wide T&G floor boards as, even though they may look good, customer expectation can be that the boards do not gap,

Do not forget that as you KD timber the F rating goes up. F17 unseasoned spotted gum is starting to be a reasonable piece of timber where as F17 KD is the two grades below standard industry grading. Talk to us about this. Further information can be found in the links below.

Do you find this confusing? I don't blame you if you do. When you specify our products and follow our guides to the letter, we take care of all this for you.

Retractable Bollards

Did you download the new page for our bollard guide with a new page for retractable bollards? We have added very useful tools to our designers tools page such as CAD blocks to help you use these items.

Do you have the bollards guide? If not see the links below to download either the page or the whole document. Need a hard copy - contact us.

New Shelter Brochures

OSA has been working at developing a new range of shelters, both traditional and contemporary. We now have brochures on these products. Follow the link below to download a copy, otherwise contact us for hard copies. While we offer steel legs most clients have been asking for our 192x192 Pioneer Posts as these give a very different look to a normal shelter. The links are below.

Ted Stubbersfield

Director OUTDOOR STRUCTURES AUSTRALIA

Phone 07 5462 4255

LINKS

Timber size links

More information on Spotted Gum

http://www.outdoorstructures.com.au/spotted_gum_hardwood.php

More information on timber grading

<http://www.outdoorstructures.com.au/grading.php>

Retractable bollard links

New pages for guide

http://www.outdoorstructures.com.au/pdf/addenda_09_09.pdf

Line drawing of the two models stocked

http://www.outdoorstructures.com.au/tpd_pdf/rhino_telemetric_bollards.pdf

Autocad block

http://www.outdoorstructures.com.au/tpd_bollard.php#rhino

NOTE: The block must be saved before it will work. If your Web Browser attempts to open the file without giving the option to save, return to this page and 'Right Click' on the download link, then select "Save Target As..." from the options.

Pages from previous update

http://www.outdoorstructures.com.au/pdf/addenda_03_09.pdf

NOTE: Set your printer to double sided printing

Download a complete traffic barrier guide

http://www.outdoorstructures.com.au/pdf/bollard_guide_09_08.pdf

NOTE: Set your printer to double sided printing

Shelter Shed Brochures links

Brochures on shelters

http://www.outdoorstructures.com.au/timber_brochures.php

(see the green box on the left)

Pioneer Post Brochure

http://www.outdoorstructures.com.au/pdf/pioneer_post.pdf

OUTDOOR STRUCTURES AUSTRALIA

E-Mail: ted@outdoorstructures.com.au

Web: www.outdoorstructures.com.au

Phone: (07) 5462 4255

Fax (07) 5462 4077

Old College Road Gatton, Australia

PO Box 517

Gatton Q 4343

Australia

ABN 29 713 463 351

