

## TALKING TIMBER



# THE VEXED RELATIONSHIP BETWEEN WOOD AND WOOL!

*What difference do the letters 'CLS' make to the size of sawn timber?  
John Park explains the bizarre naming systems for dimensional sawn timber*



Last September I received this query from a woman called Elizabeth: "Could you please let me know the difference between 3x2 CLS wood and 3x2 wood? I have seen an advertisement for a wooden building for both and would like to know what would be best for me. Also, the difference in the strength of both?"

Rather than just shoot off an e-mail I thought I'd give Elizabeth a call and was so glad

that I had done so – as you will see as the tale unfolds and it is why I have requested that this article has appeared in the *TTJ* construction supplement issue. The question arose in connection with a stable building for horses although in this instance bulls might have been more appropriate! I replied to her, precisely as follows except for the italics, with short and long answers:

The short answer: 3x2 CLS is a 'nominal' size; actual dimensions are 64x38mm (it is also referred to as 63x38 but 64 is the official Canadian measure). 3x2 wood, with a sawn finish will be 75x50mm or 47mm; with a planed finish the dimensions would be 72x47mm or 44mm. BS EN 1313-1:2010 'Round and sawn timber – Permitted deviations and preferred sizes Part 1: Softwood sawn sizes', provides a table of complementary UK (customary) sizes which includes both 75x50 and 75x47.

The long answer (I have also attached two pages from our Canadian CLS brochure. Some of the detail is a little out-of-date but the salient facts are still current):

CLS stands for Canadian Lumber Standard. It relates to what the North Americans call 'dimension lumber' which is produced in (so called!) 2in thicknesses with widths ranging from 3in to 12in. In some bizarre historical aberration of mental faculties the lumber industry over there adopted those dimensions as the industry standard, bizarre because it is sold as what it was and not what it is – hence 'so-called' above!

The actual dimensions of CLS dimension lumber are so far removed from, for example, 3x2, that when Canada started marketing it in the UK they had to adopt the metric actual dimensions in order to avoid contravening the Trades Descriptions Act! The actual dimensions of CLS wood, in millimetres, are 38x64; 89; 114; 140; 184; 235; 286. Those are the dimensions of the wood at 19% moisture content, in other words, 'dry'. (It is not 3in by 2in that has shrunk as it has dried out! (Yes, that is what one manufacturer said to Elizabeth!) Even taking a worst case scenario, 75x50 shrinking from wringing wet to bone dry would finish in the region of 70x46mm!)

**John Park – Wood technology chairman and manager of Canada Wood UK**

As I mentioned, European and Scandinavian sawmills also produce wood to CLS dimensions as it became the industry standard for the wall framing of timber frame house construction; there is currently much more 'CLS' material on the market from those producers than from Canadian producers.

Regarding structural capability, given the same strength class in both cases, full sawn 3x2in (75x50mm) will be about twice as stiff as and 1.8 times stronger than 38x64. Using 2x4 CLS (38x89) would provide equivalent (slightly greater) strength and stiffness to full sawn 3x2in.

I think that will be enough for you to convince them that they will no longer be able to pull the wool over your eyes. If they try, please let me know!

To be continued... because small change can make big difference! ■

*CLS dimensions have become the industry standard for timber frame construction; but its nominal dimensions are far removed from its actual size*



**The Wood Technology Society**

A Division of the Institute of Materials, Minerals and Mining