

## Strength grading of timber for small volume timber processors

### Dainis Dauksta

Hand-held strength grading tools utilising acoustic technology have been discussed for several years and the question keeps arising "when will they be available for use by SMEs?" The first tool of this type to be introduced in Britain was the Fibregen HM200, developed in New Zealand and used in extensive trials on Sitka spruce in Scotland by Forest Research and Napier University. This grading tool is held against the end of a log or piece of sawn timber whilst simultaneously hitting the end of the log with a small hammer, hopefully avoiding the

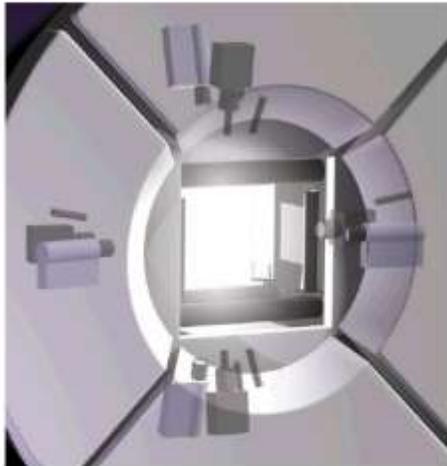
grader which costs several thousand pounds. The acoustic shockwave generated by the hammer travels the length of the log, bounces back from the end and the resulting echo is analysed by the HM200, giving readouts based on the velocity of the shockwave. Results correlate very closely with the modulus of elasticity or stiffness of the test-piece, therefore allowing users to strength grade logs or sawn timber. This tool has had some degree of commercial success in New Zealand where sawmillers have used it primarily for selecting higher strength grade logs before sawmilling. The HM200 is used on both green and dry timber.

Unfortunately the HM200 is not approved to grade sawn timber to strength classes in Europe.

For more information see;

<http://www.fibre-gen.com/hm200.html>

The only hand-held strength grader approved for use in Europe is the Brookhuis MTG; settings and software for this tool are already available for grading timber in other parts of Europe. According to Dan Ridley-Ellis of Napier University the MTG settings should also be available for UK grown Douglas fir and Scots pine by the end of this year assuming that the timber grading committee responsible for regulating and overseeing strength testing of timber in the UK approves the work on these species. The process involves painstaking bending tests to destruction of around a thousand timber battens and joists of various cross sections from all over Britain.



Optical machine grading using a Wood Eye scanner is another alternative.

It is no small job even for only one species. Work is still proceeding on

Sitka spruce but settings for both green and dry SS should be available for the MTG grader soon. Larch has been discussed especially in the light of the *Phytophthora* epidemic but testing is unlikely to proceed until the work on Sitka spruce is completed and approved. The main problem with the MTG at present is cost (not much change from £10,000) for the grading tool and software and this may prove to be an obstacle for smaller SMEs.



Fibregen HM220 - hand-held and easy to use

However, as use of home grown softwood increases in construction this tool may still be viable especially for those businesses that mill timber in house for their own timber frame production line.

For more information see;

<http://www.brookhuis.com/en/products/strength-grading/timber-grader-mtg.php>

July 2012