Glue Detection Technologies

For finger-jointing, laminating and veneer gluing

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The gluing process

1. Use correctly prepared substrate
2. Specify correct glue for the job
3. Mix the components correctly
4. Apply them to the faces to be joined at the correct rate in the correct place
5. Press the faces together for the correct time at the correct temperature and pressure
6. Easy – peasy???
The story so far

1. Industry generally uses timber of correct moisture content with clean well machined surfaces.
2. Glue companies have the correct glue for virtually any job.
3. Mixer manufacturers can provide reliable, accurate mixing and application systems.
4. So, why is it hard to get finger-jointed structural timber accepted in the market place?

The Quality Assurance Problem

• Everybody has seen lengths of finger-jointed timber fall apart unexpectedly.
• These days, the most common reason is that glue has not been adequately spread on the joint.
• The only way to ensure the finger-jointed timber is of the required strength is to proof test every joint... expensive!! (especially if some falls apart)
The task

• To find a system which will ensure that the required area of a joint is covered and that the spread rate is correct.
• To find a system which is not too expensive, is easy to maintain and reliable.

The options

• Scan the world for available technologies
  – How effective are they?
  – What do they cost to install / run?
• Develop new technology(ies)
  – How much will development cost?
  – What is the market size?
  – What will the market pay?
  – Is there any return?
Available technologies (1)

Uses camera to detect presence of glue on block as it passes sensors.

Uses fluorescent chemical in glue.

Available technologies (2)

- Surveyor GS 1400.

Technology for measuring glue thickness and spread on veneer for LVL.

Developed in NZ by TrueView (JV between GNS and fibre-gen)
New development(s)

- Forest Research has done work on using one of their technologies to detect glue spread and thickness. This may be a breakthrough for the industry.
- Developing a scanner based on video technology or other system would cost around $500,000 to a commercial stage.
- Most operators would be reluctant to pay more than $50,000 (yeah right!!).
- Would have to sell at least 20 units to break even.
- What is market size?

Where to from here?

- Very little technology is available, and what is available is rarely used.
- Plants need to evaluate the full cost of not monitoring glue application automatically
  - Reduce falldown
  - Reduce rework
  - Reduce manning / inspection
- Technology providers need to manufacture a system which will meet users needs.
- So … watch this space.