Re-use of casting timber

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Aim of the study

To investigate residual concrete on casting timber, untreated and treated with casting oil and wax, and re-used four times.

Why?

- Very little casting timber is re-used today and only after scraping. This is not a big issue in Sweden - rich in timber resources - but could be for countries where most timber has to be imported.

- Would an industrial pressure treatment with a suitable chemical, e.g. wax, make it possible to avoid concrete residues and thereby facilitate re-use the casting timber, say four times?

Materials in the test

Material	Remarks
25x95x500 mm boards of spruce	One surface fine-sawn and the other planed Moisture content 11-16%
Casting oil Lasol ”Formsläpp”	Applied by brushing
Wolwax WR	5% solution of wax applied by a vacuum-pressure process Retention: 4,65 litres/m3

Moulds

Sections were made of untreated (A), wax treated (V) and casting oil treated (F) boards with planed (H) and fine-sawn (S) surfaces. The sections were assembled to narrow moulds.

Casting and evaluation

- The moulds were filled with concrete to approximately 40 cm
- The concrete was allowed to set for 10 days
- The moulds were then removed and all surfaces were photographed and evaluated visually with respect to residual concrete
- This procedure was repeated four times

Results

- None of the boards was completely free of residues after five castings
- Untreated boards had most residues; casting oil treated the least
- No visible difference between planed and fine-sawn surfaces

Conclusions

- It will probably be difficult to avoid residues completely, and some scraping has to be accepted, if re-use is a viable idea at all.

- Improving the formulation for vacuum pressure treatment necessary to reduce residues.

Thank you for your attention!
Any questions or comments?

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