

Drying Management – Time for a paradigm shift

The status quo

Kiln drying is still one of the grey areas in saw milling. This became even more apparent after visits to drying plants at the 2012 SALDEA (South African Lumber drying Education Association) conference. There we had the “pick of the crop” in terms of kiln manufacturers, local and international, top academics as well as hands on people from industry, however, no one noticed (or just refrained from commenting) on how the results of the drying actually looked. In some instances there was not a single straight/flat board in a complete, restrained/weighed down stack. Which leads to the question – has this become the norm?

We believe kiln drying can be greatly improved in SA. Kiln drying is probably the second biggest value adding/reducing factor in the saw milling process after sawing/recovery itself and can be the difference between really being profitable and going bust. The question remains – how can it be improved? The answer has been spelled out numerous times but still remains largely unimplemented. - Manage your drying with the same level of expertise as used running the rest of the saw mill.

What is Drying management?

The successful management of the drying operation roughly consists of the following 5 points:

1. Preparation – Sawing accuracy, board dimension, stacking procedures
2. Process Control – Airflow, energy distribution and management, humidity control and venting
3. Maintenance – Electrical, Mechanical, Instrumentation and structure
4. Schedule optimization – optimally managing the condition inside each kiln
5. Monitoring, Quality control and corrective action

Numbers 1-3 should be viewed as constants and should be managed to always be the same. Only when this is achieved can one move to the next steps, to set up optimized schedules for each kiln (dimension/specie) and monitoring/managing it closely to keep it there.

The moment any factor in one of the first 3 “constants” change, the optimized schedule for a specific kiln may no longer be valid and drying quality and/or time is negatively affected.

Unfortunately, most operators start changing settings at number 4, instead of trying to find the culprit for bad drying results in the first 3 steps. The result: uneven MC distribution, over drying, wet patches, excessive warp, exponential increase in drying defects, increase in drying cost, increase in reworking cost further down the process to try and “recover” recovery under the banner of value adding.

What is required to achieve good Drying management?

To really improve the drying operation, a mind shift that recognises the value of proper drying management is required. Next, the right person for the job must be found. In other countries like the USA, the drying manager is one of the top paid individuals in the mill. This person in my mind should at least be on the same management level as the Wet mill or Dry

mill manager. In the South African scenario, the drying supervisor (if there is one) is a sub function of the Dry mill, Wet mill or, God forbid, the Maintenance manager. He normally has very little if any decision making authority other than supervising the boiler operators and the guys loading the kilns. In some cases this person **is** the boiler operator or stack puller. Let's explore the thought of a proper kiln manager for a while - what should this person's attributes be?

- Firstly, this person should be passionate about drying
- The person must fully understand the drying process. In other words be properly trained and have the experience to view the whole drying process and immediately spot problems as they arise, and then have the know how and the authority to stop the process and fix it.
- The person should have a good basic understanding of the hardware involved and how to test, troubleshoot and calibrate each element if required.
- The person should fully understand the control interface and be able to interpret what it displays
- He/she should understand and know the cost implications of the operation and how it contributes to the overall profitability of the mill. I will go so far as to say that this person should understand the budget allocated to the drying operation and have enough savvy to be able to manage the operation to be within that budget.
- This person should be held accountable if quantity, quality and budget is not reached

Most saw millers reading this are probably thinking that the industry is not big enough to warrant this approach. How can you pay a person a top salary for something as seemingly simple as drying? Seriously, once the kiln is setup correctly and drying schedules are setup, what can go wrong? Right?.....Wrong!!

The drying operation starts slipping slowly as maintenance of the kilns is neglected. Maintenance of sawing machines after all are much more important than fixing the small steam leak, loose panel or baffle that doesn't stay in place inside the kiln, (which would only be picked up by the trained eye on a graph, or by starting the kiln without any timber inside). As the maintenance slips the operator starts "compensating" by adjusting the schedules by increasing the WB depression in an attempt to keep up with production. Months down the line someone asks in a management meeting why the kilns can't keep up anymore or why the monthly glue usage at the finger joint plant has doubled in the last 6 months without an increase in throughput.

Having the right person on site would have prevented this and can easily be worth more than double his salary a year. Having such a person overseeing all aspects of drying for a saw milling group can add millions to the bottom line.

The biggest problem however is, where can one find such a person? There is probably less than a hand full of candidates in South Africa that fits this bill.

Is there an alternative?

The answer to this is simple, and has been implemented in many other industries across the globe – Outsourcing

Outsourcing the drying “know how” function could potentially unlock the full potential of your drying operation and increase profitability considerably without needing a full time fundi on-site. It would also be relieving the Wet mill, Dry mill and Maintenance managers from the hassle of Drying management where specific focus and know how is required, allowing them to focus on their jobs.

What would this involve? Getting the basic kiln management plan right and keeping it there through daily remote monitoring and scheduled on-site visits.

Conclusion

A paradigm shift in saw mill shareholder's and management's view of kiln drying is required to take SA saw milling to the next level. Constant quality drying is possible through implementing a basic management plan coupled with getting the right person to keep it running.