

POOR STACKING, POOR DRYING, POOR  
STORAGE = POOR PROFITS

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The program for today and tomorrow contains some very pertinent information; some you have already heard and more will be heard during the balance of the program.

A tremendous amount of work has been done by public agencies, universities, equipment manufacturers, private research agencies, and lumber companies to improve the techniques of lumber drying: better kiln construction, better kiln instrumentation, better heat exchangers, better air flow control, higher drying temperatures, and shorter kiln schedules where practical. All of this has led to a better job of lumber drying BUT, and in too many cases it is a big BUT, much of this improvement is negated, cancelled, because of the way lumber is manufactured, the way lumber is prepared for the dry kiln, the way the dry kiln is loaded, and in the way the dried lumber is handled after it comes from the kiln, both before and after it is planed.

The slides of poor practices I am going to show you have all been taken in the west, most of them in Oregon, Washington, Idaho, and Montana. I want to thank WWPA and Dean Huber for providing additional slides to add to the ones I have taken. In no way am I trying to point a finger at any one company, the examples shown can be found in many mill yards, not just the yards where the pictures were taken. If you should recognize your operation, remember, the same thing is happening at other mills, too.

Some of the problems actually start at the headrig or other log breakdown systems that do not manufacture uniform size lumber, the old "THICK-N-THIN" Lumber Company.

Another problem area is sometimes at the trimmer and usually occurs when a slug of lumber hits the trimmer table. The trimmer operator, in his hurry for production, misses the right trim saw button or lever and an untrimmed board gets to the green chain. These boards make kiln packages that look like this!

The green chain is also the source of potential problems. Mispulled lumber not only gradewise but sizewise, occurs frequently. As examples, 4/4 boards on 8/4 piles and 18-foot lumber on 16-foot piles.

From the green chain the lumber goes to the stacker and this operation, unless conscientiously done, can cost a company money, a lot of money, in lumber volume losses and particularly in lumber degrade.

The best practice is to stack lumber of one length in a kiln package; however, most mills will stack two lengths of lumber in one package, such as 16- and 18-foot boards.

Because all of the boards are usually lined up at one end of the package, the opposite end will contain gaps between the 16- and 18-foot lengths. If care is not exercised in building the packages by placing the 18-foot boards on the outside edges of each course, holes develop in one end of the package. When this happens it permits a high bypass of air through

the end of the package, thus drying the exposed ends more rapidly and to a much lower moisture content than the balance of the board in the package.

Stacker placement is a very important step in the stacking operation and lack of care in their placement results in:

1. Poor sticker alignment.
2. Loss of stickers between lumber courses which permits boards to touch each other, restricting air flow and impeding drying.
3. Stickers not placed at the ends of the boards permitting excessive end checking and warping; result: loss of volume when boards have to be trimmed back.
4. In multilength packages, support is lacking for the longer boards.

Two other problems can develop from poor stacking practices that affect the drying of the lumber and the quality of the lumber after it is dried:

1. Stacking packages of different heights so that the kiln charge cannot be adequately baffled, and,
2. Not topping out the packages with full courses of lumber.

After the packages leave the stacker, the fork lift operator can affect the quality of the lumber as he prepares a kiln charge.

Two important items are:

1. Not properly aligning the package stickers with the bolsters on the kiln trucks, and,
2. Jamming packages of lumber together, resulting in deforming the lumber and/or seriously restricting air flow which in turn affects the drying of several courses of lumber in adjacent packages.

In the kiln one of the major factors is adequate baffling of the kiln charge to prevent short circuiting of air and forcing it to flow between the courses of lumber to accomplish the job of drying in a uniform, satisfactory manner.

How would you satisfactorily baffle kiln charges like these?

Another cause of degrade in kilns is stain on lumber resulting from leaking steampipes, dirty spray lines, or condensation dripping onto the boards.

What is done with the packages of lumber after they have been kiln dried but before they are broken down for planing?

Some companies have the capabilities of keeping the dried lumber under roof to protect it from the elements, BUT, even here, if care is not exercised, degrade and even breakage can occur.

In the yard even more can happen. Dried, stickered, lumber is left to the elements without protection from moisture, either from above or below.

Muddy yards can add dirt and grit to the bottom tiers of the packages, not only affecting the moisture content of the lumber but adding to the woes of the planer foreman.

And again, stacking on cribs can badly deform the bottom courses of lumber.

After planing, quality can still be downgraded by poor handling and storage.

Packages of lumber exposed to splashing by passing vehicles, packages exposed to the variations of the weather, and tag ends of the dry chain improperly supported and again exposed to the weather.

In summary, if the quality of lumber is to be retained from the green board through the drying process to a specified moisture content in the kiln dried condition, care MUST be taken throughout the entire operation, from the headsaw to the customer.

Relating to the drying operation, the following suggestions are made:

1. Sort green lumber to proper sizes and, if possible, to similar moisture contents.
2. Use uniform sized stickers, placed accurately, with enough stickers used on each course to properly support the weight of the lumber and protect the ends of the pieces of lumber.
3. Construct all kiln packages to a consistent and uniform height to facilitate effective baffling of the top of the kiln charge.
4. Place lumber packages on the kiln trucks so that the lines of stickers fall directly on the bolsters of the kiln trucks. If necessary change the sticker spacing or the kiln truck bolster spacing to accomplish this.
5. Adequately baffle the kiln charge - top, bottom, and the ends.
6. Keep kilns in top condition to reduce or prevent staining of lumber.
7. Provide covered, protected storage for the material after it comes from the kiln.

Don't you agree that Poor Stacking, Poor Drying, and Poor Storage equals Poor Profits?