

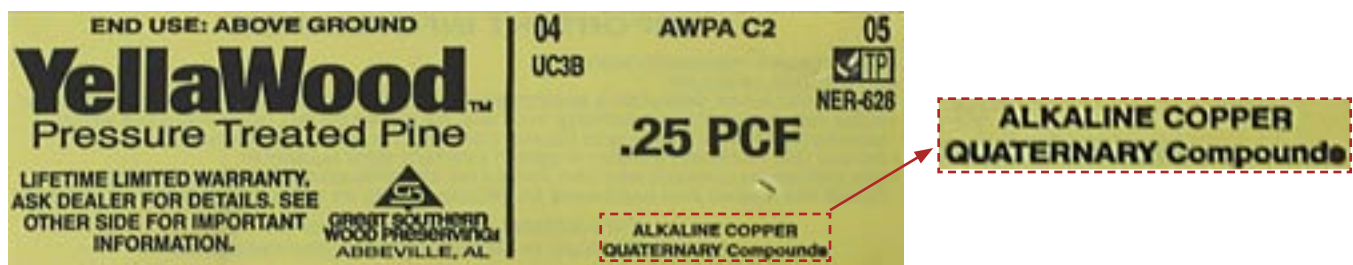
New Treated Lumber Requires Special Fasteners to Avoid Risk of Early Structural Failure

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As of January 2004 there was a change in the chemical preservatives used for pressure treated lumber available for residential use in the United States. Up until that time, almost all pressure treated Southern pine lumber was preserved with Chromated Copper Arsenate (CCA), which contains arsenic, a carcinogen. Although existing stocks of CCA treated lumber continued to be sold, all pressure treated lumber manufactured for residential use and available to the general public after January 2004 has been treated with different chemicals. The new pressure treated lumber is preserved with Alkaline Copper Quaternary (ACQ) or, less commonly, Copper Azole (CBA). (Because it's much more common, we'll just refer to ACQ.) Both of these chemical treatments are perceived to have less environmental or health risks than the old CCA chemicals. However, these new chemical treatments are more corrosive to nails, screws, and any other metal fasteners or parts that come in contact with the lumber.

CCA-treated lumber is still manufactured and sold for certain industrial and marine applications, including agricultural posts and poles, and some builders inform us that CCA lumber for poles and posts is still available and preferred. However, we are seeing considerable ACQ lumber being used in new poultry houses, including posts and dimension lumber (2x4, 2x6, etc). It is almost certain that any pressure treated lumber that you buy today from a lumber yard is NOT the CCA lumber we were all familiar with for so many years. So it becomes extremely important to know what type of treated lumber is being used, to know where it is being used in the poultry house, and to take appropriate steps to prevent problems from arising.

This newsletter will focus on explaining what you need to know about ACQ treated lumber. What does "more corrosive" mean? It means that most of the fasteners commonly used in the past, whether galvanized or not, are likely to be corroded by the chemicals in ACQ lumber at a higher rate than in CCA-treated lumber. Using the wrong fasteners could have an adverse effect on the structural performance and service life of the building. In other words, the days of being able to use just any fastener with your pressure treated lumber are over!



Above is an example of a typical pressure treated lumber label, showing required information on type of preserving chemicals used. Note: "YellaWood" is a brand name; other manufacturers will have their own brands. Brand names in this newsletter are shown for informational purposes only, and no recommendation or discrimination among similar such products is intended or should be taken as implied.

Furthermore, the corrosiveness of the new chemicals also means that much of our commonly used metal siding or other parts or equipment, whether aluminum or steel, are likely to be damaged if they are allowed to come in direct contact with the treated lumber. No carbon steel or aluminum siding or other metal should be used directly against ACQ treated lumber.

Make no mistake – The switch to ACQ treated lumber may be a good move for a safer environment, but problems with the structural stability of buildings could result if the proper fasteners and connecting materials are not used in conjunction with this new treated lumber. This is a serious issue for poultry housing and for the construction industry in general.

The solution? The building industry now recommends that fasteners or other metal contacting the lumber either be treated with the heaviest galvanizing possible (Class G-185 for sheet metal), be ceramic coated, or be type 304 or type 316 stainless steel. Never mix galvanized and stainless steel in the same connection. These requirements apply across the board, whether for ground contact or not, wet or dry conditions. No fasteners should be used unless they are clearly labeled as approved for use with ACQ treated lumber. Your local treated lumber supplier should have a list of fasteners that are approved for use with ACQ treated lumber by brand name and type.

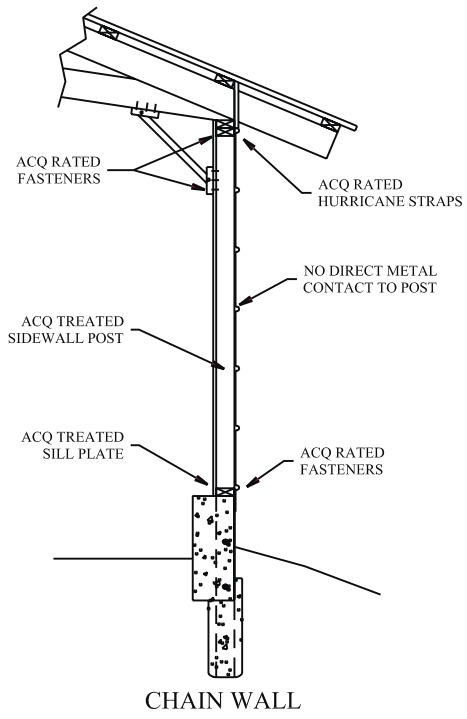
What effect will this new type of lumber treatment have on the poultry industry? With the exception of all-metal housing, almost all poultry houses use pressure treated lumber posts for structural members in the side and end walls and as framing for fans, vent inlets, or other high moisture locations where regular non-treated lumber might decay or become damaged by termites. This will affect almost every poultry house built in the United States. The fact that special nails, screws and fasteners must be used to maintain structural integrity is a major area of concern.

The lumber industry is conducting a massive educational effort to help builders and the general public become aware of this issue. If you are preparing to build, it is important to make sure that your builder is aware of the importance of using the proper fasteners and taking the necessary precautions to ensure a structure that will not deteriorate over time because of this corrosion issue. It is the builder's responsibility to instruct his people or crew on the proper methods of installing and fastening.

You must also take personal responsibility to be sure your houses are being built properly. So, how can you tell if ACQ lumber is being used in your house? Just take a look at the lumber: there should be either an inked stamp on the broad side of the lumber stating the lumber grade and preservative or a plastic tag on one end of the lumber member that states the lumber grade and preservative used.

Following are the typical locations of concern where the fasteners or metal parts will be in contact with treated lumber in a modern poultry house, assuming that only ACQ lumber is used. Note that even if CCA posts are used, any ACQ 2x4s or 2x6s being attached to them must be fastened with ACQ rated hardware.

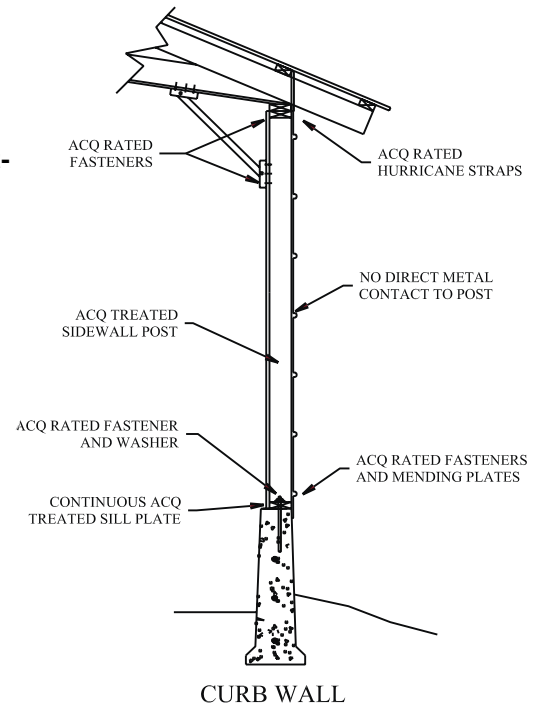
1. Foundation/sidewall sill plate – Some builders use mending plates to fasten the posts of a stem wall (posts do not extend into the footing) to the sill plate of the foundation. The fastening plates and fasteners must be approved for ACQ.
2. Structural post members – Any connections made to a structural member of the sidewall will need to be ACQ approved.
3. Interior sidewall covering – Some poultry houses use some type of plywood covering to finish out the inside of the wall or to enclose the insulation. The fasteners used to attach this covering must be ACQ approved.
4. Exterior sidewall covering – Metal siding on poultry houses is usually fastened to the structural treated posts of the building but should not be placed in direct contact with these posts. Some type of barrier, such as builder's felt or plastic sheeting, is suggested to separate the treated wood from the metal siding. The nails, screws or other fasteners used must also be ACQ approved.
5. Knee braces at posts – Those poultry houses that utilize knee braces must use ACQ approved fasteners to attach the knee brace to the post inside the wall.
6. Where top plate meets post – Although the top plates of most poultry houses are not constructed with treated lumber, they do rest on and fasten to treated lumber, so the fasteners used to attach top plates must be ACQ approved. Hurricane straps that touch ACQ posts must also now be ACQ rated.



CHAIN WALL

Drawings show cross-section sidewalls of typical chain and curb wall construction, pointing out places where ACQ rated fasteners or barriers are needed if lumber used is ACQ treated.

NOTE: It is imperative that your builder understand the fastening requirements to follow when ACQ lumber is used. It is imperative for you as owner to understand the consequences of using the wrong fasteners with ACQ lumber.



CURB WALL



Above: non-approved electroplated galvanized lag screw (top bright-colored screw) vs hot-dipped galvanized lag screw approved for ACQ lumber. Below: typical fastener package label showing ACQ rating. If ACQ lumber is used, all fastening hardware must be labeled for such use.



Above: hurricane strap connecting top plate and truss with post. Both the strap and fasteners going into an ACQ post must be ACQ rated. Below: similarly, all fasteners and hardware used on ACQ treated sill plates and/or posts must be ACQ approved. These are critical structural connections.



7. Fan framing – Often, fan frames are constructed out of treated lumber to prevent the frames from decaying due to moisture around the fan area. Some type of barrier should be installed to separate these materials from metal fan parts, hoods or shutters, and only ACQ approved fasteners should be used.
8. Vent framing – Vents that consist of metal frames installed in the sidewall and framed with treated lumber should use some type of barrier between the treated lumber and the metal parts, and fasteners penetrating the treated lumber must be ACQ rated.
9. Door framing – Many man doors used in modern poultry houses use aluminum frames and should not be installed in direct contact with treated lumber. A plastic or felt protector is recommended to prevent direct contact of ACQ treated lumber in a door opening with a metal door frame.
10. Evaporative cooling equipment – Anywhere that ACQ treated lumber is used around or to support your poultry house evaporative cooling equipment, approved fasteners should be used, and a barrier should be placed between treated lumber and any metal parts of the evaporative cooling equipment.

For more information, check out the following websites:

American Wood Council –
www.awc.org/HelpOutreach/faq/CorrosionFactSheet.pdf

Southern Pine Council –
www.southernpine.com/ptfasteners.shtml

The Bottom Line

Because only specially treated fasteners can be used with ACQ lumber, and plastic or other barriers placed between treated lumber and any metal siding or equipment, both labor and materials costs of building any wood-framed poultry house are going to be at least slightly higher. A burden is also placed on the poultry grower to pay more attention to the building process to make sure the right fasteners are used and proper procedures followed.

Growers must realize that the possible consequences of ignoring the ACQ corrosion issue or trying to avoid these costs may be severe. When you build a new poultry house you want to be confident it will stand up to hard use for its full intended life-span and not be subject to structural problems or aggravating and expensive maintenance issues.



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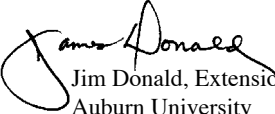
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