

# Treated Lumber

## TYPES OF TREATED LUMBER

Treated wood has outstanding environmental qualities with regard to sustainability, carbon footprint, and low-energy production as confirmed in its life-cycle assessment. There are three main families of treated lumber used in construction<sup>1</sup>: Borate, Alkaline Copper Quat (ACQ) and other rot-resistant treatments, and non-combustible (Non-Com).

**BORATE.** This newer process is primarily used in the Colorado area for sill plate use only (2x4 and 2x6) and available only in construction grades. Long-term storage should be, at minimum, wrapping the material in a watertight manner and keeping the material well off the ground to prevent migration of the borate treatment. There is no need to end coat after cutting. Exposure to the weather during a “normal” construction process is allowable for the material, but as with all construction, we suggest the building is dried in as soon as possible. No special fastener requirements are listed.

**KDAT – TREATER SERIES.** Is available in most sizes as below. This the PTI treated lumber, as further described below that has then been kiln dried after treatment (KDAT) (20’ material is “air-dried”). By drying the wood after treating but before selling, most of the defects like cupping and warping are reduced/eliminated. The specific product is milled by Weyerhaeuser and is warranted by them against a variety of product defects (see warranty for specific details).

**PTI.** Is the newest treating chemical available and most of **FRONT RANGE LUMBER’S** entire lumber inventory has been changed to this new treatment. This treatment currently can be used for the bulk of exterior wood uses – everything except in-ground applications. This formulation has a lower environmental impact throughout its production, distribution and installation than other treatment alternatives. PTI is a GreenSpec® environmentally preferable product. Out-of-ground uses include: deck framing, fence boards, exterior trim, outdoor furniture, arbors and trellises. The most visible advantage to PTI is its color. By itself, the preservative leaves wood its natural color - to distinguish treated from untreated material a cedar-tan pigment has been added to the solution. The resulting color better matches today’s favorite decking alternatives including composite decking, cedar and redwood. It can also be very readily stained or painted

without special precautions. Stainless steel or hot dipped galvanized fasteners should ALWAYS be used with this product. The only exception is when fasteners (bolts) are ½” or greater in diameter; even then, these should be zinc plated (see below for more information). End cuts should be end coated. Other cuts may be restricted, specifically ripping boards voids any decay protection and/or warranty. PTI carries a limited warranty.

**MCA.** Is an extension of the PTI process using an upgraded chemical which includes copper to provide additional rot resistance. This treatment allows for deeper penetration into the wood and more even distribution of preservatives received. This technology offers broader mold protection. Additives provide for a great barrier against the weather, reducing checking and splitting. **FRONT RANGE LUMBER** stocks this type in all common framing dimensions sizes, specifically in Weyerhaeuser’s “Treater’s Series” aka KDAT. These boards have been specially cut and treated for minimal defect, cracking and warping. There is a limited warranty available on this product.

**ACQ EXTERIOR.** As this process is treatment for exterior applications, no special covering precautions need be taken. All end-cuts should be treated with end-coat solution. Generally, other cutting (specifically ripping) should be avoided. Stainless steel or hot dipped galvanized fasteners should ALWAYS be used with this product. The only exception is when fasteners (bolts) are ½” or greater in diameter; even then, these should be zinc plated (see below for more information). Storage of ACQ treated lumber should be off the ground, stacked flat and neatly to minimize warpage and discoloration. Banding is desirable in warmer weather to reduce cupping and twisting until use. This treatment is very common and is widely available in both boards and plywoods in most construction sizes and grades. This type of treatment in a higher penetration level is used for “all wood” foundations.

**NON-COM.** This lumber (*aka* PyroGuard and other trade names, non-combustible, fire-resistant) should always be kept in a dry environment. Short-term storage under cover, off-ground prior to installation is acceptable. Again, exposure to the elements during the normal construction cycle is within guidelines. This product is NOT for direct exterior exposure. There are non-combustible products that are truly exterior graded. End cuts do not have to be end coated. Other cuts may be restricted, specifically ripping boards voids any fire protection &/or warranty. Non-Com

## FRONT RANGE LUMBER COMPANY

(303) 988-5980 (phone) • (303) 988-5985 (fax) • [www.FRLCO.com](http://www.FRLCO.com) • e-mail: [FRLCO@msn.com](mailto:FRLCO@msn.com)  
MONDAY–FRIDAY: 7:00 AM – 5:00 PM • SATURDAY: 8:00 AM – 1:00 PM

is used for fire/building code purposes where a fire-resistant construction is desired. This lumber will eventually burn; however it has been treated such that when exposed to high heat, it will “sweat” so that combustion is harder to start and slower once begun. You can verify this treatment by the stamp on each board/panel. The wood itself appears only slightly different from plain wood, in a slightly more yellow color and what looks to be a salt residue in places on individual pieces. No specific fasteners are required when using this product. Non-com plywoods are available in both CDX and ACX grades; 2x framing lumber is available in most lengths in 2x4 through 2x12. The type that **FRONT RANGE LUMBER** stocks is very red in color, readily distinguishing itself from other woods.

**CCA (CHROMATED COPPER ARSENATE).** This is a generally outdated method of treating lumber and plywood for rot/insect resistance. It has been replaced by ACQ. It is still allowed for a few, narrowly defined uses. Most insurance companies will no longer provide coverage if you do sell/use this product.

## HANGERS/FASTENERS

Treated lumber and plywoods require the use of upgraded joist hangers and fasteners. The chemicals used in this treatment process will corrode normal metals faster. Simpson, the leading hanger manufacturer, makes a whole series of hangers named Z-max for exterior construction. The Z-MAX coating assures a better galvanizing process to offset the corrosive effects of treatment. Use **ONLY Z-MAX** hangers on any treated lumber. Be sure to fill **ALL** the nail holes on all hangers to pass inspections and utilize the full strength of your hangers. The best fasteners to use on these products are stainless steel, which of course are the most expensive. A very reasonable and acceptable alternative is any nail, screw or bolt that has been hot dipped galvanized or other coatings that retard corrosion. Finally, information available to us is that any bolt with a 1/2” or greater diameter has enough bulk to it to not require special coatings. Newer treatment processes may allow for “normal” hangers and fasteners to be used, however, we recommend that a “Z-Max” type of coating continue to be used on **ALL** exterior applications. The extra cost is very much worth the extra protection. Again, Simpson Strong-tie advises the use of Z-Max hangers on all exterior installations.

## GRADES

Most treated lumber does not come in different grades, the exception being plywood, which will come in both ACX and CDX grades. Virtually all treated lumber is considered for construction only - those grades does not take appearance into consideration. In most cases (except deck framing), the treated wood used will be covered by trim, drywall, paint, etc. **FRONT RANGE LUMBER** does have some

of its own wood treated, translating into a better quality than widely available. Based on appearance and shrinkage issues, **FRONT RANGE LUMBER** does not recommend the use of treated lumber for decking boards (use for framing only).

## STORAGE

Storage of any treated lumber should be off the ground, stacked flat and neatly to minimize warpage and discoloration. Banding is desirable in warmer weather to reduce cupping and twisting until use.

## INSTALLATION TIPS

- **FRONT RANGE LUMBER** does not recommend the use of treated lumber for decking boards.
- For true below grade uses, like posts, use lumber treated specifically for “below grade” applications.
- Retain both your purchase receipt and the product’s end tags for warranty records.
- Check the product’s tag before use. Verify the use matches the tag.
- Always use screws on treated lumber. On 5/4 lumber, use at least 2 1/2” long screws; on 2x material, use at least 3” fasteners. Screws hold the boards more securely and allows for easier removal in the future if needed.
- Hot dipped or similarly coated fasteners are a must. Stainless steel would be the utmost.
- It is important to re-apply a topical water repellent once a year. A deck brightener/conditioner will clean and revitalize any wood deck’s appearance.
- For decking, we recommend butting boards tightly together as some shrinkage will occur. If the boards seem very dry, then only space slightly.

## HEALTH & SAFETY

Health concerns for **ALL** types of treated lumber are present if used unwisely. Follow common sense instructions like the following and refer to a **complete** SDS for full details. We can supply Safety Data Sheets on request.

- Wash hands and face after using treated lumber, wear gloves. Wash up before handling food and drinks (or using tobacco products). Work clothes should be laundered before reuse. Wash these clothes separately from other laundry.
- Do not burn scraps. Clean up all scraps and sawdust and dispose of in ordinary trash collections.
- As with all wood products, use of a dust mask is recommended. Cutting operations should be done outside.
- Treated lumber can be heavy! Use proper lifting techniques &/or get help!
- Keep children away from scraps and sawdust.

- Keep all food and drink away from treated lumber.
- Cut and machine wood in a well ventilated area.
- Treated lumber should never be used in applications with food or potable water – specifically never use treated lumber for a raised garden bed.
- Visit [www.wolmanizedwoodU.com](http://www.wolmanizedwoodU.com) to learn how to properly choose, install and protect treated lumber.

## GENERAL INFORMATION

In addition to the preservative treatment that enables wood to last a long time, these products have all the environmental and other advantages usually associated with wood itself. Its source is a renewable and rapidly replenished resource grown on managed timberlands, requiring less energy to produce than alternative building materials and provides greater insulative value where necessary. Growing trees absorb/sequester carbon dioxide, reducing greenhouse gases.

Wood offers excellent workability with common construction skills and tools. It provides design flexibility and is generally more economical than other alternatives. Finally, wood is the aesthetically preferable option.

## USE/RETENTION CHART

*Amount of treatment fluid per cubic foot of lumber.*

Retention	Service Conditions	Typical Applications
0.05	Above ground	decking, railing, pickets, millwork, sills
0.14	Ground contact	joists, beams, decking, railing
0.23	Heavy duty ground contact	posts, bridge timbers, building poles

## SIZE CHART

*Check with us for exact availability*

	2x4	2x6	2x8 <sup>2</sup>	2x10 <sup>2</sup>	2x12 <sup>2</sup>	CDX	ACX
<b>Borate</b>	14'	14'					
<b>PTI</b>	8-16', No 14'	8-20', No 14'			8-10'		
<b>KDAT Treater Series</b>			8-20'	8-20'	12-20', No 14'		
<b>ACQ</b>						1/2, 5/8, 3/4"	1/2, 5/8, 3/4"
<b>Non-Com</b>	8,12,16'	8,12,16	12,16	12,16	12,16	1/2, 5/8, 3/4"	1/2, 5/8, 3/4"

## FOR MORE INFORMATION...

<http://www.ccaresearch.org>

<http://www.wolmanizedwood.com>

<http://www.allweatherwood.com>

<http://www.greenbuilder.com/sourcebook/WoodTreatment.html>

<http://www.dep.state.ct.us/wst/recycle/lumber.htm>

<http://www.strongtie.com/>

<http://www.strongtie.com/productuse/corrosion.html>

<http://www.strongtie.com/productuse/PTWoodFAQs.html>

*Revised 11/17*

<sup>1</sup> Untreated wood is referred to as “bright” in the industry.

<sup>2</sup> These sizes will be treated for “ground contact” applications; these should also be used for projects like decks that are close to the ground (less than 18”).