

Rosboro's Position on Fire Treated Glulam

Fire Treated Engineered Wood Products

There is a great deal of confusion surrounding fire retardant treatments that can be applied to wood products. Several manufacturers have tested their products and have received code approval for use on framing lumber and plywood. Today there is no code or UL approved fire retardant pressure treatment for Engineered Wood Products (EWP) such as; glulam, I-Joist, LVL and strand lumber products. Such treatments may perform well on EWP but the testing and approval process is expensive and time consuming and has not been completed.

Rosboro does not assume liability for Fire treated glulam products and these treatments void the Rosboro Warranty.

1. Treating company warranties for fire retardants typically cover lumber and plywood but do not cover engineered wood.
2. Fire retardant treatments have not been tested, certified or approved for engineered wood.
3. Engineered wood treated with fire retardants may not meet building code requirements however, local building codes may recognize specific treatments.
4. Fire retardant treated lumber and plywood require strength reductions to be taken per the table listed in each manufacturer's code approval. Since EWP is not code approved reduction tables have not been developed for these products.
5. The EWP manufacturer's warranty may be voided if their product is fire retardant treated. Check with the EWP manufacturer before product is treated.

One Hour Rated Glulam

Buildings constructed with large structural timbers have excellent fire-resistive qualities. U.S. model building codes recognize this and provide guidelines for ensuring fire resistant timber structures. Two distinct approaches are included in the codes: Heavy Timber Construction and Fire Resistive Construction.

Heavy Timber Construction has long been recognized by the model building codes as fire resistant. To meet the requirements of Heavy Timber Construction, limitations are placed on the minimum size, including depth and thickness, of all load-carrying wood members.

The performance of Heavy Timber Construction under fire conditions is markedly superior to most unprotected "non-combustible" construction. Unprotected metals lose strength quickly and collapse suddenly under extreme heat. Steel weakens dramatically as its temperature climbs above 450° Fahrenheit, retaining only 10% of its strength at about 1380°F. The average building fire temperatures range from 1290°F to 1650°F.

Wood typically chars at a rate of 1/40" per minute therefore after 30 minutes of fire exposure only the outer 3/4" of the glulam will be damaged. The glulam adhesives burn at about the same rate as the wood and do not affect the overall fire performance of the member. The char that develops insulates the glulam member. Most of the cross section of the glulam will remain intact and the member will continue to support the load.

See APA Calculating Fire Resistance of Glulam Beams and Columns technical note EWS Y245B for more detail.