LIGHTNING PROTECTION

Wood Niche Customers Are Currently Experiencing an Increase in Lightning Related Losses:

There has been a noted increase in lightning related losses that are currently affecting the "Wood Niche" customers at Pennsylvania and Indiana Lumbermens Mutual. Lightning related losses for PLM customers have increased during calendar year 2007 and have been noted to be the 4th highest frequency loss type experienced. Lightning related losses, although unpredictable in nature, are one of the easiest forms of natural loss exposures to address with specific controls. In an effort to help customers control this type of loss, some historical background and control strategies have been developed and are presented in this customer bulletin.

Why You Need Lightning Protection:

Lightning protection systems have changed drastically since Benjamin Franklin first invented lightning rods in 1752. Today's systems have evolved and protect modern appliances, electrical systems and buildings. Lightning protection systems should be installed to keep up with changing requirements and methods of building construction and business technology.

Each year, thousands of buildings and properties are damaged or destroyed by lightning. It accounts for more than a quarter billion dollars in property damage annually in the United States. Lightning is responsible for more deaths and property loss than tornadoes, hurricanes and floods combined, but of these violent forces of nature, lightning is the only one **we call** economically affords to protect against.

The Need for Lightning Protection:

Lightning can strike anywhere on earth – even at the poles! In any U.S. geographical location, lightning storms occur as few as five times or as many as 100 times per year. The Northeast United States has the most violent thunderstorms in the country because of the area's extremely high earth resistivity (the earth's resistance to conduct current) increases the potential of a lightning strike. If struck, structures in these areas will generally sustain more damage when there is no lightning protection system present.

Some properties have a higher risk of lightning damage due to location and building construction features. When considering installation of a lightning protection system, you may want to specifically assess these risk factors.

How a Lightning Protection System Works:

Lightning is the visible discharge of static electricity within a cloud, between clouds, or between tile earth and a cloud. Scientists still do not fully understand what causes lightning, but most experts believe that different kinds of ice interact in a cloud.

A lightning protection system provides a means by which this discharge may enter or leave earth without passing through and damaging non-conducting parts of a structure, such as those made of wood, metal, brick, or concrete. A lightning protection system does not prevent lightning from striking; it provides a means for controlling it and preventing damage by providing a low resistance path for the discharge of lightning energy.

How You Can Protect Your Building:

Install a Lightning Protection System that complies with current nationally recognized codes. Lightning protection systems consist of air terminals (lightning rods) and associated fittings connected by heavy cables to grounding equipment, providing a path for lightning current to travel safely to ground.

Parts of structures most likely to be struck by lightning are those that project above surrounding parts, such as chimneys, ventilators, dust collectors, cooling towers, water tanks, conveyor systems, railings, gables, ridges, and parapets. The edges and corners of flat or gently sloping roof areas are the parts most likely to be struck by lightning.

Any lightning protection system should include consideration for all of the following elements which work together to prevent lightning damage.

1. Air Terminals (lightning rods)
2. A network of conductors (cable)
3. Bonding with metallic bodies
4. Ground Terminations
5. Surge Arrestors
6. Mid-roof conductor and air terminals at maximum 50-foot spacing.
7. Grounded metal bodies bonded into system.
8. Surge arresters installed at main electrical panels.
9. Transient voltage surge suppressors installed in receptacles.