The Barn Raiser

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MSR or XLG Is It In Your Future?

By Al McInvale, P.E., CG

With the new strength design properties being assigned to Southern Yellow Pine lumber, should you be considering Machine Stress Rated (MSR) or X-ray Lineal Grading (XLG)? Most likely the answer is "Yes," but it depends on your raw material resource. In these difficult economic times for wood products manufacturers, telling someone your wood is not as strong may at first seem to be a blessing. Really if wood is not as strong, will that not make customers buy bigger sizes for that same application?…….maybe and maybe not.

When I first entered the business in 1970 my boss, Roy L. Murphy, told me that he thought that lumber would be mechanically stress rated at some point in the not to distant future. Visually grading structural lumber did not make since if you could mechanically stress rate it. Visual grading was a quality control practice that began in the early 1900's and was combined with the first uniform size standard in 1924. Back then the logs were from virgin stock and were generally significantly stronger than the applications for which it was being used. Over the years our conversion to second and third growth forests have reduced the inherent strength of our wood products to the point that we are experiencing the second devaluation of lumber strengths since I first became involved in the lumber business.

Maybe it's time to throw away the visual grade book and start using science to evaluate the strength properties of lumber and other wood products. In my opinion, if your wood basket is slower grown (such as in mountainous areas) or if you know you have a fairly good supply of older growth wood, then stress rating your products using a Metrigard MSR, USNR (Newnes) XLG system or similar product to assign actual stress values to your products may bring significant value to your bottom line. Stress rating your products may also reduce your product liability and thereby cut your insurance rates. Will that eliminate your need for third party grading QC? The answer is "No". Having been through the code approval process and testing of new building products gives me an appreciation of the process and benefits of the quality control processes that underlie the creation of design properties from structural products. If you go with mechanical or nuclear stress rating, you will still need third party verification of the results of your stress rating and the QC program.

Is the time right for the industry to convert to 100% verification of the quality of the products we produce? Mr. Murphy was right back in 1970; he was just ahead of his time.

Merry Christmas and a Happy New Year!

Is a LEED certified building the right choice for you?

By: Karen Griffin, Architect

The United States Green Building Council (USGBC) has developed a certification system called LEED (Leadership in Energy and Environmental Design) which federal, state, and municipal entities, as well as private sector projects, have adopted to bring sustainable building into the mainstream. "Sustainability" is a current buzzword that has broad scope meaning including, "green", energy efficiency and consumption, extent of extraction and production of materials, maintenance and eventual disposal or recycling of construction materials, and life cycle costing of a building. Anyone, including design professionals, can take training classes and obtain a LEED accreditation through the USGBC to gain the necessary skills to design a building which could achieve certification levels ranging from simple certification to Silver, Gold, and Platinum. A points system is used to rate the design, construction, and operation of buildings through various categories to achieve the different LEED certifications. A variety of categories may include points for roof gardens and reflective roofing material to reduce heat islands, increase R values to optimize energy performance, using salvaged materials for Materials Reuse category, using recycled building products, and using regionally manufactured products, just to name a few. Forest product manufacturing plants may focus on the sustainability category where forest stewardship could gain points for use in marketing their products in the building industry. Points are then combined or traded to achieve the different levels of certification.

The good news is:

- The LEED program has been raising the conscious awareness about creating healthier living environments and the importance of saving energy (which also translates to saving operation costs) in the fields of architecture and engineering design, construction, real estate, land development and lending, creating good long term investments.
- It is a good marketing tool.
- LEED buildings make headlines, attract tenants and command higher prices.
- A LEED certified building may help smooth the way for community approval.

The bad news is:

- A LEED certified building will cost more to design and build.
- A LEED project does not assure a building will be any more energy efficient than a traditionally constructed building.
- The focus of the program encompasses a wide range of “green” goals and does not currently have a defined program in place to monitor usage of energy after construction is complete to target specific energy usage goals. (There is a pilot program being developed now).

There are however many other programs currently in place and more are being developed to help achieve end results for energy usage, starting with design software for new building construction, energy management programs for existing buildings and industrial plants, and Measurement and Verification (M & V) programs to track actual energy usage. The U.S. Department of Energy's ENERGY STAR program has been gaining notice as a program which is more effective in assisting consultants in providing energy efficient buildings at significantly less costs than other programs. ENERGY STAR partnership offers a proven energy management strategy that helps in measuring current energy performance, setting goals, tracking savings, and rewarding improvements through tax credits.

Since the U.S. Energy Information Administration (11/30/2011) reported that 41 percent of total energy consumption in the U.S. can be attributed to the buildings, saving energy in this area seems to be extremely beneficial to the future of our available fossil fuels, our natural resources, to the economy, and the quality of life for future generations. A large portion of all energy is used to heat, cool, ventilate and light the buildings and infrastructure that support the built environment so this is an area where we can make the most impact saving energy.

Article will be continued in next Issue.

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