



Bulletin Regarding SPIB Notice Dated July 28, 2010

Background

On July 28, 2010, the Southern Pine Inspection Bureau (“SPIB”) published a notice (the “SPIB Notice”) on its website at <http://www.spib.org> advising of information received establishing that some lumber (including Southern Yellow Pine and other species) had tested lower than the design values for the visual grade of such lumber. The SPIB Notice was published without prior notification to SBCA. The SPIB Notice further advises of plans on the part of the USDA Forest Products Laboratory, the American Wood Council, and the American Lumber Standard Committee (“ALSC”) to develop a protocol to determine whether or not properly visually graded lumber might have design values below the minimum.

Discussion and Recommendations

For users of structural lumber (i.e., any load bearing applications like floors, walls, roofs, decks, etc., per the IRC and IBC span tables and all engineered applications for lumber) such as the component manufacturing members of SBCA, the grade-mark applied by the manufacturer through the grade-marking supervision services of an ALSC approved agency (which includes SPIB) indicates the existence of the published minimum design or strength properties.¹ ALSC has specifically advised SBCA that a properly grade-marked stick of lumber maintains the minimum design or strength properties.² As an example, this simply means that a stick of lumber grade-marked as Southern Yellow Pine No. 2 has a minimum allowable fiber bending stress design value of 1500 psi when that stick of lumber is used for single bending member (i.e. non-repetitive member) use. This same concept applies for all other allowable stress values assigned to that grade.³

How the design values and correlation to the lumber grade stamp are then used in truss and component design software programs is contained in ANSI/TPI 1-2007, *National Design Standard for Metal Plate Connected Wood Truss Construction* which specifically states “Design values [as stated above] for solid sawn lumber and approved, grade stamped, finger jointed lumber shall be as defined by the grade stamp prior to cross cutting and in accordance with the published values of lumber rules writing agencies approved by the Board of Review of the American Lumber Standards Committee.”⁴ Thus component manufacturers are required to rely on lumber grade-marks and the corresponding design values.

Lumber testing undertaken by SBCA in recent months through its ANSI/ACCLASS accredited testing facility, the *SBC Research Institute (SBCRI)*, confirms that the lumber of various species tests lower than the values published for the corresponding grade-mark for the visual grade using testing procedures

¹ Lumber strength values are assigned to five basic properties: fiber stress in bending (Fb), tension parallel to grain (Ft) horizontal shear (Fv), compression parallel to grain (Fc), and compression perpendicular to grain (Fc[⊥]).

² See ALSC letter dated April 5, 2006 to the Wood Truss Council of America (the predecessor in name to SBCA).

³ See Southern Pine Council *Southern Pine Reference Design Values*.

⁴ Section 6.3.1 of ANSI/TPI 1-2007, *National Design Standard for Metal Plate Connected Wood Truss Construction*



described in ASTM D1990 and D4761⁵ when testing modulus of elasticity (E)⁶ and modulus of rupture (MOR).

SBCRI testing further confirms that there appears to be a pith center⁷ (juvenile wood) effect with respect to the lumber it has tested and that the design value for pith center lumber is reduced compared to non-pith center or free of heart center lumber. In other words, the minimum design values appear to be achieved through testing where free of heart center lumber is the only lumber contained in the test population. The SBCRI lumber testing data has been provided in various formats to some of the major lumber manufacturers and confirmed by at least one lumber manufacturer, through an independent testing program, as an accurate design property assessment.

Full scale floor truss and roof truss system assembly testing has also been undertaken by SBCRI validating the fact that visually graded lumber that tests lower than the design values/strength properties for such visual grades does not adversely impact the overall full scale performance of truss roof and floor systems installed and braced in accordance with SBCA industry guidelines. SBCA plans to issue additional bulletins in the future pertaining to the information gleaned from its truss assembly testing.

SBCA is calling on the senior leadership of the lumber manufacturing industry⁸ to respond in one week and to convene a working group to immediately meet with representatives of the structural building component manufacturing industry to discuss the broad range of issues that have been set forth in the SPIB Notice and this SBCA Bulletin. SBCA believes an industry crafted set of options and solutions is appropriate as opposed to manufacturing companies or industry associations taking action that is not well thought out. The participation and insight of the customer groups of structural lumber, such as the component manufacturing members of SBCA,⁹ will provide valuable perspective with respect to providing public assurance that structural lumber will continue to be utilized reliably and safely and will provide design values/properties that allow for even more creative architectural and value engineered applications our country has grown to depend upon.

The public actions that have been taken with respect to the SPIB Bulletin can be found at our website – www.sbcindustry.com/lumber.php.

⁵ Testing was undertaken per the ASTM D1990 Standard Practice for Establishing Allowable Properties for Visually-Graded Dimension Lumber from In-Grade Tests of Full-Size Specimens, and ASTM D4761 Standard Test Methods for Mechanical Properties of Lumber and Wood-Base Structural Material.

⁶ The modulus of elasticity (E) is a ratio of the amount a material will deflect in proportion to an applied load. It is a measure of stiffness and not a strength property.

⁷ The generally less dense core occurring in the structural center of the log.

⁸ This includes the following lumber manufacturing companies: Beadles Lumber Co., Canadian Forest Products Ltd., Georgia-Pacific Corporation, Weyerhaeuser, Rayonier Wood Products, Temple-Inland Forest Products, Tolko Marketing and Sales Ltd, West Fraser, Inc., AbitibiBowater, Atikokan Forest Products Ltd., Canfor Wood Products Marketing Ltd., Domtar Inc., FH Stoltze Land & Lumber Company, Idaho Forest Group, International Forest Products Ltd., Kruger Inc., Lecours Lumber Company Ltd., Maibec Industries, Inc., Materiaux Blanchet Inc., Tembec Forest Products Group, Tolleson Lumber, TR Miller Mill Co Inc., and Vaagen Bros Lumber Company.

⁹ Participation in this group ought to include representatives of the metal connector plate industry who use published lumber allowable stress design values in the truss and wall panel designs and software products they provide to their component manufacturing customers.