BLACKLABEL
THE WORLD'S BEST WOOD

TECHNICAL BULLETIN

Allowable Design Values

Design Values are meticulously assigned to lumber to ensure predictable strength properties, meeting engineering design standards. This process is grounded in specific Lumber Grading Rules, Lumber Moisture Content, and ASTM – 245 Physical and Mechanical Properties Testing.

Lumber Grading Standards

The Lumber Grading Rules serve as quality specifications, detailing the maximum knots, grain slope, and other characteristics that reduce strength. These specifications allow ASTM D - 245 test data to be effectively applied, enabling the assignment of working stresses to the designated quality.

Moisture Content in Lumber

Strength is unaffected by moisture variations above the fiber saturation point. However, as wood dries below this point, its strength increases.

Assigning Allowable Design Values

Allowable Design Values are scientifically determined by considering various pre-established reduction factors, grading rules, and moisture content in accordance with ASTM – 245 test data. These values encompass:

- Static Bending Properties:
  - Fiber Stress and Bending
  - Modulus of Rupture
  - Modulus of Elasticity
- Compression Parallel to Grain
- Compression Perpendicular to Grain
- Hardness

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- Shear Parallel to Grain
- Shear Perpendicular to Grain

Wood products without scientifically established Allowable Design Values are suitable only for aesthetic purposes, not structural applications.

GMX Group has introduced proprietary grading rules, design values, and specifications for professionals, setting new industry standards. The availability of Certified Compliance Standards is now synonymous with the GMX Group brand.

We highly recommend that specifiers and consumers use these standards in their decision-making process and explicitly reference them in purchase orders. For structural use, only specify wood products that carry Certified Allowable Design Values and include Decking, Lumber, and Timber Load and Span Tables.

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