



Tangent Structural Lumber

Tangent's Structural Lumber has exceptional strength and stiffness, its flexural modulus of 650 ksi is far in excess of typical synthetic wood alternatives and allows for increased spans, greater load bearing capacity, a more solid feel and greater safety margins. Tangent's Structural Lumber is perfect for ground contact or wet environments without compromising its incredible durability.

STANDARD COLORS



Black



Gray



Norwegian Weatherwood

Custom colors available upon request

COMMON APPLICATIONS

- Decking Substructure
- Boardwalk Substructure
- Trellises & Pergolas
- Marine Dock Substructure
- Wide-Span Decking
- Posts & Piles



TECHNICAL INFORMATION

Properties	ASTM	Value/Units
Specific Gravity	D6111	1.18 SG
Flexural Strength	D6109	6,250 psi
Flexural Modulus (Secant, at 1% strain)	D6109	650,000 psi
Compressive Strength (Perpendicular to grain)	D6108	1,482 psi
Compressive Modulus (Perpendicular to grain, Secant, at 1% strain)	D6108	54 ksi
Coefficient of Thermal Expansion	D6341	0.000033 in/in/°F
Static Coefficient of Friction - Dry	D2047	0.73 average
Static Coefficient of Friction - Wet	D2047	0.90 average
Impact Resistance (Izod)	D256	2.64 ft-lb/in
Water Absorption	D570	0.27% max by weight
Screw Withdrawal	D6117	646 lbs
Useful Temperature Range		-40°F to +140°F

All above values shall be considered average except flexural strength. This value must have appropriate reduction factors set by the engineer of record.

Material Property	Description of Test Method	ASTM	Value/Units
Brittleness	Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact	D746-07	No break at -40°F
Density and Specific Gravity	Standard Test Methods for Density and Specific Gravity of Plastics by Displacement	D792	74.0 lbs/cu.ft 0.043 lbs/cu.in Specific Gravity: 1.18
Hardness-Shore D	Standard Test Method for Rubber Property—Durometer Hardness	D2240-Type D	80
Abrasion Resistance	Standard Test Method for Abrasion Resistance of Organic Coatings by Taber Abraser	D4060 CS17 Wheel 10,000 cycles 2.2lb load	Weight Loss 0.023g / 0.043%
Ignition Temperature	Standard Test Method for Determining Ignition Temperature of Plastics; Flash Point / Ignition Temperature	D1929-96	>824°F (440°C)
UV: Effect on Hardness	Standard Practice for Florescent UV Exposure of Plastics	D4329 & D2240	500 hrs: <1% Change in Hardness
Chemical Resistance	Standard Practices for Evaluation the Resistance of Plastics to Chemical Reagents	D543-06	Sea Water: 0.06% weight increase
Chemical Resistance	Standard Practices for Evaluation the Resistance of Plastics to Chemical Reagents	D543-06	Gasoline: 3.0% weight increase
Chemical Resistance	Standard Practices for Evaluation the Resistance of Plastics to Chemical Reagents	D543-06	No.2 Diesel: 1.05% weight increase
Flammability	Standard Test Method for Surface Burning Characteristics of Building Materials	E84-21a	Flame spread index: 40 Smoke developed index: 300

Tangent Technologies, LLC, is a manufacturer of recycled plastic lumber. Tangent does not provide engineering services and assumes no responsibility, or liability, for any element of a projects design and/or construction details.

Suitability and Limitations

These products have greater impact resistance than wood but conversely less rigidity, and therefore prior to use a thorough design engineering study must be performed to determine the suitability of Tangent Structural Lumber in any critical application.

Fabrication is similar to wood and normal woodworking tools can be used. One should be advised that by transforming the product by drilling holes and routing edges the integrity and strength of the part can be altered. Eye protective wear, dusk masks, gloves and normal safety precautions must be used when handling and fabricating the product. (See SDS sheet for more details)

Inherent in Tangent Structural Lumber products, you will observe a greater coefficient of thermal expansion than stiffer wood products. Therefore, when designing your application, an accommodation must be made to properly allow for expected expansion and contraction over the length of the product.

Static electricity is a naturally occurring phenomenon to all resin-based products. On dry days there is potential to experience a static shock if you walk across Tangent Structural Lumber and touch a conducting surface such as a metal fixture. The physics is similar to walking across a carpet and receiving a shock when you touch a door handle. We do not warranty against static electricity as it is naturally occurring and is not a manufacturing defect. Contact our technical sales reps to learn how to minimize the generation of static electricity through product selection, available additives and construction details.

During winter conditions, you might find any surface made from Tangent Structural Lumber to be slippery in snow, wet and frost conditions. Unlike most other surfaces, you can easily spread rock salt or calcium chloride to restore decent traction and melt the frost or ice layer with no harmful effect to the Tangent Structural Lumber products.

Warranty

Tangent Technologies LLC, the manufacturer of Tangent Structural Lumber products, offers a limited warranty that this product will not rot, splinter, decay or suffer structural damage directly from termites or fungal decay under normal use. Tangent Technologies LLC does not recommend or approve this product for all end use applications. The appropriate national and local code authorities should be consulted for safety, suitability and applicability for intended use prior to purchasing product. (See full warranty details)

This guideline and summary is intended to provide the distributor, installer and end user with basic guidelines and technical specifications for designing and properly installing the Tangent Structural Lumber products. However, the installer and/or purchaser of any Tangent Structural Lumber product is solely responsible for interpreting specific job conditions and determining the engineering design and suitability of end use and application of any Tangent Structural Lumber product. Adherence to applicable building and safety codes for specific locations and applications of this product are the sole responsibility of the installer and/or purchaser. In no event shall Tangent Technologies LLC, the manufacturer of the Tangent Structural Lumber products, be liable for labor, installation, reinstallation or for any indirect, punitive, exemplary or consequential damages of any kind whatsoever from the provisions of this information.

This revision 1.1 [8/06/24] supersedes all other Tangent Structural Lumber technical data sheets.