

Section 06150
Wood Decking (Wood Composite Lumber)
Architect Specification Sheet



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PART-1: GENERAL

- 1.1 Section Includes:** Wood plastic composite made from 60% wood-like cellulose fiber and 40% reclaimed plastics, not use for framing or structural members.
- 1.2 Related Sections:** Division 6 Section – Rough Carpentry.
- 1.3 References:**
- A. American Society for Testing and Materials (ASTM):
1. ASTM C1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
 2. ASTM D1037 Standard Test Method for Evaluating Properties of Wood-Base Fiber and Particle Panel Material.
 3. ASTM D1413 Standard Test Method for Wood Preservatives by Laboratory Soil-Block Cultures.
 4. ASTM D143 Standard Test Methods for Small Clear Specimens of Timber.
 5. ASTM D1761 Standard Test Method for Mechanical Fasteners in Wood.
 6. ASTM D1929 Standard Test Method for Determining Ignition Temperature of Plastics.
 7. ASTM D2017 Standard Test Method for Accelerated Laboratory Test or Natural Decay Resistance of Wood.
 8. ASTM D2244 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
 9. ASTM D2394 Standard Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring.
 10. ASTM D256 Standard Test Method for Determining the Pendulum Impact of Notched Specimens of Plastics.
 11. ASTM D2565 Standard Practice for Xenon Arc Exposure of Plastics Intended for Outdoor Applications.
 12. ASTM D3345 Standard Test Method for Laboratory Evaluation of Wood and Other Cellulosic Materials for Resistance to Termites.
 13. ASTM D4761 Standard Test Method for Mechanical Properties of Lumber and Wood-Base Structural Material.
 14. ASTM D6109 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastic Lumber.
 15. ASTM D6117 Standard Test Methods for Mechanical Fasteners In Plastic Lumber and Shapes.
 16. ASTM D6341 Standard Test Method for Determination of the Linear Coefficient of Thermal Expansion of Plastic Lumber and Plastic Lumber Shapes Between -30 and 140°F (-34.4 and 60°C).
 17. ASTM D635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
 18. ASTM D638 Standard Test Method for Tensile Properties of Plastic.
 19. ASTM D6662 Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards.
 20. ASTM D696 Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer.
 21. ASTM D790 Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

- 22. ASTM D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- 23. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. Building Officials and Code Administrators (BOCA):
 - 1. BOCA International Evaluation Report #99.8.1
 - 2. BOCA National Building Code, 1999.
- C. International Conference of Building Officials (ICBO):
 - 1. Uniform Building Code, 1997
 - 2. International Building Code, 2000
 - 3. International Residential Code, 2000
- D. National Evaluation Service, Inc., Reports (NER):
 - 1. NER-A74167 Nexwood Industries Limited (in progress).
- E. Southern Building Code Congress International (SBCCI):
 - 1. Standard Building Code, 1999.
- F. Nexwood Industries Limited:
 - 1. Nexwood Contractor's Handbook and Instruction Guide.
- G. Additional Test Results:
 - 1. Full Scale Load Test as per BOCA NBC 1710.3.1.
 - 2. Full Scale Railing System Test as per BOCA NBC 1606.4 and section 4.4 ASCE 7.
 - 3. Full Scale Railing System Test as per 1997 Ontario Building Code and 1995 National Building Code of Canada Section 1.1.10.1 (1) (C) and (2).
 - 4. Stair Tread Concentrated Load Test as ICBO AC174 section 4.1.3.

1.4 System Description:

- A. Design Requirements:

Ultimate strength values are not meant for design analysis. Testing performed on a 2x6 cross section. Design values are for temperatures up to 130^o F (54^oC).

Structural properties: Ultimate Value/Design Value:

 - a. Compression Parallel to Length (ASTM D4761): 1,810 psi/700 psi.
 - b. Tensile Strength of Beam (ASTM D4761): 2,373 psi/950 psi.
 - c. Tensile Strength of Material (ASTM D638): 2,840 psi/1135 psi.
 - d. Modulus of Rupture (ASTM D790): 2,706 psi/1,050 psi.
 - e. Modulus of Elasticity (ASTM D790): 443,946 psi/396,000 psi.

1.5 Submittals:

- A. General: Submit listed submittals in accordance with conditions of the contract and submittal procedure.
- B. Product Data: Submit manufacturer's product data, maintenance recommendations and installation manual including joints' details.
- C. Samples: Submit selected and verified samples of decking and or railing in color as selected by Architect.

Some color variation in boards exposed to weathering is normal and should be expected. All colors will fade when exposed to sunlight and natural weathering.
- D. Warranty documents specified herein.

1.6 Delivery, Storage and Handling:

- A. General: Comply with product requirement section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged conditions, fitted with a protective Nexwood plastic wrap with stringers and straps; identification labels remain intact. These units should be off loaded using forklift and must be lifted from the center, between the crossers, to prevent the unit from dropping.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions.

1. Immediately upon delivery to jobsite, place materials in area protected from weathering. Keep the units covered with protective Nexwood wrap, including any exposed ends.
2. Units from the same shipment should be stored together or the wrap dated to reduce mixed production lots.
3. Store Nexwood products on a flat surface.
4. When stacking bundled units, line up supports vertically. The distance between the stringers at least 38.5" to prevent sagging.

1.7 Warranty

- A. Manufacturer's Limited Warranty: No warranty claim shall be honored without presentation of the Limited Warranty Form, proof of purchase, and submission of "certificate of installation" (if one should apply).
1. Provide manufacturer's non-transferable limited warranty against splitting, rot, and/or termite attack.
 2. Warranty Period: 20 years beginning with proof of dated purchase receipt for 2x6 Nexwood board and 10 years for 5/4 Tongue and Groove Nexwood board.

PART-2: PRODUCTS

2.1 Manufacturer: Nexwood Industries Limited, 1327 Clark Boulevard, Brampton, Ontario, Canada L6T 5R5; Telephone: 1-888-763-9966; Fax: 905-799-3663; E-mail: inquiry@nexwood.com; website: www.nexwood.com.

2.2 Proprietary Products/Systems: Nexwood is manufactured by an extrusion process per manufacturer's quality control manual.

1. Nexwood Composite Lumber Decking:

- a. Material Description: Hollow composite material consists of approximately 60 pph wood-like cellulose fiber by weight with 40 pph reclaimed plastics and 1 pph additives.
- b. Nexwood profiles manufactured in specified length: 8, 12, 16, 20 ft.
- c. Color: Natural, Driftwood Grey, Sierra Brown, Sequoia Red.
- d. Self-Ignition Temperature (ASTM D1929): > 842^o F (450^oC).
- e. Flammability (ASTM E84): Flame spread index 65, smoke developed index 340; **Class B (Class II)**.
- f. Rate of Burning (ASTM D635): 0.68"/min.
- g. Solubility in Water: Negligible.
- h. Toxicity: no harmful material.
- i. Water Absorption (ASTM D1037): < 0.8%.
- j. Relative Density (ASTM D792): 1.167 g/cm³.
- k. Specific Gravity (ASTM D792): 1.170.
- l. Bulk Density (ASTM D6111): 0.510 g/cm³.
- m. Specific Gravity (ASTM D6111): 0.511.
- n. Coefficient of linear thermal expansion (ASTM D696): 2.60X10⁻⁵ in/in/1^oF (5.79X10⁻⁵ in/in/1^oC).
- o. Resistance to Termite Block Evaluation rating (ASTM D3345): 10 (no damage).
- p. Fungus Resistance Rating (ASTM D2017): < 3% (highly resistant).
- q. Static Coefficient of Friction (ASTM C1028): 0.58 when dry, and 0.64 when wet.
- r. Hygrothermal Cycles (ASTM D6662): average flexural strength change = minus 0.4%.
- s. Weathering test (ASTM D2565-2000 hours & D2244): noticeable change.
- t. Screw Uplift (ASTM D2047): 312 lb.
- u. Lateral Withdrawal (ASTM D6117): 392 lb.

2.3 Product Substitution: No substitutions permitted.

2.4 Accessories: End caps, C-channel, E-channel, post cap, fastening screws.

1. Bolts, Exterior Use:
 - a. Material Standard: Comply with ASTM A307, with standard washers.
 - b. Finished: Galvanized, ASTM A123.
 - c. Size: Diameter less than or equal to ½" (12.7 mm).

2. Screws:
 - a. 2x6 Nexwood board:
 - #7x3" Trim Head Swan Secure Stainless Steel.
 - #8x2-1/2" GRK Pheinox or Climatek Plated.
 - b. 5/4 Tongue and Groove:
 - #8x2" GRK Climatek Plated.
 - TrapEase 2 1/2" Fasten Master Composite Deck Screw (do not apply to the deck surface!).
3. Adhesive:
 - OSI/LePage PL-400 Sub-Floor & Decking Adhesive.
 - Devcon, Plastic Welder-II.

PART-3: EXECUTION

3.1 Manufacturer's Instructions: Comply with the methods detailed in Nexwood Contractor's Handbook and Installation Guide.

3.2 Examination:

- A. Site Verification of Conditions:
 1. Verify that site conditions are acceptable for installation of Nexwood products.
 2. Do not proceed with installation of Nexwood products until unacceptable conditions are corrected.

3.3 Installation:

- A. Install in accordance with most recent version Contractor's Handbook and Installation Guide.
- B. Ensure boards are gapped end to end and width to width as described in the Nexwood Contractor's Handbook and Installation Guide.
- C. Avoid butting boards of 20 feet in length end to end (≤ 16 ft); use other alternative design of your deck with different levels (elevations) or Herringbone pattern.
- D. Use manufacturer's gapping guidelines to calculate end spacing due to temperature change.
- E. Always use double joists for each butt joint.
- F. Avoid building Nexwood deck less than 12 ft from the ground without ventilation.
- G. Do not attach Nexwood decking to any solid surface or watertight system.
- H. Ensure decking spans do not exceed the specifications of Nexwood Span Chart.

3.4 Cleaning:

- A. Comply with cleaning instructions as described in Nexwood Contractor's Handbook and Installation Guide.
- B. At completion of work, remove debris caused by installation from project site and wash the entire deck with pressure washer. Periodic cleaning is necessary to keep the deck looking great.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.5 Nexwood Decking Span Chart:

Dimension	Maximum Uniform Live Load (psi)			
	100	150	200	Recommended
	Maximum Member Span Between Supports (inches)			
2x6	30	28	26	24
5/4 T&G	26	24	22	16

END OF SECTION