

SECTION 061500

WOOD DECKING, LUMBER AND TIMBERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide labor, materials and equipment necessary to complete the work of this Section, including the following:
1. Wood decking, lumber, stringers, beams and timbers for the following applications:
 - a. Decks.
 - b. Cladding.
 - c. Bridges
 - d. Boardwalks
 - e. Marinas
 - f. Walkways.
 - g. Conservatories.
 - h. Site furnishings.
 - i. Pavilions.
 - j. Pergolas.
 - k. Porte cochere.
 - l. Lattice structures.
 - m. Arbors.
 - n. Greenhouses.
 - o. Paneling.
 - p. Ceilings.
 - q. Marine Constructions
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections.
1. Section 061000 – ROUGH CARPENTRY for other rough carpentry work.
 2. Section 062000 – FINISH CARPENTRY for other finish carpentry work.
- C. Reference Standards: Comply with applicable requirements of the following:
1. Iron Woods Grading Rules
 2. Allowable Design Values By Grade
 3. ANSI A137.1 sec 9.6 – Standard Test Method for Determining the Static and Dynamic Coefficient of Friction of Ceramic Tile and Other Like Surfaces.
 4. ASTM D143 – Standard Test Methods for Small Clear Specimens of Timber.
 5. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
 6. THUSA Green By Nature “Due Care” Standards Policies and Procedures
 7. U.S. Lacey Act.
 8. U.S. Buy American Act.
 9. U.S. Foreign Corrupt Practices Act
 10. U.S. Forced Labor Laws

1.2 SUBMITTALS

- A. Submittals: Submit under provisions of Division 01.
- B. Product Literature: Manufacturer's product literature describing all components.
- C. Verification Samples: For each type of decking, lumber and timbers.
- D. Certificate of Compliance, Green By Nature: Controlled Wood, Chain of Custody, Life Cycle Impact and Due Care Policies And Procedures. Submit Vendor documented, comprehensive and verifiable Policies and Procedures outlining step by step a process of verification and accountability related to Environmental Compliance Submittals.
- E. Certificate of Compliance, Green by Nature: Submit a certificate confirming compliance with "Green By Nature 'Due Care' Policies and Procedures – Life Cycle Impact, CITES, U.S. Buy American Act, U.S Foreign Corrupt Practices Act, U.S. Forced Labor Laws, U.S. Lacey Act, Third Party Controlled Wood, Chain of Custody, Verification of Legal Origin, and Legal Compliance.
- F. Certificate of Compliance, Verification of Legal Origin / Verification of Legal Compliance: Submit Third Party Environmental NGO such as Unifloresta™, FSC™ "Or Approved Equal" confirming audit of legal chain of custody and legal compliance from harvest source to importer as verification of U.S. Lacey Act Compliance.
- G. Certificates of Compliance: Submit documentation of the following.
 - 1. Certificate of Compliance "Inspection": A vendor certificate confirming product compliance with grade and quality requirements.
 - 2. Certificate of Compliance "Technical": A vendor certificate confirming product compliance with minimum specified Physical, Mechanical and Technical performance requirements as defined by the specification.
 - 3. Certificate of Compliance "International Building Code" with allowable design values and span tables signed by a licensed engineer.
 - 4. MSDS (Material Safety Data Sheet) – Submit a Material Safety and Data Sheet for the wood products supplied on the project.
 - 5. Grading Rules – "Iron Woods Tropical Hardwood - Grading Rules and Definitions".
 - 6. Best Practices: "Iron Woods Best Practices Guide or other relevant installation guides.

1.3 QUALITY ASSURANCE

- A. Manufacturer/Vendor Qualifications: Products covered under this Section shall be supplied by a single manufacturer/vendor unless otherwise specified with a minimum of fifteen years proven production or supply experience.
- B. Installer Qualifications: Installer shall have a minimum of three years proven construction experience and be capable of estimating and building from drawings and details, determining elevations, in addition to proper material handling.
- C. Pre-installation Conference: Conduct conference by phone or on site to comply with requirements in Division 01.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials during shipment, storage and construction against damage. If material is air dried, stickers of a minimum of 10mm shall be placed between each layer of boards when packed. If material is kiln dried, material shall be dense packed and wrapped.
- B. All units shall be individually strapped to wood pallets or blocking of a minimum thickness to allow the egress of lift forks using high strength strapping with a minimum of 4 straps per crate.
- C. Store a minimum of 4 inches off the ground in a dry location and cover with polyethylene to protect from contact with materials which would cause staining or discoloration.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design: Iron Woods™ Ipe, Tabebuia spp. Lapacho Group species by Timber Holdings USA LLC, Tel 888-932-9663, www.ironwoods.com
 - 1. Moisture Content:
 - a. Air Dried, moisture content of 18 to 25 percent; all dimensions when net thickness is over 1 inch.
 - b. Kiln Dried, moisture content of 12 to 18 percent; all dimensions when net thickness is 1 inch or less.
 - 2. Surface Options: **Select One**
 - a. S4SE4E (surfaced four sides, eased four edges). Surfaces shall be planed smooth, Edges shall be eased to a radius of 1/8 inch.
 - b. Rough Sawn. Surface shall be rough sawn, Edges shall be square.
 - c. Custom profiled. Profiles shall be as per plans and specifications.
 - 3. Dimensions on Drawings: Nominal and Actual Size shall be listed.
 - 4. Length Options:
 - a. Lumber shall be supplied over specified length for final fit in the field.
 - b. Lumber shall be supplied precision trimmed to specified lengths.
 - 5. Dimensional Tolerance: Plus or minus 0.125 inch in width and 0.0625 in thickness, measured at 25 percent moisture content.
 - 6. End Coating: Supply lumber with ends sealed with Anchorseal™, Paraffin "Or Equal" wax end sealer. Lumber shall be resealed after cutting to reduce end splits.
- B. Grade Requirement:

Reference – Iron Woods® Grading Rules

B.1 Iron Woods Premium Select Architectural Grade (Clear All Heart Mixed Grain) Inspected and Hand Selected for Serviceable appearance on 4 faces and 4 Edges (reversible).

1. Grading Face, Back Face, and Edges.
 - a. Include - Appearance characteristics.
 - b. Include - Physical characteristics which can be removed using normal installation methods, tools, or sanding.
 - c. Exclude - Sound defects.
 - d. Exclude - Unsound defects.
 - e. Exclude - Milling defects.
 - f. For Structural Application Only – Exclude Pin Knots bigger than ½” at any face and/or edge, Maximum Permitted Slope of Grain 1” in 10”, Length of End Split and Surface Split shall be as per ASTM D245 (5.4.3)

- C. Mechanical Properties: Meet or exceed the following Maximum Mechanical Properties when tested in accordance with ASTM D143:
 1. Bending Strength: 22,445 psi
 2. Modulus of Elasticity: 3,145,000 psi/
 3. Compression Parallel to Grain: 13,140 psi.
 4. Compression Perpendicular to Grain: 3,595 psi.
 5. Shear Parallel To Grain: 2,290 psi
 6. Average Air-Dry Density: Ranges from 56.7 to 59.3pcf.
 7. Basic Specific Gravity: Ranges from 0.85-0.97.

- D. Allowable Design Values For Wood Based On ASTM 245 - Dimension Lumber and Decking (1” to 4” thick by 2” and wider): Meet or exceed the following when graded according to Iron Woods Grading Rules and Tested in Accordance with ASTM D-143
 - D.1 Premium Select Architectural Grade:
 1. Bending Strength: 6,750 psi
 2. Modulus of Elasticity: 3,300,000 psi/
 3. Compression Parallel to Grain: 3,800 psi.
 4. Compression Perpendicular to Grain: 2,205 psi.
 5. Shear Parallel To Grain: 995 psi.
 6. Average Air-Dry Density: Ranges from 56.7 to 59.3pcf.
 7. Basic Specific Gravity: Ranges from 0.85-0.97.

- E. Allowable Design Values For Wood Based On ASTM 245 – Beams and Stringers (4” and thicker, width more than 2” greater than thickness): Meet or exceed the following when graded according to Iron Woods Grading Rules and Tested in Accordance with ASTM D-143:
 - E.1 Premium Select Architectural Grade
 1. Bending Strength: 8,850 psi
 2. Modulus of Elasticity: 3,300,000 psi/
 3. Compression Parallel to Grain: 4,300 psi.
 4. Compression Perpendicular to Grain: 2,205 psi.
 5. Shear Parallel To Grain: 995 psi.
 6. Average Air-Dry Density: Ranges from 56.7 to 59.3pcf.
 7. Basic Specific Gravity: Ranges from 0.85-0.97.

- F. Coefficient of Friction: Meet or exceed the minimum Static and Dynamic Coefficient of Friction as required by International Building Code in accordance with ANSI A137.1 sec 9.6 standard testing method:

1. Static Minimum: Wet .60 FP.
 2. Dynamic Minimum: Wet .42 FP.
- G. Decay Resistance: Meet or exceed International Building Code/International Residential Code requirements for “Naturally Durable Wood” being durability rated by the U.S Forest Products Laboratory or the Forest Research Laboratory Oregon State University as Class 2 or better. Ipe (Tabebuia spp, Lapacho Group) – Class 1.
- H. Screw Pull Out: Meet or exceed a minimum average screw pull out of 1102 pounds at maximum load.
- I. Fire Rating, Acute Inhalation, Combustion and Toxicity Requirements: Meet or exceed the following.
1. Lumber supplied shall be naturally fire resistant without the use of any fire resistant treatments to meet NFPA Class A, UBC Class 1 1989 and 2016 edition in accordance with ASTM E-84 standard test methods.
 2. Lumber supplied shall be approved by CalFire Wildlife Urban Interface Areas – Materials and Construction Methods, Exterior Wildlife Exposure: Decking Code Section Chapter 7A(CSFM 12-7A-4).
 3. Lumber Supplied shall meet International Building Code / International Residential Code minimum requirements for “Fire Resistant Wood”.
 4. Lumber Supplied shall have an Acute Inhalation Combustion Toxicity testing result of LC 50 of 63.60g. (Pass (19.7g or greater) as per NYS Modified Pittsburg Protocol NYSUFPBC, Art. 15, Part 1120,9 NYCRR 1120.
- J. Environmental Compliance:
1. Green by Nature Compliance: All lumber shall meet minimum environmental requirements as defined under Green By Nature...Build With Conscience™ Controlled Wood, Chain of Custody, Life Cycle Impact and Due Care – Environmental Compliance Standards, Policies and Procedures confirming that:
 - a. All Iron Woods products have been verified of legal origin and compliance as being, legally harvested, transported, exported, imported and documented in compliance with all country of origin, international and domestic laws, rules, regulations and treaties pertaining to the fair and legal trade of forest products including but not limited to the U.S. Department of Agriculture Lacey Act, ITTA (International Tropical Timber Trade Agreement), CITES (Convention On The International Trade of Endangered Species), U.S. Buy American Act, U.S Foreign Corrupt Practices Act, U.S. Forced Labor Laws.
 - b. All Iron Woods products are derived from forests which are naturally occurring, renewable and sustainable and are not harvested from forests or forest plantations where traditional or civil rights have been violated, forests having high conservation values which are threatened, forests that have been genetically modified or forests which have been converted to non-forest use. All Iron Woods and their packaging materials have been kiln dried and or fumigated and are free from live and or invasive insect, plant or animal species.
 - c. All Iron Woods products are 100 percent organic and grown without the use of chemical fertilization and are regenerated naturally or by seeding and replanting. The natural service life of Iron Woods®, exceed their natural growth cycle, trap and store carbon and are able to be reclaimed, reused or recycled. Iron Woods® do not require for service any petroleum based or inorganic chemical treatments

adhesives or coatings. Iron Woods® do not require for service any specialized handling storage or disposal procedures and generate zero post-industrial or post-consumer non-biodegradable waste. Iron Woods are also safe for human and animal contact, meet Low VOC emission standards and meet International Building Code and International Residential Code requirements for naturally durable wood.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to starting work inspect the substrate to ensure that it has been properly prepared to accept materials specified in this Section. Commencement of work shall imply acceptance of surfaces and or conditions.
 - 1. Review drawings to determine if materials specified are appropriate for the specified applications.
 - 2. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved submittals including the following:
 - 1. Manufacturers Best Practices.
 - 2. Install materials plumb, true to line, cut and fitted.
 - 3. Scribe and cope as required for accurate fit to adjacent construction.
 - 4. Use manufacturer's recommended fasteners.
 - 5. Fasten tight to supports. Provide shims if there are variations in framing.

3.3 CLEANING AND PROTECTION

- A. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.
- B. Clean using materials recommended by the manufacturer to remove stains, dirt and debris prior to final acceptance.

END OF SECTION