



**LONG-TERM WOOD TREATMENT  
PRODUCT SPECIFICATION  
IN CSI 3-PART FORMAT**

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GENERAL NOTES TO SPECIFIER:

THE FOLLOWING PRODUCT SPECIFICATION LANGUAGE HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN SPECIFYING ACCSYS TECHNOLOGY'S "ACCOYA®" ACETYLATED WOOD IN EXISTING 3-PART SPECIFICATIONS FOR THE VARIOUS PRODUCTS LISTED IN THE SPECIFICATIONS BELOW UNDER THE "SUMMARY" ARTICLE.

SAMPLE LANGUAGE IS PROVIDED FOR APPLICABLE ARTICLES IN PART 1—GENERAL AND PART 2—PRODUCTS FOLLOWING THE CONSTRUCTION SPECIFICATION INSTITUTE'S SECTIONFORMAT. BECAUSE OF THE VARIATION IN SPECIFICATION SYSTEMS CURRENTLY IN USE, ARTICLE AND PARAGRAPH NUMBERS AND TITLES MAY DIFFER SOMEWHAT THAN PRESENTED HEREIN. THE SAMPLE LANGUAGE SHOULD BE EDITED ACCORDINGLY TO FIT EACH FIRM'S SPECIFICATIONS.

THIS SECTION ASSUMES THE PROJECT MANUAL CONTAINS COMPLETE DIVISION 01 DOCUMENTS, INCLUDING THE FOLLOWING SECTIONS:

- 012513 PRODUCT SUBSTITUTION PROCEDURES
- 013300 SUBMITTAL PROCEDURES
- 016200 PRODUCT OPTIONS
- 016600 PRODUCT STORAGE AND HANDLING REQUIREMENTS
- 017400 CLEANING AND WASTE MANAGEMENT
- 017700 CLOSEOUT PROCEDURES, AND
- 017800 CLOSEOUT SUBMITTALS.

CLOSE COORDINATION WITH DIVISION 01 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

GREEN TEXT AND NOTES RELATE TO SUSTAINABLE (E.G. LEED®) PROJECTS AND CAN BE DELETED IF THE PROJECT IS NOT INTENDED TO ATTAIN CERTIFICATION.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G. [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ELECTRONIC VERSIONS OF THIS SPECIFICATION UTILIZE AUTOMATIC PARAGRAPH NUMBERING.

WHEN EDITING IS COMPLETE, DELETE ALL TEXT ON THIS PAGE, THEN REMOVE THE SECTION BREAK AT THE TOP OF THE NEXT PAGE TO REMOVE THIS INTRODUCTORY SECTION FROM THE DOCUMENT.

**SPECIFICATION BEGINS ON THE FOLLOWING PAGE.**

## Part 1 - **GENERAL**

### 1.01 SUMMARY

ACCSYS TECHNOLOGIES "ACCOYA®" ACETYLATED WOOD CAN BE USED IN A VARIETY OF EXTERIOR AND INTERIOR APPLICATIONS. SOME OF THE MORE COMMON USES ARE INDICATED BELOW. DELETE OR ADD FROM THE LISTED ITEMS AS APPLICABLE.

#### A. Section Includes:

1. Acetylated Wood used in:
  - a. [Cladding/Siding.]
  - b. [Deck Railings.]
  - c. [Door/Window Millwork.]
  - d. [Louvers.]
  - e. [Sun Shade Screens.]
  - f. [Outdoor Furniture.]
  - g. [Light Posts.]
  - h. [Other General, Civil, Structural and Marine Uses: Bridges, glu-lam beams, noise barriers, boat decks, musical instruments, signage, and veneers.]

### 1.02 REFERENCES

#### A. Definitions:

1. Acetylation: A process that essentially alters the actual cell structure of wood by transforming free hydroxyl groups into acetyl groups, improving the technical properties (durability and dimensional stability) of wood.

#### B. Reference Standards: Current edition at date of bid.

1. [U.S. Green Building Council \(USGBC\): Leadership in Energy and Environmental Design \(LEED®\) Green Building Rating System™.](#)
2. ASTM D143 - 09 Standard Test Methods for Small Clear Specimens of Timber
3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
4. AWPA E1 - Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites
5. AWPA E10 - Standard Method of Testing Wood Preservatives by Laboratory Soil-Block Cultures

6. BS EN 350-1 - Durability of wood and wood-based products. Natural durability of solid wood. Guide to the principles of testing and classification of natural durability of wood
7. WDMA T.M. 1 - Soil Block Test.
8. WDMA T.M. 2 - Swellometer Test, Test Method to Determine the Water-Repellent Effectiveness of Treating Formulations.

### 1.03 SUBMITTALS

A. Reference Section “01 33 00 – Submittal Procedures.”

B. Test and Evaluation Reports:

C. Sustainable Design Submittals

1. LEED® Submittals:

- a. Certificates for Credit MR 7: Chain-of-custody certificates certifying that products specified to be made from certified wood comply with forest certification requirements. Include evidence that mill is certified for chain of custody by an FSC-accredited certification body, such as the Programme for the Endorsement of Forest Certification (PEFC).

2. Cradle to Cradle Submittals:

- a. Certificates for Gold Level:
  - 1) All requirements met at BASIC and SILVER levels.
  - 2) NO problematic chemicals (assessed by MBDC as RED) in product.
  - 3) Plan for product recovery and closing the loop.
  - 4) Material Reutilization score  $\geq 65$ .
  - 5) Use renewable energy for 50% of manufacturing (final assembly).
  - 6) Complete an audit to characterize and quantify water use.
  - 7) Complete an audit of corporate social responsibility practices.

D. Warranty Documentation.

E. Sustainable Design Closeout Documentation.

### 1.04 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer:

- a. Single firm providing acetylated material.
- b. Minimum 4 years experience in commercial production of acetylated wood.

B. Sustainability Standards Certifications:

1. Forest Certification: Provide acetylated wood produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
2. Cradle to Cradle Certified.
3. Singapore Green Label Certified.

C. Industry Certifications:

1. RAL (German Institute for Quality Assurance and Specifications).
2. WDMA, I.S.4 Industry Standard for Preservative Treatment of Millwork.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Reference Section "01 66 00 – Product Storage and Handling Requirements."
- B. Store materials under cover of a breathable barrier and protected from weather and contact with damp or wet surfaces.
- C. Maintain temperature and relative humidity.
- D. Store materials flat, with spacers between each bundle to provide adequate air circulation, a minimum 4 inches (10 cm) above concrete flooring and 12 inches (30 cm) above ground, on framework or blocking.
- E. Protect edges, joints, and corners from damage.
- F. Packaging:

ACCOYA® WOOD IS STRAPPED WITH BINDING TAPE IN STANDARD LABELED PACKAGES, EACH WITH A UNIQUE NUMBER.

1. Include the following information:
  - a. Dimensions.
  - b. Manufacturer's contact information.

G. Environmental Limitations:

ACCOYA® WOOD IS A LOW MOISTURE CONTENT, KILN-DRIED MATERIAL THAT IS HARDER THAN THE ORIGINAL WOOD SPECIES. ACCOYA® WOOD MACHINES MORE LIKE A HARDWOOD AND REQUIRES NO SPECIAL TOOLS FOR CROSS CUTTING, RIPPING, PLANNING, ROUTING, OR DRILLING.

1. Disposal: Accoya® Wood is non-toxic, can be reused when no longer needed or can be disposed like regular wood.
2. Gluing: Accoya® Wood can be glued using many commonly used wood adhesive systems.

3. Fasteners and Other Hardware: Corrosion-resistant, high-quality 304 or 316 stainless steel or naval brass fasteners are recommended. Chrome-plated aircraft anodized aluminum or proprietary epoxy or ceramic-coated fasteners may be a suitable alternative. Zinc-plated or galvanized steel are not recommended.
4. Coatings: Many high quality outdoor approved wood coating systems are compatible with Accoya® Wood.
5. For further guidance, reference Accoya's "Wood Information Guide" available at [www.accoya.com](http://www.accoya.com).

## 1.06 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to replace Accoya® wood that fails per warranty guidelines within specified warranty period.
  1. Warranty Period:
    - a. Fifty (50) years for above-ground installations.
    - b. Twenty-Five (25) years for in-ground installations.

## Part 2 - PRODUCTS

### 2.01 MANUFACTURER

Accsys Technologies PLC

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[www.accsysplc.com](http://www.accsysplc.com)  
 Hal Stebbins and Lisa Ayala

### 2.02 DISTRIBUTORS

United States  
 Universal Forest Products  
 Sierra Forest Products  
 Atlas Lumber  
 Royal Plywood  
 Rex Lumber

Canada  
 Upper Canada Forest Products

Other Distributor Locations: United Kingdom, Ireland, The Netherlands, Italy, Austria, Norway, Germany, Poland, Switzerland, China, Thailand, Japan, Vietnam, UAE, India.

## 2.03 ACETYLATED WOOD

A. Product: Accys Technologies “Accoya®” Wood

B. Wood Characteristics:

1. Veneer Species: Radiata Pine (also known as Monterey Pine).
2. Moisture Content: Less than or equal to 8%.
3. Acetylated Wood Properties:

ACETYLATED WOOD CAN BE FIRE-TREATED FOR HIGHER RATINGS WITH FIRE-RETARDANT TREATMENTS AND COATINGS.

- a. Fire Rating, ASTM E 84: Class C (with Hoover Exterior Fire-X Fire Retardant Treatment, Class A).

ACETYLATION REDUCES SWELLING AND SHRINKAGE BY 70%+.

- b. Dimensional Stability:
  - 1) Tangential Shrink/Swell, 1.5%
  - 2) Radial Shrink/Swell, 0.8%
  - 3) Volumetric Shrink/Swell, 2.3%.
  - 4) Water Repellent Effectiveness: WDMA T.M. 2: >70%

MOST DURABLE WOOD; MORE DURABLE THAN TEAK.

- c. Durability, BS EN 350-1 Testing: Class 1 (very durable).
- d. Fungal Decay, AWWA E10: < 0.30% weight loss.
- e. Fungal Decay, WDMA T.M. 1: < 0.25% weight loss.
- f. Termites, AWWA E1: ≤ 5% weight loss with Formosan termites.

HARDNESS IS SIMILAR TO SOFT MAPLE, AMERICAN CHERRY OR AMERICAN WALNUT.

- g. Hardness, ASTM D143: 922 lbf side, 1,484 lbf end<sup>2</sup>.
- h. Bending Strength, ASTM D143: 13,144 psi (small clear specimens).
- i. Bending Stiffness, ASTM D143: 1,297,492 psi (small clear specimens).
- j. Density: 32 lb/cu ft (@ 65% relative humidity, 20 degrees C).
- k. Equilibrium Moisture Content: 3-5% (@ 65% relative humidity, 20 degrees C).

C. Accoya® Lumber Available Dimensions:

1. Nominal Depth & Width: [**1 inches** (25 mm)] [**1-1/4 inches** (32 mm)] x [**4 inches** (100 mm)] [**5 inches** (125 mm)] [**6 inches** (150 mm)] [**8 inches** (200 mm)].

2. Nominal Depth & Width: [**1-1/2 inches** (38 mm)] x [**5 inches** (125 mm)] [**6 inches** (150 mm)] [**8 inches** (200 mm)].
3. Nominal Depth & Width: [**2 inches** (50 mm)] x [**4 inches** (100 mm)] [**6 inches** (150 mm)] [**8 inches** (200 mm)].
4. Nominal Depth & Width: [**2-1/2 inches** (63 mm)] [**3 inches** (75 mm)] x [**4 inches** (100 mm)] [**5 inches** (125 mm)] [**6 inches** (150 mm)].
5. Lengths: [**7.87 feet** (2.4 m)] [**9.84 feet** (3 m)] [**11.80 feet** (3.6 m)] [**13.77 feet** (4.2 m)] [**15.74 feet** (4.8 m)]

### Part 3 - **EXECUTION**

(NOT USED)

**END OF SECTION<sup>1</sup>**

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<sup>1</sup>

This specification was prepared specifically for Accoya. Comments or suggestions for improvement should be addressed to (206) 412-9705 or C Squared Advertising, 4004 NE 4th St # 107-509, Renton, WA, 98056-4102, (425) 277.9951.

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