

ICC-ES Evaluation Report

ESR-2825

Reissued October 2023

This report also contains:



- CBC Supplement

Subject to renewal October 2024

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<p>DIVISION: 06 00 00 - WOOD, PLASTICS, AND COMPOSITES</p> <p>Section: 06 05 73.33 – Preservative Wood Treatment</p>	<p>REPORT HOLDER: ACCSYS TECHNOLOGIES PLC</p> 	<p>EVALUATION SUBJECT: ACCOYA ACETYLATED WOOD</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 [International Building Code® \(IBC\)](#)
- 2021, 2018, 2015, 2012, 2009 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Preservative-treated wood
- Decay resistance
- Termite resistance
- Corrosion
- Structural

1.2 Evaluation to the following green standards:

- 2020, 2015, 2012 and 2008 ICC 700 *National Green Building Standard™* (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

- See Section 3.1

2.0 USES

ACCOYA Acetylated Wood is used for wood members that are required by the code to be protected against decay and termites.

3.0 DESCRIPTION

3.1 General:

ACCOYA Acetylated Wood is acetylated wood products that are evaluated for use in above-ground and ground-contact applications and resist attack by fungal decay and subterranean termites. Refer to [Tables 1](#) and [2](#).

The attributes of the ACCOYA Acetylated Wood have been verified as conforming to the provisions of (i) ICC 700-2020, ICC 700-2015 and ICC 700-2012 Sections 602.1.6 and 11.602.1.6; and (ii) ICC 700-2008 Section 602.8. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These standards often provide supplemental information as guidance. See Section 5.7 for limitations on termite-resistance use.

3.2 Material:

ACCOYA Acetylated Wood is produced using a proprietary process involving acetic anhydride impregnation and reaction with the wood substrate, at production facilities listed by ACCSYS Technologies PLC and noted in [Table 3](#).

3.3 Species and Retentions:

ACCOYA Acetylated Wood can utilize any softwood or hardwood species that is capable of achieving a minimum 19 percent bound acetyl 5 percent tolerance limit in the sapwood portions. Preservative retention levels are expressed as weight/weight (w/w) % Bound Acetyl as the lower 5 percent tolerance limit that is determined by analysis procedures described in the manufacturer's quality control manual. Minimum retention levels must comply with the values shown in [Table 1](#) of this evaluation report. See [Figure 1](#) for profiles.

3.4 ACCOYA Color Grey (ACG):

ACCOYA Acetylated Wood is also available in ACCOYA Color Grey (ACG), which is manufactured from Accoya, and making use of a secondary vacuum-pressure impregnation process with a water-based pigment dispersion. The ACG process is completed after the initial acetic anhydride impregnation and reaction to wood substrate process as defined in Section 3.3. The ACG product is available for decking profiles only in finished thicknesses of $\frac{3}{4}$ and 1 inch (19 and 25 mm) and widths of $3\frac{3}{4}$, $5\frac{3}{4}$ and $7\frac{3}{4}$ inches (95, 146 and 196 mm); see [Figure 1](#) for profiles. The ACG process is conducted at the ACCSYS – Accoya Color UK Ltd. location listed in [Table 3](#).

4.0 DESIGN AND INSTALLATION

4.1 Design and Installation:

ACCOYA Acetylated Wood is installed as preservative-treated lumber and timbers in accordance with the requirements of the applicable code.

ACCSYS Technologies PLC instructions and industry-published installation instructions for wood and modified wood and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation.

The instructions within this report govern, if there are any conflicts between ACCSYS Technologies PLC instructions, the industry published instructions and this report.

4.2 Applications:

ACCOYA Acetylated Wood may be used in above-ground or ground-contact locations where wood is permitted and/or in above-ground locations required by the code to be resistant to fungal decay or termites. The wood products are limited to use in above-ground or ground-contact applications in all building types and occupancies where permitted by the applicable code. Typical applications are described in [Table 2](#).

Locations requiring protection of wood against fungal decay or termites are described in Section 2304.12 of the 2021, 2018, and 2015 IBC (Section 2304.11 of the 2012 and 2009 IBC) and Sections R317 and R318 of the IRC.

4.3 Fasteners:

Fasteners used for ACCOYA Acetylated Wood must be in accordance with Section 2304.10.6 of the 2021 and 2018 IBC (Section 2304.10.5 of the 2015 IBC, Section 2304.9.5 of the 2012 and 2009 IBC) and Section R317.3 of the IRC, and must be limited to Type 304 and 316 stainless steel.

4.4 Structural:

The maximum load duration factor allowed for ACCOYA Acetylated Wood used for structural members is 1.6, in accordance with Section 2.3 of the American Wood Council (ANSI/AWC) *National Design Specification[®] for Wood Construction* (NDS).

4.5 Spans:

ACCOYA wood products are suitable for use as decking, tongue and groove porch flooring or stair treads when manufactured into the profiles shown on [Figure 1](#) (Profiles) at the maximum spans listed in [Table 4](#).

5.0 CONDITIONS OF USE:

The ACCOYA Acetylated Wood described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Use of the wood products is limited to the types of applications noted in Section 4.2 and [Table 2](#).
- 5.2 Fasteners must be of Type 304 and 316 stainless steel.
- 5.3 Stainless steel (Type 304 or 316) or aluminum (Type 3003, 6015 or 6063) flashing or other noncorrosive means of effective moisture barrier must be used to ensure no direct contact between ACCOYA Acetylated Wood and damp cementitious materials. (Cement, concrete, concrete masonry (CMU), or cement-based siding materials).
- 5.4 Production of wood products is at the facilities noted in [Table 3](#), under a quality-control program with inspections by Timber Products Inspection, Inc.(AA-664 and AA-696).
- 5.5 The following physically above ground applications are required to be treated to ground contact (AWPA Use Category 4A) requirements.
 - 5.5.1 Components which are difficult to maintain, repair or replace and are critical to the performance and safety of the entire system/construction. Examples would be typical deck or dock joists or beams.
 - 5.5.2 Components subject to hazards comparable to ground contact due to climate, artificial or natural processes or construction which include the following:
 - 5.5.2.1 When there is a reasonable expectation that soil, vegetation, leaf litter or other debris may build up and remain in contact with treated wood.
 - 5.5.2.2 When the construction itself, other structures or anticipated vegetation growth will not allow air to circulate underneath the construction and between decking boards.
 - 5.5.2.3 When treated wood is installed less than six inches above the ground (final grade after landscaping) and supported on permeable building materials such as treated wood or concrete.
 - 5.5.2.4 When treated wood is in direct contact with non-durable untreated wood or any older construction with any evidence of decay.
 - 5.5.2.5 When treated wood is wetted on a frequent or recurrent basis such as on a freshwater floating dock or by a watering system.
 - 5.5.2.6 When treated wood is used in tropical climates.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the [ICC-ES Acceptance Criteria for Proprietary Wood Preservative Systems—Common Requirements for Treatment Process, Test Methods and Performance \(AC326\)](#), dated October 2021, Appendix H, Acetylated/Esterified Wood Modification Protection Systems.
- 6.2 Quality control documentation in accordance with Section 5.0 of AC326 with AWPA M22 compliance.

7.0 IDENTIFICATION

- 7.1 ACCOYA Acetylated Wood must be labeled with the name of the inspection agency (Timber Products Inspection Inc.); the product name (ACCOYA) or logo (see [Figure 2](#)); the production company name and plant location (refer to [Table 3](#)); the intended end use; and the evaluation report number (ESR-2825). A sample label is shown as [Figure 2](#).
- 7.2 The report holder's contact information is the following:

ACCSYS TECHNOLOGIES PLC
5000 QUORUM DRIVE #620
DALLAS, TEXAS 75254
www.accoya.com

TABLE 1—MINIMUM RETENTION REQUIREMENTS FOR ACCOYA ACETYLATED WOOD PRODUCTS BY END USE

END USE	MINIMUM TOTAL RETENTION ¹ % Bound Acetyl (w/w)	MINIMUM COMPONENTS RETENTION ¹ % Bound Acetyl (w/w)
Above ground UC3A, UC3B	≥19%	≥19%
Ground contact UC4A	≥19%	≥19%

¹Retention is expressed in percent bound acetyl as the lower 5 percent tolerance limit determined by analysis procedure described in the manufacturer’s quality control manual on a weight/weight basis.

TABLE 2—TYPICAL APPLICATIONS FOR ACCOYA ACETYLATED WOOD PRODUCTS

SERVICE CONDITIONS	USE ENVIORNMENT	AWPA USE CATEGORY ²	TYPICAL APPLICATIONS
Exterior construction, above ground, coated and rapid water runoff	Exposed to all weather cycles, including intermittent wetting	UC3A ABOVE GROUND Protected	Exterior - coated millwork, siding and trim
Exterior construction, above ground, uncoated and poor water runoff Excludes above ground applications with ground contact type hazards (see Section 5.5)	Exposed to all weather cycles including intermittent wetting but with sufficient air circulation so wood can readily dry	UC3B ABOVE GROUND Exposed	Decking, railings, joists and beams for decks and freshwater docks ¹ , fence pickets, uncoated millwork
Ground contact or Fresh Water Non-critical components Includes above ground applications with ground contact type hazards or that are critical or hard to replace	Exposed to all weather cycles, including continuous or prolonged wetting	UC4A GROUND CONTACT General Use	Sawn fence, deck, and guardrail posts, cantilevered members extending beyond the building envelope, joists and beams for decks and freshwater docks ¹

¹Joists and beams shall be treated to requirements for UC4A when they are difficult to maintain, repair or replace and are critical to the performance and safety of the entire system/construction.

²Refer to the AWPA 2020 Book of Standards, Standard U-1 Table 2-1 for a complete description of use category designations and typical applications.

TABLE 3—ACCOYA ACETYLATED WOOD AND COLORING PRODUCTION LOCATIONS

COMPANY NAME	ACCOYA PRODUCTION LOCATION
ACCSYS TECHNOLOGIES PLC	Arnhem, The Netherlands
ACCSYS – ACCOYA COLOR UK LTD.	Barry, United Kingdom

TABLE 4—ALLOWABLE SPANS FOR ACCOYA LUMBER PROFILES^{1,4}

PROFILE NUMBER ¹	THICKNESS	WIDTH	EDGE TYPE	DECK OR FLOOR SPAN ^{2,5}	STAIR TREAD SPAN ³	THICKNESS	WIDTH	EDGE TYPE	DECK OR FLOOR SPAN ^{2,5}	STAIR TREAD SPAN ³
Porch T&G Metric (mm)						Porch T&G Imperial (inch)				
1	19	86	T&G	406	406	3/4	3 ² / ₅	T&G	16	16
2	19	95	T&G	406	406	3/4	3 ³ / ₄	T&G	16	16
3	19	121	T&G	406	406	3/4	4 ³ / ₄	T&G	16	16
4	25	86	T&G	610	610	1	3 ² / ₅	T&G	24	24
5	25	95	T&G	610	610	1	3 ³ / ₄	T&G	24	24
6	25	121	T&G	610	610	1	4 ³ / ₄	T&G	24	24
Decking Metric (mm)						Decking Imperial (inch)				
7	19	95	square	406	406	3/4	3 ³ / ₄	square	16	16
8	19	146	square	406	406	3/4	5 ³ / ₄	square	16	16
9	19	197	square	406	406	3/4	7 ³ / ₄	square	16	16
10	25	95	square	610	610	1	3 ³ / ₄	square	24	24
11	25	146	square	610	610	1	5 ³ / ₄	square	24	24
12	25	197	square	610	610	1	7 ³ / ₄	square	24	24
13	25	146	G&G	610	610	1	5 ³ / ₄	G&G	24	24
14	25	197	G&G	610	610	1	7 ³ / ₄	G&G	24	24

¹Profile Numbers refer to [Figure 1](#).

²The allowable spans for deck or floor use are based on the more restrictive of the following: 100 psf (4.79 kPa) and L/360 deflection limit uniform load, and 220 lb (99.8 kg) at normal load duration and L/180 deflection limit concentrated load.

³The allowable spans for boards used as stair treads are based on the more restrictive of 300 lb (136 kg) concentrated load mid-span at normal load duration or L/180 or 0.125 in. (3.2 mm).

⁴Span ratings above are for tongue-and-groove (T&G) installed tight to each other with tongue inserted into the groove for the length of each board.

⁵Minimum board length is to cover two spans. All board joints shall be supported such that joints occur centered over joints. Joints in adjacent board runs must be staggered.

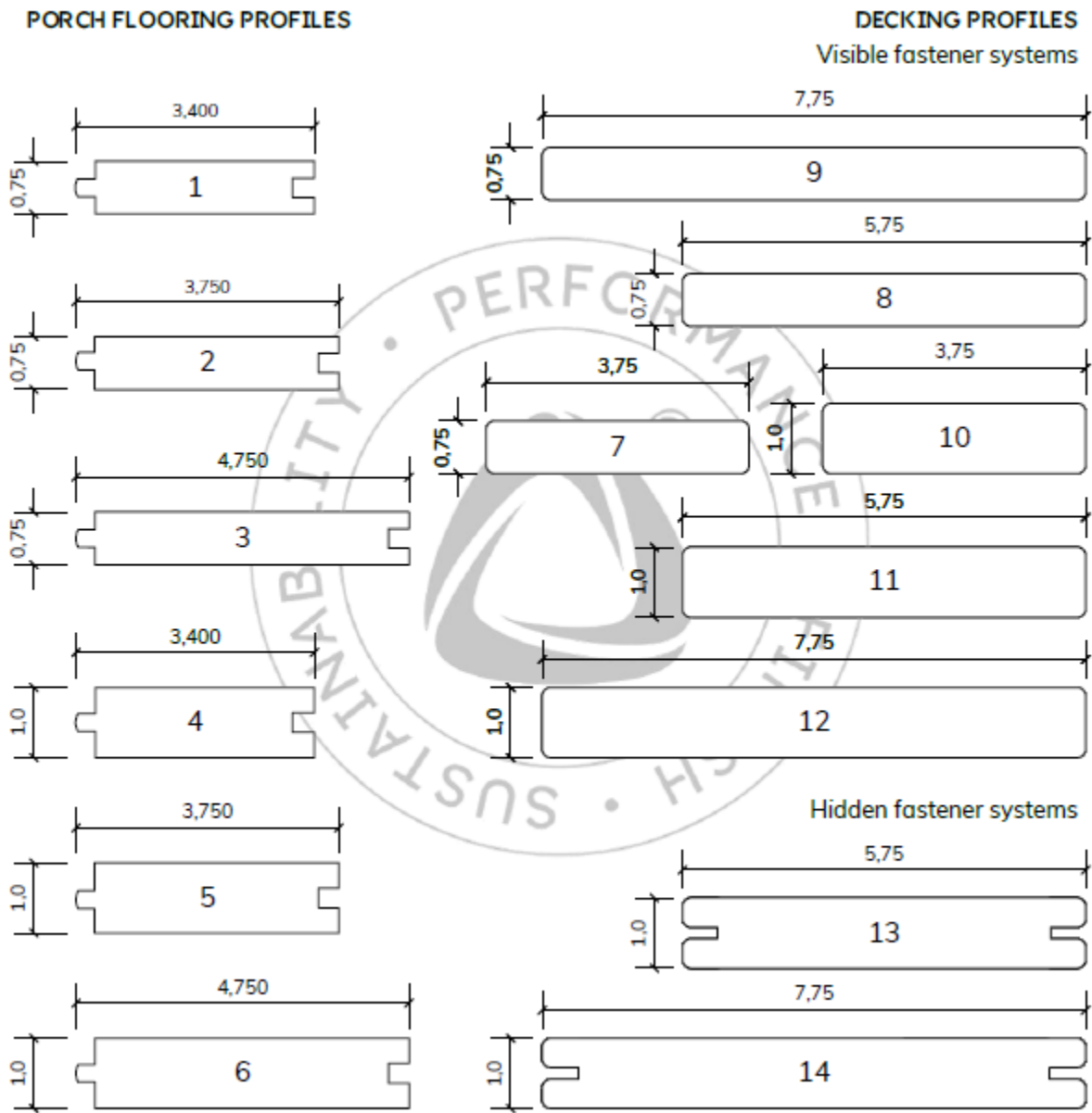




FIGURE 1—ACCOYA LUMBER PROFILES

END USE - ABOVE GROUND & GROUND CONTACT FORMOSAN SUBTERRANEAN TERMITE		15 ABOVE GROUND & GROUND CONTACT 16 Formosan Subterranean Termite
 Plant Location		Inspected by: Timber Products Inspection AA-696
		AWPA UC3A, UC3B, UC4A ESR-2825  Not Listed in AWPA U-1

End Tag front Panel - USA

END USE - ABOVE GROUND & GROUND CONTACT FORMOSAN SUBTERRANEAN TERMITE		15 ABOVE GROUND & GROUND CONTACT 16 Formosan Subterranean Termite
 Plant Location		Inspected by: Timber Products Inspection AA-696
		ESR-2825 ISO 21887 * UC3.1, UC3.2, UC4.1 

End Tag-Front Panel – International (EU)

FIGURE 2—SAMPLE PRODUCT LABELS

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 73.33—Preservative Wood Treatment

REPORT HOLDER:

ACCSYS TECHNOLOGIES PLC

EVALUATION SUBJECT:

ACCOYA ACETYLATED WOOD

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that Accsys Technologies PLC's Accoya Acetylated Wood, described in ICC-ES main report ESR-2825, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 and 2019 *California Building Code (CBC)*

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 and 2019 *California Residential Code (CRC)*

2.0 CONCLUSIONS**2.1 CBC:**

The Accsys Technologies PLC's Accoya Acetylated Wood, described in Sections 2.0 through 7.0 of the main report ESR-2825, comply with the CBC Chapter 23, provided the design and installation are in accordance with the 2021 and 2018 *International Building Code*® (IBC) provisions noted in the main report and the additional requirements of 2022 and 2019 CBC Chapters 16, 17 and 23, as applicable.

The Accsys Technologies PLC's Accoya Acetylated Wood have not been evaluated under CBC Chapter 7A for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Accsys Technologies PLC's Accoya Acetylated Wood, described in Sections 2.0 through 7.0 of the main report ESR-2825, comply with the CRC, provided the design and installation are in accordance with the 2021 and 2018 *International Residential Code*® (IRC) provisions noted in the main report and the additional requirements of 2021 and 2018 CRC Chapter 3, as applicable.

The Accsys Technologies PLC's Accoya Acetylated Wood have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

The products recognized in this supplement have not been evaluated for compliance with the *International Wildland—Urban Interface Code*®.

This supplement expires concurrently with the evaluation report, reissued October 2023.