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ICC-ES Evaluation Report

ESR-2825

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
SECTION: 06 05 73.13—PRESERVATIVE WOOD TREATMENT

REPORT HOLDER:

ACCSYS TECHNOLOGIES PLC

EVALUATION SUBJECT:

ACCOYA ACETYLATED WOOD



“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”



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ACCOYA ACETYLATED WOOD

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2015, 2012, 2009 *International Building Code*® (IBC)
- 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:

- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (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 recognized 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 700-2015 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.

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 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 2304.10.5 of the 2015 IBC, Section 2304.9.5 of the 2012 and 2009 IBC and Section R317.3 of the 2015, 2012 and 2009 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 facility 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 Appendix H, Acetylated/Esterified Wood Modification Protection Systems (formerly AC297), and with the ICC-ES Acceptance Criteria for Proprietary Wood Preservative Systems—Common Requirements for Treatment Process, Test Methods and Performance (AC326), dated October 2015.
- 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 imtermittent wetting but with sufficient air circulation so wood can readily dry	UC3B ABOVE GROUND Exposed	Decking, joists and beams for decks and freshwater docks ¹ , railings, 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	Fence, deck, and guardrail posts, 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 2016 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 PRODUCTION LOCATIONS

REPORT HOLDER	ACCOYA PRODUCTION LOCATION
ACCSYS TECHNOLOGIES PLC	Arnhem, The Netherlands

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	79	T&G	406	406	3/4	3 1/8	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	79	T&G	610	610	1	3 1/8	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)				
7a	19	146	square	406	406	3/4	5 3/4	square	16	16
7b	19	146	G&G	610	610	3/4	5 3/4	G&G	16	16
8a	19	191	square	406	406	3/4	7 1/2	square	16	16
8b	19	191	G&G	610	610	3/4	7 1/2	G&G	16	16
9a	25	146	square	610	610	1	5 3/4	square	24	24
9b	25	146	G&G	610	610	1	5 3/4	G&G	24	24
10a	25	191	square	610	610	1	7 1/2	square	24	24
10b	25	191	G&G	610	610	1	7 1/2	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.

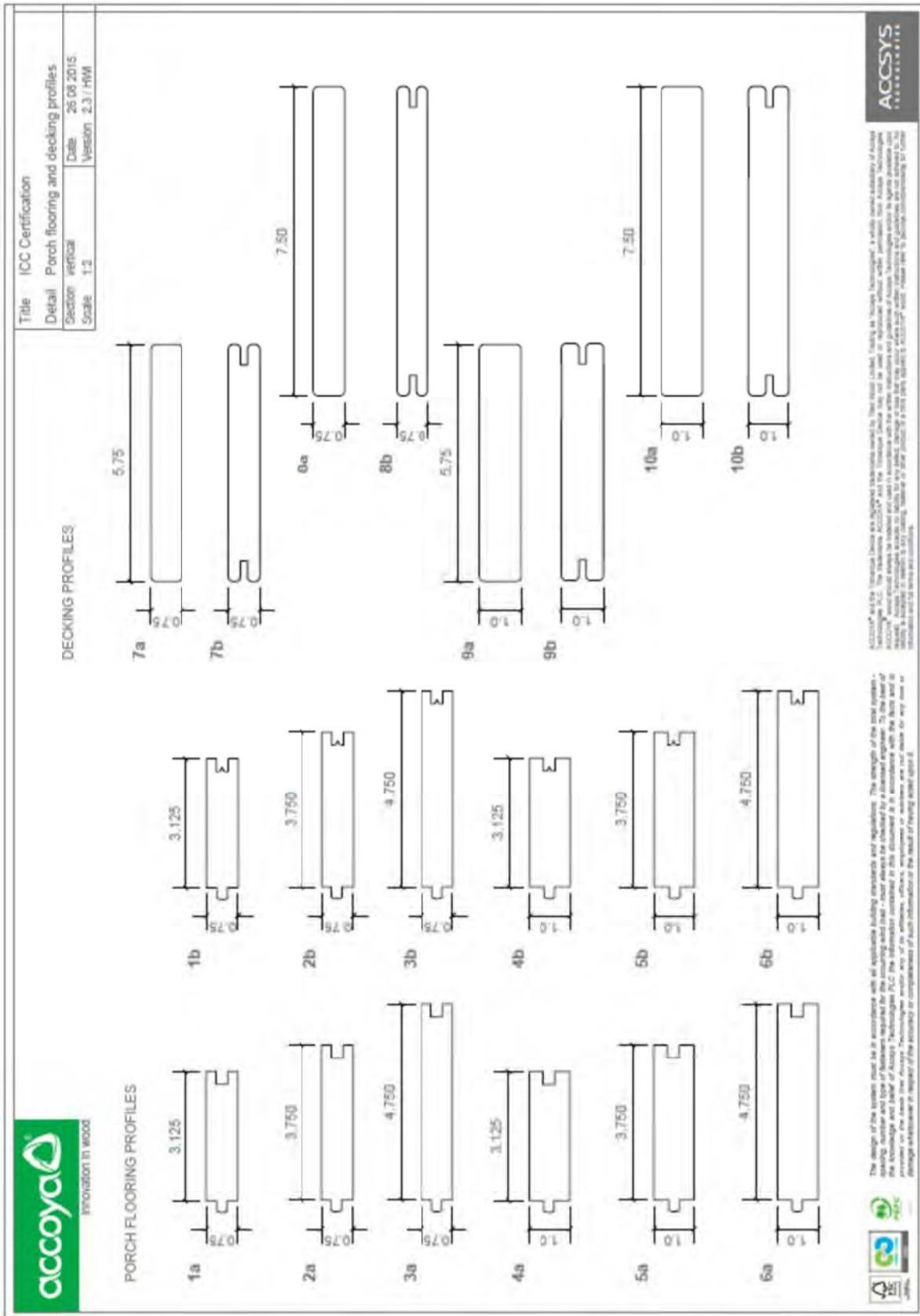






FIGURE 1—ACCOYA LUMBER PROFILES

<p>END USE - ABOVE GROUND & GROUND CONTACT FORMOSAN SUBTERRANEAN TERMITE</p>  <p>Plant Location</p>	<p>15 ABOVE GROUND & GROUND CONTACT 16 Formosan Subterranean Termite</p> <p>Inspected by: Timber Products Inspection AA-696</p> <p style="text-align: right;">AWPA UC3A, UC3B, UC4A ESR-2825</p>  <p>Not Listed in AWPA U-1</p>
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End Tag front Panel - USA

<p>END USE - ABOVE GROUND & GROUND CONTACT FORMOSAN SUBTERRANEAN TERMITE</p>  <p>Plant Location</p>	<p>15 ABOVE GROUND & GROUND CONTACT 16 Formosan Subterranean Termite</p> <p>Inspected by: Timber Products Inspection AA-696</p> <p style="text-align: right;">ESR-2825 ISO 21887 * UC3.1, UC3.2, UC4.1</p> 
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FIGURE 2—SAMPLE PRODUCT LABELS