Grade Names & Definitions
for Accoya® Radiata Pine
Version 9.1
CONTENTS

03 Rough Accoya® wood
04 A1 quality
06 FJ (finger jointed)
08 A2 quality
10 B quality
12 General specifications
13 Surfacing considerations
14 Allowed bow
15 Allowed crook
16 Allowed twist
17 Allowed cupping
ROUGH ACCOYA® WOOD
A1  MINIMUM GRADE DEFINITION

4 sides primarily clear with total allowance (combination of all sides) of the following:

LESS THAN 50 MM THICKNESS:
Up to 3 of the following defects or equivalent:
- Knot (pin): 8 mm or less
- Bark or resin pocket: 8 mm wide, 50 mm long or equivalent.

50 MM THICKNESS AND GREATER:
Up to 6 of the following defects or equivalent:
- Knot (intergrown, partially intergrown and tight encased): 15 mm
- Bark or resin pocket: 10 mm wide, 100 mm long or equivalent.

RESIN STREAKS
Three up to 8 mm wide, 100 mm long or equivalent, slightly more for a short distance.

SURFACE CHECKS
- Three up to 1 mm wide, 250 mm long or equivalent, slightly more for a short distance.
- For boards 200-300 mm wide the following additional allowance applies: Up to 1 surface check per 50 mm width, no wider than 1 mm, 250 mm long or equivalent, slightly more for a short distance.

SPLITS
Short split, up to width of board and not to exceed 200 mm.

NEEDLE FLECK/ BIRDS EYE
Medium birds eye or fleck.

WARP
As given in tables 1,2,3,4.

WANE
Up to 8 mm in depth, ¼ length of board of equivalent, slightly more for short distance. Transport damage is permitted within the same wane limits.

SURFACE FINISH
Supplied sawn.
A1

SURFACED FRONT SIDE

SURFACED BACKSIDE
NO DEFECTS ALLOWED WITH EXCEPTION:

- Sound full-grown knots, not bigger than 5mm in the nearness of the finger joint, are not considered as defect
- Bigger sound full-grown, max. 15 mm, knots are only allowed if the distance from knot to finger joint is at least 3 times the center-line of the knot, with a maximum of 2 knots on a block.
- Maximum size (center-lined) of the knots are: With timber up till width of 150 mm - 15 mm
- In-ring checking with a maximum of 5% is allowed
- Internal resin pockets are allowed with a maximum of 5%
- No cracks and checks or shell shake on the surface are allowed
- No collapse, end-, heart-, felling- or ring shake are allowed
- Calibrated on at least 2-sides (one square angle)
- Allowed deviations (complete beam)
  - Thickness: +/- 0,5 mm
  - Width: +/- 1,5 mm
- No wane is allowed
- Surface discolouring
- Resin channel

NOT ALLOWED:

- Not full grown knot
- Sound full grown cracked knot
- Sound not completely grown splay knot
- Defects in general
- Bark- and Resin pocket
- Not calibrated
- Small parts (to small width between the finger jointed blocks)

Accoya® finger jointed is bonded with EPI adhesive. It offers fixed width, engineered sections for joinery under the KOMO joinery certificate for finger joint quality. Accoya® has been finger jointed under the KOMO scheme successfully since 2007, predominantly for the Dutch market.

NOTE: Finger joints are rated for use as joinery and not in-ground.

FINGER JOINT QUALITY CERTIFICATION FOR OPAQUE JOINERY USE:
FINGER JOINTED
A2 MINIMUM GRADE DEFINITION

A2 thinner dimensions < 50 mm

BETTER FACE AND EDGE COMBINED TOTAL:

Up to 4 of the following defects or equivalent:
- Knot (intergrown, partially intergrown and tight encased): 15 mm or equivalent smaller.
- Bark or resin pocket: 10 mm wide, 100 mm long or equivalent.

REVERSE FACE AND EDGE COMBINED TOTAL:

Up to 6 of the following defects or equivalent:
- Knot (intergrown, partially intergrown and tight encased): 30 mm or equivalent smaller.
- Bark or resin pocket: 10 mm wide, 100 mm long or equivalent.

COLLAPSE

Insufficient to affect dry-dressed dimensions.

RESIN STREAKS

One, 1/5 width, 1/3 length or equivalent, slightly more for a short distance.

SURFACE CHECKS

- Three up to 1 mm wide, 250 mm long or equivalent, slightly more for a short distance.
- For boards 200-300 mm wide the following additional allowance applies: Up to 1 surface check per 50 mm width, no wider than 1 mm, 250 mm long or equivalent, slightly more for a short distance.

SPLITS

Short split, up to the width of board and no more than 200 mm.

NEEDLE FLECK/ BIRDS EYE

Medium birds eye or fleck.

WANE

Up to 8 mm in depth, 1/4 length of board of equivalent, slightly more for short distance. Transport damage is permitted within the same wane limits.

SURFACE FINISH

Supplied sawn.

A2 thicker dimensions > 50 mm

FRONT 1 (GOOD) SIDE AS A1:

KNOTS AND RESIN POCKETS

Up to 6 of the following defects or equivalent:
- Knot (intergrown, partially intergrown and tight encased) 15 mm or less.
- Bark or resin pocket: 10 mm wide, 100 mm long or equivalent.
- Resin streaks, three up to 8 mm wide, 100 mm long or equivalent, slightly more for a short distance.

SPLITS

Short split, up to width of board and not to exceed 200 mm.

SURFACE CHECKS

Checks in knots are allowed.

WANE

Up to 12 mm in depth, 1/2 length of board or equivalent, slightly more for a short distance. Transport damage is permitted within the same wane limits.

WARP

As given in tables 1, 2, 3, 4.

FRONT BACKSIDE + SIDES:

KNOTS AND RESIN POCKETS

Single large defect or defect area of any type allowed, provided it is covering an area of <500 mm. Or, a maximum of 2 large defects (25 mm width).

SPLITS

Short split, up to width of board and not to exceed 200 mm.

SURFACE CHECKS

Checks in knots are allowed.

NEEDLE FLECK/ BIRDS EYE

Medium birds eye or fleck.
A2

SURFACED FRONT SIDE

SURFACED BACKSIDE
Both faces containing knots, bark or resin pockets with total allowance of the following:

**50 MM THICKNESS AND GREATER:**

**BARK OR RESIN POCKETS**
20 mm wide, 100 mm long or equivalent, slightly more for a short distance.

**CHECKS**
Knot checks and surface checks not more than 150 mm.

**SPLITS**
Up to twice the width of the board, not more than 300 mm.

**COLLAPSE**
Insufficient to affect dried-dressed dimensions more than 1 mm per side.

**HOLES, LOOSE KNOTS, AND DECAYED KNOTS**
20 mm (40 mm in pieces exceeding 150 mm wide or 50 mm in thickness, 4 per length).

**KNOTS**
*INTERGROWN, PARTIALLY INTERGROWN, TIGHT ENCASED*
100 mm (singly), sum of sizes in any combination half of the width of the piece.

**SOUND SPIKE KNOTS AND SOUND DOUBLE SPIKE KNOTS, INTERGROWN OR PARTIALLY INTERGROWN**
50 mm wide, projected length two-thirds of width of piece.

**PITH**
up to 12 mm wide, 50% of length or equivalent, slightly more for a short distance.

**RESIN STREAKS**
1/5 width, 1/3 length or equivalent, slightly more for a short distance.

**SHAKES OTHER THAN THROUGH SHAKES**
1/5 of length.

**NEEDLE FLECK/BIRDS EYE**
unrestricted.

**WARP**
As given in tables 1, 2, 3, 4.

**WANE**
Up to 18 mm width, 50% of length or equivalent, slightly more for a short distance. Transport damage is permitted within the same wane limits.

**SURFACE FINISH**
Supplied sawn.
SURFACE FINISH AND DIMENSION

Accoya® boards can be rough sawn or dressed to a smaller dimension. The dressed dimensions have been selected with the intent of enabling production of the same final products. Boards are sold and classified according to their original sawn (nominal) dimension. 25 and 32mm boards have one hit and miss back face and one smooth appearance face. The hit and miss back side will generally have more process discolouration. This orientation should be maintained in finished product manufacture.

ADDITIONAL GRADE SPECIFICATIONS

Internal Defects Not Visually Present on Surface: Accoya® wood is produced from a natural resource. All wood has natural variation from tree to tree and board to board. This natural variation results in a product that can have defects naturally present within the wood. Furthermore, the process of cutting trees into lumber and drying of the lumber can induce defects such as shakes, cracks and checks. Accoya® wood is produced from lumber visually inspected on the surface to meet the grade specifications, however upon further processing internal defects can be discovered.

MANUFACTURING IMPERFECTIONS

Lumber may have slight manufacturing related imperfections.

OVERALL DEVIATION FROM SPECIFICATIONS

Up to 5% of boards off grade shall be deemed acceptable.

PROPERTY SPECIFICATION

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>No more than 1 mm less than the specified size.</td>
</tr>
<tr>
<td>Width</td>
<td>No more than 1 mm less than the specified size.</td>
</tr>
<tr>
<td>Length</td>
<td>No more than 20 mm shorter than nominal length.</td>
</tr>
<tr>
<td>Moisture Content</td>
<td>Less than 10%.</td>
</tr>
</tbody>
</table>
DISCOLORATION

The acetylation process can result in discolouration and sticker marks up to 6mm in depth, and on occasion due to wood’s natural variation slightly deeper. This is typically overcome in an application such as decking by milling 1mm off the back side and a higher proportion from the appearance side. Removal of discolouration is not typically required when opaque coatings are used.
## TABLE 1: ALLOWED BOW

<table>
<thead>
<tr>
<th>LENGTH [M]</th>
<th>THICKNESS [MM]</th>
<th>22 &amp; 25</th>
<th>32</th>
<th>38</th>
<th>50</th>
<th>63</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>40</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>20</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>45</td>
<td>40</td>
<td>30</td>
<td>25</td>
<td>25</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>55</td>
<td>45</td>
<td>35</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>65</td>
<td>55</td>
<td>40</td>
<td>35</td>
<td>35</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>3.9</td>
<td>80</td>
<td>65</td>
<td>50</td>
<td>40</td>
<td>40</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>90</td>
<td>75</td>
<td>55</td>
<td>45</td>
<td>45</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>105</td>
<td>90</td>
<td>65</td>
<td>55</td>
<td>55</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>120</td>
<td>100</td>
<td>75</td>
<td>60</td>
<td>60</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
**TABLE 2: ALLOWED CROOK**

<table>
<thead>
<tr>
<th>LENGTH [M]</th>
<th>WIDTH [MM]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75</td>
</tr>
<tr>
<td>1.8</td>
<td>5</td>
</tr>
<tr>
<td>2.1</td>
<td>10</td>
</tr>
<tr>
<td>2.4</td>
<td>10</td>
</tr>
<tr>
<td>2.7</td>
<td>15</td>
</tr>
<tr>
<td>3.0</td>
<td>15</td>
</tr>
<tr>
<td>3.3</td>
<td>20</td>
</tr>
<tr>
<td>3.6</td>
<td>25</td>
</tr>
<tr>
<td>3.9</td>
<td>25</td>
</tr>
<tr>
<td>4.2</td>
<td>30</td>
</tr>
<tr>
<td>4.5</td>
<td>35</td>
</tr>
<tr>
<td>4.8</td>
<td>40</td>
</tr>
</tbody>
</table>
TABLE 3: ALLOWED TWIST PER 100 MM WIDTH

<table>
<thead>
<tr>
<th>LENGTH [M]</th>
<th>THICKNESS [MM]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22 &amp; 25</td>
</tr>
<tr>
<td>1.8</td>
<td>10</td>
</tr>
<tr>
<td>2.4</td>
<td>10</td>
</tr>
<tr>
<td>3.0</td>
<td>15</td>
</tr>
<tr>
<td>3.6</td>
<td>20</td>
</tr>
<tr>
<td>4.2</td>
<td>20</td>
</tr>
<tr>
<td>4.8</td>
<td>25</td>
</tr>
</tbody>
</table>
### Table 4: Allowed Cupping

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Allowed Cupping [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>125</td>
<td>2</td>
</tr>
<tr>
<td>150</td>
<td>2</td>
</tr>
<tr>
<td>200</td>
<td>3</td>
</tr>
<tr>
<td>225</td>
<td>4</td>
</tr>
<tr>
<td>250</td>
<td>5</td>
</tr>
<tr>
<td>300</td>
<td>6</td>
</tr>
</tbody>
</table>
Accsys is a chemical company focused on the acetylation of wood. The company operates four wholly owned subsidiaries; including a commercial scale Accoya wood facility in the Netherlands, and offices in the Netherlands, USA and UK. Accoya wood has been produced by Accsys in the Netherlands continuously since 2007. Volume has grown each year and it is now sold through distribution and selected partners around the globe.

**WWW.ACCOYA.COM**

Accoya® and the Trimarque Device are registered trademarks owned by Titan Wood Limited, a wholly owned subsidiary of Accsys Technologies PLC, and may not be used or reproduced without written permission.

Accoya® wood should always be installed and used in accordance with the written instructions and guidelines of Accsys Technologies and/ or its agents (available upon request). Accsys Technologies accepts no liability for any defect, damage or loss that may occur where such written instructions and guidelines are not adhered to.

The information contained within this document has not been independently verified, and no warranty (express or implied) or representation is given in respect of the same, including without limitation as to its accuracy, completeness or fitness for any purpose. Accsys Technologies and its affiliates, officers, employees or advisers expressly disclaim any liability to the fullest extent permitted by law for any loss or damage whatsoever arising in respect of such information or the result of having acted upon it.