

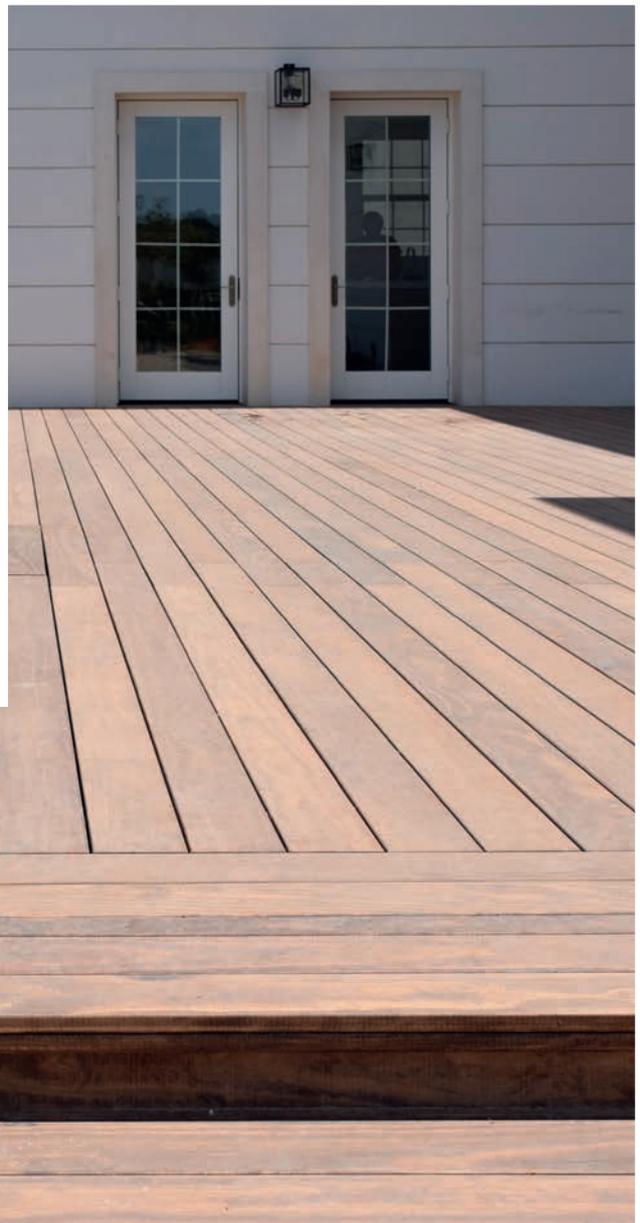
LUMBER GRADING SPECIFICATIONS



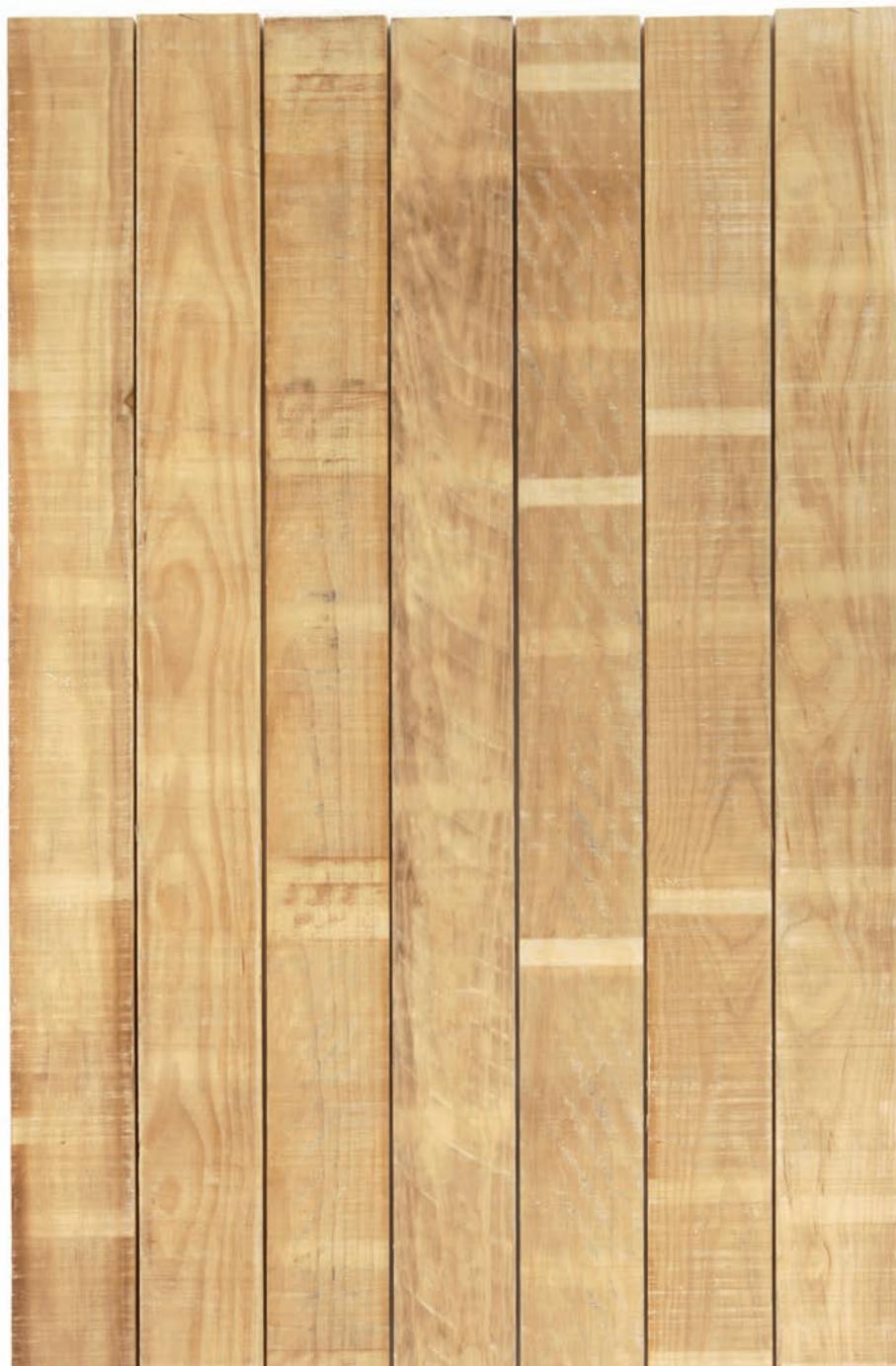
Grade Names & Definitions
for Accoya® Radiata Pine
Version 9.1

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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 8mm 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

FJ MINIMUM GRADE DEFINITION

DELIVERED SIZES		
48 x 100	62 x 100	74 x 100
48 x 125	62 x 125	74 x 125
48 x 150	62 x 150	74 x 150
48 x 200	62 x 200	74 x 200
LENGTHS		
4,200	4,800	6,000
Custom lengths (3,500 to 7,100mm - 10m ³ minimum order)		
TOLERANCE		
WIDTH	THICKNESS	
-1mm / +3mm	+/- 1mm	
JOINT DISTANCE		
MINIMUM	TYPICAL	MAXIMUM
250mm	500mm	1,000mm

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:



Cert. no. 33058/07
BRL 0605 Modified Timber
Accoya® is suitable for in use
class 1, 2, 3 and 4 (EN 335-1)

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)

FINGER JOINTED



FINGER JOINTED
FRONT SIDE

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 8mm 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.

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

- 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.

NEEDLE FLECK/ BIRDS EYE

Medium birds eye or fleck.

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 200mm.

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.

A2

SURFACED
FRONT SIDE

SURFACED
BACKSIDE

B PRIMARILY FOR FINGER JOINTING USAGE

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 300mm.

COLLAPSE

Insufficient to affect dry-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.

B

SURFACED
FRONT SIDE

SURFACED
BACKSIDE

GENERAL SPECIFICATIONS

PROPERTY

SPECIFICATION

Thickness	No more than 1 mm less than the specified size.
Width	No more than 1 mm less than the specified size.
Length	No more than 20 mm shorter than nominal length.
Moisture Content	Less than 10%.

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 discoloration. 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.

SURFACING CONSIDERATIONS

DISCOLORATION

The acetylation process can result in discolouration and sticker marks upto 6mm in depth, and on occasion due to wood's natural variation slightly deeper. This is typically over come 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.

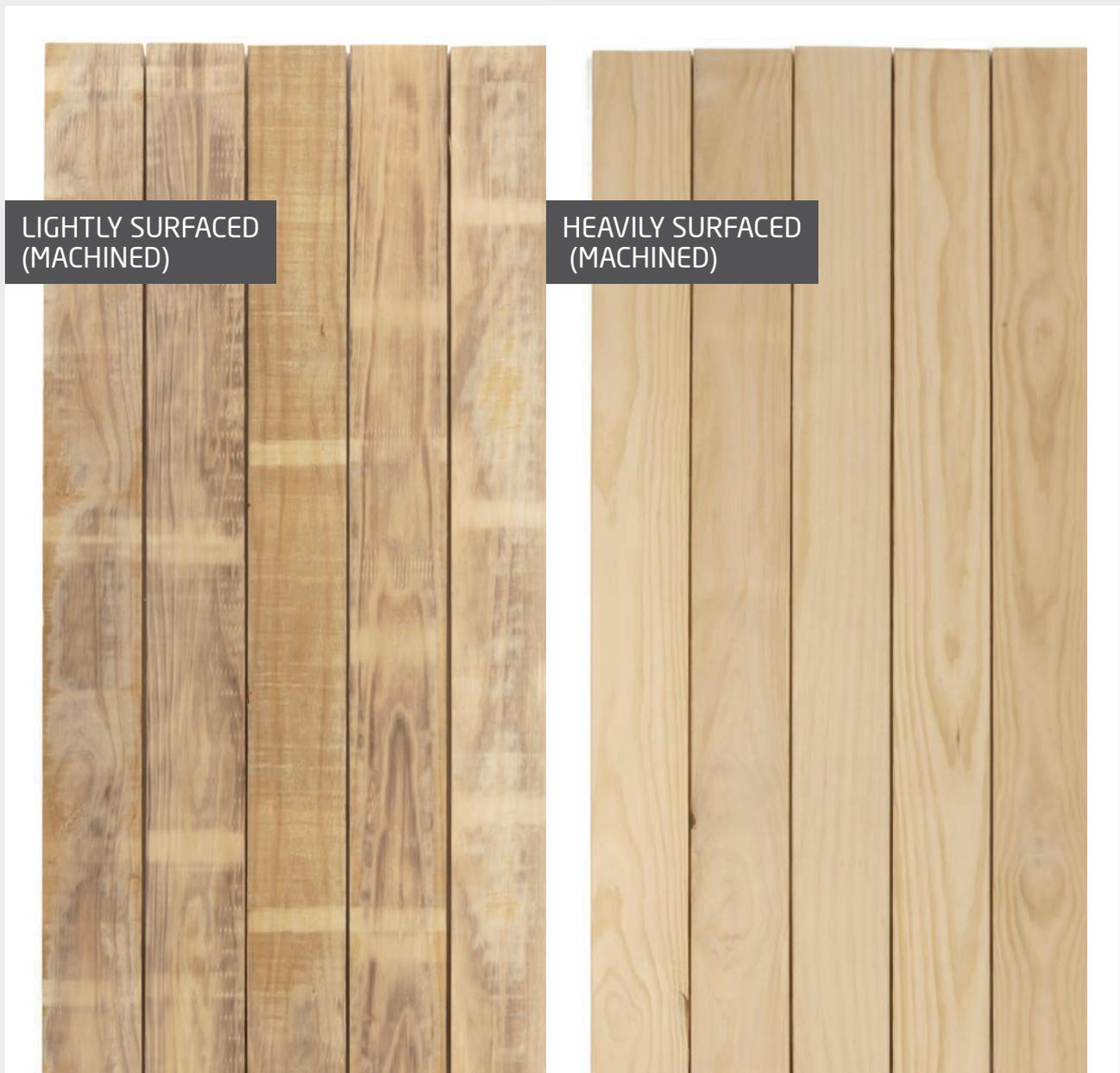


TABLE 1: ALLOWED BOW

LENGTH [M]	THICKNESS [MM]					
	22 & 25	32	38	50	63	75
1.8	15	15	10	10	10	5
2.1	25	20	15	10	10	10
2.4	30	25	20	15	15	10
2.7	40	30	25	20	20	15
3.0	45	40	30	25	25	15
3.3	55	45	35	30	30	20
3.6	65	55	40	35	35	25
3.9	80	65	50	40	40	25
4.2	90	75	55	45	45	30
4.5	105	90	65	55	55	35
4.8	120	100	75	60	60	40

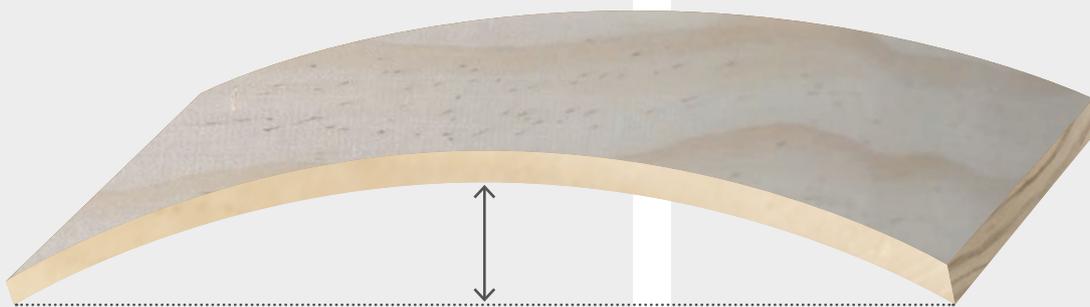


TABLE 2: ALLOWED CROOK

LENGTH [M]	WIDTH [MM]					
	75	100	125	150	200	>200
1.8	5	4	3	3	2	2
2.1	10	5	5	4	3	2
2.4	10	10	5	5	4	3
2.7	15	10	10	5	5	4
3.0	15	10	10	10	5	5
3.3	20	15	10	10	5	5
3.6	25	15	15	10	10	5
3.9	25	20	15	15	10	10
4.2	30	25	20	15	10	10
4.5	35	25	20	20	15	10
4.8	40	30	25	20	15	10



TABLE 3: ALLOWED TWIST PER 100 MM WIDTH

LENGTH [M]	THICKNESS [MM]					
	22 & 25	32	38	50	63	75
1.8	10	10	5	5	5	3
2.4	10	10	10	5	5	4
3.0	15	15	10	10	10	5
3.6	20	15	10	10	10	5
4.2	20	20	15	10	10	5
4.8	25	20	15	10	10	10



TABLE 4: ALLOWED CUPPING

WIDTH [MM]	ALLOWED CUPPING [MM]
75	1
100	1
125	2
150	2
200	3
225	4
250	5
300	6



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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.

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