Resysta in Comparison

Best result after 2000 hours Xenon test

Resysta® THE BETTER WOOD

15 materials tested

eph® Entwicklungs- und Prüflabor Holztechnologie

Task

In cooperation with the renowned „eph-Institut" located in Dresden, Germany - Resysta carried out an „artificial weathering test of selected materials". The Xenon test was chosen as test procedure.

Test Performance

Artificial weathering was carried out for 2000 h (after 650 MJ/m² irradiation) with a Xenon tester CI 3000 (test device KL 31) according to DIN EN 11341. Artificial weathering was conducted at the following test conditions:

- 55°C black standard temperature
- 50% relative humidity
- Radiation intensity 0.5 W (m² x nm) at 340 nm
- Weathering cycle: spray cycle 18 min, drying phase 102 min

A factor of 15-25 can be applied to this 2000 h test. Assuming factor 20 and an average of 7 sunshine hours per day (Central Europe) this corresponds to a weathering period of 15 years.

The following assessments were carried out to characterize the weathering resistance:
- visual evaluation of color change by means of gray scale according to DIN EN 20105-A02
- visual evaluation after 500 h, 1000 h, 1500 h and 2000 h.

Test Material

„eph-Institut" was provided with 15 material samples with two test specimen each. One specimen of each version was subject to the weathering test.

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Test Results at Artificial Weathering

Visual evaluation

MATERIAL	VISUAL EVALUATION AFTER 2000 h
Siberian Larch	completely bleached surface, brittle, major structural differences early wood / late wood
Thermo Ash Tree	completely bleached surface, brittle and cracked surface
IPE	completely bleached surface
Redwood	completely bleached surface, major structural differences early wood / late wood
Bangkirai	brittle and cracked surface
Accoya Silver Patina	patchy graying
Wood + Polymer (WPC) made in Germany	rough surface, loss of gloss, several white particles individually visible
Wood + Polymer (WPC) made in Germany	clearly visible change in color (bleaching)
Wood + Polymer (WPC) embossed wood surface made in USA	very severe change in color (bleaching), rough surface, loss of gloss, several white particles individually visible
foamed PVC made in USA	severely grayed surface
Wood + Polymer (WPC) made in USA	clearly visible change in color (bleaching), brittle and cracked surface, several white particles individually visible
Paper + Polymer (WPC) made in Finland	severe change in color (bleaching), rough surface
Wood + Polymer (WPC) made in Germany	very severe change in color (bleaching), several white particles individually visible
Resysta + Glaze (Walnut)	very slight change in color, individual white particles visible
Resysta + Glaze (Walnut) + 2K	visible change in color, individual white particles visible

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Recording of color change using gray scale gradation

RECORDING OF GRAY SCALE GRADATION ACCORDING TO DIN EN 20105-A02 AFTER

MATERIAL	500 h	1000 h	1500 h	2000 h
Siberian Larch	1	1	1	1
Thermo Ash Tree	1	1	1	1
IPE	1	1	1	1
Redwood	1	1	1	1
Bangkirai	1	1	1	1
Accoya Silver Patina	2,5	2	1,5	1,5
Wood + Polymer (WPC) made in Germany	3	3,5	3	3
Wood + Polymer (WPC) made in Germany	4,5	3,5	3,5	3
Wood + Polymer (WPC) embossed wood surface made in USA	1,5	1	1	1
foamed PVC made in USA	4	3	2,5	2
Wood + Polymer (WPC) made in USA	4	3	2,5	2,5
Paper + Polymer (WPC) made in Finland	4	3	2	1
Wood + Polymer (WPC) made in Germany	3	2,5	2,5	2
Resysta + Glaze (Walnut)	4,5	4	4	4
Resysta + Glaze (Walnut) + 2K	5	4,5	4,5	3,5

Rating scale for the assessment of color change by using the gray scale:

gray scale gradation 5	no visible change in color
gray scale gradation 4,5	very minor change in color
gray scale gradation 4	minor change in color
gray scale gradation 3,5	visible change in color
gray scale gradation 3	clearly visible change in color
gray scale gradation 2,5	very clearly visible change in color
gray scale gradation 2	severe change in color
gray scale gradation 1	very severe change in color

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Recording of color change using gray scale gradation

Initial state | after 500 h | after 1000 h | after 1500 h | after 2000 h

Sibirian Larch
completely bleached surface, brittle, major structural differences early wood / late wood

Thermo Ash Tree
completely bleached surface, brittle and cracked surface

IPE
completely bleached surface

Redwood
completely bleached surface, major structural differences early wood / late wood

Resysta in Comparison

Best result after 2000 hours Xenon test

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Recording of color change using gray scale gradation

Initial state | after 500 h | after 1000 h | after 1500 h | after 2000 h

Bangkirai
brittle and cracked surface

Accoya Silver Patina
patchy graying

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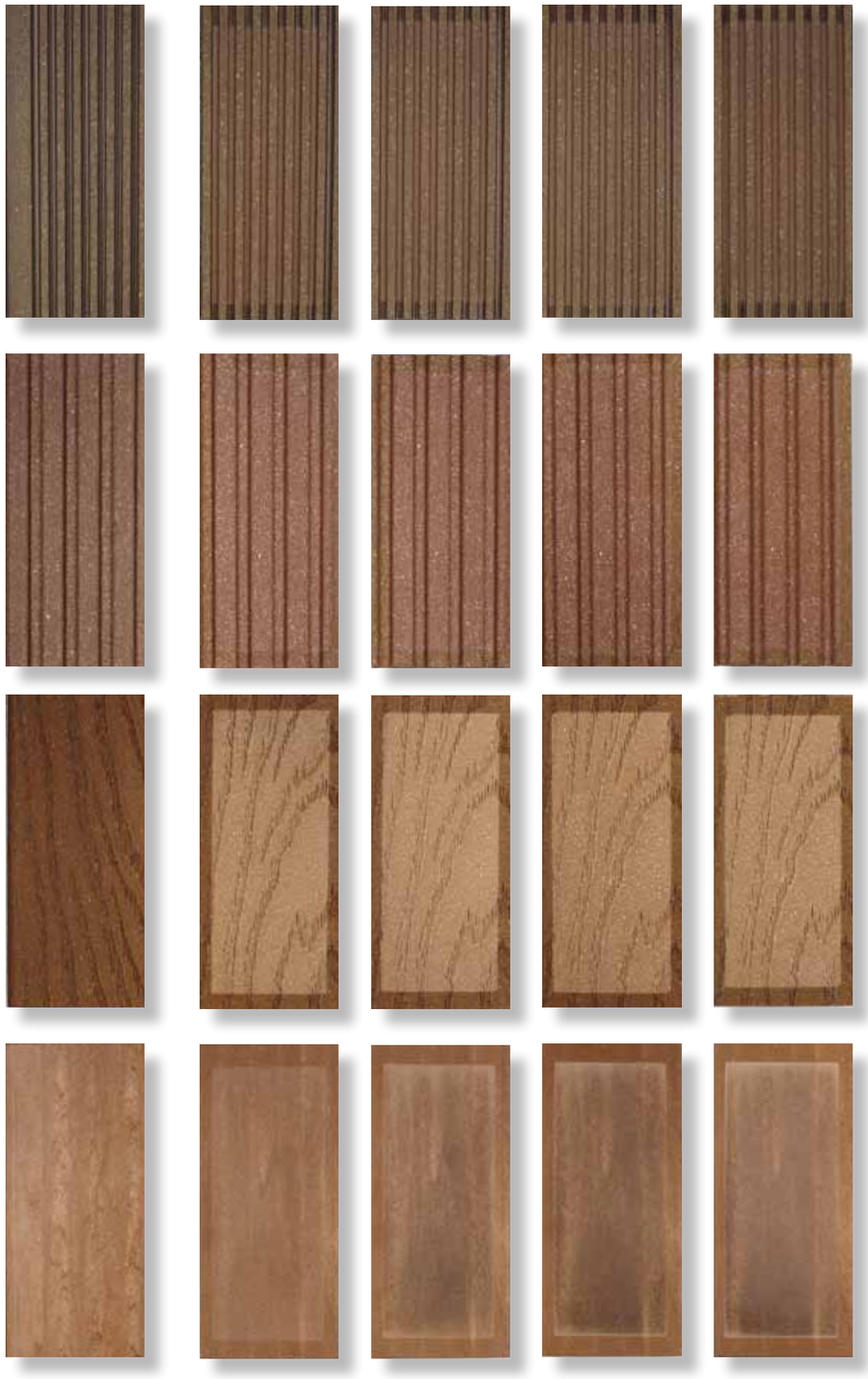
THE BETTER WOOD

Recording of color change using gray scale gradation

Initial state | after 500 h | after 1000 h | after 1500 h | after 2000 h



Wood + Polymer (WPC)
made in Germany
rough surface,
loss of gloss, several
white particles
individually visible

Wood + Polymer (WPC)
made in Germany
clearly visible change
in color (bleaching)

Wood + Polymer (WPC)
embossed wood surface
made in GUSA
very severe change in
color (bleaching),
rough surface, loss of gloss,
several
white particles
individually visible

Foamed PVC
made in USA
severly grayed surface

Resysta®
THE BETTER WOOD

Recording of color change using gray scale gradation

Initial state | after 500 h | after 1000 h | after 1500 h | after 2000 h

Wood + Polymer (WPC)
made in USA
clearly visible change
in color (bleaching),
brittle and cracked surface,
several white particles
individually visible

Paper + Polymer (WPC)
made in Finland
severe change in color
(bleaching),
rough surface

Wood + Polymer (WPC)
made in Germany
very severe change in color
(bleaching), several white
particles individually visible

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Recording of color change using gray scale gradation

Resysta + Stain (Walnut)
very slight change in color, individual white particles slightly visible

15 years inimitable color stability!

Resysta + Stain (Walnut) + 2K Sealer
visible change in color, individual white particles slightly visible

Concluding Remark:
With all products exposed to weathering, changes of the surface appearance is taking place. Mechanical changes like swelling or shrinkage could not be demonstrated in this test.

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It is clearly apparent that all wood specimen show distinct changes in color already after a short period of time. A similar effect - in milder form - can be observed with WPC materials. Besides, these feature the obvious plastic appearance.

Conclusion:
Of all tested materials, Resysta most convincingly combines the look and feel of wood with longevity.

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