

Resysta in Comparison

Best result after 2000 hours Xenon test



15 years
inimitable
color stability!

15 materials tested



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
Werzalit Terrazza brown	rough surface, loss of gloss, several white particles individually visible
Mega Wood	clearly visible change in color (bleaching)
Trex	very severe change in color (bleaching), rough surface, loss of gloss, several white particles individually visible
Timbertech XLM	severely grayed surface
Timber Tech Twin Finish	clearly visible change in color (bleaching), brittle and cracked surface, several white particles individually visible
UPM - gray	severe change in color (bleaching), rough surface
Rehau - Relazzo	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

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
Werzalit Terrazza brown	3	3,5	3	3
Mega Wood	4,5	3,5	3,5	3
Trex	1,5	1	1	1
Timbertech XLM	4	3	2,5	2
Timber Tech Twin Finish	4	3	2,5	2,5
UPM - gray	4	3	2	1
Rehau - Relazzo	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
 gray scale gradation 4,5
 gray scale gradation 4
 gray scale gradation 3,5
 gray scale gradation 3
 gray scale gradation 2,5
 gray scale gradation 2
 gray scale gradation 1

no visible change in color
 very minor change in color
 minor change in color
 visible change in color
 clearly visible change in color
 very clearly visible change in color
 severe change in color
 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



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

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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

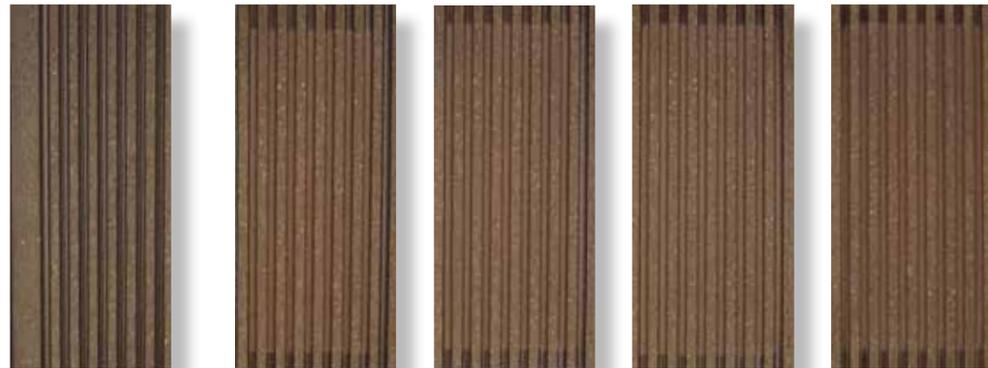


Accoya Silver Patina
patchy graying



Recording of color change using gray scale gradation

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



Werzalit Terrazza brown
rough surface,
loss of gloss, several
white particles
individually visible



Mega Wood
clearly visible change
in color (bleaching)



Trex
very severe change in
color (bleaching),
rough surface, loss of gloss,
several
white particles
individually visible



Timbertech XLM
severely grayed surface

Recording of color change using gray scale gradation

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



Timber Tech Twin Finish
clearly visible change
in color (bleaching),
brittle and cracked surface,
several white particles
individually visible



UPM - gray
severe change in color
(bleaching),
rough surface



Rehau - Relazzo
very severe change in color
(bleaching), several white
particles individually visible

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Resysta[®]
THE BETTER WOOD

Recording of color change using gray scale gradation

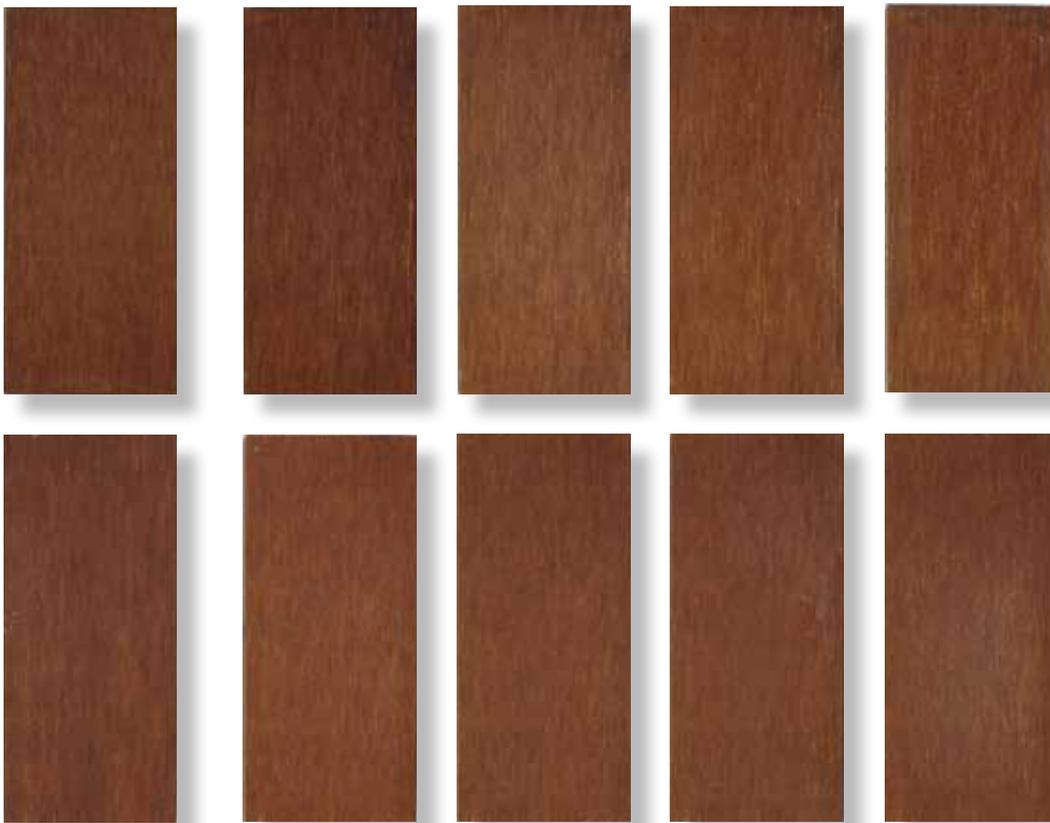
Initial state

after 500 h

after 1000 h

after 1500 h

after 2000 h



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.

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.

eph[®]
Entwicklungs- und Prüflabor
Holztechnologie

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