

REPORT

Contract no.: 1445/2015/2 – HO 02.03.2017
ILA/KA

Customer: Lengheim
Consulting und Entwicklung GmbH
Bahnstraße 16
2213 Bockfließ

Subject: One year weathering of a transparent coating system with low dif-
fusion resistance for exterior use
according to ÖNORM EN 927-3

Date of contract: 12.06.2015

Date of sample delivery: 02.12.2015

Date/Period of service: 02.12.2015 – 14.02.2017

Period of validity: ---

Pages: 4

Beilagen: 1 (3 Pages)
Enclosures

1. Order

On 12.06.2015, Lengheim Consulting und Entwicklung GmbH, 2213 Bockfließ, ordered to apply wet samples of coating material, let them dry and condition and to carry out a natural weathering test according to ÖNORM EN 927-3.

2. Test Material

The test material below was delivered by Mr. Hubert Lengheim to Holzforschung Austria and was placed for disposal for the test:

Wet samples (transparent coating material) under the designation „KaWaTech HMS9“.

3. Test Procedure

The wet samples were applied immediately after delivery on the substrate. The application of coating material on three samples of pine sapwood was carried out by brushing in two layers with intermediate drying, where the application rate of 200 g/m² each was checked by weighing. The remaining coating material was taken back by the customer.

For the natural weathering tests samples according to ÖNORM EN 927-3 (2012) were produced. According to this standard these samples were made of pine wood. The natural weathering in Vienna Arsenal, 45 ° South oriented, started on 10.02.2016 and ended on 10.02.2017. The time of weathering exposure was 12 months.

The following examinations were carried out after the exposure:

- Flaking
- Cracking
- Mould growth
- Chalking
- Blistering
- General appearance
- Gloss measurements at 60°
- Adhesion test with the cross cut method
- Colour measurements with the parameters d/8 according to the CIEL*a*b*-System at D65/10°

4. Results

Table 1 contains the results of natural weathering after one year field exposure (mean of three samples). The “maximum sum value” and the “maximum difference” were calculated according to ÖNORM EN 927-2 (2014).

The results of natural weathering exposure are documented in Figure 1 to 3 in the annex. During the exposure, the coating system showed no flaking. Furthermore, no cracking was observed at the system. The system showed no chalking and low mould growth after one year field exposure.

Table 1: Results after one year natural weathering exposure (mean of three samples), maximum sum and maximum difference according to ÖNORM EN 927-2 (2014)

	System	Sample	ICP
unwashed	Flaking	0	0
	Cracking	0	0
	Mould growth	1,0	2,0
	Chalking	0	0
	Blistering	0	0
	General appearance	3,0	2,0
washed	General appearance	2,0	1,0
	Mould growth	0	0,3
	Gloss change	-17,0	22,7
	Colour change [ΔE]	10,6	4,4
	Adhesion	2,0	1,0
	Maximum sum value	6	3
	Maximum difference	2	0

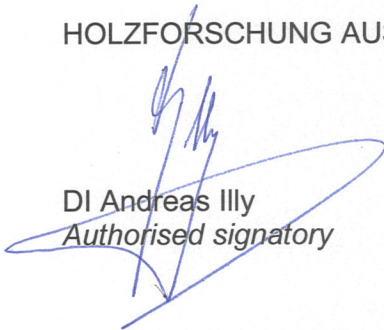
5. Summary

The tests were carried out with the transparent coating system KaWaTech HMS9 with low diffusion resistance on samples of pine wood. A 12 months weathering exposure was done on the site of Holzforschung Austria in Vienna according to ÖNORM EN 927-3.

The results of weathering after one year according to ÖNORM EN 927-3 showed, that the system after washing of the surface showed a good General appearance, no flaking, no cracking, no chalking, and no mould growth.

The test material will be stored 6 months at Holzforschung Austria after date of report.

HOLZFORSCHUNG AUSTRIA




DI Andreas Illy
Authorised signatory



Ing. Thomas Pastler
Technical consultant

Accreditation is given for the following procedures.
It is not allowed to use included accreditation marks for own purposes.

accreditation mark	type of accreditation	procedure/s
	Testing	<ul style="list-style-type: none"> • ÖNORM EN 927-3

The results and statements given in this document relate only to the tested materials, the present information and the state of the art at the time of investigation.
Publication in excerpts is only permitted with the written approval of Holzforschung Austria.

In case of dispute the original German version prevails. This translation is for information purposes only.



Figure 1: Sample 1 – Pine wood coated with KaWaTech HMS9 - unweathered (left), after 1 year natural weathering (right)



Figure 2: Sample 2 – Pine wood coated with KaWaTech HMS9 - unweathered (left), after 1 year natural weathering (right)

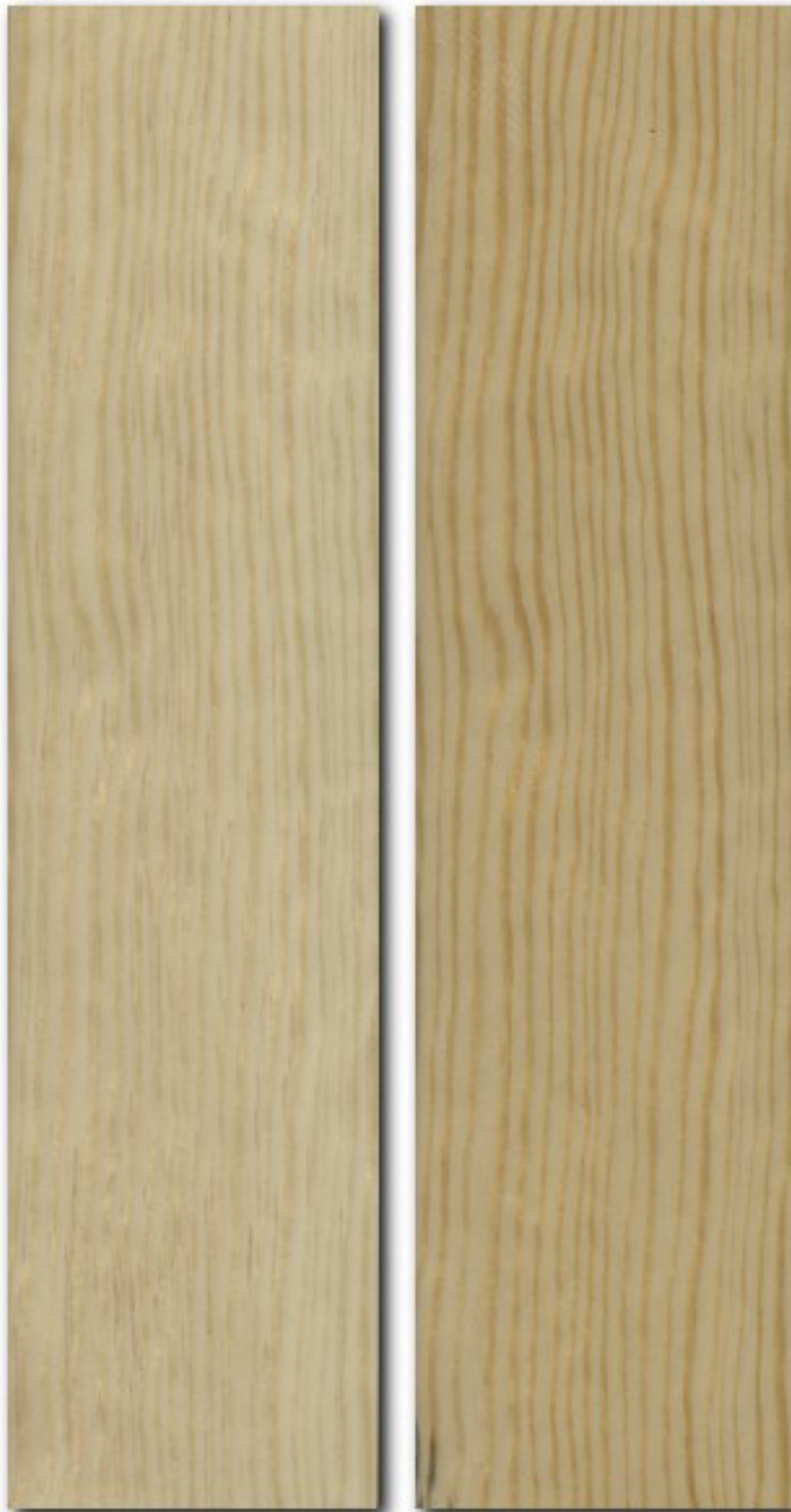


Figure 3: Sample 3 – Pine wood coated with KaWaTech HMS9 - unweathered (left), after 1 year natural weathering (right)