

Water Vapor Permeability Test

AIDIMME

Test report n. 221.I.1906.481.EN.01

1. DESCRIPTION AND IDENTIFICATION OF THE SAMPLE. INSPECTION BEFORE TESTING

KLIUCORK projected cork coating.

The sample is referenced in AIDIMME as:

<i>Description</i>	<i>AIDIMME 's reference</i>
Coating KC 14 Natural	1506151-01

2. ORIGIN OF THE SAMPLE

Samples supplied by the client.

3. TESTS REQUESTED

Determination of water vapour permeability.

4. STANDARD TEST METHOD

Test method is carried out according to the procedure described in the following standard:

Determination of water-vapour
transmission properties - Cup method

UNE-EN ISO 7783:2012

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5. DESCRIPTION OF THE TEST METHOD

DETERMINATION OF WATER VAPOUR PERMEABILITY

The test specimens are subjected to 3 conditioning cycles consisting of 24 h immersion in water at $(23\pm 2)^{\circ}\text{C}$ followed by 24 h of drying at $(50\pm 2)^{\circ}\text{C}$.

After that, the water-vapour transmission rate is evaluated, using dishes containing a saturated solution of ammonium dihydrogen phosphate producing an equilibrium atmosphere of 93% relative humidity, closed by the film to be tested. The cups are placed on a climatic chamber at $(23\pm 2)^{\circ}\text{C}$ and $(50 \pm 5) \%$ relative humidity

Because of the different partial vapour pressure between inside the test cup and the chamber, a vapour flow occurs through permeable test specimens.

The set sample-cup is weighted in order to determine the water-vapour transmission properties when stationary state is reached.

Water- vapour transmission rate V ($\text{g}/\text{m}^2 \cdot \text{d}$): The mass of water that is transmitted over a given period through a test piece of a given surface area under specified constant conditions of relative humidity, temperature and thickness.

Diffusion-equivalent air layer thickness, s_d : thickness of a static air layer that possesses, under the same conditions, the same water-vapour transmission rate as the specimen with thickness d .

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6. TEST RESULTS

DETERMINATION OF WATER-VAPOUR TRANSMISSION PROPERTIES

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TEST METHOD	RESULTS			REQUIREMENTS EN 1504-2	
UNE-EN ISO 7783	Specimen	Water-vapour transmission rate V (g/(m ² ·d))	sd (m)	Class I	$s_D < 5$ m Permeable to water vapour
	1	44	0,5	Class II	$5 \text{ m} \leq s_D \leq 50 \text{ m}$
	2	41	0,5		
	3	40	0,5	Class III	$s_D > 50$ m Not permeable to water vapour
	Classification according to EN 1504-2	Class I			
Classification according to EN 1062-1	Class II				

Test specimens average thickness, d: 6 mm

Procedure: free film test

Classification of water-vapour transmission rate according to EN 1062-1		
Class	Water-vapour transmission rate V (g/(m ² ·d))	sd (m)
I (high)	> 150	< 0,14
II (medium)	de 15 a 150	de 0,14 a 1,4
III (low)	< 15	> 1,4