iBMB MPA TU BRAUNSCHWEIG
Institut für Baustoffe, Massivbau und Brandschutz
Materialprüfanstalt für das Bauwesen

Assessment Report

- Translation -

Document No.:	(1200/032/15) – Lau of 15/01/2015
Client:	COLTECH EPE THESI ROUMANI 32011 VIOTIA INOFITA GREECE
Order date:	15/01/2015
Subject:	Preparation of an Assessment Report for tests performed on **"COLTECH TRANSELAST"** coating material
Test basis:	see annex
Test material received:	17/06/2004
Sampling:	made by client
Test material marking:	see section 1
Test period:	20/06/0004 to 20/10/2004

This Assessment Report covers 4 pages, incl. cover sheet, and - annex.

This document is the translated version of Assessment Report No. 1200/032/15 – Lau dated 15/01/2015. The German version is the only legally binding text.

Materialprüfanstalt f. d. Bauwesen MPA BS 5 Braunschweig

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Notified body (0761-CPD)
MPA Braunschweig has been approved and notified as a civil engineering supervisory, inspection and certification body. MPA Braunschweig has been ISO/IEC17025 accredited as a testing and calibration laboratory and ISO/IEC17020 accredited as an inspection body.

1 Commission and material

On 15 January 2015, COLTECH EPE, THESI ROUMANI, 32011 VIOTIA INOFITA, GREECE, commissioned the Civil Engineering Testing Institute (MPA) in Braunschweig to prepare an assessment report for tests performed on a polyurethane-based one-component coating system, with product name

"COLTECH TRANSELAST".

According to the customer's own specifications, the product is used as a coating for balconies and glazed tiles.

To be able to perform the required tests, MPA Braunschweig was supplied with a free film of the coating system with the approximate dimensions 0.7 m x 0.7m, which can be described as follows:

- Colour: transparent
- Layer thickness: 0.5 - 0.65mm.

Between 20 June to 20 October 2004, tests were carried out for

- determination of water proofness
- determination of tensile strain behaviour
- determination of elastic modulus
- determination of resistance to tear propagation
- determination of water vapour diffusion permeability
- determination of weathering resistance, characterised by changes in the tensile strain behaviour, gloss and degree of chalking.

2 Testing and test results

Details of the basis on which the tests were performed, test conditions and results of the tests are presented in a tabulated form in the attached annexes.
Samples for the tensile tests were taken from the free material film provided by the client, statistically independent of the orientation. There were no signs of any anisotropic behaviour of the tensile properties. For the weathering tests, the samples were weathered for a period of 2000 hours in a UV cabinet in compliance with DIN EN ISO 4892-3. To be able to determine changes in the material properties as a function of time, samples were taken at intervals of one third of the weathering period each and then analysed for their tensile properties on the basis of DIN EN ISO 527. Gloss and degree of chalking were determined at the end of the test.

Braunschweig, dated 15 January 2015

Head of Department

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Properties of the waterproofing system	Testing / test conditions	Test results
Weight per unit area	DIN EN 22286	755 g/m²
Impermeability to water	DIN EN 1928 Method A Length of test 24 h 2.5 bar	Tight
Reaction in the tensile test	DIN EN ISO 527 Specimen 1B v = 200 mm/min lo = 50 mm	**Reference sample** Tensile strength: x = 25.4 N/mm² s = 2.6 Elongation at tensile strength: x = 322 % s = 16,3
Elastic modulus	DIN EN ISO 527 Specimen 1B v = 200 mm/min lo = 50 mm	Elastic modulus E: x = 69.5 N/mm² s = 5.7
Resistance to tear propagation	DIN ISO 34 Method B (method B) v = 500 mm/min	Resistance to tear propagation Ts: x = 56.9 N/mm s = 8.8
Water vapour impermeability	EN ISO 12572	Water vapour diffusion current density: V = 8.05 [g/(m² · d)] Water vapour diffusion equivalent air layer thickness: sd = 4.4 [m]

x = mean value, s = standard deviation

Table 1: Results for product "COLTECH TRANSELAST"

Properties of the waterproofing system	Testing / test conditions	Test results
Behaviour after UV weathering	Exposure conditions: Radiation acc. to DIN EN ISO 4892-3 400 MJ/m² at wavelengths: 300-400 nm	
- **Tensile strain behaviour**	DIN EN ISO 527 Specimen 1B v = 200 mm/min lo = 50 mm	**Weathering 667 h:** Tensile strength: x = 30.5 N/mm² s = 2.9 Elongation at tensile strength: x = 297 % s = 17.5 **Weathering 1334 h:** Tensile strength: x = 32.3 N/mm² s = 2.5 Elongation at tensile strength: x = 304 % s = 9.9 **Weathering 2000 h:** Tensile strength: x = 25.5 N/mm² s = 1.5 Elongation at tensile strength: x = 298 % s = 14.2
- **Gloss assessment**	DIN 67530 (60° and 85°) Specimen 100 cm²	Reflectrometer value at an angle of entry of 60°: reference x = 97.4 weathered x = 86.4 85°: reference x = 94.0 weathered x = 92.6 Decrease in gloss at 60° angle of entry: **11.0 %** Decrease in gloss at 85° angle of entry: **1.2 %**
- **Degree of chalking**	DIN EN ISO 4628-6	Degree of chalking 0 (no perceptible changes)

x = mean value, s = standard deviation

Table 2: Results for product "COLTECH TRANSELAST" after weathering