ANALYSIS REPORT

Customer Ewona Finland Oy
Markku Taskila
Annalankankaantie 18
90830 Haukipudas

Contact info Eurofins Expert Services Oy
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Task Microbial growth analyses

Samples Samples arrived on 24.3.2026 (Figure 1).

Sample ID	Customer sample name
235-2026-00082401	Ewona base material
235-2026-00082402	Ewona laminated

Figure 1. *Two samples*

Methods and results

EN ISO 846 Method A, Fungal growth test. Test report on Appendix Method A

EN ISO 846 Method C, Bacterial growth. Test report on Appendix Method C

Conclusions

According to the test reports in appendixes the Ewona Laminated acoustic panel is resistant to fungal and bacterial attack and doesn't contain nutritive substances suitable for the development of microorganisms, in adopted experimental conditions.

Espoo, 10.8.2026

Marja Tuominen

Manager, Chemical testing

Appendix Method A. Test results

Method C. Test results

Distribution Customer

Test Report STULV26AA1086-1

SPONSOR	Eurofins Expert Services Oy		
TEST METHOD	EN ISO 846 - Plastics -Evaluation of the action of microorganisms Method A: Fungal-growth test		
TEST ITEM			
MATRIX OF THE PRODUCT	Acoustic panel: Base material polyester, laminated with fabric containing 70 %polyester and 30%polypropein. Abifor 512 glue is used in lamination. This glue is Co-Polyamide-Powder.		
PRODUCT NAME	Ewona Laminated acoustic panel		
STABILITY	several years		
ANALYZED SAMPLE			
BATCH	n/a		
SAMPLE CODE	NP / Manufacturer: Ewona Finland Oy		
MANUFACTURING DATE	NP		
EXPIRY DATE	n/a		
CERTIFICATE OF ANALYSIS	NO		
PARCEL REGISTRATION NUMBER	IP-LV-2026091-ADI		
RECEIVING DATE	01/04/2026		
MATERIAL ITEM ALIQUOT	LV-MAT-OI64-26-138-0F64:a		
ANALYSIS STARTING DATE	05-Jun-2026	**ANALYSIS ENDING DATE**	03-Jul-2026

EXPERIMENTAL DESIGN	
Test specimens are exposed to a mixed suspension of fungal spores at **≥95% relative humidity**. After germination, fungal growth can occur only if the test material provides nutrients. If the specimens contain no nutritive component, the fungi cannot develop mycelia. Method A is suitable for the assessment of the inherent resistance of plastics to fungal attack in the absence of other organic matter.	
EXPERIMENTAL CONDITIONS	
TEST STRAINS	Following microorganism, as Standard requested, were used: *D49 Aspergillus niger DSM 1957 equivalent to ATCC 6275* *D46 Penicillium pinophilum DSM 1944 equivalent to ATCC 36839* *D09 Paecilomyces variotii DSM 1961 equivalent to ATCC 18502* *D08 Trichoderma virens DSM 1963 equivalent to ATCC 9645* *D22 Chaetomium globosum DSM1962 equivalent to ATCC 6205* **Conservation and working cultures** The test strains are kept frozen; before use and transplanted in appropriate growth conditions and kept in a refrigerator at 5±3°C as stock colture. From the stock culture, the mould strain is transplanted onto MEA slants once and incubated at 30±1°C for 7 days to generate the working cultures. **Preparation of the mould test suspension (N)** Within six hours before testing, conidiospore suspensions were prepared from working cultures, filtered to remove mycelial fragments, and adjusted to 1-5 × 10^6 CFU/mL using a Bürker counting chamber. Spore viability was verified by inoculation on complete agar medium and incubation at 29±1°C for 3-4 days, confirming abundant growth before use.
MEDIA AND REAGENTS	The validity of media and reagents was verified before starting the analyses. – Microbicidal solution: Ethanol/water 70:30, w/w – Stock mineral salt solution – Mineral salt/wetting-agent solution – Mineral-salt/glucose solution – Incomplete and Complete agar medium – Malt extract agar (MEA)
EQUIPMENT	The validity of instruments and equipment was assured following internal procedures before starting the analyses. Standard microbiology laboratory was used and in particular: – Climate Chamber 29±1°C – Stereoscopic microscope (up to 50× magnification)
SPECIMENS	Square specimens of size of (50 mm ± 1 mm) × (50 mm ± 1 mm) were provided by Sponsor. For each sample, two test series of specimens was prepared: – **Series S**: minimum 2 specimens of sterile specimens, stored under the same conditions as test series I. – **Series I**: minimum 5 test specimens of sub-test series a (without biocide) and/or b (with biocide) inoculated with microorganisms and incubated under standard temperature and standard *moisture conditions*.
CONTACT TIME	7,14, 21 and 28 days
TEST TEMPERATURE	29±1°C; > 95 % RH
INOCULUM	1-5 x 10^6 cfu/ml
INOCULUM VOLUME	1 spray act; i.e. 0.15 ml

ASSAY

Each specimen prepared was placed in a Petri dish and randomly assigned to the appropriate test series.

For each specimen in **Series I**, approximately 0.15 mL of the mixed spore suspension was evenly applied to the surface of the specimen, corresponding on average to a minimum inoculum level of 10^3 spores/cm^2.

For each specimen in **Series S** (sterile controls), 3 mL of the microbicidal solution was applied to the specimen surface instead of the fungal inoculum.

All specimens were placed in a climate chamber at 95±5% relative humidity and incubated at 29±1°C for 4 weeks. All specimens were examined weekly, and observations were recorded. Growth was assessed visually according to the ISO 846 rating scale.

VALIDITY CRITERIA

The test was considered valid when the following criteria are met:
- The viability of each fungal strain is confirmed prior to testing by demonstrating abundant growth on complete agar medium after incubation at 29±1°C for 3–4 d.
- No growth in Negative control specimens (Series 0) should be observed.
- No growth on Sterile control specimens (Series S) maintained under the same incubation conditions as the inoculated specimens should remain free from microbial contamination.

INTERPRETATION OF RESULTS

Fungal growth was evaluated and scored according to the following rating scale:

Intensity of growth	
0	No growth apparent under the microscope.
1a	No growth visible to the naked eye, but clearly visible under the microscope. -Covering up to 25 % of the test surface-
1b	No growth visible to the naked eye, but clearly visible under the microscope. -Covering up to 50 % of the test surface-
1c	No growth visible to the naked eye, but clearly visible under the microscope. -Covering more than 50 % of the test surface-
2	Growth visible to the naked eye, covering up to 25 % of the test surface
3	Growth visible to the naked eye, covering up to 50 % of the test surface
4	Considerable growth, covering more than 50 % of the test surface.
5	Heavy growth, covering the entire test surface

RESULTS

Specimen		Contact Time (days)			
		7	**14**	**21**	**28**
Serie I	*1*	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0
	5	0	0	0	0
Serie S	*1*	0	0	0	0
	2	0	0	0	0

Same results are obtained on EWONA BASE MATERIAL - LV-MAT-OI64-26-138-0F66:a

CONCLUSIONS

On the basis of obtained results, can be stated that the test item “Ewona Laminated acoustic panel” **is resistant** to fungal attack and doesn’t contain nutritive substances suitable for the development of microorganisms, in adopted experimental conditions.

Test Report STULV26AA1086-2

SPONSOR	Eurofins Expert Services Oy		
TEST METHOD	EN ISO 846 - Plastics -Evaluation of the action of microorganisms Method C: Resistance to bacteria		
TEST ITEM			
MATRIX OF THE PRODUCT	Acoustic panel: Base material polyester, laminated with fabric containing 70 %polyester and 30%polypropein. Abifor 512 glue is used in lamination. This glue is Co-Polyamide-Powder.		
PRODUCT NAME	Ewona Laminated acoustic panel		
STABILITY	several years		
ANALYZED SAMPLE			
BATCH	n/a		
SAMPLE CODE	NP / Manufacturer: Ewona Finland Oy		
MANUFACTURING DATE	NP		
EXPIRY DATE	n/a		
CERTIFICATE OF ANALYSIS	NO		
PARCEL REGISTRATION NUMBER	IP-LV-2026091-ADI		
RECEIVING DATE	01/04/2026		
MATERIAL ITEM ALIQUOT	LV-MAT-OI64-26-138-0F65:a		
ANALYSIS STARTING DATE	09-Jun-2026	**ANALYSIS ENDING DATE**	07-Jul-2026

EXPERIMENTAL DESIGN	
The action of bacteria on test specimens is assessed using an incomplete medium without a carbon source. If there is no growth in the agar surrounding the specimen, then the specimen does not contain any nutritive components. If a material to be tested claims added functionality, such as a product with hygienic effects, the plastic material should be tested according to ISO 22196 which provides guidance for measuring the basic antibacterial performance of non-porous (plastic) materials that have been treated with a biocide with the intention of introducing antibacterial/hygienic properties into that material.	
EXPERIMENTAL CONDITIONS	
TEST STRAINS	Following microorganism, as Standard requested, were used: B72 *Pseudomonas aeruginosa* ATCC 13388/ISM 74/1 **Conservation and working cultures** The test strains are kept frozen; before use and transplanted in appropriate growth conditions and kept in a refrigerator at 5±3°C as stock colture. From the stock culture, the bacteria strain is transplanted onto TSA slants not less than twice and incubated at 30±1°C for 24 hours to generate the working cultures. **Preparation of the bacterial test suspension (N)** Within one hours before testing, suspensions were prepared from working cultures, filtered to remove mycelial fragments, and adjusted to 1-5 × 10^6 CFU/mL using a spectrophotometer. Viable microorganisms' concentration was verified by inoculation on complete agar medium and incubation at 30±1°C for 24h, confirming abundant growth before use.
MEDIA AND REAGENTS	The validity of media and reagents was verified before starting the analyses. – Water – Microbicidal solution: Ethanol/water 70:30, w/w – Casein soybean peptone agar (TSA) – Stock mineral salt solution – Incomplete and Complete agar medium – Sterile buffer solution
EQUIPMENT	The validity of instruments and equipment was assured following internal procedures before starting the analyses. Standard microbiology laboratory was used and in particular: – Climate Chamber 29±1°C – Stereoscopic microscope (up to 50× magnification)
SPECIMENS	Square specimens of size of (50 mm ± 1 mm) × (50 mm ± 1 mm) were provided by Sponsor. For each sample, two test series of specimens was prepared: – **Series S**: minimum 2 specimens of sterile specimens, stored under the same conditions as test series I. – **Series I**: minimum 5 test specimens of sub-test series a (without biocide) and/or b (with biocide) inoculated with microorganisms and incubated under standard temperature and standard *moisture conditions*.
CONTACT TIME	7,14, 21 and 28 days
TEST TEMPERATURE	29±1°C; > 95 % RH
INOCULUM	about 5 x 10^5 cfu/ml

<table>
<tr><td>ASSAY</td><td>Each specimen prepared was placed in a Petri dish and randomly assigned to the appropriate test series.
For each specimen in Series I, a sufficient amount of the inoculated agar prepared was poured to obtain an agar layer approximately 5 mm deep. After solidification, one specimen was placed on the surface of each agar layer and covered with a sufficient amount of inoculated agar. The agar was allowed to gel, resulting in a layer that covered the specimen to a depth of approximately 1 mm.
For each specimen in Series S (sterile controls), 3 mL of the microbicidal solution was applied to the specimen surface.
Uninoculated mineral-salt agar prepared was poured to obtain an agar layer approximately 5 mm deep. disinfected specimens were placed on the solidified agar surface, and covered with a layer of uninoculated agar.
All specimens were placed in a climate chamber at 95±5% relative humidity and incubated at 29±1°C for 4 weeks. All specimens were examined weekly for bacterial growth, and the observations were recorded.</td></tr>
<tr><td>VALIDITY CRITERIA</td><td>The test was considered valid when the following criteria are met:
– The viability of bacterial strain is confirmed by demonstrating abundant growth on complete agar medium after incubation at 29±1°C for 24 h.
– No growth in Negative control specimens (Series 0) should be observed.
– No growth on Sterile control specimens (Series S) maintained under the same incubation conditions as the inoculated specimens should remain free from microbial contamination.</td></tr>
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<tr><th colspan="2" rowspan="2">Specimen</th><th colspan="4">Contact Time (days)</th></tr>
<tr><th>7</th><th>14</th><th>21</th><th>28</th></tr>
<tr><td rowspan="5">Serie I</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>2</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td rowspan="2">Serie S</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>2</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
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