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FORMALDEHYDE TEST REPORT
EN 717-1

12 February 2026

1 Sample Information

Sample name	PRINT HPL
Batch no.	I 6368 / 1
Stated production date	11/11/2025
Product type	Laminate, non wood based
Stated thickness, mm	1.0
Sample reception	26/11/2025

2 Calculated Steady State Emission

Regulation or protocol	Calculated steady-state formaldehyde emission [mg/m³]
EN 717-1 §	0.0056

Full details based on the testing and direct comparison with limit values are available in the following pages
§ See section 4.4 on deviations

Claus Bonde
Analytical Service Manager

Rasmus Verdier
Analytical Service Manager

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3 Applied Test Methods

3.1 General Test References

Regulation, protocol or standard	Version	Reporting limit VOC [µg/m³]	Calculation of TVOC	Combined uncertainty¤ [RSD(%)]
EN 717-1	2004	-	(Formaldehyde only)	22%

3.2 Specific Laboratory Sampling and Analyses

Procedure	External Method	Internal S.O.P.	Quantification limit / sampling volume	Analytical principle	Uncertainty¤ [RSD(%)]
Sample preparation	ISO 16000-11:2024, EN 717-1; 2004	71M544850	-	-	-
Emission chamber testing	ISO 16000-9:2024, EN 16516:2017, EN 717-1:2004	71M544850	-	Chamber and air control	-
Sampling of aldehydes	ISO 16000-3:2022, EN 16516:2017+A1:2020; EN 717-1:2004	71M544850	35 L	DNPH	-
Analysis of aldehydes	ISO 16000-3:2022, EN 717-1:2004, EN 16516:2017+A1:2020	71M548400	3-6 µg/m³	HPLC-UV	10%

4 Test Parameters, Sample Preparation and deviations

4.1 VOC Emission Chamber Test Parameters

Parameter	Value	Parameter	Value
Chamber volume, V[L]	225	Date and time of unpacking and start of sample preparation	06/01/2026 - 10:35
Air change rate, n[h^{-1}]	1.0	Preconditioning period	-
Air Velocity [m/s]	0.1	Chamber test period	06/01/2026 - 03/02/2026
Area specific ventilation rate, q [m/h or $m^3/m^2/h$]	1	Analytical test period	06/01/2026 - 06/02/2026
Relative humidity of supply air, RH [%]	45 ± 3	Exposed sample area [m^2]	0.225
Temperature of supply air, T [°C]	23 ± 1	Loading factor [m^2/m^3]	1.0
Background concentration of formaldehyde [µg/m^3]	< 2	Measured sample thickness [mm]	1.0

4.2 Preparation of the Test Specimen

Edges and back were covered with aluminium foil and aluminium tape acc. to EN 14342, Annex A.

4.3 Picture of Sample

4.4 Deviations from Referenced Protocols and Regulations

EN 717-1 details that two samplings take place at least 3 hours apart. After 10 days the two samplings are assessed to lead to the same result, therefore samplings are carried out simultaneously after this.

The product type is not directly mentioned in EN 717-1, but has instead been prepared in accordance with the method described in EN 14342, Annex A.

4.5 Air Samplings from the Test Chamber

Sampling media	Day (yyyy-mm-dd)	Time (hh:mm)	Volume [L]
1 Day, DNPH silicagel	2026-01-07	07:30 - 09:20	36
1 Day, DNPH silicagel	2026-01-07	10:50 - 12:41	37
2 Day, DNPH silicagel	2026-01-08	10:51 - 12:39	35
2 Day, DNPH silicagel	2026-01-08	07:51 - 09:41	36
3 Day, DNPH silicagel	2026-01-09	07:54 - 09:43	36
3 Day, DNPH silicagel	2026-01-09	10:56 - 12:44	36
4 Day, DNPH silicagel	2026-01-10	11:22 - 13:12	37
4 Day, DNPH silicagel	2026-01-10	08:05 - 09:55	37
7 Day, DNPH silicagel	2026-01-13	07:26 - 09:15	35
7 Day, DNPH silicagel	2026-01-13	10:42 - 12:30	35
8 Day, DNPH silicagel	2026-01-14	10:49 - 12:37	35
8 Day, DNPH silicagel	2026-01-14	07:33 - 09:21	35
9 Day, DNPH silicagel	2026-01-15	07:26 - 09:14	35
9 Day, DNPH silicagel	2026-01-15	11:05 - 12:53	35
10 Day, DNPH silicagel	2026-01-16	10:44 - 12:31	35
10 Day, DNPH silicagel	2026-01-16	07:42 - 09:32	36
11 Day, DNPH silicagel	2026-01-17	09:13 - 11:03	36
11 Day-Res, DNPH silicagel	2026-01-17	09:14 - 11:03	36
14 Day, DNPH silicagel	2026-01-20	10:57 - 12:45	34
14 Day-Res, DNPH silicagel	2026-01-20	10:57 - 12:45	35
15 Day, DNPH silicagel	2026-01-21	09:56 - 11:44	34
15 Day-Res, DNPH silicagel	2026-01-21	09:56 - 11:44	36
16 Day, DNPH silicagel	2026-01-22	08:48 - 10:37	35
16 Day-Res, DNPH silicagel	2026-01-22	08:48 - 10:37	35
17 Day, DNPH silicagel	2026-01-23	08:35 - 10:23	35
17 Day-Res, DNPH silicagel	2026-01-23	08:36 - 10:23	35
18 Day, DNPH silicagel	2026-01-24	09:24 - 11:14	36
18 Day-Res, DNPH silicagel	2026-01-24	09:24 - 11:14	36
21 Day, DNPH silicagel	2026-01-27	10:53 - 12:41	35
21 Day-Res, DNPH silicagel	2026-01-27	10:53 - 12:41	35
22 Day, DNPH silicagel	2026-01-28	10:33 - 12:21	35
22 Day-Res, DNPH silicagel	2026-01-28	10:33 - 12:21	35
23 Day, DNPH silicagel	2026-01-29	08:35 - 10:23	35
23 Day-Res, DNPH silicagel	2026-01-29	08:35 - 10:23	35
24 Day, DNPH silicagel	2026-01-30	10:19 - 12:07	35
24 Day-Res, DNPH silicagel	2026-01-30	10:19 - 12:07	35
25 Day, DNPH silicagel	2026-01-31	09:04 - 10:54	36
25 Day-Res, DNPH silicagel	2026-01-31	09:05 - 10:55	36
28 Day, DNPH silicagel	2026-02-03	08:51 - 10:40	35
28 Day-Res, DNPH silicagel	2026-02-03	08:51 - 10:41	36

5 Results

5.1 Emission Test Results

Sampling time [Days]	Sampling time [Hours]	Formaldehyde Concentration in the Test Chamber [mg/m³]
1	24	0.0056
2	48	0.0054
3	72	0.0066
4	96	0.0062
7	168	0.005
8	192	0.005
9	216	0.006
10	240	0.006
11	264	0.005
14	336	0.005
15	360	0.004
16	384	0.005
17	408	0.004
18	432	0.004
21	504	0.005
22	528	0.004
23	552	0.004
24	576	0.005
25	600	0.004
28	672	0.004

6.1 Steady-state Emission

6.2 Steady-state Emission

To determine the steady-state formaldehyde emission value, the following power function was determined, using the above data:

$$C(t) = 6.7163 \cdot t^{-0.126}$$

$C =$ chamber concentration of formaldehyde, [µg/m³]
$t =$ time, [h]

The steady-state formaldehyde emission is determined using the following formula:

$$\frac{C(t_{steady-state}) - C(t_{steady-state}+96h)}{C(t_{steady-state}+96h)} \leq \delta, \text{ where } \delta = 0.05$$

The steady state emission was reached at time $t_{steady-state} = 144$ h
At this time the steady state emission was calculated to be $C(t_{steady\ state}) = 0.0056$ mg/m³

7 Summary of the Results

7.1 Steady-state emission

	Test result	
	Concentration [mg/m³]	
Calculated steady-state formaldehyde emission	0.0056	(144 h)

8 Appendices

8.1 How to Understand the Results

8.1.1 Acronyms Used in the Report

<	Means less than
>	Means bigger than (Tube/GC-MS overload)
*	Not a part of our accreditation
¤	Please see section regarding uncertainty in the Appendices.
§	Deviation from method. Please see deviation section
SER	Specific emission rate.

8.2 Chain of Custody

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This document must be printed and shipped with the sample.

Combined Sampling Report and Chain of Custody

Name of applicant: (name, company, phone)	Delsoglio Laura / Deligia Alessio, Abet Laminati SpA, Viale Industria, 21, 12042 BRA (CN), ITALY,

Product information

Name of the product:	PRINT HPL	**Product type**	Laminate, non wood based
Batch N°:	I 6368 / 1	**Article N°:**	SK1A 410 30 56
Model / Program / Series:		**Manufacture:** (Company, Address, Stamp)	Abet Laminati SpA, Viale Industria, 21, 12042 BRA (CN), ITALY

Production & Sampling information

Production Date: 11/11/2025 **Time:** 13:07:00		**Sampling Date:** 20/11/2025 **Time:** 16:05:00	
Place of sampling (if deviating from the manufature)		**Sample is taken from:**	☑ ongoing production ☐ stocks ☐ retained sample
		Number of samples:	4
Person in charge of sampling: (Name, company, telephone)	Deligia Alessio Abet Laminati SpA - +39 0172 419244	**Signature of sample collector:**	
Where has the product been stored prior to sampling?	☑ production ☐ store ☐ miscellaneous	**How has the product been stored prior to sampling?**	☑ open ☐ in the stack ☐ wrapped up
Place of storage:	warehouse	*Packing material:*	on pallets

Specifics (possible negative influences by air contamination where sample was taken, by petrol emissions, by solvent emissions from production; any other uncertainties, questions, etc).

Cut edges (identification of cut edges when present and identification of new surfaces and surface to be exposed in the emission test):

Confirmation from the applicant

Herewith the signer confirms the correctness of the data given above. The sample was selected, drawn and packed personally in accordance with the instructions for the taking of samples.

Date:	**Signature:**

21/11/2025	(Stamp) ABET LAMINATI spa

Chain of custody

What is a Chain of custody?

Whenever the sample is handed over, please fill out the below information

Handed over between:	Initials + Signature	Date + Time	Condition
Handed over by	A.D.	11/11/2025 13:07:00	Full size
Handed over to	A.D.	20/11/2025 16:05	cut to size
Handed over by	A.D.	20/11/2025 16:35	Samples
Handed over to	A.D.	21/11/2025 10:00	Packaging
Handed over by	ENTRANCE C.M.	21/11/2025	Shipment
Handed over to			

Laboratory receiving details (date, condition of package and sample, assigned lab no.): 26.11.2025, ok, 392-2025-00718401

Receptionist, Eurofins Product Testing A/S:	Signature of receptionist:
Q5XA	Susanne Green

8.3 Qualitative Description of VOC Emission Test

8.3.1 Test Chamber

The test chamber is made of stainless steel. A multi-step air clean-up is performed before loading the chamber, and a blank check of the empty chamber is performed.
The chamber operation parameters are as described in the test method section (EN 16516, ISO 16000-9, internal method no.: 71M549811).

8.3.2 Testing of Aldehydes

The presence of aldehydes after the specified duration of storage in the ventilated test chamber is tested by drawing air samples from the test chamber outlet through DNPH-coated silicagel tubes after the specified duration of storage in the ventilated test chamber. Analysis is performed by solvent desorption and subsequently by HPLC and UV-/diode array detection (EN 16516, ISO 16000-3, VDI 3862 Blatt 3, internal methods no.: 71M549812 / 71M548400).

The absence of formaldehyde and other aldehydes is stated if UV detector response at the specific wavelength is lacking at the specific retention time in the chromatogram. Otherwise it is checked whether the reporting limit is exceeded. In this case the identity is finally checked by comparing full scan sample UV spectra with full scan standard UV spectra.

8.4 Quality Assurance

Before loading the test chamber, a blank check of the empty chamber is performed and compliance with background concentrations in accordance with EN 16516 / ISO 16000-9 is determined.

Air sampling at the chamber outlet and subsequent analysis is performed in duplicate. Relative humidity, temperature and air change rate in the chambers is logged every 5 minutes and checked daily. A double determination is performed on random samples at a regular interval and results are registered in a control chart to ensure the uncertainty and reproducibility of the method.

The stability of the analytical system is checked by a general function test of device and column, and by use of control charts for monitoring the response of individual substances prior to each analytical sequence.

8.5 Accreditation

The testing methods described above are accredited online with EN ISO/IEC 17025 by DANAK (no. 522). This accreditation is valid worldwide due to mutual approvals of the national accreditation bodies (ILAC/IAF, see also www.eurofins.com/galten.aspx#accreditation.

Eurofins Product Testing Denmark A/S is notified body for the construction products regulation (EU) No 305/2011 with number NB 2657 under system 3.

Not all parameters are covered by this accreditation. The accreditation does not cover parameters marked with an asterisk (*), however analysis of these parameters is conducted at the same level of quality as for the accredited parameters.

8.6 Uncertainty of the Test Method

The relative standard deviation of the overall analysis is 22%. The expanded uncertainty U_m equals 2 x RSD. For further information please visit www.eurofins.dk/uncertainty.

8.7 Decision Rules

Eurofins Product Testing A/S, declare statement of conformity based on the “Binary Statement for Simple Acceptance Rule” described in ILAC’s “Guidelines on decision Rules and Statements of Conformity” ILAC-G8:09/2019.

This means that results are evaluated with the same number of significant digits as limit / acceptance values, and declaration of conformity is based on results being less than or equal to limit / acceptance values.

For limit values with more than two significant digits, the third digit will be used to confirm whether a result is below or equal to the limit value. It will always be indicated in the evaluation table if this expanded evaluation is performed.

For further information please visit www.eurofins.dk/product-testing/om-os/beslutningsregler/

8.8 Version History

Report date	Report number	Modification
12/02/2026	392-2025-00718401 _P2_EN	Current version