

TEST REPORT

SQM_541_2025

CUSTOMER

MATTONFLEX S.r.l.

PRODUCT NAME

MATTONFLEX

TYPE OF PRODUCT

Internal cladding system in agglomerated stone

TYPE OF TEST

DETERMINATION OF INDOOR EMISSIONS - VOC: VOLATILE ORGANIC COMPOUNDS - TEST CHAMBER METHOD

Client MATTONFLEX S.r.l.

Product placed on the market by MATTONFLEX S.r.l. - Via Clemente Bausano 10, 10086 - Rivarolo Canavese (TO)

Data relating to the sample examined Coating system

Sample origin sampled and supplied by the Client

Manufacturing plant Via Clemente Bausano 10, 10086 - Rivarolo Canavese (TO)

Estimate prot. 25501/lab of 30/07/2025

Order confirmation email 30/07/2025

Receipt of the samples 05/09/2025

Test execution September - October 2025

Laboratory and testing location Certimac - via Ravegnana, 186 - Faenza (RA)

Report issued 21/10/2025

Revision No. 00

Test executed by: Dr. P. Brigadeci

Test Report Editor: Eng. S. Bandini

Approval: Technical Director Eng. L. Laghi

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*This test report is part of a file in PDF format
digitally signed by Luca Laghi*

Technical Director
(Eng. Luca Laghi)



1. Subject of the tests

The following test report describes the results of the test:

- *determination of emissions into the internal environment according to - VOC: Volatile Organic Compounds - using the test chamber method*

performed on the following type of product:

- *Internal cladding system in agglomerated stone*

The results obtained refer exclusively to the sample under examination, as sampled by the Manufacturer and received by Certimac, and are valid only under the conditions in which the activity was carried out. If the Manufacturer requests that a sample be tested while acknowledging the presence of a deviation from the specified conditions, and upon acceptance, Certimac declines all responsibility for results that may be influenced by the deviation.

1. Reference standards and documents

The tests were performed using the methods defined in the following reference documents and standards:

- EN 16516:2017+A1:2020 Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air
- EN ISO 16000-9:2006 Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method (ISO 16000-9:2006)
- ISO 16000-6:2021 Indoor air - Part 6: Determination of organic compounds (VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MS FID
- ISO 16000-3:2022 Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air - Active sampling method

3. Test apparatus, environmental conditions and measurement uncertainty

Thermal desorber	Markes TD100-xr
Gas chromatograph	Agilent 8860 GC System
Mass spectrometer	Agilent 5977B GC/MSD
HPLC	Agilent 1260 Infinity II - BPE-DNPH cartridges

LOD (Limit of Detection)	Formaldehyde 6 µg/m ³ ; Acetaldehyde 9 µg/m ³
LOQ (Limit of Quantification)	Formaldehyde 10 µg/m ³ ; Acetaldehyde 14 µg/m ³ ;
Quantification	Internal Standard - 5-point calibration curve (linear regression)
Environmental conditions inside the test chamber	Temperature: 23±2 °C Relative humidity: 50±5%.
Air changes	0,5 /h
Air speed	0,2 ± 0,1 m/s
Load ratio	1,0 m ² /m ³
Measurement uncertainty	Not calculated
Preconditioning or curing period before being placed in the chamber	n.d.

1st air sampling	15/09/2025
Air sampling duration	60 min (Tenax TA) - 200 min (BPE-DNPH cartridges)
Air sampling flow	0.080 L/min
2nd air sampling	10/10/2025
Air sampling duration	100 min (Tenax TA) - 200 min (BPE-DNPH cartridges)
Air sampling flow	0.150 L/min

4. Results of the test

In **Table 1** The types and average concentrations of volatile organic compounds detected during the sampling are reported.

Volatile Organic Compounds	Number C.A.S.	Concentration (µg/m³)	
		After 72 hours (#)	After 28 days (#)
VVOC			
Formaldehyde *	50-00-0	<LOD	<LOD
Acetaldehyde*	75-07-0	<LOD	<LOD
Other unidentified compounds § VVOC	/	<LOQ	<LOQ
VOC			
n-Hexane §	110-54-3	<LOQ	<LOQ
Cyclohexane §	100-82-7	<LOQ	99
1,3,5-Trifluorobenzene §	372-38-3	<LOQ	<LOQ
1,2,4-Trifluorobenzene §	367-23-7	<LOQ	<LOQ
Benzene	71-43-2	<LOQ	<LOQ
Tricloroetilene (trielina)	79-01-6	<LOQ	<LOQ
di-2-ethylsyl-phthalate (DEHP)	117-81-7	<LOQ	<LOQ
Dibutylphthalate (DBP)	84-74-2	<LOQ	<LOQ
Heptane §	142-82-5	<LOQ	<LOQ
Toluene	108-88-3	<LOQ	12
4-Dehydroxy-N-(4,5-methylenedioxy-2-nitrobenzylidene)tyramine §	/	<LOQ	<LOQ
Trimethylphosphine §	594-09-2	<LOQ	180
Octane, 2,2-dimethyl- §	15869-87-1	<LOQ	<LOQ
Lysergic Acid, TMS derivative §	/	<LOQ	<LOQ
Octane, 3,3-dimethyl- §	4110-44-5	<LOQ	<LOQ
Octane, 2,2,6-trimethyl- §	62016-28-8	300	<LOQ
3-(Hydroxy-phenyl-methyl)-2,3-dimet hyl-octan-4-one §	/	<LOQ	54
Decane, 2,3,5-trimethyl- §	32238-11-3	<LOQ	<LOQ
Heptane, 2,2,3,5-tetramethyl- §	61868-42-6	320	<LOQ
Decane, 2-methyl- §	6975-98-0	110	<LOQ

Tetracloroetilene	127-18-4	<LOQ	<LOQ
Octane, 2,3,3-trimethyl- §	32016-30-2	<LOQ	<LOQ
3-Ethyl-3-methylheptane §	17302-01-1	<LOQ	<LOQ
Decane, 4-methyl- §	2847-72-5	<LOQ	<LOQ
Cyclopentane-trans-1,2-dicarboxami de §	/	<LOQ	<LOQ
2-Propanol, 1-(2-methoxy-1-methylethoxy)- §	20324-32-7	<LOQ	<LOQ
1-Propanone, 1,3-diphenyl-3-(trimethylsilyl)- §	/	<LOQ	<LOQ
Oxirane, [(hexadecyloxy)methyl]- §	15965-99-8	<LOQ	<LOQ
Heptane, 2,2,4,6,6-pentamethyl- §	13475-82-6	170	<LOQ
1-Pentanol, 3-methyl-2-propyl- §	54004-40-9	<LOQ	<LOQ
Nonane, 2,2,4,4,6,8,8-heptamethyl- §	4390-04-9	670	140
Eicosane, 10-methyl- §	54833-23-7	<LOQ	<LOQ
1-Octanol, 2,2-dimethyl- §	2370-14-1	1300	99
2,6-Dimethyldecane §	13150-81-7	<LOQ	<LOQ
Sulfurous acid, 2-ethylhexyl nonyl ester §	1000309-19-2	760	63
Sulfurous acid, 2-ethylhexyl undecyl ester §	/	180	<LOQ
9-Borabicyclo[3.3.1]nonane, 9-mercapto- §	/	<LOQ	<LOQ
1-Nonanol §	143-08-8	<LOQ	<LOQ
(S)-(+)-6-Methyl-1-octanol §	110453-78-6	<LOQ	<LOQ
M P xylene isomers	108-38-3/06-42-3	<LOQ	<LOQ
Styrene	100-42-5	<LOQ	<LOQ
O xilene	95-47-6	<LOQ	<LOQ
Benzaldehyde §	100-52-7	<LOQ	<LOQ
1,2,4 Trimetilbenzene	95-63-6	<LOQ	<LOQ
1,4-diclorobenzene	106-46-7	<LOQ	<LOQ
Etilbenzene	100-41-4	<LOQ	<LOQ

2-Butoxyethanol	7681-57-4	<LOQ	<LOQ
Styrene	100-42-5	<LOQ	<LOQ
Dodecane §	112-40-3	<LOQ	23
1-Benzyl-5-chloro-1H-benzimidazole-2-thiol, TMS derivative §	100440-60-6	<LOQ	<LOQ
4-Fluoro-2-nitroaniline, 5-[4-(pyrrolidin-1-yl)carbonylmethyl]perazin-1-yl]- §	/	<LOQ	<LOQ
2,4,7,9-Tetramethyl-5-decyn-4,7-diol §	126-86-3	<LOQ	<LOQ
Other unidentified compounds § VOC	/	<LOQ	50
SVOC			
1,4-Methanobenzocyclodecene, 1,2,3,4,4a,5,8,9,12,12a-decahydro- §		<LOQ	100
Other unidentified compounds § SVOC	/	<LOQ	120
TVOC		3800	710
TSVOC		<LOQ	220
TVVOC		<LOQ	<LOQ

Table 1. Results of the test for the determination of volatile organic compounds.

Legend:

= double test;

* = HPLC method according to ISO 16000-3

§ = Quantified as toluene

SUMMARY OF RESULTS

The tests described above provided the following evidence:

DETERMINATION OF INDOOR EMISSIONS - VOC: VOLATILE ORGANIC COMPOUNDS - TEST CHAMBER METHOD

The concentrations of substances measured after **28 days** are lower than the limits set for emissions both by class A+ (ref. French Decree n° 2011 - 321 of 23 March 2011 and Resolution of 19 April 2011) and by the CAM building decree (Ministerial Decree 23 June 2022).

4. List of distribution

ENEA	Archive	1 copy
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Test Executor	Test report Editor	Technical Director Approval
Dr. Paolo Brigadeci	Eng. Simone Bandini	Eng. Luca Laghi
		

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----- End of the Test Report -----