

Entwicklungs- und Prüflabor Holztechnologie GmbH · Zellescher Weg 24 · 01217 Dresden · Germany

DI Dekodur International
GmbH & Co KG
Mr. Rolf van den Berg
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Dresden, 2020-09-30
50 – br/zn

Test Report Order no. 2520398/2

Client: DI Dekodur International
GmbH & Co KG
Langenthaler Str. 4
69434 Hirschhorn Neckar

Date of order: 2020-08-17

Order: Determination of the VOC and formaldehyde emission from a HPL according to AgBB-Scheme, ISO 16000 parts 3, 6 and 9, DIN EN 16516 (01/2018)
Starline A210 ECO

Contractor: EPH – Laboratory Chemical Testing

Engineer in charge Julia Zink



Dipl.-Ing. M. Broege
Head of Laboratory Chemical Testing

The test report contains 3 pages and 1 annex with 9 pages. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.

1 Assignment

Performance of an emission test regarding formaldehyde and VOC based on the AgBB-Scheme
Methods: ISO 16000 parts 3, 6 and 9, DIN EN 16516 (01/2018)

2 Product description

Product name: **Starline A210 ECO**
Type: HPL
Thickness: 0.8 mm

3 Sampling

Packaging: Foil and carton
Number: 4 boards
Sample receipt EPH: 2020-08-20

4 Emissionsmessung

Chamber test – ISO 16000 part 9

The test piece (0.225 m²) was stored in a test chamber – lying on a metal rack – at the following conditions:

Temperature: 23 °C ± 1 K
Air humidity: 50 % ± 3 %
Air exchange range: 0.5 /h ± 0.1 /h
Loading: 1.0 m²/m³, back to back
Chamber volume: 0,225 m³
Storage: 2020-08-24

During the test the climatic parameters temperature and relative air humidity were recorded. Data for chamber test are documented on the enclosed page "Test Parameters".

5 Analytics

Volatile organic compounds (VOC) – ISO 16000 part 6

The determination of the VOC was carried out by gaschromatography after previous adsorption on tenax and following thermodesorption with cryofocussion (GC-MS).

Formaldehyde / Aldehydes – ISO 16000 part 3

The determination of formaldehyde and other aldehydes was carried out by DNPH-method.

Sampling

- | | | |
|----------------|--------------|----------------------|
| 1. Measurement | after 3 days | double determination |
| 2. Measurement | after 7 days | double determination |

6 Results*

VOC-Emission

The following printouts are attached to the report:

Evaluation according to AgBB 2018:

- General information
- Test Parameter
- Evaluation for AgBB 2018
- Measurement day 3 and 7
- Photo
- Chromatograms day 3 and 7

Formaldehyde

- | | |
|----------------|--------------------------|
| 1. Measurement | < 0.005 ppm after 3 days |
| 2. Measurement | < 0.005 ppm after 7 days |

The tested product „Starline A210 ECO“ fulfills the requirements of the AgBB-Scheme.*



Julia Zink
Engineer in charge

*Statements on conformity assessment/classification were made on the basis of the measurement results obtained. Measurement uncertainties are not included in the assessment (ILAC G8 03/2009 " Guidelines on the Reporting of Compliance with Specification" Section 2.7).

Evaluation according to AgBB 2018

2520398/2

1. General Information

Testing laboratory	Entwicklungs- und Prüflabor Holztechnologie Dresden GmbH
Responsible laboratory staff	Florian Wolf
Number of the test report	2520398/2
Client/Applicant	DI Dekodur International GmbH & Co KG
Name of the product and material number	Starline A210 ECO
Control type	Other
Date of batch production	
Date of receipt of the sample	2020-08-20
Storage of the sample until testing	verpackt
Product Group	Other Products

Description of the construction product:

Parameter	Manufacturer	Laboratory
General description of the product		
Total thickness		0,8 mm
Area weight		1725 g/m²
Additional information		

Comments

2. Test parameter

Date of the completion of the test specimen	2020-08-24
Preparation of the test specimen by	EPH
Used auxiliary materials	
Start of preconditioning	
Placing of the test specimen into the test chamber and start of testing	2020-08-24
Arrangement of the test specimen in the test chamber	liegend auf Metallgestell
Covering of the edges? Ratio of covered edges to uncovered edges?	komplett verschlossen
Use of the break-off criteria	Day 7
Manufacturer/type of the test chamber	
Material of the test chamber	Glas
Volume of the test chamber [m ³]	0.225
Area of the test specimen [m ²]	0.225
Air exchange rate [1/h]	0,5
Area specific air flow rate [m/h]	0.500
Temperature [°C]	23±1
Relative humidity [%]	50±3
Comments on testing	

3. Evaluation for AgBB 2018

Parameter	Day 3					Day 7				Day 28			
	  					 				 			
	[µg/m³]	[mg/m³]	[mg/m³]	[mg/m³]	[mg/m³]	[µg/m³]	[mg/m³]	[mg/m³]	[mg/m³]	[µg/m³]	[mg/m³]	[mg/m³]	[mg/m³]
TVOC	40	0.0	0.3	10.0	>10.0	15	0.0	0.5	>0.5	-	-	1.0	>1.0
Σ SVOC	0	0.00	0.03	>0.03	-	0	0.00	0.05	>0.05	-	-	0.1	>0.1
R-Value *	0.002	0.0	0.5	>0.5	-	0.000	0.0	0.5	>0.5	-	-	1	>1
Σ VOC w/o LCI	10	0.01	0.05	>0.05	-	10	0.01	0.05	>0.05	-	-	0.1	>0.1
Σ Carcinogenic	0	0.000	0.001	0.01	>0.01	0	0.000	0.001	>0.001	-	-	0.001	>0.001
Total											-		

DIBt Parameter

Formaldehyde	0	0.000	0.060	>0.060	-	0	0.000	0.060	>0.060	-	-	0.120	>0.120
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Additional Information

Σ VVOC	0	0	-	-	-	0	0	-	-	-	-	-	-
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*) dimension less  Pass  Continue  Fail

4. Measurement

4.1. Day 3

Date of measurement: 2020-08-27

TVOC ISO 16000-6: -

CAS-No.	Compound name	Ret. Range	RT [min]	C [$\mu\text{g}/\text{m}^3$]	Quantifi- cation	C_tol [$\mu\text{g}/\text{m}^3$]	Identifi- cation	Comment	Ri	LCI Value
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.224		Tol. equiv.	3	III		0.000	14000
591-76-4	Hexane, 2-methyl-	VOC	6.414		Tol. equiv.	10	III		-	-
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.516		Tol. equiv.	9	III		0.001	14000
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.638		Tol. equiv.	16	III		0.001	14000
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.693		Tol. equiv.	1	III		0.000	14000
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.914		Tol. equiv.	5	III		0.000	14000
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	7.016		Tol. equiv.	1	III		0.000	6000
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	7.089		Tol. equiv.	3	III		0.000	6000
142-82-5	n-Heptane	VOC	7.264	1	specific	1	I		0.000	15000
541-05-9	Cyclotrisiloxane, hexamethyl-	VOC	11.298		Tol. equiv.	2	III		-	-
n.i.	nicht identifiziert	VOC	28.201		Tol. equiv.	3	III		-	-
	Not identified VOC	VOC	29.142		Tol. equiv.	1	III		-	-
n.i.	nicht identifiziert	VOC	29.492		Tol. equiv.	1	III		-	-
n.i.	nicht identifiziert	VOC	29.622		Tol. equiv.	2	III		-	-
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	29.682		Tol. equiv.	1	III		0.000	6000

CAS-No.	Compound name	Ret. Range	RT [min]	C [$\mu\text{g}/\text{m}^3$]	Quantifi- cation	C_tol [$\mu\text{g}/\text{m}^3$]	Identifi- cation	Comment	Ri	LCI Value
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	29.723		Tol. equiv.	2	III		0.000	6000
n.i.	nicht identifiziert	VOC	29.894		Tol. equiv.	2	III		-	-
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	30.055		Tol. equiv.	1	III		0.000	6000
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	30.214		Tol. equiv.	1	III		0.000	6000
50-00-0	Formaldehyde	VVOC	6.119	0	DNPH	0	I		0.000	100 (VVOC)
75-07-0	Acetaldehyde	VVOC	7.444	1	DNPH	0	I		0.000	1200 (VVOC)
67-64-1	Acetone	VVOC	9.252	0	DNPH	0	I		0.000	1200 (VVOC)

4.2. Day 7

Date of measurement: 2020-08-31

TVOC ISO 16000-6: -

CAS-No.	Compound name	Ret. Range	RT [min]	C [$\mu\text{g}/\text{m}^3$]	Quantifi- cation	C_tol [$\mu\text{g}/\text{m}^3$]	Identifi- cation	Comment	Ri	LCI Value
591-76-4	Hexane, 2-methyl-	VOC	6.414		Tol. equiv.	3	III		-	-
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.516		Tol. equiv.	3	III		0.000	14000
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.638		Tol. equiv.	5	III		0.000	14000
	Other saturated aliphatic hydrocarbons, C6-C8	VOC	6.914		Tol. equiv.	1	III		0.000	14000
142-82-5	n-Heptane	VOC	7.264	1	specific	0	I		0.000	15000
541-05-9	Cyclotrisiloxane, hexamethyl-	VOC	11.298		Tol. equiv.	10	III		-	-
n.i.	nicht identifiziert	VOC	28.201		Tol. equiv.	2	III		-	-
n.i.	nicht identifiziert	VOC	29.492		Tol. equiv.	1	III		-	-
n.i.	nicht identifiziert	VOC	29.622		Tol. equiv.	1	III		-	-
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	29.682		Tol. equiv.	1	III		0.000	6000
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	29.723		Tol. equiv.	1	III		0.000	6000
n.i.	nicht identifiziert	VOC	29.894		Tol. equiv.	1	III		-	-
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	30.055		Tol. equiv.	1	III		0.000	6000
	Other saturated aliphatic hydrocarbons, C9-C16	VOC	30.214		Tol. equiv.	1	III		0.000	6000
50-00-0	Formaldehyde	VVOC	6.119	0	DNPH	0	I		0.000	100 (VVOC)

CAS-No.	Compound name	Ret. Range	RT [min]	C [$\mu\text{g}/\text{m}^3$]	Quantifi- cation	C_tol [$\mu\text{g}/\text{m}^3$]	Identifi- cation	Comment	Ri	LCI Value
75-07-0	Acetaldehyde	VVOC	7.444	1	DNPH	0	I		0.000	1200 (VVOC)
67-64-1	Acetone	VVOC	9.252	0	DNPH	0	I		0.000	1200 (VVOC)

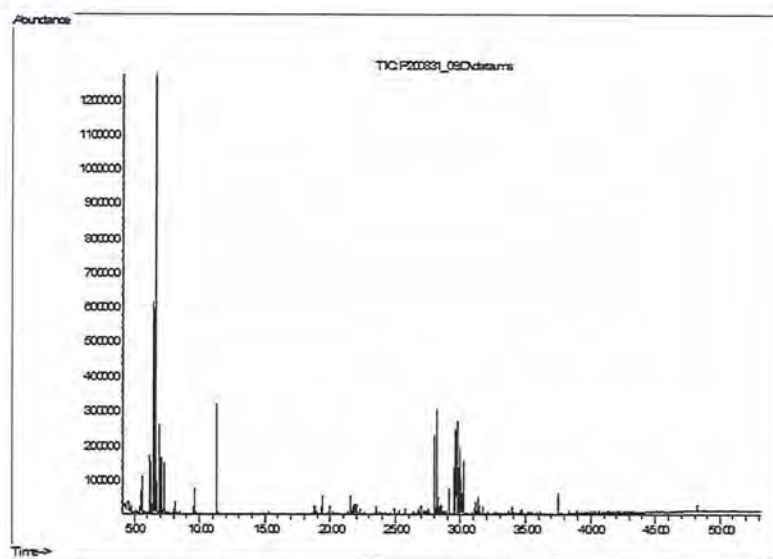
5. Images

5.1. Specimen image



6. Chromatograms

6.1. Day 3



6.2. Day 7

