

ROMEX® GmbH  
Von-Bassenheim-Straße 2  
53881 Euskirchen

## Test report no. 51592-001

<b>Test goal:</b>	<b>Report according to AgBB-Schema 2015</b>
<b>Description of samples according to customer:</b>	<b>ROMEX®-Jointing Sand-NP</b>
Sample taker:	N.A.
Sample date:	06.10.2016
Sample location:	ROMEX®-Produktion Meckenheim
Production date:	30.08.2016
Sample receipt:	10.10.2016
Test period:	10.10.2016 - 08.11.2016
Date of report:	08.11.2016
No. of pages of report:	17
Test Laboratory:	eco-INSTITUT Germany GmbH, Köln except ‡ external
Test goal achieved:	

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## Sample overview

eco sample number	Sample description	Condition of sample on arrival	Type of sample
A001	ROMEX®-Jointing Sand-NP	no faults	Jointing sand



A001: ROMEX®-Jointing Sand-NP

**Note:** The test results refer exclusively to the test object submitted. The report shall immediately cease to be valid in the event of changes in the composition or the production process of the test object. A complete or optional publication of the test report is subject to approval.

## Surveyor's evaluation

The product **ROMEX®-Jointing Sand-NP** was supplied by **ROMEX® GmbH** to undergo product testing.

The assessment is based on the "procedure for the health assessment of emissions of volatile organic compounds (VOC, VOC and SVOC) from construction products" by the Committee for the Health Assessment of Construction Products. (AgBB 2015).

The results documented in the test report are evaluated as follows.

Test parameters	Results	Requirements	Requirements fulfilled [yes/no]
<b>Emissions analysis</b>			
<b>Time of testing: 3 days after loading into test chamber</b>			
Total VOC (C <sub>6</sub> -C <sub>16</sub> ) and SVOC with NIK <sup>1)</sup>	0,009 mg/m <sup>3</sup>	≤ 10 mg/m <sup>3</sup>	yes
Total carcinogens (EU-Kat. 1A and 1B)	< 0,001 mg/m <sup>3</sup>	≤ 0,01 mg/m <sup>3</sup>	yes
<b>Time of testing: 7 days after loading into test chamber</b>			
Total VOC (C <sub>6</sub> -C <sub>16</sub> ) and SVOC with NIK <sup>1)</sup>	0,009 mg/m <sup>3</sup>	≤ 0,5 mg/m <sup>3</sup>	yes
Total SVOC without NIK (C <sub>16</sub> -C <sub>22</sub> ) <sup>1)</sup>	< 0,005 mg/m <sup>3</sup>	≤ 0,05 mg/m <sup>3</sup>	yes
R-Value (no dimension)	0,01	≤ 0,5	yes
Total VOC without NIK	< 0,005 mg/m <sup>3</sup>	≤ 0,05 mg/m <sup>3</sup>	yes
Total carcinogens (EU-Kat. 1A and 1B)	< 0,001 mg/m <sup>3</sup>	≤ 0 mg/m <sup>3</sup>	yes

1) with total VOC (C<sub>6</sub>-C<sub>16</sub>) and total SVOC (C<sub>16</sub>-C<sub>22</sub>) only substances ≥ 5 µg/m<sup>3</sup> are taken into consideration

## Summarised evaluation

The product **ROMEX<sup>®</sup>-Jointing Sand-NP** fulfills the requirements of AgBB-

Schemas. Köln, 08.11.2016

A handwritten signature in black ink, reading "M.-A. Dobaj". The signature is written in a cursive style with a long, sweeping flourish extending from the end of the name.

Marc-Anton Dobaj, M.Sc. Crystalline Materials  
(Project Manager)

# Laboratory Report

## 1 Emissions analysis

### Test method

prEN 16516	Testing and evaluation of release of hazardous materials; determining emissions of indoor air
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### A001, Manufacture of sample

Date:	14.10.2016
Pre-treatment / manufacture of sample:	Poured into aluminium form; Quantity: 7800 g/m <sup>2</sup> , lightly dampen product, when completely dry, put into testing chamber
Sticking off the rear side:	NA
Sticking off edges:	no
Ratio of open edges to surface:	NA
Load:	in relation to surface
Dimensions:	20 cm x 25 cm [390g]

### A001, Test chamber conditions acc. to DIN ISO 16000-9

Chamber volume:	0,125 m <sup>3</sup>
Temperature:	23°C
Relative air humidity:	50 %
Air pressure:	normal
Air:	cleaned
Air exchange rate:	0,5 h <sup>-1</sup>
Blowing speed:	0,3 m/s
Load:	0,40 m <sup>2</sup> /m <sup>3</sup>
Spec. air flow rate:	1,25 m <sup>3</sup> /m <sup>2</sup> · h
Air sample:	3 days after test chamber loading 7 days after test chamber loading

### Analytics

Aldehyde and Ketone Limit of determination:	DIN ISO 16000-3 2 µg/m <sup>3</sup>
Volatile organic compounds Limit of determination:	DIN ISO 16000-6 1 µg/m <sup>3</sup>
Note on evaluation	NA

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## 1.1 Sample A001, Volatile organic compounds after 3 days

### Test goal:

Volatile organic compounds (VOC), test chamber, air sample 3 days after loading of test chamber

### Test result:

Sample: A001: ROMEX-Jointing Sand-NP

No.	Substance	CAS no.	RT [min]	Concentration+ (Test chamber air)	Toluol- equivalent	KMR	NIK	R- Valu e
				Substances $\geq 1 \mu\text{g}/\text{m}^3$ after 3 days [ $\mu\text{g}/\text{m}^3$ ]	Substances $\geq 5$ $\mu\text{g}/\text{m}^3$ after 3 days [ $\mu\text{g}/\text{m}^3$ ]	Classification ++	AgBB 2015 [ $\mu\text{g}/\text{m}^3$ ]	
<b>4</b>	<b>Aliphatic mono Al- cohols (n-, iso- and cyclo-) and Dialcohols</b>							
4-10	2-Ethyl-1-hexanol	104-76-7	13,60	1			300	0,00
<b>6</b>	<b>Glycoles, Glycol- ethers, Glycolesters</b>							
6-4	Diethyleneglycol	111-46-6	12,18	1			440	0,00
<b>7</b>	<b>Aldehyde</b>							
7-22	Formaldehyde	50-00-0		2		Carc. 1B Muta. 2	100	0,02
<b>8</b>	<b>Ketone</b>							
8-10	Acetone	67-64-1		3			1200	0,00
<b>9</b>	<b>Acids</b>							
9-1	Acetic acid	64-19-7	4,55	9			1250	0,01
<b>13</b>	<b>Further substances in addition to NIK- List</b>							
	Hexamethylcyclotrisilo- xane	541-05-9	8,55	1				
	heterocyclical compound*		8,34	1				
4-13	other C4 - C10 saturated n- and iso- Alcohols*	--	13,74	2			500	0,00

+ identified and calibrated substances, substance-specifically calculated

++classification acc. to regulation (EG) no. 1272/2008: category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B, TRGS 905: K1 and K2, M1 and M2, R1 and R2, IARC: Group 1 and 2A, DFG MAK-List: category III1 and III2

\* non identified substances, calculated as Toluol equivalent

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<b>Carcinogenic, mutating and DNA changing components</b>	<b>Concentration after 3 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
KMR 1: VOC (incl. WOC and TVOC) with the following levels: Regulation (EG) no. 1272/2008: Category Carc. 1A u. 1B, Muta. 1A u. 1B, Repr. 1A u. 1B; TRGS 905: K1, K2, M1, M2, R1, R2; IARC: Group 1 u. 2A; DFG (MAK-List): Category III1, III2 (Total)	< 1	< 1,25
K 1: VOC (incl. WOC and TVOC) with the following levels: Regulation (EG) no. 1272/2008: Category Carc. 1A u. 1B (Total)	< 1	< 1,25

<b>TVOC, Total Volatile organic compounds</b>	<b>Concentration after 3 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total VOC acc. to prEN 16516	< 5	< 6,25
Total VOC acc. to AgBB 2015/ DIBt	9	11
Total VOC acc. to eco-INSTITUT-Label	15	19
Total VOC acc. to ISO 16000-6	20	25

<b>TSVOC, Total non volatile organic compounds</b>	<b>Concentration after 3 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total SVOC acc. to prEN 16516	< 5	< 6,25
Total SVOC without NIK acc. to AgBB 2015/ DIBt	< 5	< 6,25
Total SVOC without NIK acc. to eco-INSTITUT-Label	< 1	< 1,25
Total SVOC with NIK acc. to AgBB 2015/ DIBt	< 5	< 6,25

<b>TVVOC, Total Volatile organic compounds</b>	<b>Concentration after 3 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total WOC acc. to AgBB 2015/ DIBt and Belgian VO	< 5	< 6,25
Total WOC acc. to eco-INSTITUT-Label	5	6,3

**Note:** The test results refer exclusively to the test object submitted. The report shall immediately cease to be valid in the event of changes in the composition or the production process of the test object. A complete or optional publication of the test report is subject to approval.

Further VOC totals	Concentration after 3 days [ $\mu\text{g}/\text{m}^3$ ]	SE <sub>R</sub> [ $\mu\text{g}/\text{m}^2\text{h}$ ]
VOC without NIK acc. to AgBB 2015 / DIBt and Belgian VO (Total)	< 5	< 6,25
VOC without NIK acc. to eco-INSTITUT-Label (Total)	2	2,5
KMR 2: VOC (inkl. VVOC and TVOC) with following levels: Regulation (EG) no. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K3, M3, R3; IARC: Group 2B; DFG (MAK-Liste): Category III3 (Total)	2	2,5
Sensitizing substances with following levels: DFG (MAK-Liste): Category IV, BgVV-Liste: Cat A, TRGS 907 (Total)	2	2,5
Total Bicyclic Terpenes (Total)	< 1	< 1,25
C9 - C14: Alkane / Isoalkanes as Dekane-equivalent (Total)	< 1	< 1,25
C4 - C11 Aldehyde, acyclic, aliphatic (Total)	< 2	< 2,5
C9 - C15 Alkylbenzoles (Total)	< 1	< 1,25
Cresols (Total)	< 1	< 1,25

Calculation value for evaluation of NIK-materials	R-Value
R-Value acc. to eco-INSTITUT-Label	0,04
R-Value acc. to AgBB 2015 / DIBt	0,01
R-Value acc. to Belgian VO	0,01
R-Value acc. to AFSSET	0,04

Note: Due to different values in the guidelines, there are divergent values with the calculation of the TVOC, TVVOC, TSVOC and R-Values.

Note: The test results refer exclusively to the test object submitted. The report shall immediately cease to be valid in the event of changes in the composition or the production process of the test object. A complete or optional publication of the test report is subject to approval.



## 1.2 Sample A001, Volatile organic compounds after 7 days

### Test goal:

Volatile organic compounds (VOC), test chamber, air samples taken 7 days after loading of test chamber

### Test result:

Sample: A001: ROMEX<sup>®</sup>-Jointing Sand-NP

No.	Substance	CAS No.	RT [min]	Concentration+ (test chamber air)	Toluol- equivalent	KMR classification ++	NIK AgBB 2015 [µg/m <sup>3</sup> ]	R- Value
				Substances ≥ 1 µg/m <sup>3</sup> after 7 days [µg/m <sup>3</sup> ]	Substances ≥ 5 µg/m <sup>3</sup> after 7 days [µg/m <sup>3</sup> ]			
<b>7</b>	<b>Aldehyde</b>							
7-22	Formaldehyde	50-00-0		2		Carc. 1B Muta. 2	100	0,02
<b>8</b>	<b>Ketone</b>							
8-10	Acetone	67-64-1		5			1200	0,00
<b>9</b>	<b>Acids</b>							
9-1	Acetic acid	64-19-7	4,56	9			1250	0,01
<b>13</b>	<b>Further substances in addition to NIK- List</b>							
	Hexamethylcyclotrisilo- xane	541-05-9	8,57	1				
4-13	other C4 - C10 saturated n- and iso- Alcohols*	--	13,74	2			500	0,00

+ identified and calibrated substances, substance-specifically calculated

++classification acc. to regulation (EG) no. 1272/2008: category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B, TRGS 905: K1 and K2, M1 and M2, R1 and R2, IARC: Group 1 and 2A, DFG MAK-List: category III1 and III2

\* non identified substances, calculated as Toluol equivalent

**Note:** The test results refer exclusively to the test object submitted. The report shall immediately cease to be valid in the event of changes in the composition or the production process of the test object. A complete or optional publication of the test report is subject to approval.

<b>Carcinogenic, mutating and DNA changing components</b>	<b>Concentration after 7 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
KMR 1: VOC (incl. VVOC and TVOC) with following levels: Regulation (EG) no. 1272/2008: Category Carc. 1A u. 1B, Muta. 1A u. 1B, Repr. 1A u. 1B; TRGS 905: K1, K2, M1, M2, R1, R2; IARC: Group 1 u. 2A; DFG (MAK-Liste): Category III1, III2 (Total)	< 1	< 1,25
K 1: VOC (incl. VVOC and TVOC) with following levels: Regulation (EG) Nr. 1272/2008: Category Carc. 1A u. 1B (Total)	< 1	< 1,25

<b>TVOC, Total Volatile organic compounds</b>	<b>Concentration after 7 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total VOC acc. to prEN 16516	< 5	< 6,25
Total VOC acc. to AgBB 2015/ DIBt	9	11
Total VOC acc. to eco-INSTITUT-Label	12	15
Total VOC acc. to ISO 16000-6	20	25

<b>TSVOC, Total non volatile organic compounds</b>	<b>Concentration after 7 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total SVOC acc. to prEN 16516	< 5	< 6,25
Total SVOC without NIK acc. to AgBB 2015/ DIBt	< 5	< 6,25
Total SVOC without NIK acc. to eco-INSTITUT-Label	< 1	< 1,25
Total SVOC with NIK acc. to AgBB 2015/ DIBt	< 5	< 6,25

<b>TVVOC, Volatile organic compounds</b>	<b>Concentration after 7 days [<math>\mu\text{g}/\text{m}^3</math>]</b>	<b>SER<sub>a</sub> [<math>\mu\text{g}/\text{m}^2\text{h}</math>]</b>
Total WOC acc. to AgBB 2015/ DIBt and Belgian VO	5	6,3
Total WOC acc. to eco-INSTITUT-Label	7	8,8

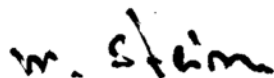
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Further VOC-Totals	Concentration after 7 days [ $\mu\text{g}/\text{m}^3$ ]	SE <sub>Ra</sub> [ $\mu\text{g}/\text{m}^2\text{h}$ ]
VOC without NIK acc. to AgBB 2015 / DIBt and Belgian VO (Total)	< 5	< 6,25
VOC without NIK acc. to eco-INSTITUT-Label (Total)	1	1,3
KMR 2: VOC (inkl. VVOC and TVOC) with following levels: Regulation (EG) Nr. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K3, M3, R3; IARC: Group 2B; DFG (MAK-List): Category III3 (Total)	2	2,5
Sensitizing substances with following levels: DFG (MAK-List): Category IV, BgVV-List: Cat A, TRGS 907 (Total)	2	2,5
Total Bicyclic Terpenes (Total)	< 1	< 1,25
C9 - C14: Alkanes / Isoalkanes as Dekane-equivalent (Total)	< 1	< 1,25
C4 - C11 Aldehyde, acyclic, aliphatic (Total)	< 2	< 2,5
C9 - C15 Alkylbenzoles (Total)	< 1	< 1,25
Cresoles (Total)	< 1	< 1,25

Calculation value for evaluation of NIK-materials	R-Value
R-Value acc. to eco-INSTITUT-Label	0,04
R-Value acc. to AgBB 2015 / DIBt	0,01
R-Value acc. to Belgian VO	0,01
R-Value acc. to AFSSET	0,04

Note: Due to different values in the guidelines, there are divergent values with the calculation of the TVOC, TVVOC, TSVOC and R-Values.

Köln, 08.11.2016



Michael Stein, Dipl.-Chem.  
(Deputy Technical Director)

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