



Produktprüfung  
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## **Expertise for the eco-INSTITUT-Label**

**(summary)**

**FERMACELL Gypsum-Fiberboard  
FERMACELL Joint Filler  
FERMACELL Jointstik (hardened)**

**Xella Trockenbau-Systeme GmbH, 47119 Duisburg**

**Test Report No. 17480-1 to 3**



ECO-Umweltinstitut GmbH  
Sachsenring 69  
50677 Köln

Fon +49-(0)221-931 245 -0  
Fax +49-(0)221-931 245 -33

[www.eco-institut.de](http://www.eco-institut.de)  
[www.eco-info.de](http://www.eco-info.de)  
[info@eco-institut.de](mailto:info@eco-institut.de)

Akkreditiert ISO/IEC 17025

**AKS** Akkreditierung: AKS-PL-20708  
Staatliche Akkreditierungsstelle Hannover



## Test Report No. 17480-1 to 3 (summary)

The following test reports 17480-1 to 3 contain an excerpt of the test reports/expertises with the test report numbers 17480-1, 17480-2 and 17480-3.

<b>Client:</b>	<b>Xella Trockenbau-Systeme GmbH, 47119 Duisburg</b>
<b>Sample designation as per client:</b>	<b>FERMACELL Gypsum-Fibreboard (17480-1) FERMACELL Joint Filler (17480-2) FERMACELL Jointstik (hardened) (17480-3)</b>
Sample No:	17480-1 to 3
Type of sample:	Gypsum-Fiberboard, ready-mix mortar, adhesive
Date of the report:	06.09.2007
Page number of the certification:	10
Aims of the testing:	1. Emission test: Volatile organic compounds (VOC) Formaldehyde 2. Odour testing 3. Contens analysis: Organic halogenated compounds (AOX) * Phthalates (samples 17480-2 and 3)
Testing Laboratory:	eco-INSTITUT GmbH, Cologne, Germany * External laboratory



## A Testing methodology

Parameter	Testing methodology
VOC (volatile organic compounds)	DIN ISO 16000-9, DIN ISO 16000-6 Pre-testing treatment FERMACELL Joint adhesive: 3 days open storage until complete hardening
Formaldehyde	DIN ISO 16000-9, DIN V ENV 717-1
Odours	according to VDA recommendation 270 at 50 % humidity Pre-testing treatment FERMACELL Joint adhesive: 3 days open storage until complete hardening
Organic halogenic compounds (AOX / EOX)	AOX: Binding of the organic halogens to activated charcoal. Combustion of the activated charcoal in an oxygen stream, micro-coulometric determination of the halogen content. EOX: Extraction with ethyl acetate. Combustion of the extract in an oxygen stream, micro-coulometric determination of the halogen content.
Phthalates	Extraction, Analysis with GC/MS



## B Testing results and evaluation

### 1 FERMACELL Gypsum-Fiberboard

#### 1.1 Emission test

Pos.	Test parameter	Concentration [ $\mu\text{g}/\text{m}^3$ ]	Limit value [ $\mu\text{g}/\text{m}^3$ ]	Within limit value [Yes/No]
<b>1</b>	<b>VOC (volatile organic compounds)</b>			
1.1	KMR-VOC <sub>3d</sub> <sup>1</sup>	n.n. <sup>2</sup>	n.n. <sup>2</sup>	Yes
1.2	TVOC <sub>3d</sub> (total volatile organic compounds) <sup>3</sup>	154	≤ 3.000	Yes
1.3	TVOC <sub>28d</sub>	97	≤ 300	Yes
1.4	VOC <sub>28d</sub> (total) without NIK	79	≤ 100	Yes
1.5	VOC <sub>28d</sub> (individual values):			
	Sum of bicyclic Terpenes	< 2	≤ 200	Yes
	Sum of sensitising materials with the following classifications: DFG (MAK lists): Category IV BgVV lists: Cat A TRGS 907	< 2	≤ 100	Yes
	Total VOCs with the following classifications: RL 67/548 EWG: Carc. Cat. 3, Mut. Cat. 3, Repr. Cat. 3 TRGS 905: K3, M3, R3 IARC: Group 2B DFG MAK-Liste: Category III3	< 2	≤ 50	Yes
1.6	Sum of SVOC <sub>28d</sub> (semi-volatile organic compounds)	96	≤ 100	Yes
		<b>Value</b>	<b>Threshold</b>	
1.7	R value	< 1,0	≤ 1,0	Yes
Pos.	Test parameter	Concentration [ $\mu\text{g}/\text{m}^3$ ]	Limit value [ $\mu\text{g}/\text{m}^3$ ]	Within limit value [Yes/No]
<b>2</b>	<b>Formaldehyde<sub>28d</sub></b> <sup>4</sup>	< 12 <sup>5</sup>	≤ 24	Yes

- 1) KMR-VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the KMR-VOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 2) n.n.= not detectable; threshold of measurement: 2  $\mu\text{g}/\text{m}^3$
- 3) VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the TVOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 4) Formaldehyde has been measured 3 days after loading the test chamber; therefore the requirements of Formaldehyde<sub>28d</sub> for the 28 days test after loading are also fulfilled.
- 5) 12  $\mu\text{g}/\text{m}^3$  corresponds to 0,01 ppm



## 1.2 Odour testing

Pos.	Test parameter	Intensity [Note]	Limit value [ $\mu\text{g}/\text{m}^3$ ]	Within limit value [Yes/No]
1	Odour	1 - 2	$\leq 3$	Yes

## 1.3 Contents analysis

Pos.	Test parameter	Concentration [mg/kg]	Limit value [mg/kg]	Within limit value [Yes/No]
1	<b>Organic halogenated compounds (AOX)</b>			
	AOX (adsorbable organic halogenated compounds)	< 0,5	$\leq 1$	Yes



## 2 FERMACELL Joint Filler

### 2.1 Emission test

Pos.	Test parameter	Concentration [µg/m³]	Limit value [µg/m³]	Within limit value [Yes/No]
<b>1</b>	<b>VOC (volatile organic compounds)</b>			
1.1	KMR-VOC <sub>3d</sub> <sup>1</sup>	n.n. <sup>2</sup>	n.n. <sup>2</sup>	Yes
1.2	TVOC <sub>3d</sub> (total volatile organic compounds) <sup>3</sup>	2	≤ 3.000	Yes
1.3	TVOC <sub>28d</sub>	24	≤ 300	Yes
1.4	VOC <sub>28d</sub> (total) without NIK	4	≤ 100	Yes
1.5	VOC <sub>28d</sub> (individual values):			
	Sum of bicyclic Terpenes	< 2	≤ 200	Yes
	Sum of sensitising materials with the following classifications:	< 2	≤ 100	Yes
	DFG (MAK lists): Category IV			
	BgVV lists: Cat A			
	TRGS 907			
	Total VOCs with the following classifications:	< 2	≤ 50	Yes
	RL 67/548 EWG: Carc. Cat. 3, Mut. Cat. 3, Repr. Cat. 3			
	TRGS 905: K3, M3, R3			
	IARC: Group 2B			
	DFG MAK-Liste: Category III3			
1.6	Sum of SVOC <sub>28d</sub> (semi-volatile organic compounds)	2	≤ 100	Yes
		<b>Value</b>	<b>Threshold</b>	
1.7	R value	< 1,0	≤ 1,0	Yes
Pos.	Test parameter	Concentration [µg/m³]	Limit value [µg/m³]	Within limit value [Yes/No]
<b>2</b>	<b>Formaldehyde<sub>28d</sub></b> <sup>4</sup>	< 12 <sup>5</sup>	≤ 24	Yes

- 1) KMR-VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the KMR-VOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 2) n.n.= not detectable; threshold of measurement: 2 µg/m³
- 3) VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the TVOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 4) Formaldehyde has been measured 3 days after loading the test chamber; therefore the requirements of Formaldehyde<sub>28d</sub> for the 28 days test after loading are also fulfilled.
- 5) 12 µg/m³ corresponds to 0,01 ppm



## 2.2 Odour testing

Pos.	Test parameter	Intensity [Note]	Limit value [ $\mu\text{g}/\text{m}^3$ ]	Within limit value [Yes/No]
1	Odour	1 - 2	$\leq 3$	Yes

## 2.3 Contents analysis

Pos.	Test parameter	Concentration [mg/kg]	Limit value [mg/kg]	Within limit value [Yes/No]
1	<b>Organic halogenated compounds (AOX)</b>			
	AOX (adsorbable organic halogenated compounds)	< 0,5	$\leq 1$	Yes
2	<b>Phthalates</b>			
	Sum Phthalates	< 500	$\leq 500$	Yes



### 3 FERMACELL Jointstik

#### 3.1 Emission test

Pos.	Test parameter	Concentration [µg/m³]	Limit value [µg/m³]	Within limit value [Yes/No]
<b>1</b>	<b>VOC (volatile organic compounds)</b>			
1.1	KMR-VOC <sub>3d</sub> <sup>1</sup>	n.n. <sup>2</sup>	n.n. <sup>2</sup>	Yes
1.2	TVOC <sub>3d</sub> (total volatile organic compounds) <sup>3</sup>	33	≤ 3.000	Yes
1.3	TVOC <sub>28d</sub>	2	≤ 300	Yes
1.4	VOC <sub>28d</sub> (total) without NIK	< 2	≤ 100	Yes
1.5	VOC <sub>28d</sub> (individual values):			
	Sum of bicyclic Terpenes	< 2	≤ 200	Yes
	Sum of sensitising materials with the following classifications:	< 2	≤ 100	Yes
	DFG (MAK lists): Category IV			
	BgVV lists: Cat A			
	TRGS 907			
	Total VOCs with the following classifications:	< 2	≤ 50	Yes
	RL 67/548 EWG: Carc. Cat. 3, Mut. Cat. 3, Repr. Cat. 3			
	TRGS 905: K3, M3, R3			
	IARC: Group 2B			
	DFG MAK-Liste: Category III3			
1.6	Sum of SVOC <sub>28d</sub> (semi-volatile organic compounds)	2	≤ 100	Yes
		<b>Value</b>	<b>Threshold</b>	
1.7	R value	< 1,0	≤ 1,0	Yes
Pos.	Test parameter	Concentration [µg/m³]	Limit value [µg/m³]	Within limit value [Yes/No]
<b>2</b>	<b>Formaldehyde<sub>28d</sub></b> <sup>4</sup>	< 12 <sup>5</sup>	≤ 24	Yes

- 1) KMR-VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the KMR-VOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 2) n.n.= not detectable; threshold of measurement: 2 µg/m³
- 3) VOC have been measured 24 hours after loading the test chamber; therefore the requirements of the TVOC<sub>3d</sub> for the 3 days test after loading are also fulfilled.
- 4) Formaldehyde has been measured 3 days after loading the test chamber; therefore the requirements of Formaldehyde<sub>28d</sub> for the 28 days test after loading are also fulfilled.
- 5) 12 µg/m³ corresponds to 0,01 ppm





Pos.	Test parameter	Concentration [µg/m³]	Limit value [µg/m³]	Within limit value [Yes/No]
3	Isocyanat monomers <sub>24h</sub>	n.n. <sup>1</sup>	n.n. <sup>1</sup>	Yes

1) n.n.= not detectable; threshold of measurement: 1 µg/m³ (TDI, HDI), 2 µg/m³ (MDI)

### 3.2 Odour testing

Pos.	Test parameter	Intensity [Note]	Limit value [µg/m³]	Within limit value [Yes/No]
1	Odour	1 - 2	≤ 3	Yes

### 3.3 Contents analysis

Pos.	Test parameter	Concentration [mg/kg]	Limit value [mg/kg]	Within limit value [Yes/No]
1	<b>Organic halogenated compounds (AOX)</b>			
	AOX (adsorbable organic halogenated compounds)	< 0,5	≤ 1	Yes
	EOX (extractable organic halogenated compounds)	< 2	≤ 2	Yes
2	<b>Phthalates</b>			
	Sum Phthalates	< 500	≤ 500	Yes



## C Recapitulatory evaluation

The products FERMACELL Gypsum-Fiberboard, FERMACELL Joint Filler and FERMACELL Jointstik (hardened) were examined on the behalf of Xella Trockenbau-Systeme GmbH, 47119 Duisburg, for ecological product testing for the acquisition of the eco-INSTITUT-Label. The laboratory analyses was successfully completed.

As a result of the successful ecological product examination the

### eco-INSTITUT-Label

is awarded for the products:

#### FERMACELL Gypsum-Fiberboard



Number of certificate  
Number of test report  
Validity

ID 0907 – 13701 – 001  
17480-1  
09/2008

#### FERMACELL Joint Filler



Number of certificate  
Number of test report  
Validity

ID 0907 – 13701 – 002  
17480-2  
09/2008

#### FERMACELL Jointstik (hardened)



Number of certificate  
Number of test report  
Validity

ID 0907 – 13701 – 003  
17480-3  
09/2008

Valid for one year.

At expiration of one year the possibility exists of acquiring the eco-INSTITUT-Label for a period of two years. For this a laboratory test would be accomplished according to the latest eco-INSTITUT-Label test criteria.

Cologne, 14.09.2007

Karin Roth, Dipl.-Geogr.