

# Test Report

Report Number:  
924801-1-F



**DANISH  
TECHNOLOGICAL  
INSTITUTE**

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Init.: JLE/MHON  
Order no.: 924801  
Encl.: 3

**Assignor:** Acupanel international ApS, Tietgensgade 7 B, DK-7400 Herning

**Material:** Acupanel 20 mm board thickness (MDF, Veneer and polyester) and 10 mm MDF with sanded 0,6 mm veneer. Article number: 240060020.  
Additional information is given in enclosure A.

**Sampling:** The assignor confirms having selected the product. The product was forwarded by the assignor and received at Danish Technological Institute on 16 April 2020.

**Period:** The test took place from 27 April 2020 to 17 June 2020.

**Method:** EN 717-1:2004, reapproved 2014, Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method  
Additional information is given in enclosure B.

**Test results:** Formaldehyde in air: 0.089 mg/m<sup>3</sup> [672h] = 0.072 ppm  
The results are shown in detail in enclosure C.

**Terms:** This test was conducted accredited in accordance with international requirements (ISO/IEC 17025:2005) and in accordance with the General Terms and Conditions of Danish Technological Institute. The test results solely apply to the tested item. This test report may be quoted in extract only if Danish Technological Institute has granted its written consent.

**Place:** Danish Technological Institute, Taastrup, Building and Construction

**Signature:** This document is only valid with a digital signature from Danish Technological Institute.  
Date of issue 17 June 2020.  
Johan Stefan Leitet  
Consultant



DIGITALLY SIGNED DOCUMENT

17 June 2020

DANISH TECHNOLOGICAL INSTITUTE



**DANAK**

TEST Reg.no. 2



## Material identification

Acupanel 20 mm board thickness (MDF, Veneer and polyester) and 10 mm MDF with sanded 0,6 mm veneer.  
Article number: 240060020.

<b>Panel type (MDF, PB, plywood,?)</b>	MDF
<b>Origin of the board:</b>	Denmark
<b>Date of manufacturing:</b>	25.03.2020
<b>Date of sampling:</b>	16.04.2020
<b>Place, location (e.g. factory) and state (e.g. surface coating or finishing) of the board at the time of sampling:</b>	Factory is located in Aulum, Denmark Surface can be oiled black or white
<b>Thickness of board:</b>	20 mm (MDF, Veneer and polyester)
<b>Density of board:</b>	Not known
<b>Information regarding finishing, sanding etc.:</b>	10 mm MDF with sanded 0,6 mm veneer
<b>Name of product/Article:</b>	Acupanel
<b>Article number(s):</b>	240060020
<b>Production date/Batch no.:</b>	25.03.2020/24006002025032020
<b>Additional information, if any:</b>	Behind the lamella is a 9 mm sound absorber. It is made by up to 60 % reusable bottles. The product is polyester and is 100% recyclable. It is asthma and allergy friendly. MDF: colored FSC Certified. Test panels measures are 2400 × 600 mm, made up of 10 mm deep and 27 mm wide lamellas, with a slab spacing of 13 mm. The lamella is mounted on the underlying acoustic blanket. The panel is a total of 20 mm thick



## Emission testing

**Material:** Acupanel 20 mm board thickness

**Additional test method:**

ISO 16000-3:2011, Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds - Active sampling method

BAnz AT 26.11.2018 B2, Bekanntmachung analytischer Verfahren für Probenahmen und Untersuchungen für die in Anlage 1 der Chemikalien-Verbotsverordnung genannten Stoffe und Stoffgruppen

**Sample handling:**

Prior to testing the sample was stored in airtight wrapping at the test laboratory at 20-25 °C.

**Sample preparation:**

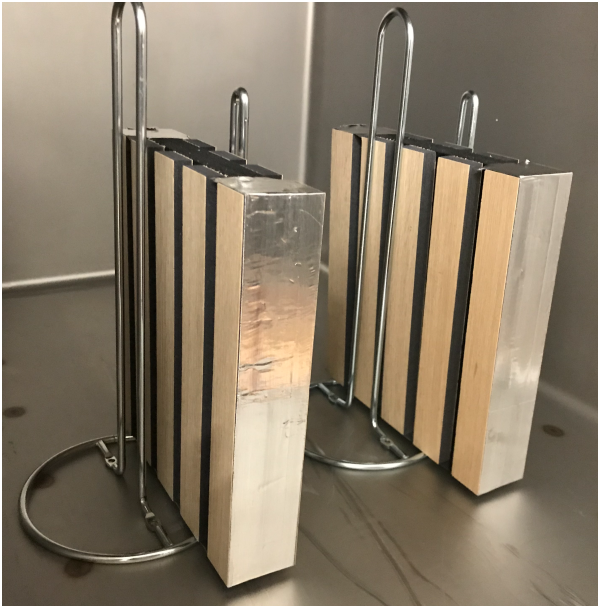
Preparation date of test specimens: 2020-04-24

The edges were partly sealed with emission free aluminium tape at  $U/A=1.5 \text{ m/m}^2$  (ratio of length of open edge related to surface area).



### Climate chamber testing

The test specimens was placed in chamber with exposure of both sides.



Climate chamber:	225 L Polished stainless steel
Temperature:	23 °C ± 0.5 °C
Relative humidity:	45 % RH ± 3 % RH
Air velocity at the surface of the specimen:	0.1 – 0.3 m/s
Air change (n):	1.0 h <sup>-1</sup> ± 0.05 h <sup>-1</sup>
Material load (L):	1.0 m <sup>2</sup> /m <sup>3</sup>
Area specific air flow rate (q):	1.0 m <sup>3</sup> /m <sup>2</sup> h
Climate chamber start date:	2020-04-27
Air sampling date:	2020-05-25

Air samples were taken from the climate chamber outlet air with calibrated pumps according to ISO 16000-3 on DNPH tubes.



## Results

### Emission of formaldehyde

**Material:** Acupanel 20 mm board thickness

Analysis of the total formaldehyde sampled on DNPH was performed at the Danish Technological Institute under DANAK accreditation 90. Report no. 930100.

At 23 °C and 760 mmHg: 1 ppm formaldehyde is equal to 1.236 mg/m<sup>3</sup> formaldehyde.

The total sampled formaldehyde amount (µg) converted to air concentrations. Results are shown in Table 1.

**Table 1: Formaldehyde concentration in air**

	Formaldehyde [µg]	Air sample [L]	Formaldehyde in air [mg/m <sup>3</sup> ]	Formaldehyde in air [ppm]	Test duration [h]
Sample 1	5.5	60	0.089	0.072	672
Sample 2	5.5	60	0.089	0.072	672
<b>Average</b>	-	-	<b>0.089</b>	<b>0.072</b>	672

Formaldehyde emission requirements:

≤ 0.124 mg/m<sup>3</sup> (Formaldehyde class E1, EN 13986:2004+A1:2015, Wood-based panels for use in construction-Characteristics, evaluation of conformity and marking.)

According to German Ordinance: Chemikalien-Verbotsverordnung vom 20. Januar 2017; BGBl. I S.94; 2018 I S. 1389 the requirement is ≤ 0.1 ppm.

When the test is performed according to EN 717-1, BAnz AT 26.11.2018 B2 specifies that the results are to be multiplied by a factor of 2.0, before comparison with the requirement.

In this case the result is then **0.144 ppm**.