



Technological & Educational Institution (TEI) of Larissa  
Dept. of Wood and Furniture Design and Technology

## LABORATORY OF WOOD TECHNOLOGY

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GR-57001, Thermi, Thessaloniki, GREECE  
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### **REPORT\* – PERFORATOR TESTS IN 7 PB & 3 MDF SAMPLES**

Seven (7) particleboard samples, *green coloured*, of the **moisture resistant** grade, were delivered by NTL on 20.08.2012 in the *Lab of Wood Technology (attn: Dr. George Mantanis)* in order to measure *formaldehyde content* based upon the EN120 standard (called *Perforator method*). The samples were originated by the [REDACTED] mill. In addition, three (3) medium density fiberboard (MDF) samples were also sent for FF testing.

Samples were cut carefully and 50mm edge-parts were left out and removed.

The tests were carried out in lab by Dr. George Mantanis in the week of 27.08.2012. The samples were distinguished in *3 different categories*, as shown in the tables below and the final results were obtained.

	<b>1</b> 9mm 150" MUF E1	<b>2</b> 9mm 155" MUF E1	<b>3</b> 9mm 160" MUF E1
Moisture content (%)	7.95%	8.27%	7.99%
FF (6.5%) (mg/100g)	<b>10.29</b>	<b>10.15</b>	<b>10.95</b>

*\* This lab work was made through **project no. 573** (Research Committee, TEI of Larissa)*

- ✚ The above 3 particleboard (PB) samples tested clearly belong to **E2** class.
- ✚ The sample **1** was double-tested and measured. It showed a variability bet. 10.3 and 10.7.

	<b>4</b> 115" █████	<b>5</b> 125" MUF E1	<b>6</b> 120" MUF E1	<b>7</b> 120" █████
Moisture content (%)	7.53%	7.46%	8.15%	7.52%
FF (6.5%) (mg/100g)	<b>7.89</b>	<b>8.23</b>	<b>8.19</b>	<b>10.62</b>

- ✚ The PB samples **4, 5 and 6** were *the best* in this series. PB sample no. 4 belongs to E1 class (smaller than limit of 8 mg/100g). The samples 5 and 6 are very close to E1 limits (*note: according to the strict German regulation which requires FF values lower than 6.5 mg, these 3 samples are not achieving the German strict E1 limit*).
- ✚ Sample **7** was rather relatively close to E1.
- ✚ The sample **4** was double-tested and measured. It showed a variability bet. 7.9 and 8.2.

	<b>8</b> MDF "1"	<b>9</b> MDF "2"	<b>10</b> MDF "3"
Moisture content (%)	6.62%	5.95%	6.42%
FF (6.5%) (mg/100g)	<b>52.14</b>	<b>64.36</b>	<b>54.50</b>

- ✚ The 3 MDF samples tested have very high contents belonging to E3 and E4 class.
- ✚ All 3 had also very low moisture content levels, <6.6%; not that common in practice.

Note: The above-listed results are valid only for the tested materials, as those delivered to TEI/L on 20.08.2012. Unknown is if these samples were climatized to normal climatic conditions before.

We suggest: PB/MDF samples must be climatized, not sent right after the hot pressing; Samples to be very well wrapped up in plastic bags.

Thus, PB sample 4 tested in this series accomplished the E1 limit, and no. 5 and 6 are very close to E1.

We verify this herein

The Head of *Wood Technology Laboratory*

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