

**Appendix F**  
**Raw Data and Summary of Plywood Formaldehyde Minimisation (Veneer Thickness Control)**

Item/ Size/ MC/ Glue/ Process		HWPW/ 2.5 mm, (2440 x 1220) mm/ MC6 %/ UF (FF= 0.32 %, GS= 28±2 g/ft <sup>2</sup> )/ HP(115 °C, 8 kg/cm <sup>2</sup> )				
Method/ Standard/ Specimens		DC-AA (24 hr, 20 °C)/ JAS 233/ (150 x 50)mm, 10pcs				
RSY Panel	Absorbance DC-AA (412 nm)					
	VT 1.8mm	VT 1.5mm	VT 1.2mm	VT 0.9mm	VT 0.6mm	
P1	0.021	0.022	0.028	0.036	0.039	
P2	0.019	0.021	0.027	0.036	0.042	
P3	0.019	0.022	0.027	0.035	0.041	
P4	0.019	0.021	0.028	0.037	0.042	
P5	0.019	0.022	0.028	0.037	0.042	
	Formaldehyde emission DC-AA (mg/L)					
P1	0.14	0.15	0.19	0.25	0.28	
P2	0.12	0.14	0.18	0.26	0.30	
P3	0.12	0.15	0.18	0.25	0.30	
P4	0.12	0.14	0.19	0.26	0.30	
P5	0.13	0.15	0.20	0.26	0.31	
<b>Mean</b>	<b>0.13</b>	<b>0.14</b>	<b>0.19</b>	<b>0.26</b>	<b>0.30</b>	
SD	0.006	0.005	0.005	0.006	0.009	
Co-v	0.05	0.03	0.03	0.02	0.03	
RSD	5.2%	3.1%	2.6%	2.5%	3.1%	

Item/ Size/ MC/ Glue/ Process		HWPW/ 2.5 mm, (2440 x 1220) mm/ MC6 %/ UF (FF= 0.32 %, GS= 28±2 g/ft <sup>2</sup> )/ HP(115 °C, 8 kg/cm <sup>2</sup> )								
Method/ Standard/ Specimens		SPME-A (24 hr, 20 °C)/ JAS 233/ (150 x 50)mm, 10pcs. SPME-W/ Nil/ (15 x 10)mm, 2pcs								
RSY Panel	Peak Area SPME-A (RT=7.5 min)					Peak Area SPME-W (RT=7.5 min)				
	VT 1.8mm	VT 1.5mm	VT 1.2mm	VT 0.9mm	VT 0.6mm	VT 1.8mm	VT 1.5mm	VT 1.2mm	VT 0.9mm	VT 0.6mm
P1	578116	650531	769460	866365	1163228	736619	793032	851532	1030231	1281378
P2	568026	633296	762376	865090	1137399	730830	774683	821174	1017353	1362124
P3	550480	606442	752744	862428	1093871	718910	772255	820318	1012154	1205115
P4	534295	588343	741751	860363	1154382	679253	770949	805484	999662	1316545
	Formaldehyde emission SPME-A (mg/L)					Formaldehyde emission SPME-W (mg/L)				
P1	0.193	0.216	0.255	0.286	0.382	0.244	0.262	0.281	0.339	0.421
P2	0.190	0.211	0.253	0.286	0.374	0.242	0.257	0.272	0.335	0.447
P3	0.184	0.202	0.249	0.285	0.360	0.238	0.256	0.271	0.334	0.396
P4	0.179	0.196	0.246	0.284	0.380	0.226	0.255	0.267	0.329	0.432
<b>Mean</b>	<b>0.19</b>	<b>0.21</b>	<b>0.25</b>	<b>0.29</b>	<b>0.37</b>	<b>0.24</b>	<b>0.26</b>	<b>0.27</b>	<b>0.33</b>	<b>0.42</b>
SD	0.006	0.009	0.004	0.001	0.010	0.008	0.003	0.006	0.004	0.021
Co-v	0.03	0.04	0.02	0.00	0.03	0.04	0.01	0.02	0.01	0.05
RSD	3.4%	4.3%	1.6%	0.3%	2.7%	3.5%	1.3%	2.3%	1.2%	5.1%

Item/ Size/ MC/ Glue/ Process		HWPW/ 2.5 mm, (2440 x 1220) mm/ MC6 %/ UF (FF= 0.32 %, GS= 28±2 g/ft <sup>2</sup> )/ HP(115 °C, 8 kg/cm <sup>2</sup> )								
Method/ Standard/ Specimens		GC-FID/ EPA 556/ (150 x 50)mm, 10pcs. GC-ECD / EPA 556/ (150 x 50)mm, 10pcs								
RSY Panel	Peak Area LLE-FID (RT=12 min)					Peak Area LLE-ECD (RT=12 min)				
	VT 1.8mm	VT 1.5mm	VT 1.2mm	VT 0.9mm	VT 0.6mm	VT 1.8mm	VT 1.5mm	VT 1.2mm	VT 0.9mm	VT 0.6mm
P1	16751	19825	31501	45897	52540	15289	18289	32353	43854	58472
P2	17002	19427	29175	43139	52584	17451	17451	32338	39831	53081
P3	17989	18571	28206	46827	58094	15808	19068	30984	44756	52857
P4	17345	18345	27480	42513	56826	16734	20347	33735	42892	57423
	Formaldehyde emission LLE-FID (mg/L)					Formaldehyde emission LLE-ECD (mg/L)				
P1	0.091	0.108	0.174	0.255	0.293	0.089	0.108	0.197	0.269	0.361
P2	0.092	0.106	0.161	0.240	0.293	0.103	0.103	0.197	0.244	0.327
P3	0.098	0.101	0.155	0.260	0.324	0.092	0.113	0.188	0.275	0.326
P4	0.094	0.100	0.151	0.236	0.317	0.098	0.121	0.205	0.263	0.355
<b>Mean</b>	<b>0.09</b>	<b>0.10</b>	<b>0.16</b>	<b>0.25</b>	<b>0.31</b>	<b>0.10</b>	<b>0.11</b>	<b>0.20</b>	<b>0.26</b>	<b>0.34</b>
SD	0.003	0.004	0.010	0.012	0.016	0.006	0.008	0.007	0.013	0.018
Co-v	0.03	0.04	0.06	0.05	0.05	0.06	0.07	0.04	0.05	0.05
RSD	3.2%	3.8%	6.2%	4.8%	5.3%	6.3%	7.0%	3.6%	5.1%	5.4%

Summary:										
RSY Panel	Formaldehyde Emission (ppm)					Relative Standard Deviation, RSD (%)				
	DC-AA	SPME-A	SPME-W	LLE-FID	LLE-ECD	DC-AA	SPME-A	SPME-W	LLE-FID	LLE-ECD
VT 1.8mm	0.13	0.19	0.24	0.09	0.10	5.17%	3.37%	3.52%	3.23%	6.34%
VT 1.5mm	0.14	0.21	0.26	0.10	0.11	3.13%	4.34%	1.30%	3.80%	6.98%
VT 1.2mm	0.19	0.25	0.27	0.16	0.20	2.63%	1.56%	2.30%	6.15%	3.60%
VT 0.9mm	0.26	0.29	0.33	0.25	0.26	2.49%	0.31%	1.23%	4.76%	5.14%
VT 0.6mm	0.30	0.37	0.42	0.31	0.34	3.05%	2.67%	5.07%	5.29%	5.35%