

Content in appendix/USB

Below is a list of what is included in the appendix in the format of the file structure to be found in the appendix. This is spilt into two sections, results relevant to chapter 6 and those related to chapter 7. Following the list for each chapter are the tables with the wood numbers of associated treatments. Together this should allow the appendix to be easily searched for the desired information.

- ❖ Aqueous treatment (Chapter 6)
 - Artificially degraded wood
 - Scans
 - Before treatment
 - After treatment
 - Photographs
 - Before
 - After
 - Experiment set-up
 - SEM images -treatments and controls
 - Percentage volume and weight changes
 - Archeological wood treatment (batch 1)
 - Photographs
 - Before treatment
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 - Cross section
 - Tape test
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- EDS-SEM
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- ASE results
- Fruit penetrometer results
- Surveys
- Tape test results
- Archeological wood treatment (batch 2)
 - Photographs
 - Before treatment
 - After treatment
 - Scans
 - Before
 - After
 - Tape test
 - Photos
 - Tape test results
 - ASE results

The wood moved during treatment hence when removed from treatment the numbers around the container did not actually match the wood number in a few cases. The photographs were taken right away. However, afterwards, the photographs from before and after were compared to double check the correct numbers were correct and any that were not were corrected from that point forward. The numbers and calculations in the thesis are therefore all correct. However, the number beside the wood in some of the original photographs are incorrect. The folders on the other hand have been correctly numbered. Hence please rely on the folder numbers rather than those in the photographs.

Table 1: Artificially degraded wood pieces numbers and aqueous treatment

Artificially degraded wood			Archaeological wood treatment batch 1	
Treatment	Wood number Stave No. Piece number	Size	Treatment	Wood number
Water	4.9	1x1x1cm	Water	74
	9.1	1x1x1cm		75
				76
10% Chitosan salt	4.15	1x1x1cm	10% Chitosan salt	59
	10.2	1x1x1cm		60
	15.8	2x1x1cm		61
5% HEA	4.11	1x1x1cm	5% Chitosan salt and 10% PEG	62
	5.3	1x1x1cm		63
	10.8	2x1x1cm		64
20% PEG	15.4	1x1x1cm	5% HEA	65
	19.4	1x1x1cm		66
	19.8	2x1x1cm		67
2% AEA	4.3	1x1x1cm	2.5% HEA and 20% PEG	68
	16.4	1x1x1cm		69
				70
20% PEG in 2% AEA	5.6	1x1x1cm	10% PEG	71
	19.2	1x1x1cm		72
				73
5% Chitosan and PEG	10.7	2x1x1cm	10% Chitosan in acetic acid	77
				78
				79
5% chitosan in acetic acid	19.7	2x1x1cm	20% PEG	80
				81
				82
			40% PEG	83
				84
				85

Table 2: Archaeology wood pieces numbers and aqueous treatment, second round to establish effect of concentration

Archaeological wood treatment batch 2		
Type of drying	Treatment	Wood number
Air dried	Water	92
		93
		94
	5% HEA	95
		96
		97
	20% PEG	98
		99
		100
	Freeze dried	Water
111		
112		
5% HEA and 10% PEG		101
		102
		103
20% PEG		104
		105
		106
6% HEA		107
		108
		109
10% Chitosan - washed		113
		114
		115
10% Chitosan and vanillin		116
		117
		118

- ❖ Non-aqueous treatment (Chapter 7)
 - Artificially degraded wood
 - Scans
 - Before treatment
 - After treatment
 - Photographs
 - Before
 - After
 - Experiment set-up
 - SEM
 - EDS-SEM
 - Percentage weight and volume change results
 - Fruit penetrometer results
 - Archaeological wood
 - Photographs
 - Before treatment
 - After treatment
 - Experiment set-up
 - Survey set-up
 - Tape test
 - Scans
 - Before treatment
 - After treatment
 - SEM
 - EDS-SEM
 - Surveys results
 - Fruit penetrometer results
 - Tape test
 - Percentage weight and volume change results

Table 3: Artificially degraded wood pieces numbers and non-aqueous treatment

Injection			Immersion		
Treatment	Wood number	Size	Treatment	Wood number	Size
Control 50:50 toluene/ ethyl acetate		1x1x1cm	Control 50:50 toluene/ ethyl acetate	5.10	1x1x1cm
				9.1	1x1x1cm
5% B72	15.7	1x1x1cm	5% B72	10.1	1x1x1cm
	16.11	1x1x1cm		15.6	1x1x1cm
	5.90	2x1x1cm		20.9	2x1x1cm
2.5% TBDMS chitosan	10.4	1x1x1cm	10% B98	5.10	1x1x1cm
	16.5	1x1x1cm		9.13	1x1x1cm
	9.7	2x1x1cm		16.9	2x1x1cm
5% TBDMS chitosan	9.12	1x1x1cm	10% TBDMS chitosan	4.10	1x1x1cm
	16.13	1x1x1cm		5.2	1x1x1cm
	15.10	2x1x1cm		16.7	2x1x1cm
5% TBDMS chitosan (isopropanol)	5.4	1x1x1cm	10% TBDMS chitosan (t-butanol- air dried)	5.5	1x1x1cm
	15.1	1x1x1cm		16.8	1x1x1cm
	15.9			19.3	2x1x1cm
			10% TBDMS chitosan (t-butanol- freeze dried)	5.5	1x1x1cm
				16.8	1x1x1cm
				19.3	2x1x1cm
			10% PEG (t-butanol- freeze dried)	4.16	1x1x1cm
				16.3	1x1x1cm
				5.8	2x1x1cm
			t-butanol control (freeze dried)	10.5	1x1x1cm
				16.6	1x1x1cm

Table 4: Archaeology wood pieces numbers and non-aqueous treatment

Injection treatment		Immersion treatment			
		Treatment Concentration		Treatment Length	
		2 week treatment			
Treatment	Wood number	Treatment	Wood number	Treatment	Wood number
50:50 Toluene/ethyl acetate control	4	Untreated	1	10% TBDMS chitosan 2 days vacuum treatment	17
			2		18
			3		19
5% TBDMS chitosan	5	50:50 Toluene/ethyl acetate control	48	10% TBDMS chitosan 2 weeks	23
	6		49		24
	7		50		25
5% B72	8	10% TBDMS chitosan	23	10% TBDMS chitosan (batch 2) 2 weeks	45
	9		24		46
	10		25		47
5% B98	11	10% TBDMS chitosan (batch 2)	45	10% TBDMS chitosan 1 month	20
	12		46		21
	13		47		22
2.5% TBDMS chitosan and 2.5% B72	14	5% TBDMS chitosan	28		
	15		29		
	16		30		
		20% TBDMS chitosan	42		
			43		
			44		
		10% B72	37		
			38		
			26		
		10% B98	51		