Supplementary material

Effect of drying on the hydroxyl accessibility and sorption properties of pressurized hot water extracted wood

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Table S.1 Moisture content and the mass difference within the interval of final 60 minutes (dm/dt) during the different steps of the sorption isotherm measurements from never-dried (ND) and dried and re-soaked samples (DR)

		Reference				Treated for 5 h			
		Never-dried (ND)		Dried and re-soaked (DR)		Never-dried (ND)		Dried and re-soaked (DR)	
	Target RH (%)	Moisture content (%)	dm/dt (µg g^{-1} min^{-1})	Moisture content (%)	dm/dt (µg g^{-1} min^{-1})	Moisture content (%)	dm/dt (µg g^{-1} min^{-1})	Moisture content (%)	dm/dt (µg g^{-1} min^{-1})
Desorption isotherm	95	28.2	-4.2	26.8	-1.0	30.8	2.5	28.2	-2.8
	75	18.5	-1.6	17.7	0.4	17.2	-3.2	16.6	-3.4
	55	13.0	-3.1	12.6	-3.4	11.4	-4.2	11.2	-3.4
	35	8.9	-2.7	8.7	-2.8	7.6	-2.3	7.5	-2.4
	0	0	-0.6	0	-0.6	0	-0.46	0	-0.5
Absorption isotherm	35	7.4	0.97	7.3	0.6	6.4	0.69	6.2	0.5
	55	10.7	0.78	10.5	1.2	9.3	0.70	9.1	1.4
	75	15.5	0.39	15.0	-0.6	13.5	-0.47	13.3	1.2
	95	24.1	0.78	23.0	-1.4	21.5	-0.47	21.5	1.7

Table S.2 Hydroxyl accessibility, moisture content at 95 % RH and the mass difference within the interval of final 60 minutes during automated sorption balance steps B, C and D (dm/dt) from never-dried (ND) and dried and re-soaked samples (DR)

		Hydroxyl accessibility (mmol g^{-1})	Moisture content at 95 % RH (mmol g^{-1})	Step B dm/dt (µg g^{-1} min^{-1})	Step C dm/dt (µg g^{-1} min^{-1})	Step D dm/dt (µg g^{-1} min^{-1})
Reference	Never-dried (ND)	9.5	13.9	-1.3	3.5	-0.6
		9.4	13.9	-1.2	2.9	-0.6
		9.5	14.1	-1.0	1.9	-0.5
	Dried and re-soaked (DR)	9.4	13.5	-1.1	1.4	-0.5
		9.0	13.5	-1.4	1.8	-0.5
		9.5	13.6	-1.4	2.0	-0.3
1 h HWE treatment	Never-dried (ND)	9.3	13.3	-1.2	1.7	-0.7
		9.6	13.3	-1.3	3.3	-0.4
		9.6	13.2	-1.3	3.8	-0.3
	Dried and re-soaked (DR)	9.3	13.1	-1.3	2.9	-0.5
		9.5	13.0	-1.4	2.5	-0.7
		9.4	13.0	-1.4	2.8	-0.4
3 h HWE treatment	Never-dried (ND)	9.0	13.0	-1.2	3.6	-0.4
		9.3	13.2	-1.3	3.7	-0.6
		9.1	13.2	-1.3	3.7	-0.6
	Dried and re-soaked (DR)	9.0	12.4	-0.9	3.0	-0.5
		9.2	12.8	-1.4	3.4	-0.7
		9.0	12.7	-1.1	4.0	-0.5
5 h HWE treatment	Never-dried (ND)	8.6	13.0	-1.1	4.2	-0.4
		8.7	13.0	-1.2	2.4	-0.6
		8.8	13.1	-1.3	1.1	-0.7
	Dried and re-soaked (DR)	8.7	12.0	-1.0	3.0	-0.3
		8.8	12.3	-0.8	2.7	-0.4
		8.8	12.4	-1.5	3.6	-0.5

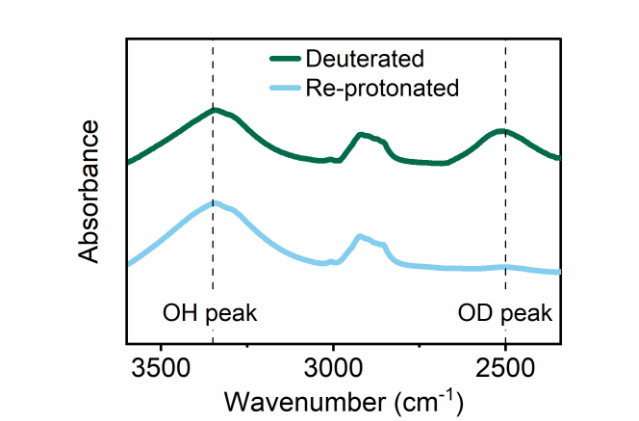

Fig S.3 FTIR spectra of a deuterated wood sample (upper curve) and a re-protonated wood sample (3 h HWE, never-dried, lower curve) in the range 2340-3560 cm^{-1}

Table S.4 Relative hydroxyl accessibility OD/(OD+OH) of never-dried (ND), dried and re-soaked samples (DR) and untreated and deuterated additional samples

		Relative hydroxyl accessibility OD/(OD+OH) (%)								
Reference	Never-dried (ND)	1.7	2.0	0	2.4	0	0	2.0	2.3	2.0
	Dried and re-soaked (DR)	2.7	2.0	1.1	2.6	1.7	0.5	2.4	1.8	1.9
1 h HWE treatment	Never-dried (ND)	2.0	2.7	2.6	2.4	0	0	1.8	2.2	1.9
	Dried and re-soaked (DR)	1.6	0.9	1.8	2.2	2.2	2.2	2.6	2.1	0
3 h HWE treatment	Never-dried (ND)	2.7	1.8	1.7	2.1	3.1	1.8	2.0	2.7	2.6
	Dried and re-soaked (DR)	2.7	2.4	2.4	2.7	2.6	2.3	2.1	2.5	2.4
5 h HWE treatment	Never-dried (ND)	2.1	2.6	2.5	2.2	2.3	2.3	2.6	2.7	1.5
	Dried and re-soaked (DR)	2.4	2.6	2.7	2.3	2.4	2.2	2.6	2.5	2.7
Untreated and deuterated		32.8	29.8	28.4						