

9. NOMENCLATURE

C_P	Specific heat capacity	$\text{J.kg}^{-1}.\text{K}^{-1}$
D	Diffusion coefficient	$\text{m}^2.\text{s}^{-1}$
D_E	Activation energy for diffusion	K
D_r	Reference diffusion coefficient	$\text{m}^2.\text{s}^{-1}$
E	Modulus of elasticity	MPa
E_G	Green modulus of elasticity	MPa
E_L	Longitudinal modulus of elasticity	MPa
h_F	Heat—transfer coefficient	$\text{W.m}^{-2}.\text{K}^{-1}$
J	Mass flux of water from the surface of timber	$\text{kg.m}^{-2}.\text{s}^{-1}$
k_m	Mass—transfer coefficient	m.s^{-1}
L	Width of Sample	m
M_i	Moisture change	$\text{kg}^{-1}.\text{kg}^{-1}$

n	Number of experimental data points	—
Q	Total rate of heat transfer	W.m^{-2}
t	Time	seconds
T	Temperature of the board	K
T_G	Dry—bulb temperature	K
T_S	Surface temperature	K
T_W	Wet—bulb temperature	K
u	Air velocity	m.s^{-1}
V	Acoustic speed	km.s^{-1}
<i>Weight</i>	Weighting assigned to each experimental data point to show how much confidence there is on the value. The higher the uncertainty of the value, the lower the weighting assigned.	—
X	Moisture content	kg.kg^{-1}

X_{Exp}	Experimental moisture content	kg.kg^{-1}
X_{fsp}	Moisture content at fibre saturation point	kg.kg^{-1}
X_i	Initial moisture content	kg.kg^{-1}
X_{Pred}	Predicted moisture contents	kg.kg^{-1}
Y_G	Bulk—air humidity	kg.kg^{-1}
Y_S	Surface humidity	kg.kg^{-1}
z	Distance from the surface	m

Greek Letters

β	Shrinkage coefficient	$(\text{mm.mm}^{-1})/(\text{kg.kg}^{-1})$
Δx_i	Size of each layer	m
ε	Strain	mm.mm^{-1}
ν	Kinematic Viscosity	$\text{m}^2.\text{s}^{-1}$

λ	Thermal conductivity	$\text{W.m}^{-1}.\text{K}^{-1}$
λ_S	Heat of sorption	J.kg^{-1}
λ_W	Latent heat of vaporization	J.kg^{-1}
ρ	Timber density	kg.m^{-3}
ρ_{air}	Density of air	kg.m^{-3}
ρ_D	Basic Density	kg.m^{-3}
ρ_G	Green density	kg.m^{-3}
σ	Stress	MPa
ζ	Shrinkage	mm.mm^{-1}

Subscripts

c	At the centre of the timber board	—
i	At node point i within the timber board	—
S	At the surface of the timber board	—