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NOMENCLATURE

<i>c</i>	specific heat capacity, J. kg ⁻¹ . K ⁻¹
<i>d</i>	fibers diameter, m
<i>d_m</i>	air collision diameter, m
<i>f</i>	volume fraction of solid, -
<i>g</i>	gravitational acceleration, m.s ⁻²
<i>k</i>	thermal conductivity, W.m ⁻¹ .K ⁻¹
<i>k_B</i>	Boltzmann's constant, J.K ⁻¹
<i>l_p</i>	free path of photons, m

<i>n</i>	refractive index, -
<i>r</i>	radius of the fibers, m
<i>s</i>	thickness of material, m
<i>K</i>	permeability, m ²
<i>Kn</i>	Knudsen number, -
<i>N</i>	Planck number, -
<i>P</i>	pressure, Pa
<i>Ra*</i>	modified Rayleigh number, -
<i>T</i>	temperature, K

Greek symbols

<i>α</i>	thermal diffusivity, m ² .s ⁻¹
<i>β</i>	volumetric thermal expansion coefficient of air, K ⁻¹
<i>δ</i>	characteristic length, m
<i>ε</i>	porosity, -
<i>λ</i>	molecular free path, m
<i>μ</i>	dynamic viscosity, kg.m ⁻¹ .s ⁻¹
<i>ρ</i>	bulk density, kg.m ⁻³
<i>σ</i>	Stefan-Boltzmann's constant, W.m ⁻² .K ⁻⁴
<i>ΔT</i>	temperature difference, K

Subscripts

<i>air</i>	air value
<i>bulk</i>	bulk value
<i>c</i>	conduction
<i>conv</i>	natural convection
<i>e</i>	effective value
<i>f</i>	fibers
<i>g</i>	gas
<i>r</i>	radiation
<i>true</i>	true value