JQ.7.6.Setup

November 5, 2014

7.6 A thin layer of Masonite (wood veneer) is attached to an insulating layer of glass wool. The Masonite is 2 mm thick and has the following properties. Skip part (c).

$k = 0.14 W/(mK)$, $\rho = 640 kg/m^3$, $c_p = 2.85 J/gK$, $T_{ig} = 300^o C$

(note typo in value of ρ)

a) Calculate the time to ignition for Masonite when subjected to a radiant heat flux of 50 kW/m2.

b) What is the critical or minimum heat flux for ignition

c)After ignition, what is the initial upward spread rate if the flame heat flux is uniform at 30 kW/m2 and the flame extends 0.2 m beyond the ignited region of 0.1 m.(skip part c)

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