JQ.8.8.Setup

November 16, 2014

8.8 A thick polystyrene wainscoating (panel below chair rail) covers the wall of a room up to 1m from the floor. It is ignited over a 0.2 m region and begins to spread. Assume that the resulting smoke layer in the room does not descend below 1m and no mixing occurs between the smoke layer and the lower limit. The initial temperature is 20 C, the ambient oxygen mass fraction is 0.233 and the specific heat of air is 1 J/(gK).

Much of the information given is not really required. We are given the flame height, $x_f = 1.8m$, when the pyrolysis heaight, $x_p = 0.5m$. Use a thick flame spread formula like equation 8.23 with $\delta_f = x_f - x_p$.

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