

Drawing only for understanding .Not to scale or proportion

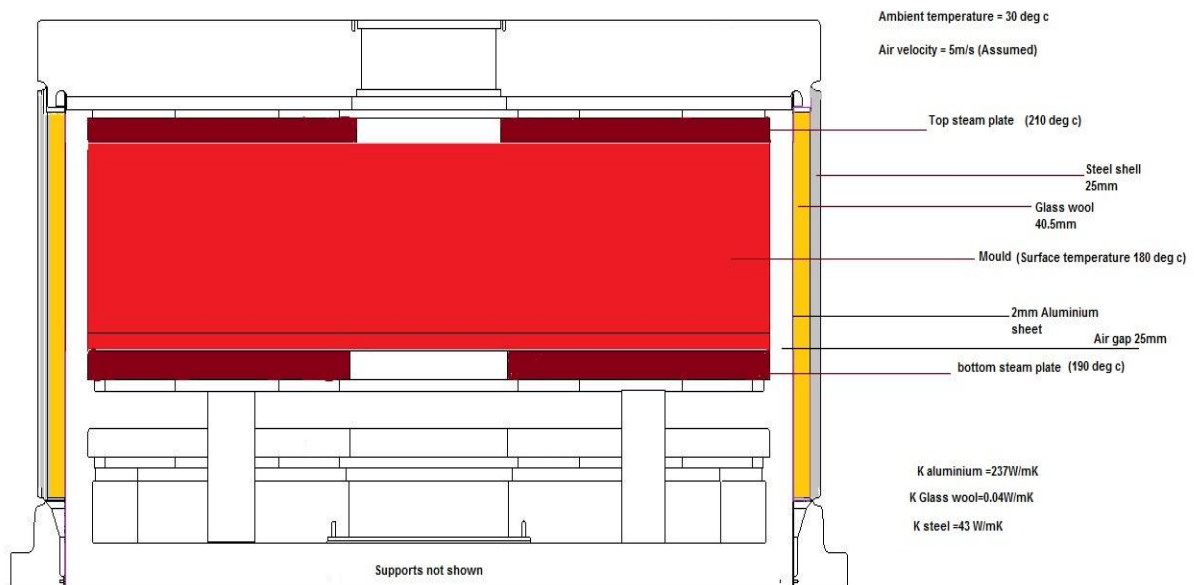


Figure 1

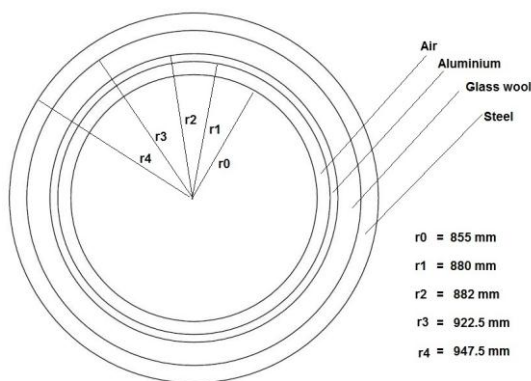


Figure 2

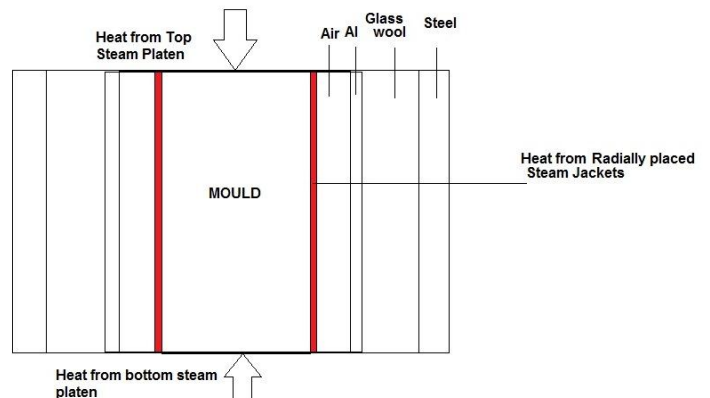


Figure 3

PROBLEM DEFINITION : The ambient temperature ,During the working of press is around 65 deg C

(This Value was provided by the customer for a press supplied earlier)

- Fig.1 Shows the Upper and Lower housings.(Top steam plate is in the upper housing and bottom steam plate in the lower housing)
- The Mould is 90% with upper housing and 10% with lower housing
- During operation,Upper housing moves down while the steam plate and the lower mould part moves up.
- The mould is heated axially by the steam platens and radially by the steam jackets.(The problem can be started considering the surface temp of mould since it is customer scope).
- The insulation materials and their typical heat transfer values are shown in Fig 1

- The convective heat transfer coefficient value of air was assumed to be $5\text{W/m}^2\text{K}$
- The Dimensions are shown in Fig 2.

The ambient temperature should be reduced to 45°C

Please tell me how to define this as thermal problem or an approach to do that (For E.g One dimensional steady state problem with no internal heat generation.)

I have lot of ambiguities in considering whether the problem is steady state or transient

But I considered that due to long operation time of press, the heat transfer will eventually become steady state.

So how do you determine these?

Please provide me with some good material to refer or some approach from your experience