

Conductive Heat Flow Lab

The Conductive Heat Flow Lab was designed to demonstrate a real life heat conduction problem. This particular lab is focused on predicting the heat conduction through a given wall, as shown in Figure 1 and 2, and the programming of the data acquisition system. MET 466 students are able to predict the temperature throughout the wall by the use of heat transfer equations and compare the analytical calculations to the experimental values.

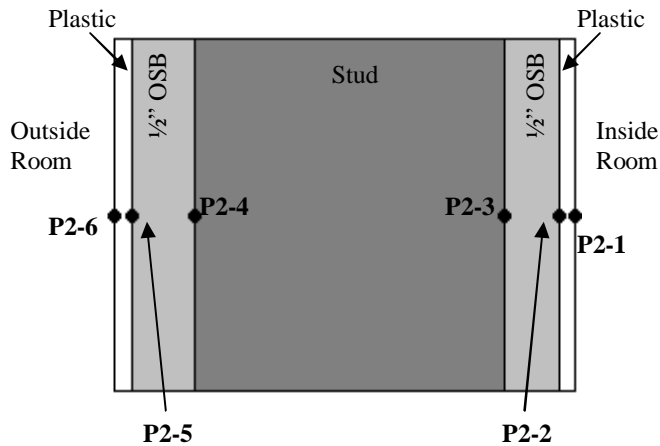


Figure 1: Wall Stud Section

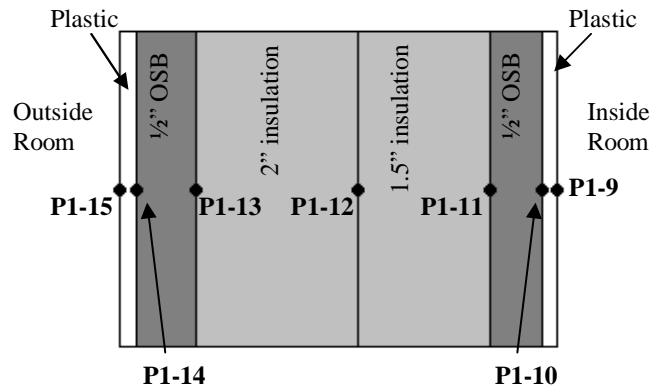


Figure 2: Wall Insulation Section

Testing:

The Conductive Heat Flow Lab's testing is conducted in the outdoor room of Montana State University HVAC lab's psychrometric chambers. In this room the heat is controlled so that a steady state temperature of 95 degrees Fahrenheit is achieved. Once steady state is achieved the temperature at each point in the wall is recorded and compared to the students' analytical calculations.