# Week 3 Assignment

**Question 1: Finalize the composite wall question by finding the heat transfer rate, and then solve the same question while the thickness of the brick is increased to 32 cm and comment on the results.**

**Question 2: Solve again the simplified wall calculation procedure replacing the glass fiber one with urethane rigid foam and while replacing the fiberboard with plywood and find the two R_unit values**

|  | **A** | **B** |
|---|---|---|
| Outside Air | 0.03 | 0.03 |
| Wood bevel | 0.14 | 0.14 |
| plywood | 0.11 | 0.11 |
| Urethane | No | (0.98*90)/ 25 = 3.528 |
| Wood studs | 0.63 | No |
| Gypsum board | 0.079 | 0.079 |
| Inside surface | 0.12 | 0.12 |

$$R'_{with\ wood} = 0.03 + 0.14 + 0.11 + 0.63 + 0.079 + 0.12 = 1.019 \ m^2.°\frac{C}{W}$$

$$R'_{with\ insulation} = 0.03 + 0.14 + 0.11 + 3.528 + 0.079 + 0.12 = 4.007 \ m^2.°\frac{C}{W}$$