H.T.I.

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF AN AIR CONDITIONING SYSTEM FOR A BUILDING

M/727

AGAPIOU NICOLAS

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1. ESTIMATION AND CALCULATION OF "U"-VALUES

1.1 ESTIMATION OF "U"-VALUE"

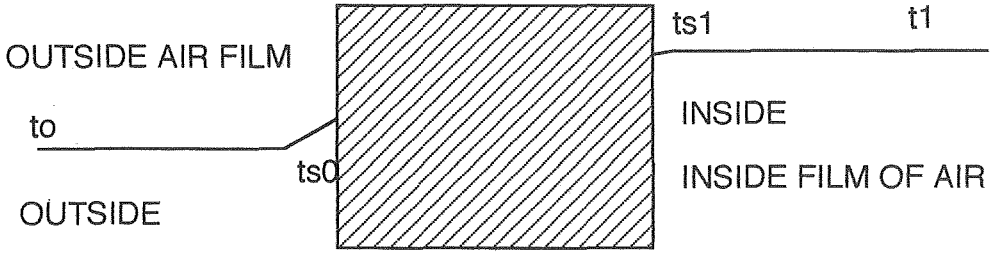
Thermal transmittance or "u-value" is the quantity of heat which will flow through unit area of a given structure from the air one side to the air on the other side, for a unit difference between the environmental temperatures on either side of the structure in unit time and it's calculated in w/m²k

It depends up the material used their thickness and thermal conductivity, the degree of exposure and the inside thermal resistance. The figure bellow allestrates the temp gradvet through a wall in winter. hence the coefficient of conduction which concerned are:

(1) the coefficient of conduction his, the film of the air at the inside surface.

(2) the coefficient of conductance cw, through the actual wall which results to temperature drop tsi-tso.

(3) the coefficient of conduction hso, through the film of the air at outside wall.



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