

WT 750

Ventilation system for duct installation

Correction of the thermal heat recovery rate:

$$\eta = \eta_0 \times \eta_1 \times \eta_2$$

Calculation example

Task:

Exhaust air:

Volumetric flow $V_i = 2000 \text{ m}^3/\text{h}$

Temperature $t_i = 27.7 \text{ }^\circ\text{C}$

Relative humidity = 68 %

Outside air:

Volumetric flow $V_e = 1538 \text{ m}^3/\text{h}$

Temperature $t_e = -2 \text{ }^\circ\text{C}$

Therm. heat recovery rate

$\eta_0 = 62 \text{ } \%$

Calculation:

1. Correction η_1 :

Result from figure 1 $\eta_1 = 1.12$

2. Correction η_2 :

Relationship of the volumetric flows: $2000:1530 = 1.3$

Result from figure 2 $\eta_2 = 1.07$

3. Corrected efficiency η

$$\eta = \eta_0 \times \eta_1 \times \eta_2 = 62 \times 1.12 \times 1.07 = 74.3\%$$

Figure 1

Figure 2