

Mixing of two air streams

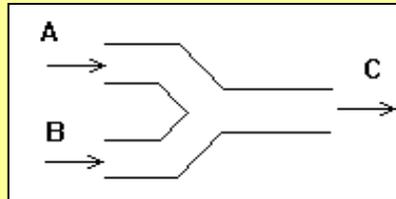
This document shows how **Thermo Utilities, MS Excel Add-ins** can be used for calculation of mixing two air streams. In an air conditioning plant, outdoor air mixes with recirculated air. Calculate the specific enthalpy, moisture content and dry-bulb temperature of the mixed air stream.

Outdoor air:

dry-bulb temp. = 5 C
 moisture content = 0.002
 mass flow = 2 kg/s

Recirculated air:

dry-bulb temp. = 21 C
 moisture content = 0.012
 mass flow = 6 kg/s



Inputs		Units
Outdoor air, DBT	5.00	C
Outdoor air, moisture content	0.002	
Outdoor air, mass flow rate	2.00	kg/s
Recirculated air, DBT	21.00	C
Recirculated air, moisture content	0.010	
Recirculated air, mass flow rate	6.00	kg/s
Outputs		
mass flow rate of the mixture	8.00	kg/s
moisture content of the mixture	0.0080	
specific enthalpy of the outdoor air	10.0376	kJ/kg
specific enthalpy of the recirculated air	46.4336	kJ/kg
specific enthalpy of the mixture	37.3346	kJ/kg
Dry-bulb temp. of the mixture	17.0398	C

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