Ventos

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Project data

Client: X
Project Number: 00-2020
Object: Elektrownia
Date: 03-08-2009 [Today]
Venting zone: Hala Maszynowni

Season: Lato +30
Calculations author: BK

Natural Ventilation

Number of ventilation openings: 4 [Calculate results] [Generate report]

1 | 2 | 3 | 4

Name: Wywietrzaki na dachu
Height of hole middle o.grond h[m]: 37,8
Coefficient of the flow Cv [-]: 0,40
Area opening Ag [m²]: 211,0
Coefficient of wind resis. Cw [-]: 0

Input data

Name	Designation	Value	Unit
Room length	a	92	[m]
Room width	b	42	[m]
Mean room height	h av	36,5	[m]
Maximum building height (roof ridge)	h	37	[m]
Degree of obstruction	VB	0,5	[-]
Mean wind speed	U∞	0	[m/s]
External air temperature	te	30	[°C]
Thermal load from Q'-process	Q'	2630	[kW]
Degree of room loading	μT	0,60	[-]
Thermal loads from outside	Q'A	40	[kW]
Exhaust air temperature	t ab,0	45	[°C]
Accuracy of iteration	k	0,1	[-]

Mechanical ventilation

Amount of inlet and exhaust vents: 2

1 | 2

Name: Wywiew mechaniczny
Height of hole middle o.grond h[m]: 22
Air inlet temperature T [°C]: 37
Volume stream V' [m³/h]: -45000

Calculation results

Name	Designation	Value	Unit
Surface area of shop	A	3864,00	[m²]
Volume of shop	VR	141036	[m³]
Net volume of shop	VRN	70518	[m³]
Total thermal flow	Q'g	2670,00	[kW]
Specific internal heat of net shop volume	Q'i	37,86	[W/m³]
Exhaust air temperature	t out	43,6	[°C]
Change in exhaust temperature	Δt out	13,6	[K]
Displacement of outdoor air (per hour)	LW	6,45	[1/h]
Height of neutral zone from ground	NZ	32,03	[m]
For incoming air (geometric)	Ag in	120,64	[m²]
For incoming air (aerodynamic)	Aw in	36,19	[m²]
For outgoing air (geometric)	Ag out	211,00	[m²]
For outgoing air (aerodynamic)	Aw out	84,40	[m²]
Incoming natural volumetric flow of air	V in	454678	[m³/h]
Outgoing natural volumetric flow of air	V out	608639	[m³/h]
Incoming mechanical volumetric flow of air	V' in	173400	[m³/h]
Outgoing mechanical volumetric flow of air	V' out	45000	[m³/h]

Total Progress | Partial progress