

Kitchen canopy selection

When choosing a canopy, the first question is whether grease or steam is to be extracted.

For air volume (supply/exhaust) calculations, the heat, steam and other impurity loads caused by cooking equipment should be taken into account.

Extraction air capacities are determined according to the table below, where air volume depends on cooking equipment extraction coefficient K_e [l/(s*kW)], electrical power P [kW] and coincidence factor K_s .

	Extraction coefficient K_e		Total power P/kW	Coincidence factor $K_s(0,5-1,0)$ l/(s*kW)	Exhaust air volume $M_p=K_e*P*K_s$ M_p (l/s)
	Electric	Gas			
Automatic sauce maker	18				
Bain marie	35				
Baking cabinet	27				
Baking oven	33				
Boiling pan	10	12			
Ceramic stove	25				
Coal grill		60			
Coffee maker	5				
Combi oven	10				
Convection oven	10				
Dishwasher	20				
Dishwasher (heat recovery)	10				
Food mixer	10				
Fryer	25				
Frying pan	32	35			
Griddle	32	35			
Grill drawers	30				
Grilling pan/ Fry	35				
Halogen cooker	20				
Heat level	28				
Hot air oven	13				
Induction cooker	20				
Induction wok	40				
Kebab grill	33	35			
Lava stone grill	35				
Microwave oven	5				
Multi-cooker	30				
Oven	20				
Pasta cooker	10				
Pizza oven	15				
Pressure cooking cabinet	12				
Salamander grill	35	33			
Smoke oven	12				
Steam cooker	15				
Tandoor oven		35			
Toaster oven	33	35			
Vario cooking center	25				
Wok		60			

K_s values:

- restaurant kitchens $K_s= 0,8...1,0$ l/(s*kW)
- canteens $K_s= 0,5...0,8$ l/(s*kW)

Total volume of kitchen exhaust air is calculated by multiplying the total product of cooking equipment extraction coefficient and electrical load coefficient with cooking equipment coincident coefficient:

Example: $\sum M_p = \sum (K_e * P) * K_s$, l/s

	P	K_e	K_s	
Stove	8 kW	30	0,5	$M_p = 8 * 30 * 0,5 = 120$
Stem cooker	12 kW	10	0,8	$M_p = 12 * 10 * 0,8 = 96$
Combination oven	40 kW	10	0,6	$M_p = 40 * 10 * 0,6 = 240$
Total exhaust volume				$\sum M_p = 456$ l/s

General exhaust air is about 10 % of the total volume	= $0,1 * 456 = 46$ l/s
Total extraction air flow	= $46 + 456 = 502$ l/s
Intake air volume is 70-90% of extraction volume	= $0,9 * 502 = 452$ l/s

Installation position

The canopy is positioned over the cooking equipment, with an overhang distance of 300-400 mm vertically between the edges of appliances. Canopies installed over ovens should be deeper than the oven by at least 600 mm, to ensure elimination of the entire steam volume from the air released when the oven door is opened. The recommended height of canopies from the floor is 2000 mm (2000-2500 mm).

