IMPORTANCE OF ECOLOGY UNIT & SOLVING GREASE DEPOSITION

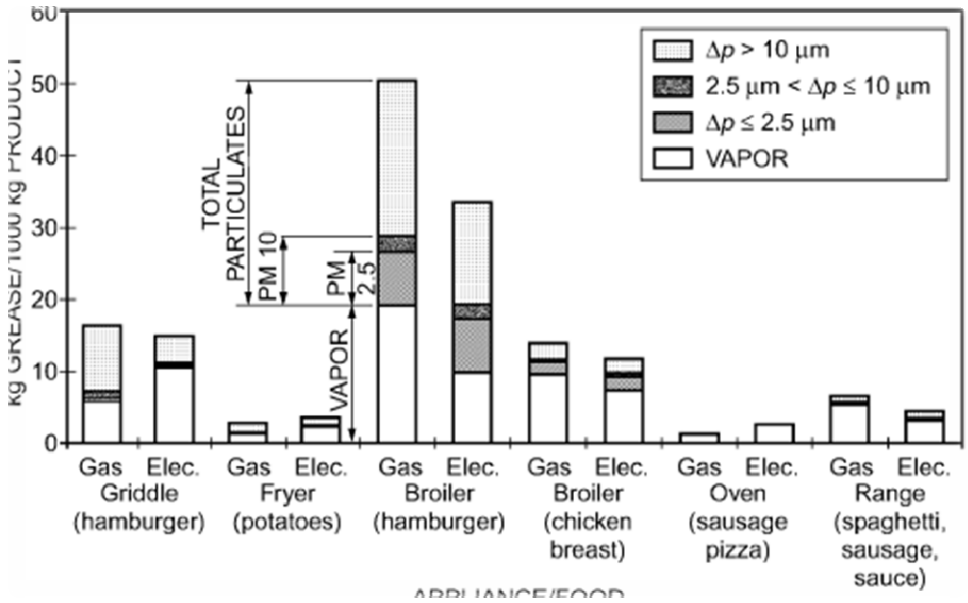
As a designer always think about Kitchen hood but never counted on exhaust part, only an exhaust fan can't control cooking effluent.

What is Cooking Effluent? – When heat applied to food in cooking, effluent is released into the surrounding atmospheres. Kitchen Effluent consists of *heat and contaminants*

- ✓ Grease particles from 0.01 to 100 microns
- ✓ Moisture
- ✓ Bad odour
- ✓ VOC's (volatile organic compounds).

When these all are exhausted directly from the kitchen hood through an exhaust fan, following are the basic questions we normally faced:-

1. Why Grease Deposition on the roof.
2. Why Exhaust Fan bearing completely chocked.
3. Duct need to clean frequently.
4. Why Cooking area is too hot.
5. Neighbors always complain about cooking odour.



-: Grease in Particle and Vapor Phases Emitted by Selected Commercial Cooking Appliances and Food Products - 2007 ASHRAE HVAC Application:-

The second question is how much we should extract to control Effluent, give comfortable working environment for the Worker to increase the Productivity, Health / Safety as per NFPA norms & the last but not the least Energy / Costs.

The Few guidelines as follows:

- ✓ Net Exhaust volume must be greater than the thermal updraft.
- ✓ Decide the type of HOOD.
- ✓ Decide the cooking equipment, so that contaminated air generated by the cooking equipment can be establish correctly.
- ✓ Cross drafts and turbulence.

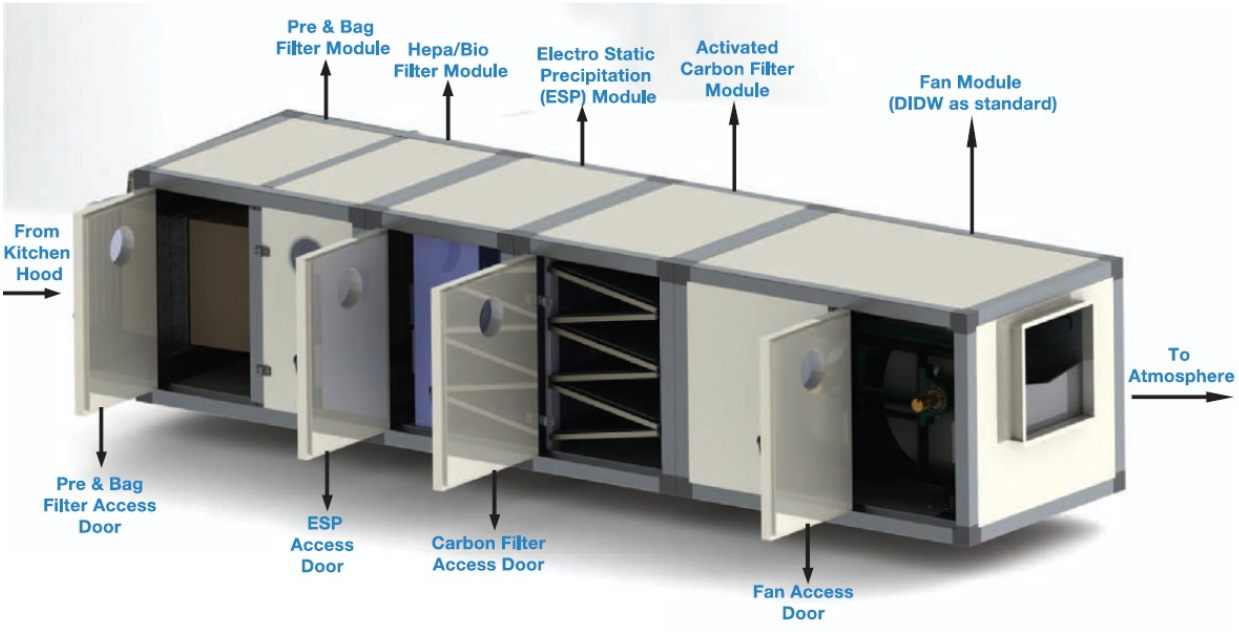
Type of Hood	Minimum Exhaust Flow Rate, cfm Per Linear Foot of Hood			
	Light Duty	Medium Duty	Heavy Duty	Extra-Heavy Duty
Wall-Mounted Canopy, Unlisted	200	300	400	550
Listed	150 to 200	200 to 300	200 to 400	350+
Single-Island, Unlisted	400	500	600	700
Listed	250 to 300	300 to 400	300 to 600	550+
Double-Island (Per Side), Unlisted	250	300	400	550
Listed	150 to 200	200 to 300	250 to 400	500+
Eyebrow, Unlisted	250	250	Not Allowed	Not Allowed
Listed	150 to 250	150 to 250	—	—
Back Shelf/Proximity/Pass-Over, Unlisted	300	300	400	Not Allowed
Listed	100 to 200	200 to 300	300 to 400	Not Recommended

Source: *2011 ASHRAE Handbook—HVAC Applications*

Now a day all over GCC air quality have emphasized the need for higher efficiency grease & bad odour control from the exhaust air stream, cleaner exhaust discharge to outdoors may be required by increasingly stringent air quality regulations or where the exhaust is such that grease or odour in the discharge could create a nuisance.

Ecology system has an efficient & economical solution to exhaust contaminated air from kitchen hood.

Commercial Kitchen Exhaust System



WORKING PRINCIPLE:-

FIRST STAGE, FILTERATION SECTION TO REMOVE GREASE FROM THE AIRSTREAM WITH FOLLOWING COMBINATION OF MODULE:

Stage1: Washable Aluminium Pleated Filter:

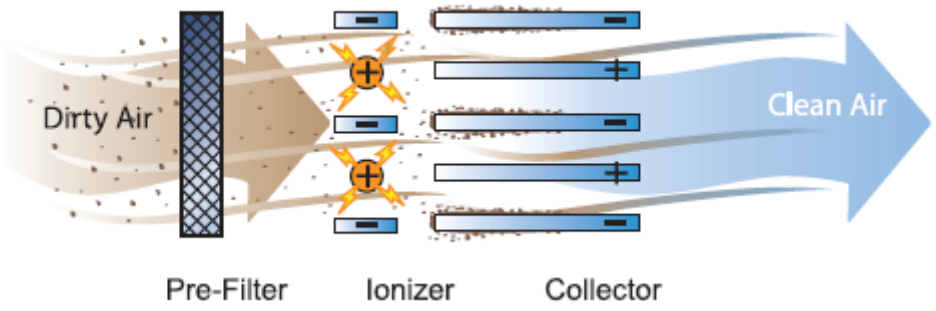
1. EN 779 : G2/G4

Stage2: Synthetic Bag Filter:

1. EN 779 : F9

Stage3: Electrostatic Precipitation.

Air is drawn by the blower through a washable metal mesh pre-filter & Bag Filter which traps large dust particles. The remaining particles, some as small as 0.01 microns, pass into a strong electrical field (ionizing section) where the particulate receives an electrical charge. The charged particles then pass into a collector plate section made up of a series of equally spaced parallel plates. Each alternate plate is charged with the same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect.



Stage4: Bio-Hepa Filter:

1. EN 779 : H10

SECOND STAGE, WHICH REMOVES BAD ODOUR FROM THE AIRSTREAM WITH FOLLOWING COMBINATION OF MODULE

Durable non-woven polyester base media, impregnated with activated carbon.
The unique combination of high quality activated carbon and polyester affords odour and particulate trapping efficiency while maintaining excellent airflow properties.

Thanking you,

Mohamad Mokdad

Export Manager

Maico Gulf (DYNAIR & ELICENT)