

AS 1668.2:2012

DESIGN IMPLEMENTATION

TOPICS

- **THE TRANSITION**
- **SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS**
- **SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS**
- **SECTION 4 VENTILATION OF ENCLOSURES USED BY VEHICLES WITH COMBUSTION ENGINES**
- **SECTION 5 MECHANICAL VENTILATION OF ENCLOSURES USED FOR PARTICULAR HEALTH CARE FUNCTIONS**



THE TRANSITION

- Key changes
 - All references to environmental tobacco smoke have been removed
 - AS 1668: Part 2 does not address Natural Ventilation, now covered in the new AS 1668: Part 4:2012
 - Natural vent of car parks has been moved to AS1668.4:2012
 - All sections further developed/refined
 - New section particular to Health Care functions



THE TRANSITION

- ABCB advice
 - AS 1668.2-2012 referenced from 2013 BCA edition
 - AS 1668.4-2012 will NOT be referenced before 2014 ?
 - Transitional arrangement for one year, during which, both 1991 and 2012 editions will be referenced in the BCA.
 - Where natural ventilation is the preferred option, the ONLY referenced Standard covering natural ventilation of car parks will be the 1991 edition.



SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS

- New Clause 2.4
 - Floor wastes within ducts or plenums **MUST** be permanently charged.
 - Relying on condensate only to charge is not appropriate

2.4 TUNDISHES AND FLOOR WASTES

A duct or plenum shall not contain a tundish or floor waste that is not permanently charged.

NOTES:

- 1 Designing systems for charging by condensate only is not appropriate.
- 2 The installation of tundishes and floor wastes will need to comply with AS/NZS 3500.2.



SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS

- Clause 2.5 Filtration
 - Requires minimum filter ratings
 - Must filter outdoor and recycled air
 - Provide safe and convenient access

TABLE 2.1
MINIMUM FILTER RATING

System characteristics	Minimum filter rating (see AS 1324.1)
≥1000 L/s ducted	G4
≥1000 L/s non-ducted	G4
<1000 L/s ducted	G2
<1000 L/s non-ducted	NR
Evaporative coolers	NR

LEGEND:
NR = no requirement



SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS

- Clause 2.6 Prohibition of recycle air, now increased to 9 categories from which air must not be recycled to dissimilar occupancies.

- (a) Any enclosure listed in Appendix B.
- (b) Any enclosure of the following types:
 - (i) Equipment and store enclosures holding materials generating odours or noxious gases.
 - (ii) Animal enclosures, pet shops, veterinary centres, kennels.
 - (iii) Swimming pools, deck and pool and ancillary areas.
 - (iv) Embalming enclosures, autopsy enclosures.
 - (v) Operating and delivery enclosures.
 - (vi) Warehouses for products that give off odours or noxious gases, (e.g. particleboard products such as formaldehyde).
- (c) Any enclosure required to be ventilated by a general or local exhaust ventilation system.
- (d) Any enclosure that contains specific contaminants.



SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS

- Clause 2.8 Outdoor airflow rates.
 - Minimum outside air rates in line with those required by the 1991 edition.
 - Additional design procedures and guidance notes incorporated
 - Demand control ventilation (DCV) refined.
Min setting at 0.35l/s/m^2
 - The Dilution Index procedure from the 2002 Standard has not been adopted
 - Appendix D revised



SECTION 2 MECHANICAL VENTILATION—SUPPLY SYSTEMS

Clause 2.8 Outdoor airflow rates.

- Effective Outdoor Airflow - allows credit for air cleaning systems within the space and unused outdoor air in recycle or transfer airstreams.



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

- Clause 3.2.1 General.

Allows supply air ventilation in lieu of exhaust air ventilation, where:

1. discharges would not be objectionable,
2. adjacent enclosures of different usage are kept at higher pressures.



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

- Local Exhausts
 - Clause 3.3.1 Gives exemption for microwave ovens and the like that are used solely for reheating food
 - Provides direct reference to specific applicable AS in Appendix

TABLE 01
APPLICABLE AUSTRALIAN STANDARDS

Application	Applicable Standard
Batteries	AS 2380.4 AS 2676.2 AS 2865
Compressed gas	AS 4332
Corrosive metal	AS 3780
Electrical equipment	AS 1482
Flammable liquid	AS 1940
Gas installations	AS/NZS 2243.8 AS 4745 AS 5601.1
Hazardous chemical	AS 2714



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

- Clause 3.4 to 3.6 Kitchen exhaust Hoods
 - Number of hood types increased to 7
 - Number of cooking process types increased to 7
 - Too many changes to detail here



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

- Clause 3.8 Replenishment of exhaust air
 - More comprehensive requirements for sourcing make-up airflow
 - Additional requirements for make up air to kitchen hoods reflecting energy saving requirements of Section J



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

- Air Discharges
 - Multiple discharges less than 1,000 L/s but within 6m radius are treated as one discharge.
 - Refined separation distances

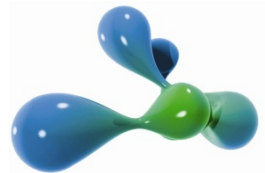
Airflow rate within the minimum distance L/s	Minimum distance m
<200	1 (see Note)
<400	2
<600	3
<800	4
<1000	5
≥1000	6

NOTE: For airflow rates of less than 200 L/s, separation of discharge from natural ventilation openings within the same sole occupancy unit do not apply.



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS

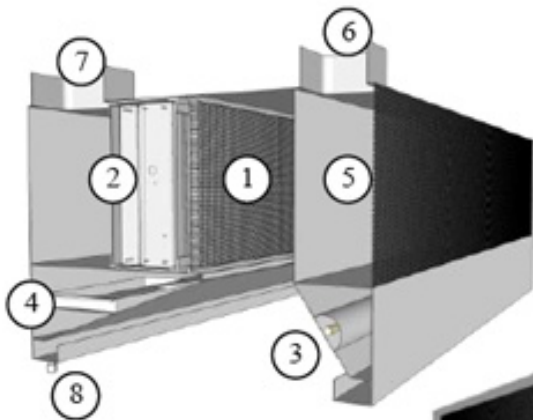
- Air Discharges
 - Non-required discharges (spill and relief air), simply must not cause a nuisance. No special criteria for distance to air intake
 - Performance based Kitchen Exhaust discharge guidelines included



SECTION 3 MECHANICAL VENTILATION—EXHAUST SYSTEMS



1. Honeycomb filter
2. Electrostatic filter
3. LED lighting
4. Grease tray
5. Air supply plenum
6. Air supply spigot
7. Exhaust spigot
8. Gutter & drain cap
9. MUA perforated plate
10. ESP control box
11. ESP cell access door
12. Ozone generator door



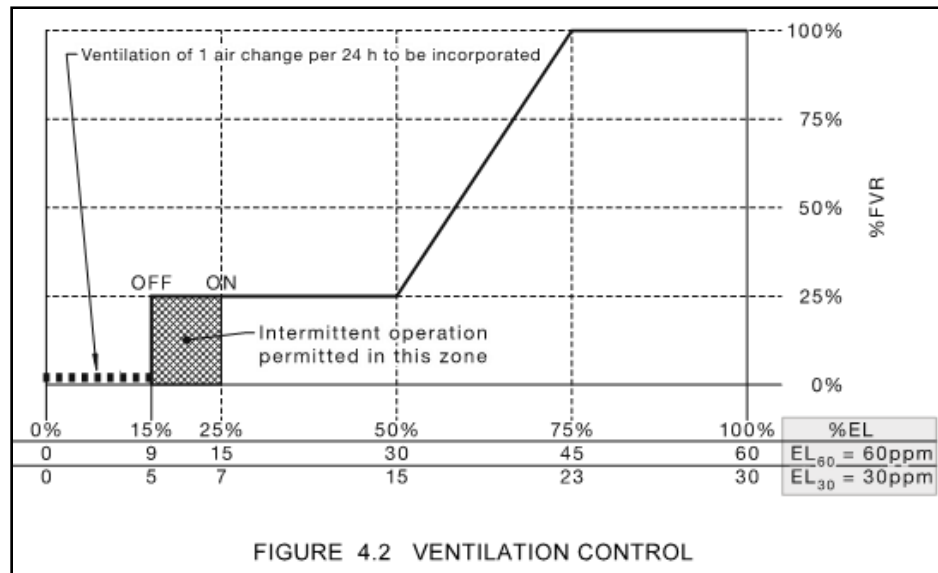
SECTION 4 VENTILATION OF ENCLOSURES USED BY VEHICLES WITH COMBUSTION ENGINES

- Does not include Natural Ventilation provisions
- Introduces the requirement for other occupancies located within the car park area
- New ventilation calculation procedures (similar to the 2002 version)
- Small car park definition is <40 car spaces (with simple calc procedure)



SECTION 4 VENTILATION OF ENCLOSURES USED BY VEHICLES WITH COMBUSTION ENGINES

- Ventilation Control
 - Demand control requirements have been enhanced

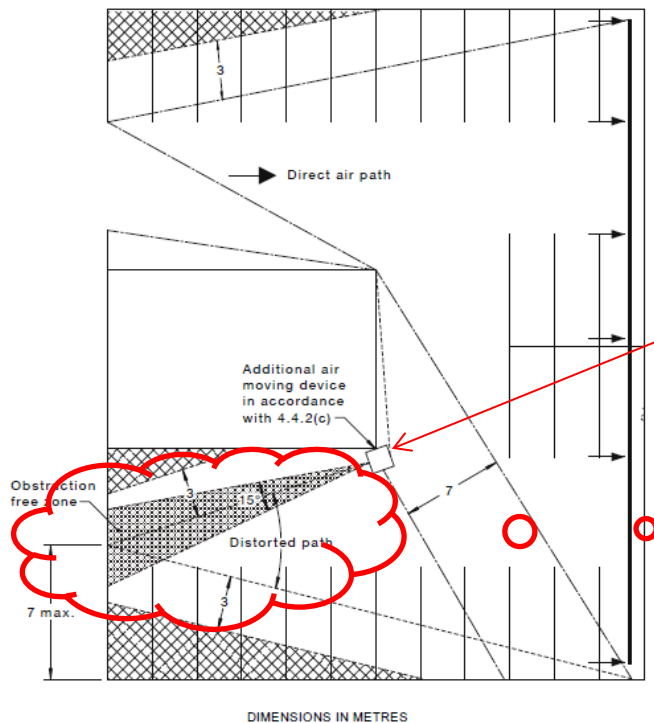


- For small car parks, demand control can be simplified incorporating motion sensors



SECTION 4 VENTILATION OF ENCLOSURES USED BY VEHICLES WITH COMBUSTION ENGINES

- Ventilation Distribution:
 - Air moving devices are permitted to avoid extra ductwork where air paths are obstructed within the car park.



Air moving device

• 15 degree cone



FIGURE 14 EXHAUST VENTILATION OF A 'SQUARE' CAR PARK INCORPORATING AN AIR MOVING DEVICE

SECTION 5 ENCLOSURES USED FOR PARTICULAR HEALTH CARE FUNCTIONS

- It is generally the same as section 6 in the 2002 edition of the Standard.
- Specific features
 - Rooms or enclosures covered are: operating theatres, sterile stores, isolation rooms, recovery rooms, autopsy rooms and dirty utility room.
 - Ventilation parameters specified include: supply air change rates, recirculated rate, outdoor airflow rate, filtration type, exhaust grille location and room pressure with respect to adjacent health care rooms.



HOW TO

