

In this Chapter :

- ⇒ Design criteria for Ventilation, Smoke containment and Smoke Management Systems.
- ⇒ Application of Smoke Control Systems for various locations and occupancies.
- ⇒ Acceptance Tests and maintenance of Smoke Control Systems

INTENTIONS

- Restrict the spread of smoke through air duct systems within a building or into a building from the outside.
- To maintain tenable conditions, Limit smoke from entering stairwells, means of egress, smoke refuge areas, elevator shafts, or similar areas where evacuees are in the process of egress during fire emergencies.
- Assist Fire Fighters visibility during combating fire and post fire smoke clearance, Contribute to the protection of life and property, enabling the reduction of downtime of the affected facility and business.

1. Definitions

1.1. General

1.1.1. Shall

It is a mandatory requirement by Civil Defence.

1.1.2. Should

It is a suggested requirement recommended by Civil Defence but not mandatory.

1.1.3. Listed

Approved and registered by individual Emirates' Civil Defence material department.

1.1.4. Newton (N)

SI unit of force. It is equal to the force that would give a mass of one kilogram an acceleration of one meter per second per second (Second squared)

1 lbf (Pound Force) = 4.4 N (Newton)

1.1.5. Pascal (Pa)

The SI unit of pressure, equal to one newton per square meter.

0.1" w.g. (Inches of water column) = 25 Pa (Pascal)

1.1.6. Cubic Feet Per Minute (cfpm)

It is the unit of volumetric flow rate capacity for finding air volume velocity or air flow.

1 cfpm = 0.000048 m³/second

1.1.7. Kilowatt (kW)

It is the unit of energy equivalent to 1 kilowatt of power sustained for 1 hour. 1 Watt is 1 joules per second.

1kW= 3.6 Mega Joules (Energy transferred to an object when force of 1 N is applied to it, in the direction of its motion through distance of 1 meter.

1.1.8. Heat Release Rate (HRR)

The heat release rate (HRR) can be measured in Joules per second, which is termed Watts. Since a fire puts out much more than 1 Watt, it is usually convenient to quantify the HRR in kilowatts (1000 W) or megawatts (a million watts, MW).