

**Table 10.8.: Mall Smoke Management System**

| ITEMS   | REQUIREMENTS   |
|---|--|
| <b>4. CAPACITY OF FANS</b>                              | <ul style="list-style-type: none"> <li>i. The capacity of an engineered smoke control system shall be capable of handling the largest demand for smoke exhaust from the worst case scenario.</li> <li>ii. Another example of the worst case scenario in an atrium. See <b>Figure 10.13</b> for example, the smoke is originating from the second level and with protruded obstructions from upper levels.</li> <li>iii. Adequate arrangement (s) shall be made in each smoke reservoir for the removal of smoke in a way that will prevent the formation of stagnant regions.</li> </ul>   |
| <b>5. SMOKE CURTAINS</b>                                | <ul style="list-style-type: none"> <li>i. Listed and approved smoke curtains shall be provided at every 122 m of the mall corridor and circulation areas.</li> <li>ii. All smoke curtains unless permanently fixed in position, shall be brought into the position automatically to provide adequate smoke-tightness and effective depth.</li> <li>iii. The effective depth in general is 20% of the total floor ceiling height of the space.</li> <li>iv. A minimum headroom of 1800 mm shall be maintained on circulation paths when smoke screens or curtains are activated.</li> <li>v. Smoke screens shall be located strategically to channel the smoke towards the extract fans.</li> <li>vi. Where glass walls or panels are being used as smoke screens to form a smoke reservoir or as channeling screens, they shall be 1 hour fire rated or shall be protected with closely spaced draft sprinklers. See <b>Figure 10.19</b> for illustrations.</li> </ul> |
| <b>6. COMMUNICATING SPACES AND CONVENIENCE OPENINGS</b> | <ul style="list-style-type: none"> <li>i. Convenience Openings and communicating spaces shall not require a smoke management system. However, any of the following methods shall be implemented to prevent smoke spread to the communicating space or convenience opening from the mall. <ul style="list-style-type: none"> <li>a. Maintaining the smoke layer interface at a level higher than that of the highest opening to the communicating space.</li> <li>b. Providing a smoke barrier to limit the smoke spread into the communicating space.</li> <li>c. Providing an opposed airflow through the opening to prohibit smoke spread into the communicating space.</li> <li>d. Providing smoke screens as per <b>Table 10.5.5.</b></li> </ul> </li> </ul>   |
| <b>7. CLEAR LAYER</b>                                   | <ul style="list-style-type: none"> <li>i. The design smoke layer base shall be above the heads of people escaping beneath it. The minimum height shall be 1830 mm.</li> </ul>  |



**DUBAI MALL FOR ILLUSTRATION**