

Table 10.3.: General Requirements for Smoke Control Systems

| ITEMS | REQUIREMENTS |
|---|--|
| 3. MAKE-UP AIR (REPLACEMENT AIR) | <ul style="list-style-type: none"> i. Makeup air for smoke management systems shall be provided by fans or by openings to the outside. ii. Where wall fire rating is required to be ensured by other sections of this code, make up air through openings to the outside, penetrating fire rated walls, shall not be acceptable. iii. The design replacement air discharge velocity shall not exceed 5.0 m/s to prevent the escapees being hindered by the air flow. iv. The replacement air intake shall be sited at least 5 m away from any exhaust air discharge. v. The supply points for the makeup air (Replacement air) shall be located beneath the smoke layer interface, unless otherwise determined by computer model analysis. vi. The replacement air shall be discharged at a low level, at least 1.5 m beneath the designed smoke layer, to prevent smoke logging of the lower clear zone. See Figure 10.10. for illustrations. vii. Where the inlet cannot be sited at least 1.5 m below the smoke layer, a smoke curtain or a barrier shall be used to prevent replacement air distorting the smoke layer. viii. Such smoke curtain depth shall be 20% of the total height of the space. ix. Where replacement air is taken through inlet air ventilators or doorways, devices shall be incorporated to automatically open such inlet ventilators and doors to admit replacement air upon activation of the smoke ventilation system. x. The mechanical makeup air shall be less than the mass flow rate of the mechanical smoke exhaust. |

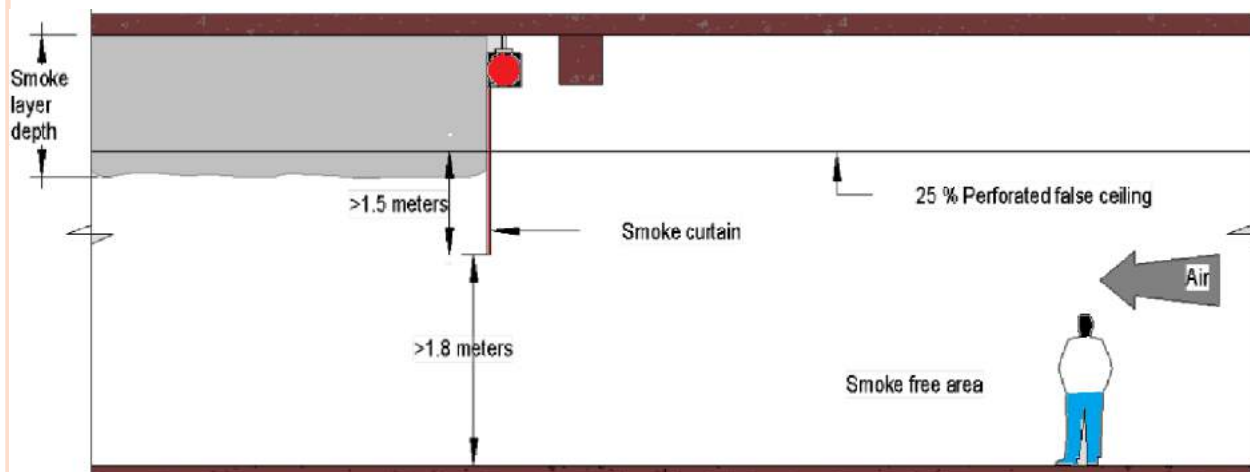


Figure 10.10.: Smoke curtain used in relation to replacement air