

2.9. Theater Smoke Management System

- 2.9.1.** Theaters with legitimate stages shall comply with the relevant general requirements for smoke control systems as per **Section 2.5** and theater smoke management requirements of **Table 10.7**.

Table 10.7.: Theater Smoke Management System

ITEMS	REQUIREMENTS
1. GENERAL	<ul style="list-style-type: none"> i. Theaters with regular stages greater than 93 m² and legitimate stages shall be provided with an automatic smoke management system to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. ii. The system equipment, fan wiring and ducts shall be located and protected to ensure a minimum of 20 minutes of operation in the event of activation.
2. FANS	<ul style="list-style-type: none"> i. Smoke extract fans shall comply with Table 10.1. and shall be approved for an effective operation at 400°C for 2 hours.
3. DESIGN CRITERIA	<ul style="list-style-type: none"> i. The smoke control system shall be designed to maintain the smoke level at not less than 1830 mm above the highest level of the theater seating or above the top of the proscenium opening where a proscenium wall and opening protection are provided.
4. MAKE-UP AIR (REPLACEMENT AIR)	<ul style="list-style-type: none"> i. Mechanical air supply inlets shall be through air inlets connected to a supply fan. ii. Mechanical air supply inlets shall achieve a minimum of 85% airflow rate of the extract. iii. The makeup air velocity shall not exceed 1.02 m/s where the makeup air could come into contact with the plume unless a higher makeup air velocity is supported by an engineering analysis. iv. The supply points for the makeup air shall be located beneath the smoke layer interface.
5. FIRE CURTAIN	<ul style="list-style-type: none"> i. Regular stages greater than 93 m² and legitimate stages shall be provided with a fire curtain approved and listed for 1 hour fire rating to separate the stages from rest of the seating area, during fire. ii. Such fire curtain shall be activated by the sprinkler operation or the smoke detection from the stage zone.
6. SMOKE SCREENS	<ul style="list-style-type: none"> i. Smoke screens or listed smoke curtains shall be provided strategically to channel the smoke towards the extract fans or to achieve the smoke reservoir.
7. SYSTEM ACTIVATION	<ul style="list-style-type: none"> i. The theater smoke management system shall be activated independently by any of the following: <ul style="list-style-type: none"> a. Activation of the sprinkler system in the stage area. b. Activation of Cross zoned smoke detectors over the stage area. c. Operation of a manual switch with Smoke Control Panel (SCP) at an approved location. ii. A means of manually starting and stopping the smoke management system shall be provided with a Smoke Control Panel (SCP) at the emergency command center.