

## 404.5

### Smoke Control in Atriums

**CHANGE TYPE:** Modification

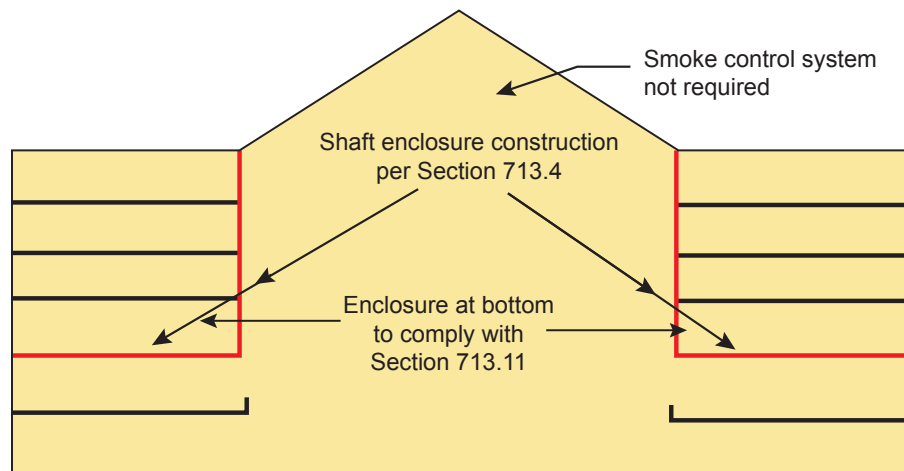
**CHANGE SUMMARY:** In the evaluation of whether a smoke control system is required for an atrium condition, vertical opening protection consisting of a combination of both the atrium and a shaft enclosure is now recognized.

**2021 CODE TEXT: 404.5 Smoke control.** A smoke control system shall be installed in accordance with Section 909.

**Exceptions:**

1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for atriums that connect only two stories.
2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met:
  - 2.1 Only the two lowest stories shall be permitted to be open to the atrium.
  - 2.2 All stories above the lowest two stories shall be separated from the atrium in accordance with the provisions for a shaft in Section 713.4.

**CHANGE SIGNIFICANCE:** A major component of the life-safety system for a building containing an atrium is the required smoke control system. Intended to prevent the migration of smoke throughout interconnected stories of a building via the atrium, the design of the smoke control system is to be in accordance with Section 909. The smoke control system is to be installed in all atriums connecting more than two stories as well as those Group I-2 and Group I-1, Condition 2 buildings where atriums connect two or more stories. The extension of an atrium without smoke control beyond two stories has historically been prohibited; however, a new exception removes that limitation where two conditions are met. First, only the two lowest stories are permitted to be open to the atrium.



ATRIUM CONDITION

Second, those stories located above the two lowest stories are required to be separated from the atrium with shaft enclosures having a minimum fire-resistance rating in compliance with Section 713.4. The new allowance recognizes that a combination vertical opening condition consisting of both an atrium and a shaft enclosure provides the necessary degree of separation expected between multiple stories, eliminating the need for a smoke control system.



This excerpt is taken from *Significant Changes to the International Building Code®*, 2021 Edition. The Significant Changes series takes you directly to the most important changes that impact projects. Key changes are identified then followed by in-depth discussion of how the change affects real-world application. Photos, tables and illustrations are included to further clarify application. Available for the IBC, IRC, IFC, IECC and IPC/IMC/IFGC, the Significant Changes publications are very useful training and review tools for transitioning to a new code edition.