

SHAFT DAMPERS: FD AND SD PATHS

2024 IMC 607.5.5 | Independent exceptions and prohibitions

Start with listed fire (FD) and smoke (SD) dampers at permitted shaft openings. Test every exception independently. A 22-inch subduct alone establishes neither exception.

1 Fire-damper exception: steel exhaust subduct

- Steel wall ≥ 0.0187 in.; vertical rise ≥ 22 in. in the exhaust shaft; fan at the shaft upper terminus, continuously powered under IBC 909.11, maintaining continuous upward airflow outdoors. An FD exception does not itself waive the SD.
- Other FD routes: ASTM E119/UL 263 tested rated assembly; approved IBC 909 smoke control where FD interferes; or garage exhaust/supply shaft separated from other shafts by ≥ 2 -hour rated construction.

2 Smoke-damper exception: named exhaust only

- Group B or R with automatic sprinklers throughout under IBC 903.3.1.1; kitchen, clothes-dryer, bathroom or toilet-room exhaust; steel wall ≥ 0.0187 in., rise ≥ 22 in., upper-terminus fan continuously powered per IBC 909.11, upward flow outdoors.
- Other SD routes: garage exhaust/supply shaft separated from other shafts by ≥ 2 -hour rated construction, or approved IBC 909 mechanical smoke control where SD interferes. Neither determines the FD decision.

3 Prohibited damper and remaining protection

- Where the code prohibits dampers in kitchen or clothes-dryer exhaust, 607.5.5 does not require an FD or combination FD/SD. Under 607.5.5.1, no FD/SD may close off required continuous shaft upflow. Document the remaining protection path and partial-height shaft bottom under IBC 713.11.

Bring: shaft use/rating, Group and sprinkler record, exact FD/SD exception, steel thickness and rise, upper fan location and IBC 909.11 power/airflow sequence, garage separation and damper schedule.

Source: ICC 2024 IMC 607.5.5-607.5.5.1, checked 2026-10-15. Educational model-code guide; not an approved shaft design or locally adopted-code determination.