

Hydrogen ventilation: size each opening

2024 model IMC 304.5.1.1-.1.2

For the natural-ventilation path, the high and low openings each need their own net free area. Do not divide the required area between them.

Where this screen applies

- IMC 304.5 covers hydrogen-generating appliances or refueling systems in public, private, repair and parking garages and automotive motor fuel-dispensing facilities. A nonliving room directly communicating with a private garage is treated as part of that garage.
- Choose the applicable route: natural ventilation under 304.5.1, mechanical ventilation under 304.5.2 / 502.16, or an approved engineered system under 304.5.3.

Natural route: field checks

- Indoor hydrogen-generating/refueling location: no more than 850 square feet. Rated hydrogen generation: no more than 4 scfm per 250 square feet of floor area.
- Provide two permanent openings in the same exterior wall, directly to outdoors. The upper is entirely within 12 inches of the garage ceiling; the lower is entirely within 12 inches of the garage floor.
- **EACH opening:** net free area at least 0.5 square foot per 1,000 cubic feet of garage volume. A 2,000-cubic-foot garage needs at least 1.0 square foot net free at the upper opening AND 1.0 square foot at the lower opening.
- Minimum cross-sectional dimension of an opening: 3 inches. Each connected duct has the same cross-sectional area as the free area of its opening. Ignition sources are not within 12 inches of the ceiling.
- Size louvers/grilles by actual net free area. If unknown, assume 25% free area for wood and 75% for metal. Keep louvers and grilles fixed open.

Evidence to collect

Send the garage area and volume, appliance/refueling cut sheet, upper/lower opening dimensions and louver data, duct dimensions if used, and ignition-source elevations.

Official source

ICC 2024 IMC Chapter 3, Section 304.5

Educational 2024 model-code summary, not a hydrogen-system design or permit approval. Confirm the locally adopted edition and project-specific requirements.