

2021 Virginia Construction Code

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 421 HYDROGEN FUEL GAS ROOMS

[F] 421.1 General.

Where required by the *International Fire Code*, *hydrogen fuel gas rooms* shall be designed and constructed in accordance with [Sections 421.1](#) through [421.7](#).

[F] 421.2 Location.

Hydrogen fuel gas rooms shall not be located below grade.

[F] 421.3 Design and construction.

Hydrogen fuel gas rooms not classified as Group H shall be separated from other areas of the building in accordance with [Section 509.1](#).

[F] 421.3.1 Pressure control.

Hydrogen fuel gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

[F] 421.3.2 Windows.

Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with [Section 716](#).

[F] 421.4 Exhaust ventilation.

Hydrogen fuel gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of [Section 502.16.1](#) of the *International Mechanical Code*.

[F] 421.5 Gas detection system.

Hydrogen fuel gas rooms shall be provided with a *gas detection system* that complies with [Sections 421.5.1](#), [421.5.2](#), and [916](#).

[F] 421.5.1 System activation.

Activation of a gas detection alarm shall result in both of the following:

1. Initiation of distinct audible and visible alarm signals both inside and outside of the *hydrogen fuel gas room*.
2. *Automatic* activation of the mechanical exhaust ventilation system.

[F] 421.5.2 Failure of the gas detection system.

Failure of the *gas detection system* shall automatically activate the mechanical exhaust ventilation system, stop hydrogen generation, and cause a trouble signal to sound at an *approved* location.

[F] 421.6 Explosion control.

Explosion control shall be provided where required by [Section 414.5.1](#).

[F] 421.7 Standby power.

Mechanical ventilation and *gas detection systems* shall be provided with a *standby power system* in accordance with [Section 2702](#).