

# Element D Services

Heating, Ventilating, and Air  
Conditioning

## D304201 HVAC - Patient Treatment Exhaust and Ventilation

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### PART 1 - GENERAL

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#### 1.1 OVERVIEW

- A. This section supplements Design Guideline Element D3042 with additional criteria on exhaust systems unique to patient treatment facilities.

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### PART 2 - DESIGN CRITERIA

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#### 2.1 GENERAL

- A. Exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vents, or areas that may collect vehicular exhaust or other noxious fumes shall be located at least 25 feet from outside air intakes.
- B. Exhaust outlets from areas that may be contaminated shall be above roof level and arranged to minimize recirculation of exhaust air into the building.
- C. Due to chase space limitations within existing buildings, coordinate with MD Anderson Cancer Center on possible location of new exhaust risers and fan locations.
- D. General exhaust systems serve toilet rooms, janitor's closets, soiled utility rooms, dark rooms, recovery rooms, and general laboratories as an example.
- E. Special exhaust systems include dedicated exhaust for critical areas, such as airborne infectious isolation, laboratory fume hoods, etc.
- F. Each dedicated exhaust system has its own unique set of requirements for air quantity, construction of materials, type of discharge, controls, emergency power, and hours of operation. Refer also to Design Guideline Element D3000 for additional emergency power requirements.
- G. Locate exhaust discharge where it cannot be easily reintroduced into the building outside air intakes. Where applicable, the A/E shall recommend a wind tunnel study to verify locations of the exhausts in relation to the intakes are acceptable.

#### 2.2 AMBULANCE ENTRANCE VENTILATION

- A. Exhaust fan to ventilate this area shall be activated automatically based on a CO sensor. When CO reading falls below setpoint for more than five minutes the fan shall shutoff. . Provide 0-15 minute time delay.
- B. Provide a thermostat to cycle the exhaust fan when the ambulance entrance space temperature exceeds 85 degrees F.

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### 2.3 AIRBORNE INFECTIOUS ISOLATION EXHAUST

- A. Provide a dedicated exhaust system.
- B. Provide a redundant fan to facilitate maintenance such that exhaust system may be operated 24 hours per day, 7 days per week.
- C. Provide fan selection data on a performance curve and ensure that the fan discharge is directed vertically upward with a discharge velocity of 3500 fpm.
- D. Minimum stack height shall be 12-feet.

### 2.4 DECONTAMINATION EXHAUST

- A. Provide a dedicated exhaust system.
- B. A/E shall confirm actual requirements with the Owner during the Project design phase.

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## PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

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### 3.1 GENERAL

- A. The A/E shall include a schematic of the general exhaust and pressure relief systems in the Contract Documents.

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## PART 4 - PRODUCTS

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### 4.1 GENERAL

- A. Refer to Owner's Master Construction Specifications. These are available on the Owner's Design Guidelines website:  
<http://www2.mdanderson.org/depts/cpm/standards/specs.html>
- B. Refer to Design Guideline Element D3041 for additional criteria on outside air intakes.

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## PART 5 - DOCUMENT REVISION HISTORY

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Issue	Date	Revision Description	Reviser
	20190301	Original Issuance	
Rev. 1			

END OF ELEMENT D304201