

TABLES & GRAPHICS

Graphic images included in rules are published separately in this tables and graphics section. Graphic images are arranged in this section in the following order: Title Number, Part Number, Chapter Number and Section Number.

Graphic images are indicated in the text of the emergency, proposed, and adopted rules by the following tag: the word “Figure” followed by the TAC citation, rule number, and the appropriate subsection, paragraph, subparagraph, and so on.

Figure: 22 TAC §134.101:

Issue	Citation	Suggested Action
Technical Review determines some/all experience is not acceptable	Chapter 134 Subchapter E; §134.43	Demonstration of additional experience required equal to the amount needed to meet minimum experience requirement. Experience must be verified by at least one registered professional land surveyor reference provider.
Technical Review determines unfavorable references	Chapter 134 Subchapter F; §134.53	Additional favorable registered professional land surveyor references received to replace the unfavorable plus an additional reference. References must be knowledgeable of work experience covered in previous unfavorable reference.
Technical Review of application documentation determines applicant may have fraudulently or deceitfully provided information related to licensure.	§1071.401 [1001.452]; §134.81	Third-party ethics course of appropriate level related to infraction.
Waiver of Fundamentals of Surveying or Principles and Practice of Engineering Exam not recommended.	§134.69	Require passage of Fundamentals of Surveying and/or Principles and Practice of Surveying Exam.

Figure: 26 TAC §511.77(g)(2)(B)

Example Table for Administrative Penalties

Hospital's Total Gross Revenue	Less Than \$10,000,000		\$10,000,000 or More & Less Than \$100,000,000		\$100,000,000 or More	
Penalty for Each Day of Violation*	\$10 per Violation per Day		\$100 per Violation per Day		\$1000 per Violation per Day	
Number of Days of Violation	Total Daily Penalty Amount	Cumulative Administrative Penalty	Total Daily Penalty Amount	Cumulative Administrative Penalty	Total Daily Penalty Amount	Cumulative Administrative Penalty
<u>1</u>	<u>\$10</u>	<u>\$10</u>	<u>\$100</u>	<u>\$100</u>	<u>\$1,000</u>	<u>\$1,000</u>
<u>2</u>	<u>\$20</u>	<u>\$30</u>	<u>\$200</u>	<u>\$300</u>	<u>\$2,000</u>	<u>\$3,000</u>
<u>3</u>	<u>\$30</u>	<u>\$60</u>	<u>\$300</u>	<u>\$600</u>	<u>\$3,000</u>	<u>\$6,000</u>
<u>4</u>	<u>\$40</u>	<u>\$100</u>	<u>\$400</u>	<u>\$1,000</u>	<u>\$4,000</u>	<u>\$10,000</u>
<u>5</u>	<u>\$50</u>	<u>\$150</u>	<u>\$500</u>	<u>\$1,500</u>	<u>\$5,000</u>	<u>\$15,000</u>
<u>6</u>	<u>\$60</u>	<u>\$210</u>	<u>\$600</u>	<u>\$2,100</u>	<u>\$6,000</u>	<u>\$21,000</u>
<u>7</u>	<u>\$70</u>	<u>\$280</u>	<u>\$700</u>	<u>\$2,800</u>	<u>\$7,000</u>	<u>\$28,000</u>
<u>8</u>	<u>\$80</u>	<u>\$360</u>	<u>\$800</u>	<u>\$3,600</u>	<u>\$8,000</u>	<u>\$36,000</u>
<u>9</u>	<u>\$90</u>	<u>\$450</u>	<u>\$900</u>	<u>\$4,500</u>	<u>\$9,000</u>	<u>\$45,000</u>
<u>10</u>	<u>\$100</u>	<u>\$550</u>	<u>\$1,000</u>	<u>\$5,500</u>	<u>\$10,000</u>	<u>\$55,000</u>
<u>11</u>	<u>\$110</u>	<u>\$660</u>	<u>\$1,100</u>	<u>\$6,600</u>	<u>\$11,000</u>	<u>\$66,000</u>
<u>12</u>	<u>\$120</u>	<u>\$780</u>	<u>\$1,200</u>	<u>\$7,800</u>	<u>\$12,000</u>	<u>\$78,000</u>
<u>13</u>	<u>\$130</u>	<u>\$910</u>	<u>\$1,300</u>	<u>\$9,100</u>	<u>\$13,000</u>	<u>\$91,000</u>
<u>14</u>	<u>\$140</u>	<u>\$1,050</u>	<u>\$1,400</u>	<u>\$10,500</u>	<u>\$14,000</u>	<u>\$105,000</u>
<u>15</u>	<u>\$150</u>	<u>\$1,200</u>	<u>\$1,500</u>	<u>\$12,000</u>	<u>\$15,000</u>	<u>\$120,000</u>
<u>16</u>	<u>\$160</u>	<u>\$1,360</u>	<u>\$1,600</u>	<u>\$13,600</u>	<u>\$16,000</u>	<u>\$136,000</u>
<u>17</u>	<u>\$170</u>	<u>\$1,530</u>	<u>\$1,700</u>	<u>\$15,300</u>	<u>\$17,000</u>	<u>\$153,000</u>
<u>18</u>	<u>\$180</u>	<u>\$1,710</u>	<u>\$1,800</u>	<u>\$17,100</u>	<u>\$18,000</u>	<u>\$171,000</u>
<u>19</u>	<u>\$190</u>	<u>\$1,900</u>	<u>\$1,900</u>	<u>\$19,000</u>	<u>\$19,000</u>	<u>\$190,000</u>
<u>20</u>	<u>\$200</u>	<u>\$2,100</u>	<u>\$2,000</u>	<u>\$21,000</u>	<u>\$20,000</u>	<u>\$210,000</u>
<u>21</u>	<u>\$210</u>	<u>\$2,310</u>	<u>\$2,100</u>	<u>\$23,100</u>	<u>\$21,000</u>	<u>\$231,000</u>
<u>22</u>	<u>\$220</u>	<u>\$2,530</u>	<u>\$2,200</u>	<u>\$25,300</u>	<u>\$22,000</u>	<u>\$253,000</u>
<u>23</u>	<u>\$230</u>	<u>\$2,760</u>	<u>\$2,300</u>	<u>\$27,600</u>	<u>\$23,000</u>	<u>\$276,000</u>
<u>24</u>	<u>\$240</u>	<u>\$3,000</u>	<u>\$2,400</u>	<u>\$30,000</u>	<u>\$24,000</u>	<u>\$300,000</u>
<u>25</u>	<u>\$250</u>	<u>\$3,250</u>	<u>\$2,500</u>	<u>\$32,500</u>	<u>\$25,000</u>	<u>\$325,000</u>
<u>26</u>	<u>\$260</u>	<u>\$3,510</u>	<u>\$2,600</u>	<u>\$35,100</u>	<u>\$26,000</u>	<u>\$351,000</u>
<u>27</u>	<u>\$270</u>	<u>\$3,780</u>	<u>\$2,700</u>	<u>\$37,800</u>	<u>\$27,000</u>	<u>\$378,000</u>
<u>28</u>	<u>\$280</u>	<u>\$4,060</u>	<u>\$2,800</u>	<u>\$40,600</u>	<u>\$28,000</u>	<u>\$406,000</u>
<u>29</u>	<u>\$290</u>	<u>\$4,350</u>	<u>\$2,900</u>	<u>\$43,500</u>	<u>\$29,000</u>	<u>\$435,000</u>

<u>Hospital's Total Gross Revenue</u>	<u>Less Than \$10,000,000</u>		<u>\$10,000,000 or More & Less Than \$100,000,000</u>		<u>\$100,000,000 or More</u>	
	<u>\$300</u>	<u>\$4,650</u>	<u>\$3,000</u>	<u>\$46,500</u>	<u>\$30,000</u>	<u>\$465,000</u>
<u>30</u>	<u>\$300</u>	<u>\$4,650</u>	<u>\$3,000</u>	<u>\$46,500</u>	<u>\$30,000</u>	<u>\$465,000</u>
<u>31</u>	<u>\$310</u>	<u>\$4,960</u>	<u>\$3,100</u>	<u>\$49,600</u>	<u>\$31,000</u>	<u>\$496,000</u>

Note: Figure 26 TAC §511.77(g)(2) is for example purposes only. Violations for more than 31 days will continue to accrue and be calculated according to this formula:

Cumulative administrative penalty = [penalty for each day of violation + (penalty for each day of violation x number of days of violation)]/2 x (number of days of violation).

*HSC §327.008(c)(1) authorizes a penalty that may not exceed \$10 for each day a hospital violates HSC Chapter 327 if the hospital's total gross revenue is less than \$10,000,000;

HSC §327.008(c)(2) authorizes a penalty that may not exceed \$100 for each day a hospital violates HSC Chapter 327 if the hospital's total gross revenue is \$10,000,000 or more and less than \$100,000,000; and

HSC §327.008(c)(3) authorizes a penalty that may not exceed \$1,000 for each day a hospital violates HSC Chapter 327 if the hospital's total gross revenue is \$100,000,000 or more.

Figure: 26 TAC §511.169(a)

SOUND TRANSMISSION LIMITATIONS IN LIMITED SERVICES RURAL HOSPITALS

Adjacency Combination	Airborne Sound Transmission Class (STC) ¹	
	Partitions	Floors
<u>Patient care room to patient care room</u>	<u>45</u>	<u>40</u>
<u>Public space to patient care room ²</u>	<u>55</u>	<u>40</u>
<u>Service areas to patient care room ³</u>	<u>65</u>	<u>45</u>
<u>Patient care room access corridor ⁴</u>	<u>45</u>	<u>45</u>

¹ Sound transmission class (STC) shall be determined by tests in accordance with methods set forth in American Society for Testing and Materials (ASTM) E90 and ASTM E4 13. Where partitions do not extend to the structure above, sound transmission through ceilings and composite STC performance must be considered.

² Public space includes corridors (except patient room access corridors), lobbies, dining rooms, recreation rooms, treatment rooms, and similar space.

³ Service areas include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patient care rooms, offices, nurses stations, and similar occupied space shall be effectively isolated from the floor.

⁴ Patient care room access corridors contain composite walls with door/windows and have direct access to patient care rooms. Junctions and joints of walls and partitions shall be sealed to prevent sound leakage under, over, or through the separation. Outlets shall be insulated and separated. Openings around ducts, conduits, and pipes shall be sealed to minimize sound transmission.

Types of wall construction and the associated STC ratings are given in Fire Resistance Design Manual available from Gypsum Association.

NOTE: The listed STC rating requirements are for a reasonable degree of privacy. Rooms requiring confidentiality, such as psychiatric examination rooms and rooms with extraordinary noise sources, may require additional sound insulation, including acoustical doors and seals.

Figure: 26 TAC §511.169(b)

FLAME SPREAD AND SMOKE PRODUCTION LIMITATIONS FOR INTERIOR FINISHES

		<u>Flame Spread Rating</u>	<u>Smoke Development Rating</u>
<u>Walls and Ceilings</u> ¹	<u>Exit Access, Storage Rooms, and Areas of Unusual Fire Hazard</u>	<u>Class A</u> ² <u>NFPA 255</u>	<u>450 or less</u> <u>NFPA 258</u> ³
	<u>All other Areas</u>	<u>Class B</u> ² <u>NFPA 255</u>	<u>450 or less</u> <u>NFPA 258</u> ³
<u>Floors</u> ⁴		<u>No requirements</u>	<u>No requirements</u>

¹ Textile materials having a napped, tufted, looped, woven, nonwoven, or similar surface shall not be applied to walls or ceilings unless such materials have a Class A rating and are installed in rooms or areas protected by an approved automatic sprinkler system. Cellular or foamed plastic materials shall not be used as interior wall and ceiling finishes.

² Products required to be tested in accordance with National Fire Protection Association (NFPA) 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 2000 edition, shall be Class A (flame spread 0-25) or Class B (flame spread 26-75).

³ Smoke development rating, an average of flaming and nonflaming values as determined by National Fire Protection Association 258, Standard Research Test Method for Determining Smoke Generation of Solid Materials, 2001 Edition.

⁴ Refer to §511.162(d)(1)(D) of this subchapter for requirements relative to carpeting in areas that may be subject to use by individuals with disabilities. Such areas include offices and waiting spaces as well as corridors that might be used by employees, visitors, or staff with disabilities.

Figure: 26 TAC §511.169(c)

VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES ¹

Area Designation	Air movement relationship to adjacent areas ^{2, 16}	Minimum air changes of outdoor air per hour ³	Minimum total air changes per hour ⁴	All air exhausted directly to outdoors ⁵	Recirculated by means of room units ⁶	Relative humidity ⁷ (%)	Design temperature ⁸ (degrees F)
SURGERY AND CRITICAL CARE							
Operating/Surgical, cystoscopic rooms ^{9, 16}	Out	4	20	----	No	30-60	68-73 ¹⁷
Recovery room ⁹	----	2	6	----	No	30-60	70-75
Treatment room ¹⁰	----	----	6	----	----	----	75
Trauma room ¹⁰	Out	3	15	----	No	30-60	70-75
Anesthesia gas storage	In	----	8	Yes	----	----	----
Endoscopy	Out	2	6	----	No	30-60	68-73
Bronchoscopy	In	2	12	Yes	No	30-60	68-73
Emergency suite waiting	In	2	12	Yes ¹⁹	----	----	70-75
Triage	In	2	12	Yes ¹⁹	----	----	70-75
Radiology waiting	In	2	12	Yes ¹⁹	----	----	70-75
Procedure room	Out	4	20	----	No	30-60	70-75

TABLE 3
VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES ¹
 (Continued)

<u>Area Designation</u>	<u>Air movement relationship to adjacent areas ^{2,16}</u>	<u>Minimum air changes of outdoor air per hour ³</u>	<u>Minimum total air changes per hour ⁴</u>	<u>All air exhausted directly to outdoors ⁵</u>	<u>Recirculated by means of room units ⁶</u>	<u>Relative humidity ⁷ (%)</u>	<u>Design temperature ⁸ (degrees F)</u>
<u>Laser eye room</u>	<u>Out</u>	<u>4</u>	<u>20</u>	<u>----</u>	<u>No</u>	<u>30-60</u>	<u>70-75</u>
<u>X-ray (Surgical/ Critical care, catheterization)</u>	<u>Out</u>	<u>3</u>	<u>15</u>	<u>----</u>	<u>No</u>	<u>30-60</u>	<u>70-75</u>
<u>NURSING</u>							
<u>Toilet room</u>	<u>In</u>	<u>----</u>	<u>10</u>	<u>Yes</u>	<u>----</u>	<u>----</u>	<u>70-75</u>
<u>Airborne infection isolation room ¹²</u>	<u>In</u>	<u>2</u>	<u>12</u>	<u>Yes</u>	<u>No</u>	<u>----</u>	<u>70-75</u>
<u>Isolation alcove or anteroom ¹²</u>	<u>In/Out ²⁰</u>	<u>----</u>	<u>10</u>	<u>Yes</u>	<u>No</u>	<u>----</u>	<u>----</u>
<u>Patient corridor</u>	<u>----</u>	<u>----</u>	<u>2</u>	<u>----</u>	<u>----</u>	<u>----</u>	<u>----</u>
<u>ANCILLARY</u>							
<u>Radiology ¹³</u>	<u>----</u>	<u>----</u>	<u>6</u>	<u>----</u>	<u>----</u>	<u>----</u>	<u>75</u>
<u>X-ray (diagnostic and treatment)</u>	<u>----</u>	<u>----</u>	<u>6</u>	<u>----</u>	<u>----</u>	<u>----</u>	<u>75</u>

TABLE 3
 VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES ¹
 (Continued)

Area Designation	Air movement relationship to adjacent areas ^{2,16}	Minimum air changes of outdoor air per hour ³	Minimum total air changes per hour ⁴	All air exhausted directly to outdoors ⁵	Recirculated by means of room units ⁶	Relative humidity ⁷ (%)	Design temperature ⁸ (degrees F)
Darkroom	In	----	10	Yes	No	----	----
Fluoroscopy	In	2	6	----	----	----	75
Laboratory General ¹³	----	2	6	----	----	----	75
Bacteriology	In	2	6	Yes	No	----	75
Biochemistry ¹³	In	2	6	Yes	No	----	75
Cytology	In	2	6	Yes	No	----	75
Glass washing	In	----	10	Yes	----	----	75
Histology	In	2	6	Yes	No	----	75
Microbiology ¹³	In	2	6	Yes	No	----	75
Nuclear medicine	In	2	6	Yes	No	----	75
Pathology	In	2	6	Yes	No	----	75
Serology	In	2	6	Yes	No	----	75

TABLE 3
VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES. ¹
(Continued)

<u>Area Designation</u>	<u>Air movement relationship to adjacent areas ^{2, 1,6}</u>	<u>Minimum air changes of outdoor air per hour ³</u>	<u>Minimum total air changes per hour ⁴</u>	<u>All air exhausted directly to outdoors ⁵</u>	<u>Recirculated by means of room units ⁶</u>	<u>Relative humidity ⁷ (%)</u>	<u>Design temperature ⁸ (degrees F)</u>
<u>Sterilizing</u>	<u>In</u>	----	<u>10</u>	<u>Yes</u>	<u>No</u>	----	<u>75</u>
<u>Media transfer</u>	<u>Out</u>	<u>2</u>	<u>4</u>	----	----	----	----
<u>Autopsy room</u>	<u>In</u>	----	<u>12</u>	<u>Yes</u>	<u>No</u>	----	----
<u>Nonrefrigerated body-holding room</u>	<u>In</u>	----	<u>10</u>	<u>Yes</u>	----	----	<u>70</u>
<u>Pharmacy</u>	<u>Out</u>	----	<u>4</u>	----	----	----	<u>75</u>
<u>Preparation/anteroom</u>	<u>Out</u>	<u>2</u>	<u>6</u>	----	<u>No</u>	----	<u>75</u>
<u>Intravenous hood room</u>	<u>Out</u>	<u>2</u>	<u>6</u>	----	<u>No</u>	----	<u>75</u>
<u>Chemotherapy room-fume hoods</u>	<u>In</u>	<u>2</u>	<u>6</u>	<u>Yes</u>	<u>No</u>	----	<u>75</u>
<u>DIAGNOSTIC AND TREATMENT</u>							
<u>Examination room</u>	----	----	<u>6</u>	----	----	----	<u>75</u>
<u>Medication room</u>	<u>Out</u>	----	<u>4</u>	----	----	----	<u>75</u>

TABLE 3
VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES 1
 (Continued)

<u>Area Designation</u>	<u>Air movement relationship to adjacent areas 2, 16</u>	<u>Minimum air changes of outdoor air per hour 3</u>	<u>Minimum total air changes per hour 4</u>	<u>All air exhausted directly to outdoors 5</u>	<u>Recirculated by means of room units 6</u>	<u>Relative humidity 7 (%)</u>	<u>Design temperature 8 (degrees F)</u>
<u>Treatment room</u>	----	----	6	----	----	----	75
<u>Physical therapy and hydrotherapy</u>	In	----	6	----	----	----	75
<u>Soiled workroom or holding</u>	In	----	10	Yes	No	----	----
<u>Clean workroom or holding</u>	Out	----	4	----	----	----	----
<u>STERILIZING AND SUPPLY</u>							
<u>EO sterilizer room 15</u>	In	----	10	Yes	No	30-60	75
<u>Sterilizer equipment room 2</u>	In	----	10	Yes	No	----	----
<u>Central medical and surgical supply</u>							
<u>Soiled or decontamination room</u>	In	----	6	Yes	No	----	68-73
<u>Clean workroom</u>	Out	----	4	----	No	30-60	75
<u>Sterile storage</u>	Out	----	4	----	----	70 Max	----
<u>Equipment storage</u>	----	----	2	----	----	----	----

TABLE 3
 VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES 1
 (Continued)

Area Designation	Air movement relationship to adjacent areas 2,16	Minimum air changes of outdoor air per hour 3	Minimum total air changes per hour 4	All air exhausted directly to outdoors 5	Recirculated by means of room units 6	Relative humidity 7 (%)	Design temperature 8 (degrees F)
<u>SERVICE</u>							
Food preparation center 14	----	----	10	----	No	----	----
Ware washing	In	----	10	Yes	No	----	----
Dietary day storage	In	----	2	----	----	----	----
Laundry, general	----	----	10	Yes	----	----	----
Soiled linen (sorting and storage)	In	----	10	Yes	No	----	----
Clean linen storage	Out	----	2	----	----	----	----
Soiled linen and trash chute room	In	----	10	Yes	No	----	----
Bedpan room	In	----	10	Yes	----	----	----
Bathroom	In	----	10	Yes	----	----	75
Janitor's closet	In	----	10	Yes	No	----	----

TABLE 3
VENTILATION REQUIREMENTS FOR LIMITED SERVICES RURAL HOSPITALS AND OUTPATIENT FACILITIES ¹
(Continued)

Area Designation	Air movement relationship to adjacent areas ^{2, 1, 6}	Minimum air changes of outdoor air per hour ³	Minimum total air changes per hour ⁴	All air exhausted directly to outdoors ⁵	Recirculated by means of room units ⁶	Relative humidity ⁷ (%)	Design temperature ⁸ (degrees F)
ADMINISTRATIVE AND SUPPORT SERVICE							
Administrative and support service	----	----	2	----	----	30 Min	68-73

Notes applicable to Table 3:

"Ventilation Requirements for Limited Services Rural Hospitals and Outpatient Facilities"

¹ The ventilation rates in this table cover ventilation for comfort, as well as for asepsis and odor control in areas of acute care hospitals that directly affect patient care and are determined based on health care facilities being predominantly "No Smoking" facilities. Where smoking may be allowed, ventilation rates will need adjustment. Areas where specific ventilation rates are not given in the table shall be ventilated in accordance with American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 62.1, 2004 edition, Ventilation for Acceptable Indoor Air Quality, and American Society of Heating Refrigeration and Air-Conditioning Engineers, Handbook of Applications, 2003 edition. Occupational Safety and Health Administration (OSHA) standards and/or National Institute for Occupational Safety and Health (NIOSH) criteria require special ventilation requirements or employee health and safety within health care facilities.

² Design of the ventilation system shall provide air movement that is generally from clean to less clean areas. If any form of variable air volume or load shedding system is used for energy conservation, it must not compromise the corridor-to-room pressure balancing relationships or the minimum air changes required by the table. Except where specifically permitted by exit corridor plenum provisions of National Fire Protection Association (NFPA) 90A, 2002 edition, the volume of infiltration or exfiltration shall be the volume necessary to maintain a minimum of 0.01 inch water gauge.

3 To satisfy exhaust needs, replacement air from the outside is necessary. Table 3 does not attempt to describe specific amounts of outside air to be supplied to individual spaces except for certain areas such as those listed. Distribution of the outside air, added to the system to balance required exhaust, shall be as required by good engineering practice. Minimum outside air quantities shall remain constant while the system is in operation. In variable volume systems, the minimum outside air setting on the air handling unit shall be calculated using the ASHRAE Standard 62.1, 2004 edition.

4 Number of air changes may be reduced when the room is unoccupied if provisions are made to ensure that the number of air changes indicated is reestablished any time the space is being utilized. Adjustments shall include provisions so that the direction of air movement shall remain the same when the number of air changes is reduced. Areas not indicated as having continuous directional control may have ventilation systems shut down when space is unoccupied and ventilation is not otherwise needed, if the maximum infiltration or exfiltration permitted in Note 2 is not exceeded and if adjacent pressure balancing relationships are not compromised. Air quantity calculations must account for filter loading such that the indicated air change rates are provided up until the time of filter change-out. The minimum total air change requirements shall be based on the supply air quantity in positive pressure rooms and the exhaust air quantity in negative pressure rooms. Air change requirements indicated are minimum values. Higher values shall be used when required to maintain indicated room conditions (temperature and humidity, based on the cooling load of the space: lights, equipment, people, exterior walls and windows, etc.).

5 Air from areas with contamination and/or odor problems shall be exhausted to the outside and not recirculated to other areas.

6 Recirculating room heating, ventilating, and air conditioning (HVAC) units refers to those local units that are used primarily for heating and cooling of air, and not disinfection of air. Because of cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked "No." However, for airborne infection control, air may be recirculated within individual isolation rooms if filters with a maximum efficiency rating value of 17 or higher are used. The maximum efficiency rating value (MERV) is a standard of ASHRAE, Standard 52.2, 1999 edition. An isolation room may be ventilated by reheat induction units in which only the primary air supplied from a central system passes through the reheat unit. Gravity-type heating or cooling units such as radiators or convectors shall not be used in operating rooms and other special care areas. Recirculating devices with 99.97 percent efficiency filters may have potential uses in existing facilities as interim, supplemental environmental controls to meet requirements for the control of airborne infectious agents. Limitations in design must be recognized. The design of either portable or fixed systems should prevent stagnation and short circuiting of airflow. The supply and exhaust locations should direct clean air to areas where health care workers are likely to work, across the infectious source, and then to the exhaust, so the health care worker is not in a position between the infectious source and the exhaust location. The design of such systems should also allow for easy access for scheduled preventive maintenance and cleaning.

⁷ The ranges listed are the minimum and maximum limits where control is specifically needed. The maximum and minimum limits are not intended to be independent of a space's associated temperature. The relative humidity is expected to be at the lower end of the range when the temperature is at the higher end, and vice versa.

⁸ Where temperature ranges are indicated, the systems shall be capable of maintaining the rooms at any point within the range. A single figure indicates a heating or cooling capacity of at least the indicated temperature. This is usually applicable when patients may be undressed and require a warmer environment. Additional heating may be required in these areas to maintain temperature range. Nothing in these rules shall be construed as precluding the use of temperatures lower than those noted when the patients' comfort and medical conditions make lower temperatures desirable. Unoccupied areas such as storage rooms shall have temperatures appropriate for the function intended.

⁹ NIOSH Criteria Documents regarding Occupational Exposure to Waste Anesthetic Gases and Vapors, and Control of Occupational Exposure to Nitrous Oxide indicate a need for both local exhaust (scavenging) systems and general ventilation of the areas in which the respective gases are utilized.

¹⁰ The term trauma room as used here is the operating room space in the emergency department or other trauma reception area that is used for emergency surgery. The first aid room and/or "emergency room" used for initial treatment of accident victims may be ventilated as noted for the "treatment room." Treatment rooms used for bronchoscopy shall be treated as bronchoscopy rooms. Treatment rooms used for cryosurgery procedures with nitrous oxide shall contain provisions for exhausting waste gases.

¹¹ The infectious disease isolation room described here is to be used for isolating the airborne spread of infectious diseases, such as measles, varicella, or tuberculosis. The design of airborne infection isolation rooms should include the provision for normal patient care during periods not requiring isolation precautions. Supplemental recirculating devices may be used in the patient room, to increase the equivalent room air exchanges; however, such recirculating devices do not provide the outside air requirements. Air may be recirculated within individual isolation rooms if filters with a MERV rating of 17 or higher are used. Exhaust systems for infectious isolation rooms shall exhaust no other areas or rooms. Reversible airflow provisions are not acceptable.

¹² When required, appropriate hoods and exhaust devices for the removal of noxious gases or chemical vapors shall be provided. Laboratory hoods shall meet the following general standards.

1. Have an average face velocity of at least 75 feet per minute.
2. Be connected to an exhaust system to the outside that is separate from the building exhaust system.
3. Have an exhaust fan located at the discharge end of the system.

4. Have an exhaust duct system of noncombustible corrosion-resistant material as needed to meet the planned usage of the hood.

Laboratory hoods shall meet the following special standards:

1. Fume hoods and their associated equipment in the air stream, intended for use with perchloric acid and other strong oxidants, shall be constructed of stainless steel or other material consistent with special exposures, and be provided with a water wash and drain system to permit periodic flushing of duct and hood. Electrical equipment intended for installation within the duct shall be designed and constructed to resist penetration by water. Lubricants and seals shall not contain organic materials. When perchloric acid or other strong oxidants are only transferred from one container to another, standard laboratory fume hoods and associated equipment may be used in lieu of stainless steel construction. Fume hood intended for use with radioactive isotopes shall be constructed of stainless steel or other material suitable for the particular exposure and shall comply with National Fire Protection Association 801, Facilities for Handling Radioactive Materials, 2003 edition (NFPA 801).

NOTE: RADIOACTIVE ISOTOPES USED FOR INJECTIONS, ETC. WITHOUT PROBABILITY OF AIRBORNE PARTICULATES OR GASES MAY BE PROCESSED IN A CLEAN WORKBENCH-TYPE HOOD WHERE ACCEPTABLE TO THE NUCLEAR REGULATORY COMMISSION.

2. In new installations and construction or major renovation work, each hood used to process infectious or radioactive materials shall have a minimum face velocity of 150 feet per minute with suitable static pressure operated dampers and alarms to alert staff of fan shutdown. Each hood shall have filters with an efficiency of 99.97% (based on the dioctyl-phthalate test method) in the exhaust stream, and be designed and equipped to permit the removal, disposal, and replacement of contaminated filters. Filters shall be as close to the hood as practical to minimize duct contamination. Hoods that process radioactive materials shall meet the requirements of the Nuclear Regulatory Agency.

13 Food preparation centers shall have ventilation systems whose air supply mechanisms are interfaced appropriately with exhaust hood controls or relief vents so that exfiltration or infiltration to or from exit corridors does not compromise the exit corridor restrictions of NFPA 90A, 2002 edition, the pressure requirements of NFPA 96, 2001 edition, or the maximum defined in the table. The number of air changes may be reduced or varied to any extent required for odor control when the space is not in use.

14 The space that houses ethylene oxide (EO) sterilizers shall be designed to:

1. provide a dedicated local exhaust system with adequate capture velocity of 200 feet per minute to allow for the most effective installation of an air handling system, i.e., exhaust over sterilizer door, atmospheric exhaust vent for safety valve, exhaust at sterilizer, drain and exhaust for the aerator, and multiple load station;

2. provide exhaust in EO source areas such as service/aeration areas;
 3. ensure that general airflow is away from sterilizer operator(s);
 4. provide a dedicated exhaust duct system for EO. The exhaust outlet to the atmosphere should be at least 25 feet away from any air intake; and
 5. meet OSHA requirements.
- ¹⁵ Differential pressure shall be a minimum of 0.01 inch water gauge. If alarms are installed, allowances shall be made to prevent nuisance alarms of monitoring devices.
- ¹⁶ Some surgeons may require room temperatures that are outside of the indicated range. All operating room design conditions shall be developed in consultation with surgeons, anesthesiologists, infection control, and nursing staff.
- ¹⁷ In a ventilation system that recirculates air, filters with a MERV rating of 17 or higher can be used in lieu of exhausting the air from these spaces to the outside. In this application, the return air shall be passed through the HEPA filters before it is introduced into any other space.
- ¹⁸ Air movement shall be IN to the isolation anteroom from the adjacent corridor and OUT from the anteroom to the adjacent isolation room.

Figure: 26 TAC §511.169(d)

FILTER EFFICIENCIES FOR CENTRAL VENTILATION AND AIR CONDITIONING SYSTEMS

<u>Area Designation</u>	<u>Number of Filter Beds</u>	<u>Filter Bed No. 1 (Percent, MERV*)</u>	<u>Filter Bed No. 2 (Percent, MERV*)</u>
<u>IV preparation and chemo-hood rooms</u>	<u>2</u>	<u>25, 7</u>	<u>99.97, 17</u>
<u>General procedure operating rooms, patient care areas and treatment, diagnostic and related areas</u>	<u>2</u>	<u>25, 7</u>	<u>90, 14</u>
<u>Laboratories and sterile storage</u>	<u>1</u>	<u>80, 13</u>	<u>----</u>
<u>Administrative, bulk storage, soiled holding areas, food preparation areas, and laundries</u>	<u>1</u>	<u>30, 7</u>	<u>----</u>

* MERV – Minimum efficiency rating value (American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 52.2, 1999 edition).

NOTES:

Additional roughing or prefilters should be considered to reduce maintenance required for filters with efficiency higher than 75 percent.

The filtration efficiency ratings are based on ASHRAE Standard 52.1, 1992 edition.

Figure: 26 TAC §511.169(e)

HOT WATER USE

	<u>Clinical</u>	<u>Dietary</u>	<u>Laundry</u>
<u>Gallons per hour per station¹</u>	<u>3</u>	<u>2</u>	<u>2</u>
<u>Temperature (F degrees)</u>	<u>105-120²</u>	<u>140³</u>	<u>160⁴</u>

¹ Quantities indicated for design demand of hot water are for general reference minimums and shall not substitute for accepted engineering design procedures using actual number and types of fixtures to be installed. Design will also be affected by temperatures of cold water used for mixing, length of run, and insulation relative to heat loss. As an example, total quantity of hot water needed will be less when temperature available at the outlet is very nearly that of the source tank, and cold water used for tempering is relatively warm.

² Hot water temperature at point of use for hand washing and bathing.

³ Provisions shall be made to provide 180 degrees Fahrenheit rinse water at the ware washer (may be by separate booster) unless a chemical rinse is provided.

⁴ Provisions shall be made to provide 160 degrees Fahrenheit hot water at the laundry equipment when needed. (This may be by steam jet or separate booster heater.) However, it is emphasized that this does not imply that all water used will be at this temperature. Water temperatures required for acceptable laundry results shall vary according to type of cycle, time of operation, and formula of soap and bleach as well as type and degree of soil. Lower temperatures may be adequate for most procedures but the higher 160 degrees Fahrenheit should be available when needed for special conditions.

Figure: 26 TAC §511.169(f)

STATION OUTLETS FOR OXYGEN, VACUUM, AND MEDICAL AIR SYSTEMS

<u>Location</u>	<u>Station Outlets</u>		
	<u>Oxygen</u> <u>see notes 1, 4</u>	<u>Vacuum</u> <u>see notes 1, 4</u>	<u>Medical Air</u> <u>see notes 1, 2, 3, 4</u>
<u>Isolation rooms – infectious</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Examination/treatment (medical, surgical care)</u>	<u>1/room</u>	<u>1/room</u>	<u>---</u>
<u>Preoperative preparation and holding</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Operating room (general, cardio-vascular, neurological and orthopedic surgery)</u>	<u>2/room</u>	<u>3/room</u>	<u>1/room</u>
<u>Operating room (cystoscopic and endoscopic surgery)</u>	<u>1/room</u>	<u>3/room</u>	<u>---</u>
<u>Post-anesthetic care unit</u>	<u>1/bed</u>	<u>3/bed</u>	<u>1/bed</u>
<u>Phase II recovery (note 12)</u>	<u>1/bed</u>	<u>3/bed</u>	<u>---</u>
<u>Special procedure rooms</u>	<u>2/room</u>	<u>2/room</u>	<u>1/room</u>
<u>Special procedure recovery</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Cardiac catheterization lab</u>	<u>2/room</u>	<u>2/room</u>	<u>2/room</u>
<u>Endoscopic procedure room</u>	<u>2/room</u>	<u>2/room</u>	<u>1/room</u>
<u>Endoscopy work room</u>	<u>---</u>	<u>1</u>	<u>1 (note 3)</u>
<u>Decontamination room (part of sterile processing)</u>	<u>---</u>	<u>1</u>	<u>1 (note 3)</u>
<u>Magnetic resonance imaging (MRI)</u>	<u>1/room</u>	<u>1/room</u>	<u>1/room</u>
<u>Anesthesia workroom</u>	<u>1</u> <u>/workstation</u>	<u>---</u>	<u>1/workstation</u>
<u>Holding/observation area/room</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Definitive emergency care holding/observation area/room</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Definitive emergency care exam/treatment room</u>	<u>1/bed</u>	<u>1/bed</u>	<u>1/bed</u>

<u>Location</u>	<u>Station Outlets</u>		
	<u>Oxygen</u> <u>see notes 1, 4</u>	<u>Vacuum</u> <u>see notes 1, 4</u>	<u>Medical Air</u> <u>see notes 1, 2, 3, 4</u>
<u>Orthopedic and cast room</u>	<u>1/room</u>	<u>1/room</u>	<u>---</u>
<u>Initial emergency management</u>	<u>1/bed</u>	<u>1/bed</u>	<u>---</u>
<u>Triage area (definitive emergency care)</u>	<u>1/station</u>	<u>1/station</u>	<u>---</u>
<u>Decontamination room (definitive emergency care)</u>	<u>1/station</u>	<u>1/station</u>	<u>---</u>
<u>Respiratory therapy clean room</u>	<u>1</u>	<u>---</u>	<u>1</u>
<u>Autopsy room</u>	<u>---</u>	<u>1/workstation</u>	<u>---</u>
<u>Laboratory (note 9)</u>	<u>(notes 4,7)</u>	<u>(note 6)</u>	<u>(notes 4,7)</u>

Notes:

1. Prohibited uses of medical gases include fueling torches, blowing down or drying any equipment such as lab equipment, endoscopy or other scopes, or any other purposes. Also prohibited is using the oxygen or medical air to raise, lower, or otherwise operate booms or other devices in operating rooms (ORs) or other areas.

2. Medical air sources shall be connected to the medical air distribution system only and shall be used only for air in the application of human respiration, and calibration of medical devices for respiratory application. The medical air piping distribution system shall support only the intended need for breathable air for such items as intermittent positive pressure breathing (IPPB) and long-term respiratory assistance needs, anesthesia machines, and so forth. The system shall not be used to provide engineering, maintenance, and equipment needs for general hospital support use. The life safety nature of the medical air system shall be protected by a system dedicated solely for its specific use.

3. Instrument air shall be used for purposes such as the powering of medical devices unrelated to human respiration (e.g., surgical tools, ceiling arms). Medical air and instrument air are distinct systems for mutually exclusive applications. Nitrogen shall be allowed for Decontamination and Endoscopy workroom uses if provided with reducing regulator. This shall be supplied from existing medical gas support nitrogen system and installed in accordance with National Fire Protection Association (NFPA) 99, 2002 edition.

4. Central supply systems for oxygen, medical air, nitrous oxide, carbon dioxide, nitrogen, and all other medical gases shall not be piped to, or used for, any other purpose except patient care applications.

5. Any laboratory (such as for analysis, research, or teaching) in an LSRH that is used for purposes other than direct support of patient therapy should preferably have its own self-supporting vacuum system, independent of the medical-surgical

vacuum system. Where only one set of vacuum pumps is available for a combined medical-surgical vacuum system and an analysis, research, or teaching laboratory vacuum system, such laboratories shall be connected separately from the medical-surgical system directly to the receiver tank through its own isolation valve and fluid trap located at the receiver. Between the isolation valve and fluid trap, a scrubber shall be permitted to be installed. A small laboratory in patient care areas used in direct support of patient therapy should not be required to be connected directly to the receiver or have fluid traps, scrubbers, and so forth, separate from the rest of the medical-surgical system.

6. Laboratory gas piping systems should not be used to pipe gas for use by LSRH patients. This applies to piping systems intended to supply gas to patients within a laboratory facility. Such a system should not be used to supply laboratory equipment other than that directly involved with the patient procedure.

7. Laboratory is a building, space, room, or group of rooms intended to serve activities involving procedures for investigation, diagnosis, or treatment in which flammable, combustible, or oxidizing materials are to be used.

8. If Phase II recovery area is a separate area from the post-anesthesia care unit (PACU), only one vacuum per bed or station shall be required.

Figure: 26 TAC §511.169(g)

NURSES CALLING SYSTEM

<u>LOCATION</u>	<u>NURSES REGULAR CALLING SYSTEM</u>		<u>EMERGENCY CALLING SYSTEM</u>		<u>STAFF EMERGENCY ASSISTANCE CALLING SYSTEM (Code Blue)</u>	
	<u>CALL</u>	<u>Annunciate</u>	<u>CALL</u> ⁴	<u>Annunciate</u>	<u>CALL</u>	<u>Annunciate</u>
<u>Administration & Public Suite</u>	-	-	-	-	-	-
<u>Cart Cleaning & Sanitizing Unit</u>	-	-	-	-	-	-
<u>Central Sterile Supply Suite</u>	-	-	-	-	-	-
<u>Dietary Suite</u>	-	-	-	-	-	-
<u>Emergency Suite</u>	-	<u>Note 1</u>	X	<u>Note 1</u>	-	<u>Note 2, 3</u>
<u>Triage, Trauma</u>	-	-	-	-	X	-
<u>Exam, Treatment</u>	X ⁶	-	-	-	X	-
<u>Holding and Observations Rooms/Area</u>	X ⁶	-	-	-	X ¹⁰	-
<u>Multiple Purpose Room</u>	-	-	-	-	X	-
<u>Patient Decontamination/Shower</u>	-	-	-	-	X	-
<u>Employees Suite</u>	-	-	-	-	-	-
<u>Engineering Suite & Equipment Areas</u>	-	-	-	-	-	-
<u>General Stores</u>	-	-	-	-	-	-

TABLE 7
NURSES CALLING SYSTEM
(Continued)

<u>LOCATION</u>	<u>NURSES REGULAR CALLING SYSTEM</u>	<u>EMERGENCY CALLING SYSTEM</u>	<u>STAFF EMERGENCY ASSISTANCE CALLING SYSTEM (Code Blue)</u>
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	<u>CALL</u>	<u>Annunciate</u>	<u>CALL</u> ⁴	<u>Annunciate</u>	<u>CALL</u>	<u>Annunciate</u>
<u>Hyperbaric Suite</u>	=	<u>Note 1</u>	<u>X</u>	<u>Note 1</u>	=	<u>Note 2, 3</u>
<u>Holding Area</u>	<u>X</u> ⁶	=	=	=	=	=
<u>Patient Dressing Room</u>	=	=	<u>X</u>	=	=	=
<u>Treatment</u>	=	=	=	=	<u>X</u>	=
<u>Imaging Suite</u>	=	<u>Note 1</u>	<u>X</u>	<u>Note 1</u>	=	<u>Note 2, 3</u>
<u>Holding, Prep, Recovery</u>	<u>X</u> ⁶	=	=	=	=	=
<u>Patient Dressing Room</u>	=	=	<u>X</u>	=	=	=
<u>Imaging Procedure Room</u>	=	=	=	=	<u>X</u> ⁵	=
<u>Laboratory Suite</u>	=	=	=	=	=	=
<u>Specimen Collection Room (remote location only)</u>	=	=	<u>X</u>	<u>Note 8</u> <u>Note 1</u>	=	=
<u>Laundry Suite</u>	=	=	=	=	=	=
<u>Medical Records Suite</u>	=	=	=	=	=	=
<u>Patient care room holding mental health patient</u>	=	=	=	=	=	=
<u>Morgue</u>	=	=	=	=	=	=
<u>Nuclear Medicine Suite</u>	=	<u>Note 1</u>	<u>X</u>	<u>Note 1</u>	=	<u>Note 2, 3</u>
<u>Holding, Observation, Exam</u>	<u>X</u> ⁶	=	=	=	=	=
<u>Patient Dressing Room, Dose Administration</u>	=	=	<u>X</u>	=	=	=
<u>Nuclear Medicine Procedure Room, Exam</u>	=	=	=	=	<u>X</u>	=
<u>Central Bathing Unit</u>	=	<u>Note 1</u>	<u>X</u>	<u>Note 1</u>	<u>X</u>	<u>Note 2, 3</u>
<u>Pharmacy Suite</u>	=	=	=	=	=	=
<u>Radiotherapy Suite</u>	=	<u>Note 1</u>	=	<u>Note 1</u>	=	<u>Note 2, 3</u>

TABLE 7
 NURSES CALLING SYSTEM
 (Continued)

LOCATION	NURSES REGULAR CALLING SYSTEM		EMERGENCY CALLING SYSTEM		STAFF EMERGENCY ASSISTANCE CALLING SYSTEM (Code Blue)	
	CALL	Annunciate	CALL ⁴	Annunciate	CALL	Annunciate
Holding	X ⁶	=	=	=	=	=
Patient Dressing Room	=	=	X	=	=	=
Exam, Treatment	=	=	=	=	X	=
Rehabilitation Therapy Suite	=	=	X	Note 1	=	Note 2, 3
Exam, Treatment	=	=	=	=	X	=
Hydrotherapy Tub	=	=	X	=	X	=
Patient Dressing Room	=	=	X	=	=	=
Renal Dialysis Suite (Acute & Chronic)	=	Note 1	X	Note 1	=	Note 2, 3
Treatment	X ⁶	=	=	=	X	=
Respiratory Therapy Suite	=	=	X	Note 1	=	=
Special Procedure Suite	=	Note 1	X	Note 1	=	Note 2, 3
Preoperative, Holding Area	X ⁶	=	=	=	=	=
Recovery	X ⁶	=	=	=	X ¹⁰	=
Special Procedure, Treatment Room, Bronchoscopy, Cardiac Catheterization Lab	=	=	=	=	X	=
Surgical Suite	=	Note 1	X	Note 1	=	Note 2, 3
Preoperative	X ⁶	=	=	=	=	=
PACU, Recovery, Holding Area	X ⁶	=	=	=	X ¹⁰	=

<u>Operating, Special Procedure Room</u>	=	=	=	=	X	=
<u>Mobile Units - see specific requirements for type of suite provided</u>	=	=	=	=	=	=

<u>Notes to Nurses Calling Systems Table:</u>	
<u>1</u>	<u>Nurse Station, Clean Work Room, Soiled Work Room, Medication Room, Charting Room, Clean Linen Storage, Nourishment Room, Equipment Storage</u>
<u>2</u>	<u>Nurse Station, Clean Work Room, Soiled Work Room, Medication Room, Charting Room, Clean Linen Storage, Nourishment Room, Equipment Storage, Exam and Treatment Rooms</u>
<u>3</u>	<u>The system shall have voice communication capabilities between the point of alarm and the nurse station so that the type of emergency or help required may be specified.</u>
<u>4</u>	<u>All toilets, showers, baths, and dressing rooms used by all patients</u>
<u>5</u>	<u>Device(s) for MRI to be in adjacent Control Room</u>
<u>6</u>	<u>In areas under constant visual surveillance, the nurses regular calling system may be limited to a bedside call button or station that activates a signal readily seen at the control station.</u>
<u>7</u>	<u>System is not required. When provided, refer to §511.163(n)(5)(A) for requirements.</u>
<u>8</u>	<u>Call to annunciate in the nearest unit or suite</u>
<u>9</u>	<u>Each patient bed shall be provided with a bedside call button. Consideration should be given to the age of the patient(s) so that voice communication is available as needed.</u>
<u>10</u>	<u>One code blue station may be shared between two gurneys in a multi-occupancy patient care room.</u>

Figure: 28 TAC §19.1003(d)(2)

License Period	Total Required Hours	Ethics
Less than 6 months	0	0
6 months up to and including 7 months	2	3
8 months up to and including 9 months	3	3
10 months up to and including 11 months	4	3
12 months up to and including 14 months	5	3
15 months up to and including 16 months	6	3
17 months up to and including 19 months	7	3
20 months up to and including 21 months	8	3
22 months up to and including 23 months	9	3