

4101:1-5-01 General building heights and areas.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 501**GENERAL**

501.1 Scope. The provisions of this chapter control the height and area of structures hereafter erected and additions to existing structures.

501.2 Address identification. *Unless otherwise prescribed by local regulations, new and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of ½ inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address identification shall be maintained.*

SECTION 502**DEFINITIONS**

502.1 Definitions. The following terms are defined in Chapter 2:

AREA, BUILDING.

BASEMENT.

EQUIPMENT PLATFORM.

GRADE PLANE.

HEIGHT, BUILDING.

MEZZANINE.

SECTION 503

GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered a separate building.

503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual building heights to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the building height, number of stories and building area limitations specified in Sections 504 and 506.

503.1.2 Buildings on same lot. Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building where the building height, number of stories of each building and the aggregate building area of the buildings are within the limitations specified in Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular building heights and areas are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited building height in Sections 503.1.1 and 504.3 or increased building heights and areas for other types of construction.

SECTION 504

BUILDING HEIGHT AND NUMBER OF STORIES

504.1 General. The height, in feet, and the number of stories of a building shall be determined based on the type of construction, occupancy classification and whether there is an automatic sprinkler system installed throughout the building.

Exception: The building height of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be

limited where the building is provided with an automatic sprinkler system or automatic fire-extinguishing system in accordance with Chapter 9 and is entirely surrounded by public ways or yards not less in width than one and one-half times the building height.

504.1.1 Unlimited area buildings. The height of unlimited area buildings shall be designed in accordance with Section 507.

504.1.2 Special provisions. The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable heights of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

504.2 Mixed occupancy. In a building containing mixed occupancies in accordance with Section 508, no individual occupancy shall exceed the height and number of story limits specified in this section for the applicable occupancies.

504.3 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3.

Exception: Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1510.2.5. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height where of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable building height where of combustible materials (see Chapter 15 for additional requirements).

504.4 Number of stories. The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

SECTION 505

MEZZANINES AND EQUIPMENT PLATFORMS

505.1 General. Mezzanines shall comply with Section 505.2. Equipment platforms shall comply with Section 505.3.

505.2 Mezzanines. A mezzanine or mezzanines in compliance with Section 505.2 shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories as regulated by Section 503.1. The area of the mezzanine shall be included in determining the fire area.

The clear height above and below the mezzanine floor construction shall be not less than 7 feet (2134 mm).

TABLE 504.3
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE^a

<u>OCCUPANCY CLASSIFICATION</u>	<u>TYPE OF CONSTRUCTION</u>									
	<u>SEE FOOTNOTES</u>	<u>TYPE I</u>		<u>TYPE II</u>		<u>TYPE III</u>		<u>TYPE IV</u>	<u>TYPE V</u>	
		<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>HT</u>	<u>A</u>	<u>B</u>
<u>A, B, E, F, M, S, U</u>	<u>NS^b</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>70</u>	<u>60</u>
<u>H-1, H-2, H-3, H-5</u>	<u>NS^{c, d}</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>									
<u>H-4</u>	<u>NS^{c, d}</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>70</u>	<u>60</u>
<u>I-1 Condition 1, I-3</u>	<u>NS^{d, e}</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>70</u>	<u>60</u>
<u>I-1 Condition 2, I-2</u>	<u>NS^{d, f, e}</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>						
<u>I-4</u>	<u>NS^{d, g}</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>70</u>	<u>60</u>
<u>R^h</u>	<u>NS^d</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>50</u>	<u>40</u>
	<u>S13D</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>50</u>	<u>40</u>
	<u>S13R</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>
	<u>S</u>	<u>UL</u>	<u>180</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>75</u>	<u>85</u>	<u>70</u>	<u>60</u>

For SI: 1 foot = 304.8 mm.

Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D=Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building height in accordance with Chapter 34 and in Group R-2 occupancies.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the Fire Code.
- For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- In other than group R-2, all new Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

TABLE 504.4
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE^{a, b}

<u>OCCUPANCY CLASSIFICATION</u>	<u>TYPE OF CONSTRUCTION</u>									
	<u>SEE FOOTNOTES</u>	<u>TYPE I</u>		<u>TYPE II</u>		<u>TYPE III</u>		<u>TYPE</u>	<u>TYPE V</u>	
		<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>HT</u>	<u>A</u>	<u>B</u>
<u>A-1</u>	<u>NS</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
<u>A-2</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
<u>A-3</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
<u>A-4</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
<u>A-5</u>	<u>NS</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
	<u>S</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
<u>B</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>3</u>
<u>E</u>	<u>NS</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>2</u>
<u>F-1</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>
<u>F-2</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>3</u>
<u>H-1</u>	<u>NS^{c, d}</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>NP</u>
	<u>S</u>									
<u>H-2</u>	<u>NS^{c, d}</u>	<u>UL</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>
	<u>S</u>									
<u>H-3</u>	<u>NS^{c, d}</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>1</u>
	<u>S</u>									
<u>H-4</u>	<u>NS^{c, d}</u>	<u>UL</u>	<u>7</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>8</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>3</u>
<u>H-5</u>	<u>NS^{c, d}</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
	<u>S</u>									
<u>I-1 Condition 1</u>	<u>NS^{d, e}</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>10</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>3</u>
<u>I-1 Condition 2</u>	<u>NS^{d, e}</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>10</u>	<u>5</u>						
<u>I-2</u>	<u>NS^{d, f}</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>1</u>	<u>NP</u>
	<u>S</u>	<u>UL</u>	<u>5</u>	<u>3</u>						

<u>I-3</u>	<u>NS^{d, e}</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>
<u>I-4</u>	<u>NS^{d, g}</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>2</u>
<u>M</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>4</u>	<u>2</u>

(continued)

TABLE 504.4—continued
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE^{a, b}

<u>OCCUPANCY CLASSIFICATION</u>	<u>SEE FOOTNOTES</u>	<u>TYPE OF CONSTRUCTION</u>								
		<u>TYPE I</u>		<u>TYPE II</u>		<u>TYPE III</u>		<u>TYPE</u>	<u>TYPE V</u>	
		<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>HT</u>	<u>A</u>	<u>B</u>
<u>R-1^h</u>	<u>NS^d</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>
	<u>S13R</u>	<u>4</u>	<u>4</u>						<u>4</u>	<u>3</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>3</u>
<u>R-2^h</u>	<u>NS^d</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>
	<u>S13R</u>	<u>4</u>	<u>4</u>						<u>4</u>	<u>3</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>3</u>
<u>R-3^h</u>	<u>NS^d</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>3</u>
	<u>S13D</u>	<u>4</u>	<u>4</u>						<u>3</u>	<u>3</u>
	<u>S13R</u>	<u>4</u>	<u>4</u>						<u>4</u>	<u>4</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>4</u>
<u>R-4^h</u>	<u>NS^d</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>
	<u>S13D</u>	<u>4</u>	<u>4</u>						<u>3</u>	<u>2</u>
	<u>S13R</u>	<u>4</u>	<u>4</u>						<u>4</u>	<u>3</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>3</u>
<u>S-1</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>4</u>	<u>2</u>
<u>S-2</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>U</u>	<u>NS</u>	<u>UL</u>	<u>5</u>	<u>4</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>

Note: UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D=Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.

- d. The NS value is only for use in evaluation of existing building height in accordance with Chapter 34 and in Group R-2 occupancies.
- e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
- f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the Fire Code.
- g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- h. In other than group R-2 occupancies, new Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

505.2.1 Area limitation. The aggregate area of a mezzanine or mezzanines within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the mezzanine is located. In determining the allowable mezzanine area, the area of the mezzanine shall not be included in the floor area of the room.

Where a room contains both a mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

Exceptions:

- 1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
- 2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 and an approved emergency voice/alarm communication system in accordance with Section 907.5.2.2.

505.2.2 Means of egress. The means of egress for mezzanines shall comply with the applicable provisions of Chapter 10.

505.2.3 Openness. A mezzanine shall be open and unobstructed to the room in which such mezzanine is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

- 1. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the occupant load of the aggregate area of the enclosed space is not greater than 10.
- 2. A mezzanine having two or more exits or access to exits is not

- required to be open to the room in which the mezzanine is located.
3. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the mezzanine area.
 4. In industrial facilities, mezzanines used for control equipment are permitted to be glazed on all sides.
 5. In occupancies other than Groups H and I, that are no more than two stories above grade plane and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, a mezzanine having two or more means of egress shall not be required to be open to the room in which the mezzanine is located.

505.3 Equipment platforms. Equipment platforms in buildings shall not be considered as a portion of the floor below. Such equipment platforms shall not contribute to either the building area or the number of stories as regulated by Section 503.1. The area of the equipment platform shall not be included in determining the fire area in accordance with Section 903. Equipment platforms shall not be a part of any mezzanine and such platforms and the walkways, stairs, alternating tread devices and ladders providing access to an equipment platform shall not serve as a part of the means of egress from the building.

505.3.1 Area limitation. The aggregate area of all equipment platforms within a room shall be not greater than two-thirds of the area of the room in which they are located. Where an equipment platform is located in the same room as a mezzanine, the area of the mezzanine shall be determined by Section 505.2.1 and the combined aggregate area of the equipment platforms and mezzanines shall be not greater than two-thirds of the room in which they are located.

505.3.2 Automatic sprinkler system. Where located in a building that is required to be protected by an automatic sprinkler system, equipment platforms shall be fully protected by sprinklers above and below the platform, where required by the standards referenced in Section 903.3.

505.3.3 Guards. Equipment platforms shall have guards where required by Section 1015.2.

SECTION 506 **BUILDING AREA**

506.1 General. The floor area of a building shall be determined based on the

type of construction, occupancy classification, whether there is an automatic sprinkler system installed throughout the building and the amount of building frontage on public way or open space.

506.1.1 Unlimited area buildings. Unlimited area buildings shall be designed in accordance with Section 507.

506.1.2 Special provisions. The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

506.1.3 Basements. Basements need not be included in the total allowable floor area of a building provided the total area of such basements does not exceed the area permitted for a one-story above grade plane building.

506.2 Allowable area determination. The allowable area of a building shall be determined in accordance with the applicable provisions of Sections 506.2.1 through 506.2.4 and Section 506.3.

506.2.1 Single-occupancy, one-story buildings. The allowable area of a single-occupancy building with no more than one story above grade plane shall be determined in accordance with Equation 5-1:

$$\underline{A_a} = \underline{A_t} + (\underline{NS} \times \underline{I_f}) \quad \text{(Equation 5-1)}$$

where:

$\underline{A_a}$ = Allowable area (square feet).

$\underline{A_t}$ = Tabular allowable area factor (NS, S1, or S13R value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for nonsprinklered building (regardless of whether the building is sprinklered).

$\underline{I_f}$ = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

506.2.2 Mixed-occupancy, one-story buildings. The allowable area of a mixed-occupancy building with no more than one story above grade plane shall be determined in accordance with the applicable provisions of Section 508.1 based on Equation 5-1 for each applicable occupancy.

<u>R-3^h</u>	<u>S13D</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
	<u>S13R</u>									
	<u>S1</u>									
	<u>SM</u>									
<u>R-4^h</u>	<u>NS^d</u>	<u>UL</u>	<u>UL</u>	<u>24,000</u>	<u>16,000</u>	<u>24,000</u>	<u>16,000</u>	<u>20,500</u>	<u>12,000</u>	<u>7,000</u>
	<u>S13D</u>									
	<u>S13R</u>									
	<u>S1</u>	<u>UL</u>	<u>UL</u>	<u>96,000</u>	<u>64,000</u>	<u>96,000</u>	<u>64,000</u>	<u>82,000</u>	<u>48,000</u>	<u>28,000</u>
	<u>SM</u>	<u>UL</u>	<u>UL</u>	<u>72,000</u>	<u>48,000</u>	<u>72,000</u>	<u>48,000</u>	<u>61,500</u>	<u>36,000</u>	<u>21,000</u>
<u>S-1</u>	<u>NS</u>	<u>UL</u>	<u>48,000</u>	<u>26,000</u>	<u>17,500</u>	<u>26,000</u>	<u>17,500</u>	<u>25,500</u>	<u>14,000</u>	<u>9,000</u>
	<u>S1</u>	<u>UL</u>	<u>192,000</u>	<u>104,000</u>	<u>70,000</u>	<u>104,000</u>	<u>70,000</u>	<u>102,000</u>	<u>56,000</u>	<u>36,000</u>
	<u>SM</u>	<u>UL</u>	<u>144,000</u>	<u>78,000</u>	<u>52,500</u>	<u>78,000</u>	<u>52,500</u>	<u>76,500</u>	<u>42,000</u>	<u>27,000</u>
<u>S-2</u>	<u>NS</u>	<u>UL</u>	<u>79,000</u>	<u>39,000</u>	<u>26,000</u>	<u>39,000</u>	<u>26,000</u>	<u>38,500</u>	<u>21,000</u>	<u>13,500</u>
	<u>S1</u>	<u>UL</u>	<u>316,000</u>	<u>156,000</u>	<u>104,000</u>	<u>156,000</u>	<u>104,000</u>	<u>154,000</u>	<u>84,000</u>	<u>54,000</u>
	<u>SM</u>	<u>UL</u>	<u>237,000</u>	<u>117,000</u>	<u>78,000</u>	<u>117,000</u>	<u>78,000</u>	<u>115,500</u>	<u>63,000</u>	<u>40,500</u>
<u>U</u>	<u>NS</u>	<u>UL</u>	<u>35,500</u>	<u>19,000</u>	<u>8,500</u>	<u>14,000</u>	<u>8,500</u>	<u>18,000</u>	<u>9,000</u>	<u>5,500</u>
	<u>S1</u>	<u>UL</u>	<u>142,000</u>	<u>76,000</u>	<u>34,000</u>	<u>56,000</u>	<u>34,000</u>	<u>72,000</u>	<u>36,000</u>	<u>22,000</u>
	<u>SM</u>	<u>UL</u>	<u>106,500</u>	<u>57,000</u>	<u>25,500</u>	<u>42,000</u>	<u>25,500</u>	<u>54,000</u>	<u>27,000</u>	<u>16,500</u>

(continued)

TABLE 506.2—continued
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET^{a, b}

Note: UL = Unlimited; NP = Not permitted; For SI: 1 square foot = 0.0929 m².

NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building area in accordance with *Chapter 34 and Group R-2 occupancies*.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the Fire Code.
- New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
- In other than Group R-2 occupancies, new Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

506.2.3 Single-occupancy, multistory buildings. The allowable area of a

single-occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:

$$\underline{A_a} = [\underline{A_t} + (\text{NS} \times \underline{I_f})] \times \underline{S_a} \quad \textbf{(Equation 5-2)}$$

where:

$\underline{A_a}$ = Allowable area (square feet).

$\underline{A_t}$ = Tabular allowable area factor (NS, S13R or SM value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building (regardless of whether the building is sprinklered).

$\underline{I_f}$ = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

$\underline{S_a}$ = Actual number of building stories above grade plane, not to exceed three.

For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed four.

No individual story shall exceed the allowable area ($\underline{A_a}$) as determined by Equation 5-2 using the value of $\underline{S_a} = 1$.

506.2.4 Mixed-occupancy, multistory buildings. Each story of a mixed-occupancy building with more than one story above grade plane shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories, determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed three.

$$\underline{A_a} = [\underline{A_t} + (\text{NS} \times \underline{I_f})] \quad \textbf{(Equation 5-3)}$$

where:

$\underline{A_a}$ = Allowable area (square feet).

$\underline{A_t}$ = Tabular allowable area factor (NS, S13R or SM value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building (regardless of whether the building is sprinklered).

$\underline{I_f}$ = Area factor increase due to frontage (percent) as calculated in

accordance with Section 506.3.

Exception: For buildings designed as separated occupancies under Section 508.4 and equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed four.

506.2.4.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

506.3 Frontage increase. Every building shall adjoin or have access to a public way to receive an area factor increase based on frontage. Area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. A fire lane shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

Exception: An unoccupied space on an adjoining property may be included, provided that the adjoining property is dedicated or deeded so as to preclude, for the life of the structure, the erection of any building or structure on such space (see section 3781.02 of the Revised Code).

506.3.2 Minimum frontage distance. To qualify for an area factor increase based on frontage, the public way or open space adjacent to the building perimeter shall have a minimum distance (W) of 20 feet (6096 mm) measured at right angles from the building face to any of the following:

1. The closest interior lot line.
2. The entire width of a street, alley or public way.

3. The exterior face of an adjacent building on the same property.
Where the value of W is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the building area increase based on frontage, regardless of the actual width of the public way or open space. Where the value of W varies along the perimeter of the building, the calculation performed in accordance with Equation 5-5 shall be based on the weighted average calculated in accordance with Equation 5-4.

$$W = (L_1 \times w_1 + L_2 \times w_2 + L_3 \times w_3 \dots) / F \quad \text{(Equation 5-4)}$$

where:

W (Width: weighted average) = Calculated width of public way or open space (feet).

L_n = Length of a portion of the exterior perimeter wall.

w_n = Width (□□20 feet) of a public way or open space associated with that portion of the exterior perimeter wall.

F = Building perimeter that fronts on a public way or open space having a width of 20 feet (6096 mm) or more.

Exception: Where a building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot (18 288 mm) public way or yard requirement, and the value of W is greater than 30 feet (9144 mm), the value of W shall not exceed 60 feet (18 288 mm).

506.3.3 Amount of increase. The area factor increase based on frontage shall be determined in accordance with Equation 5-5:

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-5)}$$

where:

I_f = Area factor increase due to frontage.

F = Building perimeter that fronts on a public way or open space having minimum distance of 20 feet (6096 mm).

P = Perimeter of entire building (feet).

W = Width of public way or open space (feet) in accordance with Section 506.3.2.

SECTION 507 **UNLIMITED AREA BUILDINGS**

507.1 General. The area of buildings of the occupancies and configurations

specified in Sections 507.1 through 507.12 shall not be limited. Basements not more than one story below grade plane shall be permitted.

507.1.1 Accessory occupancies. Accessory occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2, otherwise the requirements of Sections 507.2 through 507.12 shall be applied, where applicable.

507.2 Measurement of open spaces. Where Sections 507.3 through 507.13 require buildings to be surrounded and adjoined by public ways and yards, those open spaces shall be determined as follows:

1. Yards shall be measured from the building perimeter in all directions to the closest interior lot lines or to the exterior face of an opposing building located on the same lot, as applicable.
2. Where the building fronts on a public way, the entire width of the public way shall be used.

507.2.1 Reduced open space. The public ways or yards of 60 feet (18 288 mm) in width required in Sections 507.3, 507.4, 507.5, 507.6 and 507.12 shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width provided all of the following requirements are met:

1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.
2. The exterior walls facing the reduced width shall have a fire-resistance rating of not less than 3 hours.
3. Openings in the exterior walls facing the reduced width shall have opening protectives with a fire protection rating of not less than 3 hours.

507.3 Nonsprinklered, one-story buildings. The area of a Group F-2 or S-2 building no more than one story in height shall not be limited where the building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.4 Sprinklered, one-story buildings. The area of a Group A-4 building no more than one story above grade plane of other than Type V construction, or the area of a Group B, F, M or S building no more than one story above grade plane of any construction type, shall not be limited where the building is provided with an automatic sprinkler system throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

Exceptions:

1. Buildings and structures of Type I or II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.3 and 903.3.1.1 and Chapter 32 of the Fire Code.
2. The automatic sprinkler system shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that both of the following criteria are met:
 - 2.1. Exit doors directly to the outside are provided for occupants of the participant sports areas.
 - 2.2. The building is equipped with a fire alarm system with manual fire alarm boxes installed in accordance with Section 907.

507.4.1 Mixed occupancy buildings with Groups A-1 and A-2. Group A-1 and A-2 occupancies of other than Type V construction shall be permitted within mixed occupancy buildings of unlimited area complying with Section 507.3, provided all of the following criteria are met:

1. Group A-1 and A-2 occupancies are separated from other occupancies as required for separated occupancies in Section 508.4.4 with no reduction allowed in the fire-resistance rating of the separation based upon the installation of an automatic sprinkler system.
2. Each area of the portions of the building used for Group A-1 or A-2 occupancies shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1.
3. Exit doors from Group A-1 and A-2 occupancies shall discharge directly to the exterior of the building.

507.5 Two-story buildings. The area of a Group B, F, M or S building no more than two stories above grade plane shall not be limited where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.6 Group A-3 buildings of Type II construction. The area of a Group A-3 building no more than one story above grade plane, used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court of Type II construction, shall not be limited provided all of the following criteria are met:

1. The building shall not have a stage other than a platform.
2. The building shall be equipped throughout with an automatic sprinkler

system in accordance with Section 903.3.1.1.

3. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.7 Group A-3 buildings of Type III and IV construction. The area of a Group A-3 building of Type III or IV construction, with no more than one story above grade plane and used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court, shall not be limited provided all of the following criteria are met:

1. The building shall not have a stage other than a plat- form.
2. The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) of street or grade level and all exits are provided with ramps complying with Section 1012 to the street or grade level.
4. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.8 Group H-2, H-3 and H-4 occupancies. Group H-2, H- 3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F or S occupancies in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.

507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building or the area limitations for the Group H occupancies as specified in Section 506 based on the perimeter of each Group H floor area that fronts on a public way or open space.

507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the Group H occupancies as specified in Section 506.

507.8.1.1.1Liquid use, dispensing and mixing rooms. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5m²) need not be located on the outer perimeter of the building where they are in accordance with the Fire Code and NFPA 30.

507.8.1.1.2Liquid storage rooms. Liquid storage rooms having a

floor area of not more than 1,000 square feet (93 m²) need not be located on the outer perimeter where they are in accordance with the Fire Code and NFPA 30.

507.8.1.1.3 Spray paint booths. Spray paint booths that comply with the Fire Code need not be located on the outer perimeter.

507.8.2 Located on building perimeter. Except as provided for in Section 507.8.1.1, Group H occupancies shall be located on the perimeter of the building. In Group H-2 and H-3 occupancies, not less than 25 percent of the perimeter of such occupancies shall be an exterior wall.

507.8.3 Occupancy separations. Group H occupancies shall be separated from the remainder of the unlimited area building and from each other in accordance with Table 508.4.

507.8.4 Height limitations. For two-story, unlimited area buildings, Group H occupancies shall not be located more than one story above grade plane unless permitted based on the allowable height and number of stories and feet as specified in Section 504 based on the type of construction of the unlimited area building.

507.9 Unlimited mixed occupancy buildings with Group H-5. The area of a Group B, F, H-5, M or S building no more than two stories above grade plane shall not be limited where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width, provided all of the following criteria are met:

1. Buildings containing Group H-5 occupancy shall be of Type I or II construction.
2. Each area used for Group H-5 occupancy shall be separated from other occupancies as required in Sections 415.11 and 508.4.
3. Each area used for Group H-5 occupancy shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1 including modifications of Section 506.

Exception: Where the Group H-5 occupancy exceeds the maximum allowable area, the Group H- 5 shall be subdivided into areas that are separated by 2-hour fire barriers.

507.10 Aircraft paint hangar. The area of a Group H-2 air- craft paint hangar no more than one story above grade plane shall not be limited where such aircraft

paint hangar complies with the provisions of Section 412.6 and is surrounded and adjoined by public ways or yards not less in width than one and one-half times the building height.

507.11 Group E buildings. The area of a Group E building no more than one story above grade plane, of Type II, IIIA or IV construction, shall not be limited provided all of the following criteria are met:

1. Each classroom shall have not less than two means of egress, with one of the means of egress being a direct exit to the outside of the building complying with Section 1022.
2. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.12 Motion picture theaters. In buildings of Type II construction, the area of a motion picture theater located on the first story above grade plane shall not be limited where the building is provided with an automatic sprinkler system throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.13 Covered and open mall buildings and anchor buildings. The area of covered and open mall buildings and anchor buildings not exceeding three stories in height that comply with Section 402 shall not be limited.

507.14 Adjoining property. *Where referenced in section 507, an unoccupied space on an adjoining property may be included in the required open perimeter distance, provided that the adjoining property is dedicated or deeded so as to preclude, for the life of the structure, the erection of any building or structure on such space (see section 3781.02 of the Revised Code).*

SECTION 508

MIXED USE AND OCCUPANCY

508.1 General. Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.

Exceptions:

1. Occupancies separated in accordance with Section 510.
2. Where required by Table 415.6.2, areas of Group H- 1, H-2 and H-3

occupancies shall be located in a detached building or structure.

3. Uses within live/work units, complying with Section 419, are not considered separate occupancies.

508.2 Accessory occupancies. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.2 Allowable building height. The allowable height and number of stories of the building containing accessory occupancies shall be in accordance with Section 504 for the main occupancy of the building.

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for non-sprinklered buildings in Table 506.2 for each such accessory occupancy.

508.2.4 Separation of occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

508.3 Nonseparated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

508.3.1 Occupancy classification. Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of

this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area. Where nonseparated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the high-rise building.

508.3.2 Allowable building area and height. The allowable building area and height of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from other occupancies contiguous to them in accordance with the requirements of Section 420.

508.4 Separated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building.

508.4.2 Allowable building area. In each story, the building area shall be such that the sum of the ratios of the actual building area of each separated occupancy divided by the allowable building area of each separated occupancy shall not exceed 1.

508.4.3 Allowable height. Each separated occupancy shall comply with the building height limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions of Section 510 shall permit occupancies at building heights other than provided in Section 503.1.

508.4.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

508.4.4.1 Construction. Required separations shall be fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies.

SECTION 509 **INCIDENTAL USES**

509.1 General Incidental uses located within single occupancy or mixed occupancy buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy and are limited to those uses listed in Table 509.

Exception: Incidental uses within and serving a dwelling unit are not required to comply with this section.

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1 ^a , I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B ^c , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1 ^a , I-3, I-4	=	=	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	=	=	=	=	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	=	=	=	=	=	=	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	=	=	=	=	=	=	=	=	N	N	1	2	NP	NP	3	4	2	3	2	NP
B ^c , F-1, M, S-1	=	=	=	=	=	=	=	=	=	=	N	N	NP	NP	2	3	1	2	1	NP
H-1	=	=	=	=	=	=	=	=	=	=	=	=	N	NP	NP	NP	NP	NP	NP	NP
H-2	=	=	=	=	=	=	=	=	=	=	=	=	=	=	N	NP	1	NP	1	NP
H-3, H-4	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	1 ^d	NP	1	NP
H-5	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1. N = No separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.

c. See Section 406.3.4.

- d. Separation is not required between occupancies of the same classification.
- e. See Section 422.2 for ambulatory care facilities.

509.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

509.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the building area of the story in which they are located.

509.4 Separation and protection. The incidental uses listed in Table 509 shall be separated from the remainder of the building or equipped with an automatic sprinkler system, or both, in accordance with the provisions of that table.

509.4.1 Separation. Where Table 509 specifies a fire- resistance-rated separation, the incidental uses shall be separated from the remainder of the building by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both. Construction supporting 1-hour fire barriers or horizontal assemblies used for incidental use separations in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

509.4.2 Protection. Where Table 509 permits an automatic sprinkler system without a fire barrier, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.5.9.3. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.8.

TABLE 509
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
<u>Furnace room where any piece of equipment is over 400,000 Btu per hour input</u>	<u>1 hour or provide automatic sprinkler system</u>

<u>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Refrigerant machinery room</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Hydrogen fuel gas rooms, not classified as Group H</u>	<u>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</u>
<u>Incinerator rooms</u>	<u>2 hours and automatic sprinkler system</u>
<u>Paint shops, not classified as Group H, located in occupancies other than Group F</u>	<u>2 hours; or 1 hour and provide automatic sprinkler system</u>
<u>In Group E occupancies, laboratories and vocational shops not classified as Group H</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>In Group I-2 occupancies, laboratories not classified as Group H</u>	<u>1 hour and provide automatic sprinkler system</u>
<u>In ambulatory care facilities, laboratories not classified as Group H</u>	<u>1 hour and provide automatic sprinkler system</u>
<u>Laundry rooms over 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>In Group I-2, laundry rooms over 100 square feet</u>	<u>1 hour</u>
<u>Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces</u>	<u>1 hour</u>
<u>In Group I-2, physical plant maintenance shops</u>	<u>1 hour</u>
<u>In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater</u>	<u>1 hour</u>
<u>In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet</u>	<u>1 hour</u>
<u>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies</u>	<u>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</u>

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

509.4.2.1 Protection limitation. Where an automatic sprinkler system is provided in accordance with Table 509, only the space occupied by the incidental use need be equipped with such a system.

SECTION 510 **SPECIAL PROVISIONS**

510.1 General. The provisions in Sections 510.2 through 510.9 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable building heights and areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The

provisions of Sections 510.2 through 510.8 are to be considered independent and separate from each other.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 3 hours.
2. The building below the horizontal assembly is of Type IA construction.
3. Shaft, stairway, ramp and escalator enclosures through the horizontal assembly shall have not less than a 2- hour fire-resistance rating with opening protectives in accordance with Section 716.5.

Exception: Where the enclosure walls below the horizontal assembly have not less than a 3-hour fire- resistance rating with opening protectives in accordance with Section 716.5, the enclosure walls extending above the horizontal assembly shall be permitted to have a 1-hour fire-resistance rating, provided:

1. The building above the horizontal assembly is not required to be of Type I construction;
2. The enclosure connects fewer than four stories; and
3. The enclosure opening protectives above the horizontal assembly have a fire protection rating of not less than 1 hour.
4. The building or buildings above the horizontal assembly shall be permitted to have multiple Group A occupancy uses, each with an occupant load of less 300, or Group B, M, R or S occupancies.
5. The building below the horizontal assembly shall be protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum building height in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the grade plane.

510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above. A Group S-2 enclosed parking garage with not more than one story above grade plane and located below a Group S-2 open parking garage shall be classified as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate

- occupancy shall not exceed 1.
2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the fire-resistance requirements of the Group S-2 open parking garage.
 3. The height and the number of tiers of the Group S-2 open parking garage shall be limited as specified in Table 406.5.4.
 4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 open parking garage shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 open parking garage, except exit openings, shall not be required to be protected.
 5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m²) and mechanical equipment rooms incidental to the operation of the building.

510.4 Parking beneath Group R. Where a maximum one story above grade plane Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of stories to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a fire- resistance rating not less than the mixed occupancy separation required in Section 508.4.

510.5 Group R-1 and R-2 buildings of Type IIIA construction. The height limitation for buildings of Type IIIA construction in Groups R-1 and R-2 shall be increased to six stories and 75 feet (22 860 mm) where the first floor assembly above the basement has a fire-resistance rating of not less than 3 hours and the floor area is subdivided by 2-hour fire- resistance-rated fire walls into areas of not more than 3,000 square feet (279 m²).

510.6 Group R-1 and R-2 buildings of Type IIA construction. The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the lot and from lot lines, the exits are segregated in an area enclosed by a 2-hour fire-resistance-rated fire wall and the first floor assembly has a fire-resistance rating of not less than 1 ½ hours.

510.7 Open parking garage beneath Groups A, I, B, M and R. Open parking garages constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under Section 406.5. The height and area of the portion of the building above the open parking garage shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and stories, of the portion of the building above the open parking garage shall be measured from grade plane and shall include both the open parking garage and the portion of the building above the parking garage.

510.7.1 Fire separation. Fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711 between the parking occupancy and the upper occupancy shall correspond to the required fire-resistance rating prescribed in Table 508.4 for the uses involved. The type of construction shall apply to each occupancy individually, except that structural members, including main bracing within the open parking structure, which is necessary to support the upper occupancy, shall be protected with the more restrictive fire-resistance-rated assemblies of the groups involved as shown in Table 601. Means of egress for the upper occupancy shall conform to Chapter 10 and shall be separated from the parking occupancy by fire barriers having not less than a 2-hour fire-resistance rating as required by Section 706 with self-closing doors complying with Section 716 or horizontal assemblies having not less than a 2-hour fire-resistance rating as required by Section 711, with self-closing doors complying with Section 716. Means of egress from the open parking garage shall comply with Section 406.5.

510.8 Group B or M buildings with Group S-2 open parking garage above. Group B or M occupancies located below a Group S-2 open parking garage of a lesser type of construction shall be considered as a separate and distinct building from the Group S-2 open parking garage for the purpose of determining the type of construction where all of the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 2 hours.
2. The occupancies in the building below the horizontal assembly are limited to Groups B and M.
3. The occupancy above the horizontal assembly is limited to a Group S-2 open parking garage.
4. The building below the horizontal assembly is of Type IA construction.

Exception: The building below the horizontal assembly shall be permitted to be of Type IB or II construction, but not less than the type

of construction required for the Group S-2 open parking garage above, where the building below is not greater than one story in height above grade plane.

5. The height and area of the building below the horizontal assembly does not exceed the limits set forth in Section 503.
6. The height and area of the Group S-2 open parking garage does not exceed the limits set forth in Section 406.5. The height, in both feet and stories, of the Group S-2 open parking garage shall be measured from grade plane and shall include the building below the horizontal assembly.
7. Exits serving the Group S-2 open parking garage discharge directly to a street or public way and are separated from the building below the horizontal assembly by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

510.9 Multiple buildings above a horizontal assembly. Where two or more buildings are provided above the horizontal assembly separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in Section 510.2, 510.3 or 510.8, the buildings above the horizontal assembly shall be regarded as separate and distinct buildings from each other and shall comply with provisions of this code as applicable to each separate and distinct building.

Replaces: 4101:1-5-01
Effective: 11/01/2017
Five Year Review (FYR) Dates: 11/01/2022

CERTIFIED ELECTRONICALLY

Certification

05/26/2017

Date

Promulgated Under: 119.03
Statutory Authority: 3781.10(A)
Rule Amplifies: 3781.10, 3781.11, 3791.04
Prior Effective Dates: 7/1/79, 1/1/81, 7/1/82, 3/1/85, 1/1/89, 1/1/90, 9/1/92,
7/1/95, 3/1/98, 1/1/02, 3/1/05, 9/6/05, 7/1/07, 11/1/07,
11/1/11, 1/1/16