

**Proponent:** Rick Thornberry, P.E., The Code Consortium, representing the Alliance for Fire and Smoke Containment and Control (AFSC)

Delete and substitute as follows:

**TABLE 508.3.3  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A <sup>e</sup> , E		I		R <sup>d</sup>		F-2, S-2 <sup>e,d</sup> , U <sup>d</sup>		B <sup>b</sup> , F-1, M <sup>b</sup> , 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
A <sup>e</sup> , E <sup>e</sup>	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3 <sup>a</sup>
I	-	-	N	N	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
R <sup>d</sup>	-	-	-	-	N	N	1	2	1	2	NP	NP	3	NP	2	NP
F-2, S-2 <sup>e,d</sup> , U <sup>d</sup>	-	-	-	-	-	-	N	N	1	2	NP	NP	3	4	2	3 <sup>a</sup>
B <sup>b</sup> , F-1, M <sup>b</sup> , S-1	-	-	-	-	-	-	-	-	N	N	NP	NP	2	3	1	2 <sup>a</sup>
H-1	-	-	-	-	-	-	-	-	-	-	N	NP	NP	NP	NP	NP
H-2	-	-	-	-	-	-	-	-	-	-	-	-	N	NP	1	NP
H-3, H-4, H-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	NP

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

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. For Group H-5 occupancies, see Section 903.2.4.2.

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

1. Area is less than 10 percent of the floor area;
2. Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
3. Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4.

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

**TABLE 508.3.3  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)<sup>a</sup>**

USE	A-1	A-2	A-3	A-4	A-5	B <sup>b</sup>	E	F-1	F-2	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M <sup>p</sup>	R-1	R-2	R-3,R-4	S-1	S-2 <sup>c</sup>	U
A-1		2	2	2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-2 <sup>e</sup>			2	2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-3				2	2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-4					2	2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
A-5						2	2	3	2	NP	4	3	2	4	2	2	2	2	2	2	2	2	3	2	1
B <sup>b</sup>							2	3	2	NP	2	1	1	1	2	2	2	2	2	2	2	2	3	2	1
E								3	2	NP	4	3	2	3	2	2	2	2	2	2	2	2	3	2	1
F-1									3	NP	2	1	1	1	3	3	3	3	3	3	3	3	3	3	3
F-2										NP	2	1	1	1	2	2	2	2	2	2	2	2	3	2	1
H-1											NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
H-2												1	2	2	4	4	4	4	4	4	4	4	4	2	1
H-3													1	1	4	3	3	3	3	1	3	3	3	1	1
H-4														1	4	4	4	4	4	1	4	4	4	1	1
H-5															4	4	4	4	3	1	4	4	4	1	3
I-1																2	2	2	2	2	2	2	4	3	2
I-2																	2	2	2	2	2	2	3	2	1
I-3																		2	2	2	2	2	3	2	1
I-4																			2	2	2	2	3	2	1
M <sup>p</sup>																				2	2	2	3	2	1
R-1																					2	2	3	2	1
R-2																					2	2	3	2	1
R-3,R-4																						2	3	2 <sup>d</sup>	3
S-1																									3
S-2 <sup>c</sup>																									1
U																									

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

NP = Not permitted.

- a. Except for Group H and I-2 occupancies, where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the fire-resistance ratings shall be reduced by 1 hour but to not less than 1 hour and to not less than that required for the floor construction according to the type of construction.
- b. Occupancy separation need not be provided for storage areas within Groups B and M if the:
  1. Area is less than 10 percent of the floor area;
  2. Area is provided with an automatic fire-extinguishing system and is less than 3,000 square feet; or
  3. Area is less than 1,000 square feet.
- c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.
- d. See Section 406.1.4 for private garages and carports.
- e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

**Reason:** This is a follow up to Code Change G32-04/05 which was approved as modified during the last code development cycle. We are very concerned that that code change proposal was approved based on erroneous information. For example, the Committee Reason stated that there were no significant technical changes made by that Code Change Proposal. Yet it goes on to say that similar hazards may be lumped together and not separated from each other with fire resistance rated fire barriers or horizontal assemblies. This is obviously a significant technical change from the previous provisions of Section 302.3.2 Separated Uses and Table 302.3.2 Required Separation of Occupancies (Hours) in the 2003 IBC. In no case in the previous Table 302.3.2 is a fire resistance rating required to separate occupancies allowed to be less than one hour, even when a automatic sprinkler system is installed and the occupancy separation is allowed to be reduced by one hour. The Exception to Section 302.3.2 did not permit the rating to be reduced to less than one hour even where the sprinkler reduction was applied. However, the new Table 508.3.3 has virtually most of the table allowing no fire resistance ratings for the separation requirements as designated by "N" throughout the table. Thus, there is no fire resistance rated separation required between those different occupancies in Table 508.3.3 where the letter "N" is shown. This looks more to us like the nonseparated uses option allowed by Section 508.3.2. So there appears to be an overlap and potential conflict between this revised Section 508.3.3 and current Section 508.3.2.

We believe that if a designer does not wish to utilize fire resistance rated occupancy separations where the building contains mixed occupancies, then the designer should utilize the nonseparated use option of Section 508.3.2. Revising Table 508.3.3 in the manner proposed virtually renders useless the separated occupancies option in Section 508.3.3.

This also begs the question as to how to determine where the separate occupancies are and where the fire areas are that are created by these separate occupancies in order to apply Section 508.3.3. If there are no fire resistance ratings provided, there can be no fire areas and there can be no separated occupancies. Please refer to the definition in Section 702.1 for "fire area." It states the following: "The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls, or fire-resistance rated horizontal assemblies of a building." The only time a fire area is created by Table 508.3.3 and Section 508.3.3 is if there is an actual number provided in the table to indicate the hourly rating. This is further exacerbated by Footnote c which allows a one hour reduction for Group S-2 Parking Garages used for private or pleasure vehicles. For the case of separating such occupancies from Groups B, F-1, M, and S-1 occupancies which are protected throughout with an automatic sprinkler system, the separation rating goes to "0". Again, there would be no fire separation and thus no fire area created. It should also be noted that such a reduction was not allowed by the previous table.

We are also concerned that there is no link between Section 508.3.3 Separated Occupancies and Section 508.3.3.4 Separation regarding fire areas. Section 508.3.3 talks about fire areas but Section 302.3.2.2 does not. One has to make the assumption that when the occupancies are separated, they have been separated into fire areas by looking at the definition for "fire area". The Committee Reason also stated that the new provisions provide some good clarifications and simplification for separated occupancies. We totally disagree. We find this section more confusing and the table more complex than the previous Table 302.3.2 which is very straight forward and simple to understand. Code Change Proposal G32-04/05 as modified represents a significant reduction in the fire resistance ratings required for separated uses when the separated use option of Section 508.3.3 is used. It is totally unworkable and unenforceable and will result in the misapplication of occupancy separation requirements and create confusion between separated and nonseparated use options currently provided for in Section 508.3 of the 2006 IBC.

To help address this problem and fix what is apparently a broken code section, we have proposed to delete the current Table 508.3.3 in its entirety and substitute the previous Table 302.3.2 which was replaced in Code Change G32-04/05. We were certainly able to utilize the previous Table 302.3.2 for the three plus years it existed in the 2000 and 2003 editions of the IBC. Furthermore, the predecessor table to that table was taken directly from the BOCA National Building Code as was the entire concept of the nonseparated and separated occupancies in mixed occupancy buildings. Apparently it had worked quite well under the BOCA code system so we see no reason why it can't continue to work just as well under the IBC. Certainly, those occupancy separations when used in the separated occupancies option have evidently stood the test of time.

A review of the tabular summary included with this code change identifies 30 technical changes to the hourly fire-resistance ratings in the previous Table 302.3.2, not to mention several other equally significant changes proposed to water down the concept of separated uses. It could be argued that a number of these separated use combinations are unrealistic. However, an equal number, though, are very real and represent an unjustified reduction from current code requirements for fire-resistant construction. To unilaterally propose that a mixed use office and moderate hazard warehouse be reduced from the current 3-hour minimum fire separation to a zero separation is unjustifiable. Office employees have an expectation to be protected from the dissimilar risk posed to them by a warehousing operation with moderate to severe fuel loading. Likewise, no rationale has been supplied for the removal of any minimum fire separation between a moderate hazard factory generally with a much higher risk of ignition sources, and either those same office employees in an adjacent portion of the building or large quantities of highly combustible fuel loads associated with either the raw materials or finished products. In fact, no justification has been given for any of the rating reductions.

Another basic flaw in the approach taken by Code Change G32-04/05 is the seemingly innocent deletion of the exception to previous Section 302.3.2.1. That exception, which the proponent of G32-04/05 would lead you to believe, was simply inserted into the proposed new Table 508.3.3. But that is not the case which is obvious by looking at the numbers, or lack thereof, in the table. That exception contained two long-standing provisions that: 1) any reduction for sprinklers never be permitted to be reduced below the floor rating for the type of construction; and 2) the 1-hour sprinkler reduction never result in less than a one hour separation.

Finally, there is absolutely no good argument for removing all passive fire protection between H-3 and H-4 uses. Even though the IBC recognizes that these do not normally include the most flammable or most explosive of materials, the code requires a 1-hour separation so that a fire involving flammable solids of water-reactive materials does not adversely impact an immediately adjacent stockpile of highly toxic H-4 substances.

Separated Occupancy Groups	Required Occupancy Separation		Net Loss in Fire-Resistance (Hours)
	2003 IBC	2006 IBC	
A-1/all other A	2	0	-2
A-1/E	2	0	-2
A-1/F-1 or S-1	3	2	-1
A-1/F-2 or S-2	2	1	-1
A-2/all other A	2	0	-2
A-2/E	2	0	-2
A-2/F-1 or S-1	3	2	-1
A-2/F-2 or S-2	2	1	-1
A-3/all other A	2	0	-2
A-3/F-1 or S-1	3	2	-1
A-3/F-2 or S-2	2	1	-1
A-4/all other A	2	0	-2
A-4/E	2	0	-2
A-4/F-1 or S-1	3	2	-1
A-4/F-2 or S-2	2	1	-1
A-5/E	2	0	-2
A-5/F-1 or S-1	3	2	-1
A-5/F-2 or S-2	2	1	-1
B/F-1 or S-1	3	0	-3
B/M	2	0	-2
E/F-1 or S-1	3	2	-1
E/F-2 or S-2	2	1 (or zero)	-1
F-1/F-2 OR S-2	3	2	-1
F-1/S-1	3	0	-3
I-1/all other I	2	0	-2
I-1/F-1 OR S-2	3	2	-1
I-1/S-1	4	2	-2
I-2/all other I	2	0	-2
I-2/F-1 or S-1	3	2	-1
I-3/all other I	2	0	-2
I-3/F-1 or S-1	3	2	-1
I-4/all other I	2	0	-2
I-4/F-1 or S-1	3	2	-1
R/F-1 or S-1	3	2	-1

**Cost Impact:** The code change proposal will increase the cost of construction.

Public Hearing: Committee: AS AM D  
Assembly: ASF AMF DF

## G149-06/07

### 508.1 through 508.3.1.3

**Proponent:** Sarah A. Rice, Schirmer Engineering Corporation, Deerfield, IL

#### Revise as follows:

**508.1 General.** Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building or portion thereof contains two or more occupancies or uses, the building or portion thereof shall comply with the applicable provisions of ~~this section~~, Section 508.2, 508.3 or 508.4, or a combination of these sections.

#### Exceptions:

1. Occupancies separated in accordance with Section 509.
2. Where required by Table 415.3.2, areas of Group H-1, H-2 or H-3 occupancies shall be located in a separate and detached building or structure.

**508.2 Ancillary use areas ~~Incidental uses~~.** Ancillary use areas are those occupancies that are subordinate or auxiliary to the main occupancy of the building or portion thereof. Ancillary ~~Incidental~~ use areas shall comply with the provisions of Section 508.2.1 through 508.2.6.3. ~~this section~~.

#### Exceptions:

1. Ancillary ~~Incidental~~ use areas within and serving a dwelling unit, are not required to comply with this section.
2. Accessory assembly areas having a floor area less than 750 square feet (69.7 m<sup>2</sup>) are not considered separate occupancies.