



STATE OF WASHINGTON
STATE BUILDING CODE COUNCIL

1. State Building Code to be Amended:

- | | |
|---|---|
| <input checked="" type="checkbox"/> International Building Code | <input type="checkbox"/> State Energy Code |
| <input type="checkbox"/> ICC ANSI A117.1 Accessibility Code | <input type="checkbox"/> International Mechanical Code |
| <input type="checkbox"/> International Existing Building Code | <input type="checkbox"/> International Fuel Gas Code |
| <input type="checkbox"/> International Residential Code | <input type="checkbox"/> NFPA 54 National Fuel Gas Code |
| <input type="checkbox"/> International Fire Code | <input type="checkbox"/> NFPA 58 Liquefied Petroleum Gas Code |
| <input type="checkbox"/> Uniform Plumbing Code | <input type="checkbox"/> Wildland Urban Interface Code |

Section(s):
IBC Table 1604.5

Title:
Risk Category for I-4 Occupancies

2. Proponent Name (Specific local government, organization or individual):

Proponent: City of Bellevue Development Services Department

Title:

Date: October 30, 2017

3. Designated Contact Person:

Name: Julius Carreon, PE, SE

Title: Structural Plan Examiner

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4. **Proposed Code Amendment.** Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code additional pages may be attached. (Examples on the SBCC [website](#))

Code(s) IBC Section(s) Table 1604.5

Enforceable code language must be used; see an example [by clicking here](#). Amend section to read as follows:

**TABLE 1604.5
RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES**

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing Group E occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000.^a • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: <ul style="list-style-type: none"> Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and Are sufficient to pose a threat to the public if released.^b
IV	Buildings and other structures designated as essential facilities, including but not limited to: <ul style="list-style-type: none"> • Group I-2 occupancies having surgery or emergency treatment facilities. • Fire, rescue, ambulance and police stations and emergency vehicle garages. • Designated earthquake, hurricane or other emergency shelters. • Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. • Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures. • Buildings and other structures containing quantities of highly toxic materials that: <ul style="list-style-type: none"> Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and Are sufficient to pose a threat to the public if released.^b • Aviation control towers, air traffic control centers and emergency aircraft hangars. • Buildings and other structures having critical national defense functions. • Water storage facilities and pump structures required to maintain water pressure for fire suppression.

5. Briefly explain your proposed amendment, including the purpose, benefits and problems addressed. Specifically note any impacts or benefits to business, and specify construction types, industries and services that would be affected. Finally, please note any potential impact on enforcement such as special reporting requirements or additional inspections required.

Reason statement:

The 2015 edition of the IBC has been changed to modify the educational and daycare uses for risk category III in Table 1604.5 to be occupancy based rather than “use” based (see S83-12 attached) as it was in the 2012 IBC. Buildings containing elementary school, secondary school or day care facilities has been changed to Group E occupancies. However, day care facilities are now classified in both Group E and Group I-4 occupancies. I-4 occupancies are not currently listed in Table 1604.5 which means that occupants attributed to I-4 will be classified under risk category II (Buildings and other structures except those listed in Risk Categories I, III and IV). This occurs even though the I-4 occupancy has a higher relative hazard compared to group E (see IEBC Table 1012.4 attached). The ICC Structural Committee that approved S83-12 may not have realized the loophole that was created when they supported this code change. For the safety of children who will be occupying these facilities, we suggest an emergency rule be approved to include I-4 in Table 1604.5 for Risk Category III as shown above.

S83-12
Table 1604.5

Proponent: William W. Stewart, FAIA, representing self (codedoc@sbcglobal.net)

Revise as follows:

TABLE 1604.5
RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing elementary school, secondary school or day care facilities <u>Group E occupancies</u> with an occupant load greater than 250. • Buildings and other structures containing adult education facilities, such as colleges and universities, <u>educational occupancies for students above the 12th grade</u> with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000^a. • Power-generating stations, water treatment facilities for potable water, waste water treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and Are sufficient to pose a threat to the public if released ^b.

(Portions of table not shown remain unchanged)

Reason: Consistency. The laundry list in the second bullet is exactly the same as the entire list of items that make up E Occupancies in 305. This just substitutes a defined term for a laundry list. My change has the added advantage of making it clearer that the 250 occupant load trigger applies to all, not just day care facilities.

The change in bullet 3 uses the words from 304. Current text says the same thing as in 304 but uses different words..

Additionally it relieves the code from deciding which college freshmen are adults.

This change also makes it clear that trade schools are covered .

Cost Impact: The code change proposal will not increase the cost of construction.

1012.4 Means of egress, general.

Hazard categories in regard to life safety and means of egress shall be in accordance with Table 1012.4.

**TABLE 1012.4
MEANS OF EGRESS HAZARD CATEGORIES**

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U

Below is an example of how designers are using this loophole in the 2015 code. The combination of E and I-4 occupancies does not result in the building being assigned to higher risk category because the total number of E occupants in the building does not exceed 250 which is the threshold listed in Table 1604.5 for Risk Category III. In this example, a seismic retrofit would not be required for this daycare facility but it would be if I-4 were added to Table 1604.5. Adding I-4 to the Table will correct an unintended oversight and create safer structures for our most vulnerable building occupants.

Room	Room Number	Occupancy Classification	Area (SF)	Occupant Load Factor (SF/Person)		Total Occupants	Area (SF)	Occupant Load Factor (SF/Person)		Calculated Occupancy (Maximum)	WSDCEL = WASHINGTON STATE DEPARTMENT OF EARLY LEARNING
				(IBC TABLE 1004.1.2)	(IBC 1004)			(WSDCEL WAC 170-295-0080)	(WSDCEL)		
FIRST FLOOR											
Reception	100	B Accessory to I-4	290	100	3	290					Office Use
Carseat Storage	103	Accessory to I-4	99	300	1	99					Accessory Storage Area
Admin. Office	102	B Accessory to I-4	264	100	3	264					Office Use
Conference Room	101	B Accessory to I-4	121	100	2	121					Office and Public Use
Infant Room	109	I-4	472	35	14	400	50	8			Daycare Room
Infant Room	110	I-4	473	35	14	400	50	8			Daycare Room
Warming Kitchen	111	Accessory to I-4	240	200	2	240					Food Warming Kitchen
Toddler Room	107	I-4	506	35	15	475	35	13			Daycare Room
Toddler Room	115	I-4	523	35	15	497	35	14			Daycare Room
Toddler Room	113	I-4	518	35	15	492	35	14			Daycare Room
Early Preschool Room	121	E	726	20	37	710	35	20			Classroom
Early Preschool Room	123	E	522	20	27	506	35	14			Classroom
Laundry	116	Accessory to I-4	67	200	1	67					Accessory Storage Area
Adult Restroom	117	Accessory to I-4	58	100	1	58					Restroom
Fire Alarm Room	106	Accessory to I-4	81	100	1	81					Building Equipment Room
Elevator Machine Room	119	Accessory to I-4	36	100	1	36					Elevator Machine Equipment Room
Fire Sprinkler Room	118	Accessory to I-4	10	100	1	10					Building Equipment Room
Electrical Room	104	Accessory to I-4	23	100	1	23					Building Electrical Room
Circulation		I-4	1059	35	31	1059					Circulation Space
TOTAL			4821		147	4561		91			
SECOND FLOOR											
Storage	202	Accessory to E	28	300	1	28					Accessory Storage Area
Early Preschool Room	205	E	729	20	37	713	35	20			Classroom
Resource Room	203	B Accessory to E	83	100	1	83					Accessory Storage Area
Staff Room	201	B Accessory to E	187	100	2	187					Office Use
Early Preschool Room	207	E	720	20	36	704	35	20			Classroom
Pre-Kindergarten Room	210	E	721	20	36	705	35	20			Classroom
Pre-Kindergarten Room	214	E	721	20	36	705	35	20			Classroom
Preschool Room	217	E	718	20	36	702	35	20			Classroom
Preschool Room	220	E	718	20	36	702	35	20			Classroom
IT Room	213	B Accessory to E	25	100	1	25					Accessory Storage Area
Adult Restroom	204	Accessory to E	51	100	1	51					Restroom
Shared Restroom	206	Accessory to E	100	100	1	100					Restroom
Child Restrooms	211, 212, 215, 216	Accessory to E	191	100 per restroom	4	191					Restroom
Child Restrooms	218, 219, 221, 222	Accessory to E	191	100 per restroom	4	191					Restroom
Circulation		Accessory to E	715	100	8						Circulation Space
TOTAL			4650		241	4554		120			
			Maximum Occupancy				Maximum Occupancy				
BUILDING TOTAL			9471	389		9115	211				
E OCCUPANCY NOTE: TOTAL 2ND FLOOR E OCCUPANCY IS 155 (120 CHILDREN + REMAINDER OF FLOOR/TEACHERS 35) PER WSDCEL CALCULATION COLUMN + 1ST FLOOR E OCCUPANCY 38 (34 CHILDREN + 4 TEACHERS) = 193 TOTAL OCCUPANTS < 250 OCCUPANTS IN AN E OCCUPANCY CATEGORY. PROJECT IS IN RISK CATEGORY II											

6. Specify what criteria this proposal meets. You may select more than one.

- The amendment is needed to address a critical life/safety need.
- The amendment is needed to address a specific state policy or statute.
- The amendment is needed for consistency with state or federal regulations.
- The amendment is needed to address a unique character of the state.
- The amendment corrects errors and omissions.

7. Is there an economic impact: Yes No

Explain:

Adding Group I-4 occupancies to Risk Category III in IBC Table 1604.5 may result in an increase to the environmental loading demands (seismic, wind, and snow) to buildings with day care facilities by as much as 25%. However, as stated above, the proposed change is intended to correct an oversight in the 2015 edition of the IBC when the ICC Structural Committee approved the S83-12 proposal. This proposal has no economic impact when compared to the previous code cycle (2012 edition of the IBC).

If there is an economic impact, use the Table below to estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. If preferred, you may submit an alternate cost benefit analysis.

Building Type	Construction ¹		Enforcement ²		Operations & Maintenance ³	
	Costs	Benefits ⁴	Costs	Benefits ⁴	Costs	Benefits ⁴
Residential						
Single family						
Multi-family						
Commercial/Retail						
Industrial						
Institutional						

Please send your completed proposal to: sbcc@ga.wa.gov

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.

¹ \$ / square foot of floor area or other cost. Attach data. **Construction** costs are costs prior to occupancy, and include both design and direct construction costs that impact the total cost of the construction to the owner/consumer.

² Cost per project plan. Attach data. **Enforcement** costs include governmental review of plans, field inspection, and other action required for enforcement.

³ Cost to building owner/tenants over the life of the project.

⁴ Measurable benefit.