

**TOPIC: Office Space Occupant Load Calculation  
OSSC/10/#10**

**CODE: Oregon Structural Specialty Code: 2019 Edition**

**APPROVED:** \_\_\_\_\_, 2020 \_\_\_\_\_, Director

**REFERENCE: Oregon Structural Specialty Code  
1004 Means of Egress - Occupant Load**

**SUBJECT: How to Calculate Occupant Load for Office Spaces**

**QUESTION:** How does the Bureau of Development Services (BDS) calculate the occupant load for office spaces that include nontraditional work areas like lounges and huddle rooms for purposes of egress, plumbing fixture count and seismic triggers?

**RESPONSE:** The occupant load calculation depends on how the space is used and whether it is simultaneous or non-simultaneous use. BDS will calculate the occupant load of a specific use based on its function for purposes of egress, fixture counts, and seismic triggers.

**A. Scope**

This Code Guide applies to new construction, areas within existing buildings that are being altered, and areas within existing buildings undergoing a change of occupancy or use.

**B. Definitions**

1. **Design Occupant Load:** The total number of people who could occupy a building or portion thereof at any one time.
2. **Occupant Load Factor (OLF):** The area assigned to an individual occupant based on how the occupant uses the area in question. The code prescribed values are based on studies of the number of occupants in typical buildings and are intended to reflect a conservative “worst case” scenario, rather than the average occupant load of a space.
3. **Non-simultaneous Use Areas:** An area that is occupied by the same people but at different times. For example, an employee could not be in the employee breakroom and at their desk at the same time; they would either be at their desk or in the breakroom.

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4. **Flexible Workspaces:** Flexible workspaces are non-simultaneous use areas in an office that allow employees to work or gather without adding to the total occupant load of the area. Examples include, but are not limited to, focus rooms, huddle rooms, collaboration rooms, small conference rooms, common seating areas, conference tables in open office areas, and other areas that allow occupants the flexibility to work either individually or in groups.
5. **Concentrated Office Spaces:** Concentrated office spaces include call centers, trading floors, electronic data processing centers, and similar business use areas with a higher density of occupants than would normally be expected in a typical office environment.

### C. OSSC Section 1004 – Occupant Load

In areas without fixed seating, the occupant load is calculated at the rate of one occupant per unit of area as prescribed in Table 1004.5. When an intended function is not listed in Table 1004.5, the building official may establish a function that most nearly resembles the intended function.

Table 1004.5 identifies an occupant load factor (OLF) of 150 sf per occupant for general office uses and 50 sf per occupant for concentrated office uses. Unconcentrated assembly areas without fixed seats are assigned an OLF of 15 sf per person.

### D. Occupant Load Calculations for Egress

1. For offices, BDS will use a gross OLF of 1:150 for the full square footage within the exterior walls, exclusive of vent shafts and courts.
2. Flexible workspaces, conference rooms, and breakrooms larger than 250 sf will be subtracted from the gross square footage and calculated using an OLF of 1:15.
3. Where multiple seating areas, such as those described in D.2 above, are adjacent to one another, the area of each room will be treated as an independent space when separated by full height partitions compliant with the construction required for the building. Openings in the partitions separating the rooms shall be limited to a maximum area of 49% of the common wall area. If the common wall is 50% or more open, the aggregate area of the two spaces shall be used for determining whether the space is larger than 250 sf.
4. Corridors primarily serving the assembly spaces described in paragraph D.2 above may be excluded from the gross square footage and assigned a design occupant load of zero.
5. Storage rooms larger than 250 sf may be subtracted from the gross square footage and calculated using an OLF of 1:300.
6. BDS will use a gross OLF of 1:50 for concentrated office spaces.

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7. For purposes of egress, the occupant load of an occupied roof will be calculated at 1:15 and added to the total occupant load of the floor.

### E. Occupant Load Calculations for Plumbing Fixtures and Seismic Retrofit Triggers

1. Similar to the calculation for egress occupant load, BDS will use a gross OLF of 1:150 for the full square footage within the exterior walls of office buildings, exclusive of vent shafts and courts.
2. However, for purposes of determining the required number of plumbing fixtures in OSSC 2902.1 and legal building occupancy for seismic retrofit triggers in Portland City Code Title 24 Chapter 24.85, flexible workspaces, conference rooms, and breakrooms *larger than 750 sf* will be subtracted from the gross square footage and calculated using an OLF of 1:15.
3. Where multiple seating areas, such as those described in E.2 above, are adjacent to one another, the area of each room will be treated as an independent space when separated by full height partitions compliant with the construction required for the building. Openings in the partitions separating the rooms shall be limited to a maximum area of 49% of the common wall area. If the common wall is 50% or more open, the aggregate area of the two spaces shall be used for determining whether the space is larger than 750 sf.
4. For purposes of plumbing fixtures and seismic retrofit triggers, the occupant load of an occupied roof that is less than 750 sf, used only by the occupants of the office tenant, and accessed only from the tenant space will be zero.
5. For the purpose of seismic triggers and comparison of existing or proposed occupancy against the legal building occupancy as of October 1, 2004 (the “2004 Baseline”), where 1:150 OLF is used to determine existing or proposed occupant load calculations, the same 1:150 OLF shall be used to calculate the occupant load for existing office areas within the building for the legal building occupancy as of October 1, 2004. Spaces permitted as conference rooms or breakrooms before 2004 may be calculated at 1:15 OLF. The same method for calculating occupant load shall be applied to the 2004 Baseline occupant load calculation and the cumulative occupant load calculation. For example, if an architect chooses to use the non-simultaneous calculations outlined in this code guide for the new occupant load of a space, the same method must be applied for the building’s 2004 Baseline occupant load.
6. Per OSSC 1004.5.1, the occupant load is permitted to be increased provided all other requirements of the code are met for the modified number. Therefore, it is permitted to keep the 1:100 OLF for existing general office spaces in the 2004 Baseline calculation if all new general office areas in the building are also assigned an occupant load based on the 1:100 OLF.

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