

Loads for reinforced concrete structures

Loads can be divided into three general categories:

Dead Loads: Dead loads are those that are **Constant in magnitude** and **Fixed in location** throughout the lifetime of the structure, such as: floor fill, floor finish, and plastered ceiling for buildings and wearing surface, sidewalks, and curbing for bridges.

Live Loads: Live loads are those that are either fully or partially in place or not present at all, may also change in location; the minimum live loads for which the floors and roof of a building should be designed are usually specified in building code that governs at the site of construction

Environmental Loads: Environmental Loads consist of wind, earthquake, and snow loads.

Example:

Some Typical Uniformly Distributed Live Loads

Lobbies of assembly areas	100 psf	Classrooms in schools	40 psf
Dance hall and ballrooms	100 psf	Upper-floor corridors in schools	80 psf
Library reading rooms	60 psf	Stairs and exitways	100 psf
Library stack rooms	150 psf	Heavy storage warehouse	250 psf
Light manufacturing	125 psf	Retail stores – first floor	100 psf
Offices in office buildings	50 psf	Retail stores – upper floors	75 psf
Residential dwelling areas	40 psf	Walkways and elevated platforms	60 psf

psf = pounds per square foot

²² American Society of Civil Engineers, 2010, *Minimum Design Loads for Buildings and Other Structures*, ASCE 7-10 (Reston, VA: American Society of Civil Engineers), pp. 17–19.

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_0 , AND MINIMUM CONCENTRATED LIVE LOADS

Occupancy or Use	Uniform psf (kN/m ²)	Conc. lbs (kN)
Apartments (see residential)		
Access floor systems		
Office use	50 (2.4)	2000 (8.9)
Computer use	100 (4.79)	2000 (8.9)
Armories and drill rooms	150 (7.18)	
Assembly areas and theaters		
Fixed seats (fastened to floor)	60 (2.87)	
Lobbies	100 (4.79)	
Movable seats	100 (4.79)	
Platforms (assembly)	100 (4.79)	
Stage floors	150 (7.18)	