



Design Live Loads for Residential Floors

U.S. building codes specify a uniform live load of 40 pounds per square foot (psf) for most residential floor designs. This load is intended to account for the large number of loads that can occur in a residence. In reality, these loads do not typically take the form of uniform loads. They generally consist of furniture, appliances and a myriad of other furnishings that actually induce individual point loads. Since it would be nearly impossible to design for every individual load in a residence, the building codes specify a uniformly distributed live load. This approach has proven to be very successful in providing structural members with enough capacity to support these loads.

The International Residential Code (IRC) allows the reduction of the uniform live load in residential sleeping rooms to 30 psf. It is Boise Cascade EWP Engineering's recommendation that 40 psf live load should be used in these residential areas. The 30 psf load may be exceeded with whirlpool bathtubs, waterbeds, etc. The 40 psf load is typically adequate to cover these loads. If a whirlpool filled with water or any other object weighs more than the 40 psf uniform load placed over its footprint, the floor joists or beams should be designed for the heavier load.

For further information on design loads, please contact Boise Cascade EWP Engineering at 800.232.0788.