

$$R_2 = 1.2 - 0.05 F \text{ for } 4 < F < 12 \quad (\text{Equation 16-30})$$

$$R_2 = 0.6 \text{ for } F \geq 12 \quad (\text{Equation 16-31})$$

where:

$F$  = For a sloped roof, the number of inches of rise per foot (for SI:  $F = 0.12 \times \text{slope}$ , with slope expressed as a percentage), or for an arch or dome, the rise-to-span ratio multiplied by 32.

**1607.11.2.2 Special-purpose roofs.** Roofs used for promenade purposes, roof gardens, assembly purposes or other special purposes, and marquees, shall be designed for a minimum live load,  $L_o$ , as specified in Table 1607.1. Such live loads are permitted to be reduced in accordance with Section 1607.9. Live loads of 100 psf (4.79 kN/m<sup>2</sup>) or more at areas of roofs classified as Group A occupancies shall not be reduced.

**1607.11.3 Landscaped roofs.** Where roofs are to be landscaped, the uniform design live load in the landscaped area shall be 20 psf (0.958 kN/m<sup>2</sup>). The weight of the landscaping materials shall be considered as dead load and shall be computed on the basis of saturation of the soil.

**1607.11.4 Awnings and canopies.** Awnings and canopies shall be designed for uniform live loads as required in Table 1607.1 as well as for wind loads as specified in Sections 1608 and 1609.

**1607.12 Crane loads.** The crane live load shall be the rated capacity of the crane. Design loads for the runway beams, including connections and support brackets, of moving bridge cranes and monorail cranes shall include the maximum wheel loads of the crane and the vertical impact, lateral and longitudinal forces induced by the moving crane.

**1607.12.1 Maximum wheel load.** The maximum wheel loads shall be the wheel loads produced by the weight of the bridge, as applicable, plus the sum of the rated capacity and the weight of the trolley with the trolley positioned on its runway at the location where the resulting load effect is maximum.

**1607.12.2 Vertical impact force.** The maximum wheel loads of the crane shall be increased by the percentages shown below to determine the induced vertical impact or vibration force:

|   |            |
|---|------------|
| Monorail cranes (powered)   | 25 percent |
| Cab-operated or remotely operated bridge cranes (powered)                 | 25 percent |
| Pendant-operated bridge cranes (powered)                                  | 10 percent |
| Bridge cranes or monorail cranes with hand-gear bridge, trolley and hoist | 0 percent  |