lower roof for l_u in Fig. 7-9 and using three-quarters of h_d as determined from Fig. 7-9 as the drift height. The larger of these two heights shall be used in design. If this height is equal to or less than h_c, the drift width, w, shall equal $4h_d$ and the drift height shall equal h_d. If this height exceeds h_c, the drift width, w, shall equal $4h_d^2/h_c$ and the drift height shall equal h_c. However, the drift width, w, shall not be greater than $8h_c$. If the drift width, w, exceeds the width of the lower roof, the drift shall be truncated at the far edge of the roof, not reduced to zero there. The maximum intensity of the drift surcharge load, p_d, equals $h_d\gamma$ where snow density, γ, is defined in Eq. 7.7-1:

$$\gamma = 0.13p_g + 14 \text{ but not more than } 30 \text{ pcf} \quad (7.7\text{-}1)$$

(in SI: $\gamma = 0.426p_g + 2.2$, but not more than 4.7 kN/m^3)

This density shall also be used to determine h_b by dividing p_s by γ (in SI: also multiply by 102 to get the depth in m).

7.7.2 Adjacent Structures

If the horizontal separation distance between adjacent structures, s, is less than 20 ft (6.1 m) and less than six times the vertical separation distance ($s < 6h$), then the requirements for the leeward drift of Section 7.7.1 shall be used to determine the drift load on the lower structure. The height of the snow drift shall be the smaller of h_d, based upon the length of the adjacent higher structure, and $(6h - s)/6$. The horizontal extent of the drift shall be the smaller of $6h_d$ or $(6h - s)$.

For windward drifts, the requirements of Section 7.7.1 shall be used. The resulting drift is permitted to be truncated.

7.8 ROOF PROJECTIONS AND PARAPETS

The method in Section 7.7.1 shall be used to calculate drift loads on all sides of roof projections and at parapet walls. The height of such drifts shall be taken as three-quarters the drift height from Fig. 7-9 (i.e., $0.75h_d$). For parapet walls, l_u shall be taken equal to the length of the roof upwind of the wall. For roof projections, l_u shall be taken equal to the greater of the length of the roof upwind or downwind of the projection. If the side of a roof projection is less than 15 ft (4.6 m) long, a drift load is not required to be applied to that side.

7.9 SLIDING SNOW

The load caused by snow sliding off a sloped roof onto a lower roof shall be determined for slippery upper roofs with slopes greater than ¼ on 12, and for other (i.e., nonslippery) upper roofs with slopes greater than 2 on 12. The total sliding load per unit length of eave shall be $0.4p_fW$, where W is the horizontal distance from the eave to ridge for the sloped upper roof. The sliding load shall be distributed uniformly on the lower roof over a distance of 15 ft (4.6 m) from the upper roof eave. If the width of the lower roof is less than 15 ft (4.6 m), the sliding load shall be reduced proportionally.

The sliding snow load shall not be further reduced unless a portion of the snow on the upper roof is blocked from sliding onto the lower roof by snow already on the lower roof.

For separated structures, sliding loads shall be considered when $h/s > 1$ and $s < 15$ ft (4.6 m). The horizontal extent of the sliding load on the lower roof shall be $15 - s$ with s in feet ($4.6 - s$ with s in meters), and the load per unit length shall be $0.4\,p_fW\,(15 - s)/15$ with s in feet ($0.4p_fW\,(4.6 - s)/4.6$ with s in meters).

Sliding loads shall be superimposed on the balanced snow load and need not be used in combination with drift, unbalanced, partial, or rain-on-snow loads.

7.10 RAIN-ON-SNOW SURCHARGE LOAD

For locations where p_g is 20 lb/ft^2 (0.96 kN/m^2) or less, but not zero, all roofs with slopes (in degrees) less than $W/50$ with W in ft (in SI: $W/15.2$ with W in m) shall include a 5 lb/ft^2 (0.24 kN/m^2) rain-on-snow surcharge load. This additional load applies only to the sloped roof (balanced) load case and need not be used in combination with drift, sliding, unbalanced, minimum, or partial loads.

7.11 PONDING INSTABILITY

Roofs shall be designed to preclude ponding instability. For roofs with a slope less than ¼ in./ft (1.19°) and roofs where water can be impounded, roof deflections caused by full snow loads shall be evaluated when determining the likelihood of ponding instability (see Section 8.4).

7.12 EXISTING ROOFS

Existing roofs shall be evaluated for increased snow loads caused by additions or alterations. Owners or agents for owners of an existing lower roof shall be advised of the potential for increased snow loads where a higher roof is constructed within 20 ft (6.1 m). See footnote to Table 7-2 and Section 7.7.2.