

WATER CARRY-OVER

Water carry-over (also called condensate blow-off) is the situation where the condensation that has formed on the coil becomes separated from the coil finned surface and becomes airborne. With luck, it falls into the drain pan-but it's better to not take the chance in the first place!

Factors that increase the odds that carry-over will occur:

- ◇ High face velocity
- ◇ Large % of outside air
- ◇ Large latent load (low leaving air temp required)
- ◇ Higher fin height
- ◇ More dense fin spacing
- ◇ Use of a protective coating
- ◇ Incomplete blank-off around coil (allowing air to pass through header area, return bend area, or top/bottom of coil)

Optimizing Coil Size

Because of these varying factors, there is no perfect guideline for optimizing coil size (keeping the size minimal but not allowing blow-off). However, the rules of thumb that are a good starting point include:

- ◇ For return air (80/67 design air temperature) – maximum 550 ft/min face velocity.
- ◇ For outside air (95/75 design air temperature) – maximum 450 ft/min face velocity.

Drain Pans

For designing drain pans, with optimum conditions you only need a drain pan that extends 6" beyond the leaving air side of the coil. However, as a rule it is prudent to design the drain pan so that it extends a minimum of 12 inches beyond the coil. And keep in mind that less than optimum conditions will require considerably longer airway lengths for drain pans. (When airway length is restricted but condensate blow-off is a concern, the application of moisture eliminators should be considered).