



Icing In Walk-In Freezers

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There are two typical icing conditions in a freezer.

Both can be eliminated by finding and correcting the root cause.

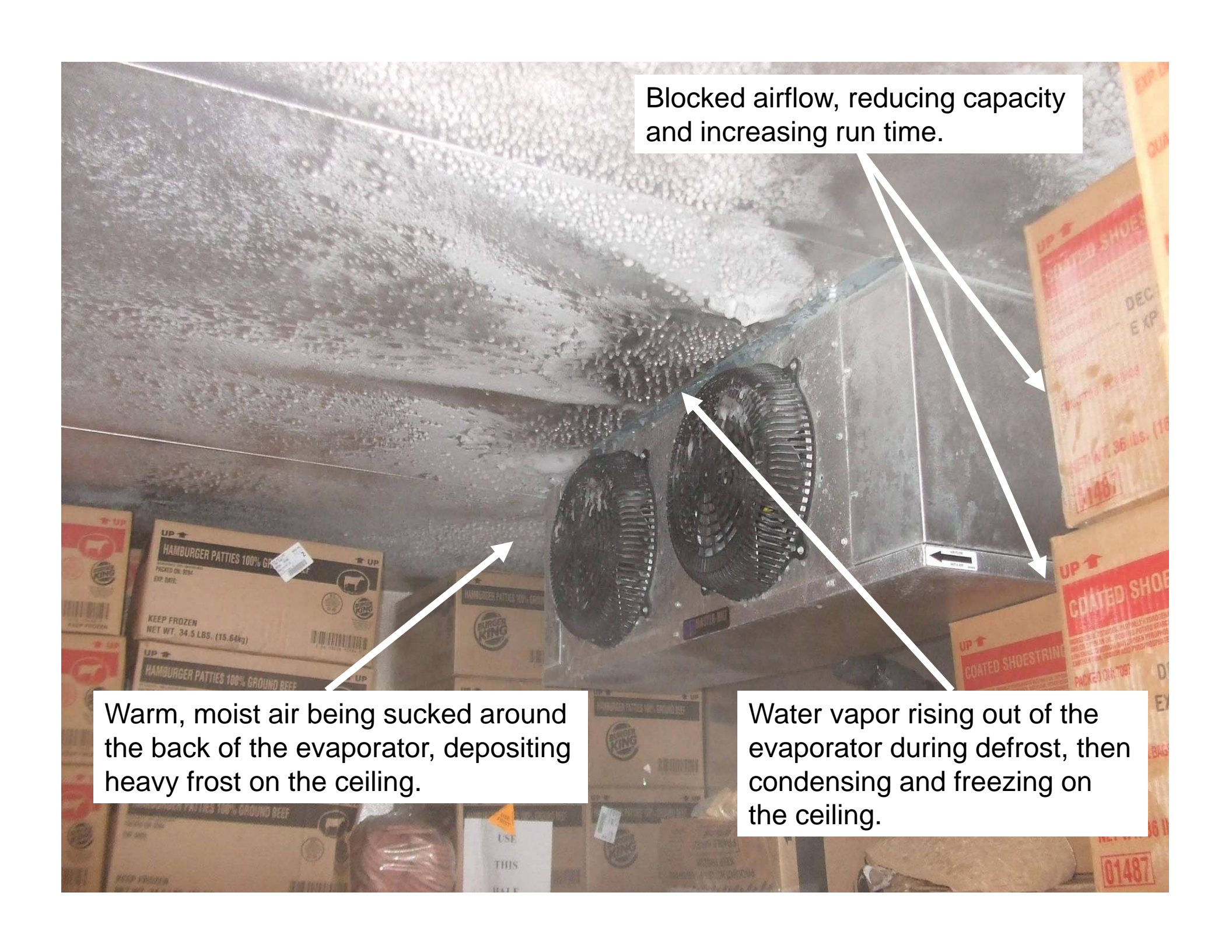


Frost or snow ice is caused by warm, moist air infiltration. It forms when water goes directly from a vapor to a solid by deposition. This is normally due to a walk-in door which is not sealing properly or air leaks at penetrations for conduit or piping. Adjustments or a new gasket, hinge or latch should solve the door leak problem. If doors are left open for extended periods of time, a strip curtain should be installed. All penetrations need to be properly sealed.



Hard, clear ice forms from water vapor coming out of the evaporator during defrost cycles. It forms when water vapor rises out of the evaporator, condenses to liquid droplets on the fan blades, fan guard and ceiling, then freezes to solid ice. This can be due to incomplete defrosts or poor drainage. If the defrost timer is set for too short a time, the cycle will terminate on time instead of temperature. Less frequently, the fan delay switch, defrost termination switch or heaters could be faulty. All drain heaters must be working properly so the condensate drains completely.

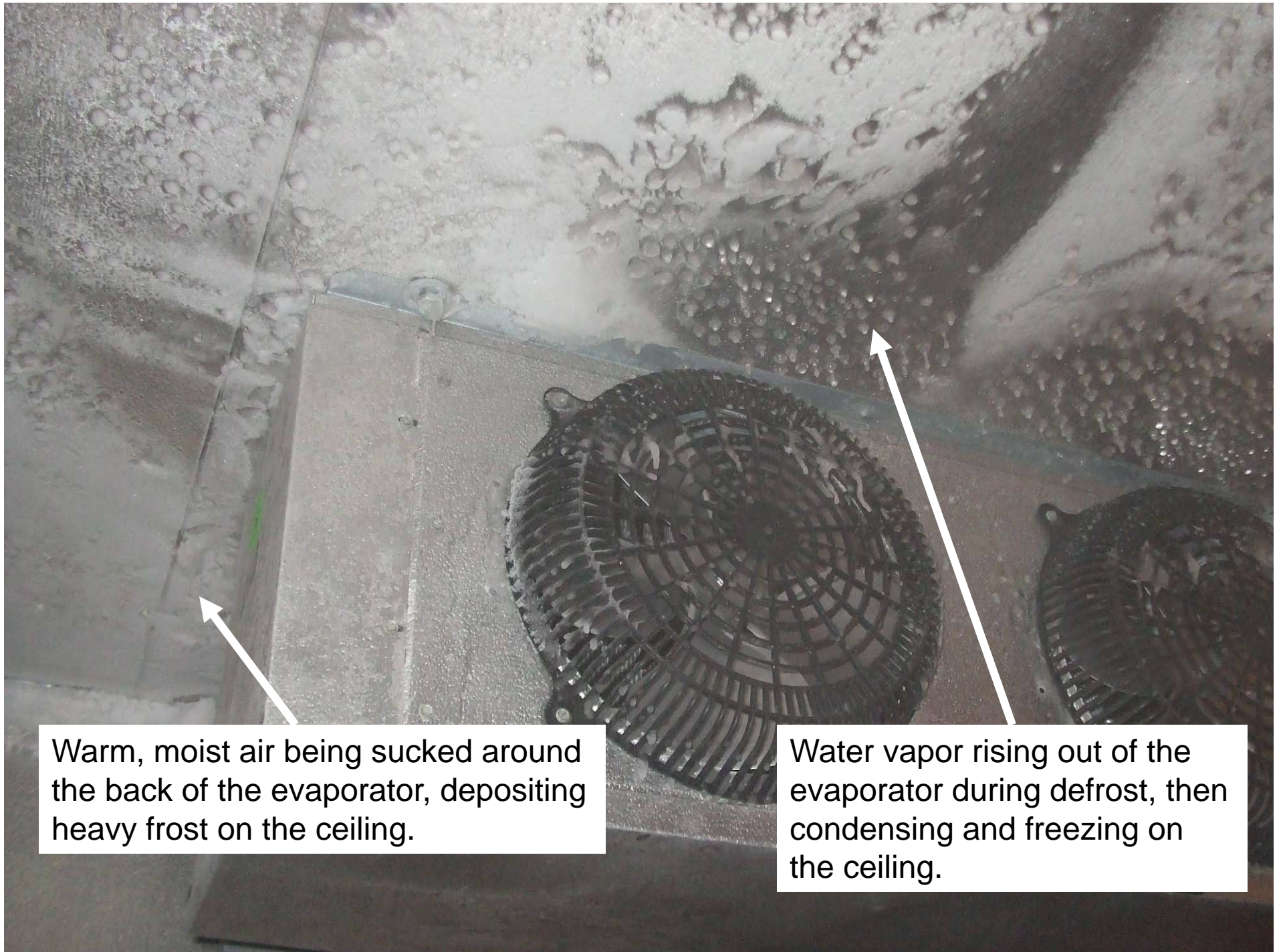
Air infiltration problems must be corrected first! After the walk-in is free of frost and snow, the defrost timer should be set to provide three to four complete defrosts every day. At the end of a defrost cycle the coil should be free of water and ice, and the condensate drain pan should be empty. The fan delay should prevent the fans from coming on until the coil has pulled down below freezing.



Blocked airflow, reducing capacity and increasing run time.

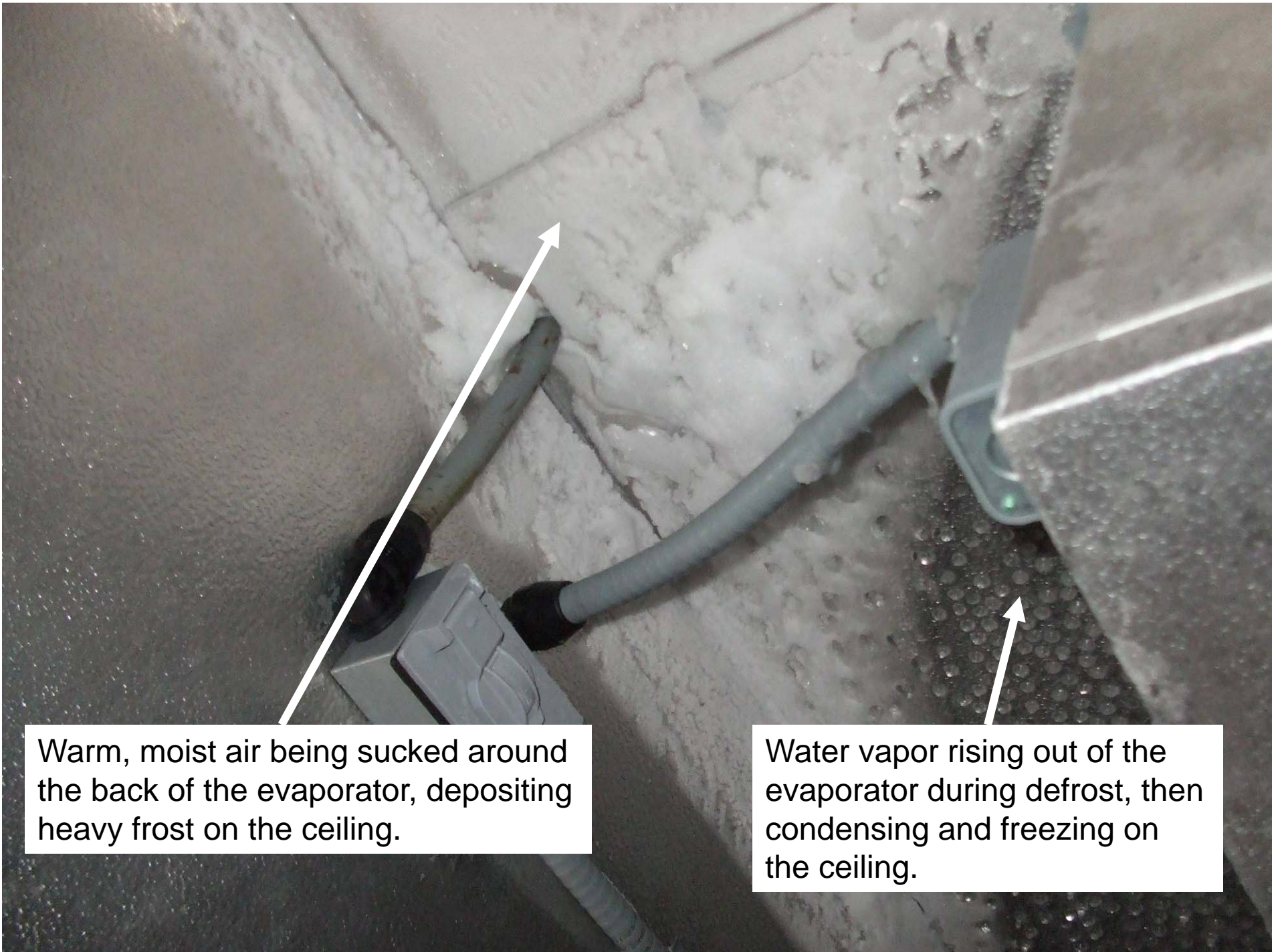
Warm, moist air being sucked around the back of the evaporator, depositing heavy frost on the ceiling.

Water vapor rising out of the evaporator during defrost, then condensing and freezing on the ceiling.



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