Take the HVAC CHALLENGE™

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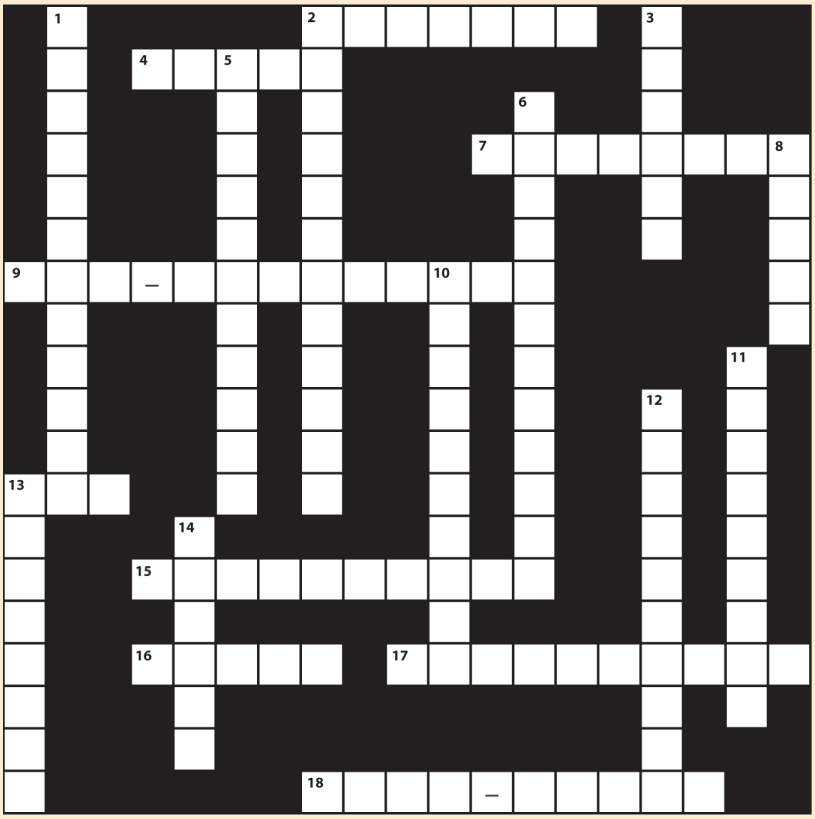
Desiccant Dehumidification and Pressure-Drying Equipment



ACROSS

2. This air velocity, through the desiccant bed, strongly affects leaving moisture in a rotary solid-desiccant dehumidifier.
4. This type of heat-reactivated drier normally operates on, at minimum, 4-hr adsorption periods and is generally designed with a heater embedded in the desiccant.
7. This type of drier operates on a short adsorption period of 30 to 300 seconds.
9. These types of dehumidifiers are often used to provide air at low dewpoints.
13. Refrigerating air below this temperature point is the most common method of dehumidification.
15. This type of drier usually operates on, at a minimum, 4-hr adsorption periods and is designed with an external heater and cooler as the reactivation system.
16. Moisture is absorbed from or desorbed into the air because of the difference in this water pressure between the air and the desiccant solution.
17. When dehumidification is applied to drying gases under pressure or liquids this one of the terms normally used.
18. This type of solid-sorption system uses two or more pressurized containers of dry desiccant arranged in parallel, and air is forced through one container for drying while desiccant in the other container is reactivated.

DOWN

1. These types of dehumidification systems usually use a form of silica or alumina gel, activated alumina, molecular sieves, lithium chloride alt, or a glycol solution.
2. This type of reactivated cartridge solid-sorption equipment uses solid desiccant and is used where the expected moisture load is continuous but small.
3. This process air temperature is higher than the inlet air temperature primarily because the heat of sorption of moisture removed from the air is converted to sensible heat.
5. Because this is a separate unit than a conditioner in a regeneration process, it can be in a different location and connected to the conditioner by piping.
6. This air inlet temperature changes the outlet moisture content of the process air.
8. This type of sorption passes air through a bed of granular desiccant or through a structured pacing impregnated with desiccant.
10. Drying with this form of desiccant usually incorporates regeneration equipment, so the desiccant can be reactivated and reused.
11. This type of drier also operates on, at minimum, 4-hr adsorption periods and is designed with an external heater and a blower to force heated atmospheric air through the desiccant tower for reactivation.
12. This type of solid-sorption product uses packages of solid desiccant that are often sealed into packaging for consumer electronics, pharmaceutical tablets, and military supplies.
13. Regenerator residual heat is usually called "regenerator heat _____."
14. This type of desiccant dehumidifier rotates the desiccant slowly between two airstreams so that dry, high-capacity desiccant leaving the reactivation air is always available to remove moisture from the process air.

To brush up on the facts behind this month's clues, refer to Chapter 22 ("Desiccant Dehumidification and Pressure Drying Equipment") in the *2004 ASHRAE Handbook — HVAC Systems and Equipment.*

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