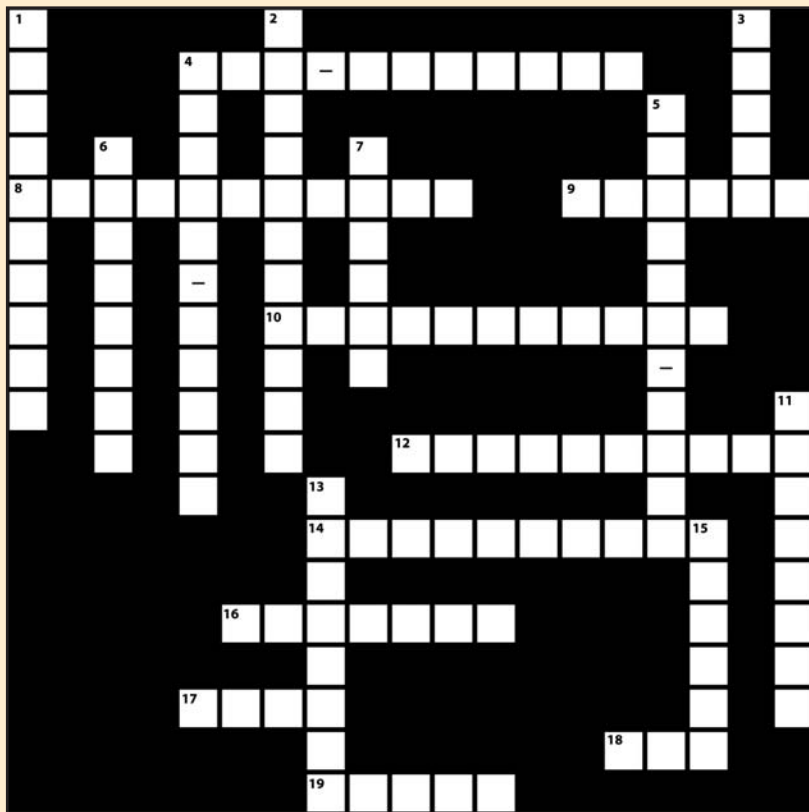




# Take the HVAC CHALLENGE™

BY STEVEN G. LIESCHEIDT, P.E., CSI-CCS, CCPR

## Room Air Distribution Equipment



### ACROSS

4. These terminal units are used in primary/secondary HVAC systems as secondary-level air handlers.
8. The greater this differential between the supply air projected into a space and the air in the space, the greater the buoyancy effect on the part of the supply airstream.
9. This effect counteracts the drop of a horizontally projected cool airstream and is commonly referred to as the surface or ceiling effect.
10. This type of damper consists of a series of parallel blades mounted inside a round or square frame and is installed in the diffuser collar or the branch duct takeoff to the air device.
12. This type of grille has vanes, blades, or bars that can be moved and can be either single- or double-deflection.
14. This type of diffuser typically has a free area of about 50%, is normally selected to meet architectural demands for air outlets that blend into the ceiling, and tends to cost less than other air devices.
16. This airflow from an outlet entrains room air into the jet.

17. This type of linear diffuser is an elongated air outlet available with single or multiple openings.
18. This type of linear grille has fixed elements at its face that normally run parallel to the length.
19. This type of ceiling diffuser has a series of flaring concentric or expanding truncated conical rings.

### DOWN

1. This type of grille is used to transfer air to or from darkrooms.
2. Outlets where this is found have high characteristics that can be used advantageously in air conditioning systems with low supply air temperatures and consequent high temperature differentials between the room air and the supply air.
3. This level from an outlet is largely a function of its discharge velocity or from other sources in the system.
4. This type of grille has vanes, blades, or bars that are not adjustable.
5. This type of diffuser is constructed with a back pan that includes a duct collar and a single piece that forms the diffuser face.
6. This is the deposition of dirt particles on the air outlet or a surface near the outlet.
7. These air outlets and diffusing equipment introduce air into a conditioned space to obtain desired indoor atmospheric environment.
11. This type of grille is available for various levels of tamper resistance and access through the grille.
13. This type of damper is a single-blade device hinged at one edge and usually located at the branch connection of a duct or outlet.
15. This is an airflow rate adjuster installed either directly on the rear of a diffuser outlet, at the entrance to the outlet plenum, or remotely near the branch-trunk duct junction.

To brush up on the facts behind this month's clues, refer to Chapter 17 ("Room Air Distribution Equipment") in the 2004 ASHRAE Handbook —HVAC Systems and Equipment.

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## Solution to December's HVAC Challenge™

