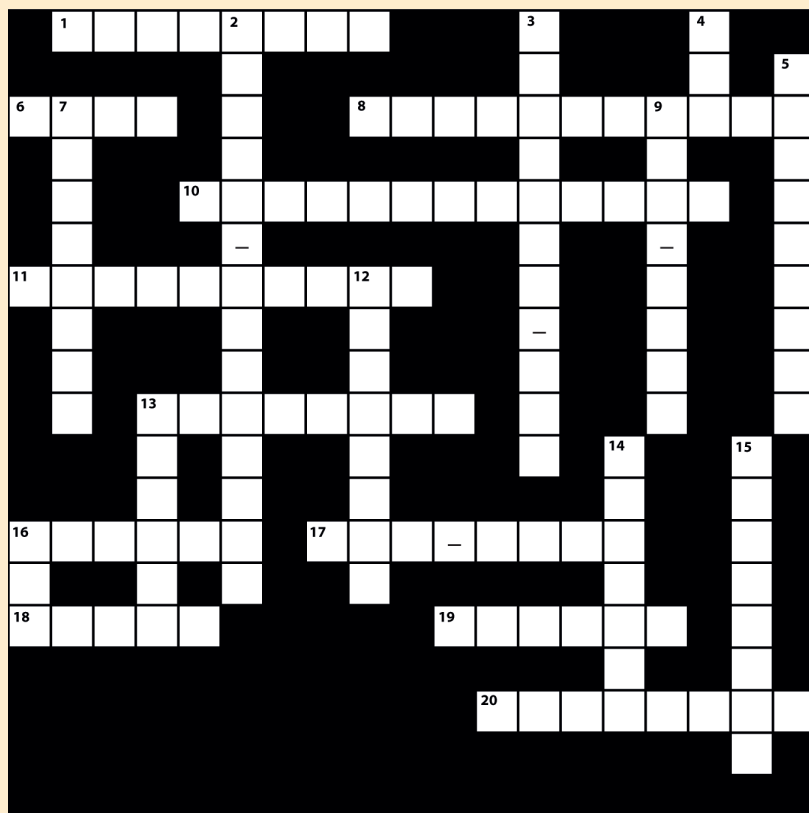




Take the HVAC CHALLENGE™

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

In-Room Terminal Systems



ACROSS

- For a fan coil unit, this is usually controlled by coil water flow, fan speed, or a combination of these.
- When this number of pipes is used in water distribution of secondary water, the system has chilled water supply and return and hot water supply and return pipes.
- One of the advantages of in-room terminal systems is that this air is positively supplied and can accommodate constant recommended outside air quantities.
- This design load is determined by considering the entire portion or block of the building served by the air and water system at the same time.
- This can take several hours and usually temporarily upsets room temperature.
- A major advantage of fan coil unit systems is that this system (piping vs. duct) requires less building space.
- This organization publishes *Standard 79 – Method of Testing for Rating Fan-Coil Conditioners*.
- These types of units can include cooling as well as heating, normally move air by forced

convection through the conditions space, filter circulating air, and may introduce outside ventilation air.

- When this number of pipes is used in water distribution of secondary water, the system has separate hot and cold water supply pipes and a common return pipe.
- This is not required with four-pipe systems for primary air or secondary water systems.
- These loads are heat gains from sources like lights, people, and computers.

DOWN

- These floor-to-ceiling units are available in which the water and condensate drain risers are part of the factory-furnished unit.
- Some of these air systems operate with 100% outside air.
- This organization publishes *Standard 400 – Standard for Room Fan-Coils*.
- In this type of in-room terminal unit, centrally conditioned primary air is supplied to the unit plenum at medium to high pressure.
- These types of horizontal units may be fitted with ductwork on the discharge to supply

several outlets.

- In this type of water distribution system, either hot or cold water is supplied through the same piping to the in room terminal unit.
- These loads are heat gains from sources like solar heat gains and temperature difference between the outside and inside.
- The relative heating requirement of every space is determined by calculating the transmission heat flow per this temperature difference unit of measure.
- This is the outside air temperature at which secondary cooling is no longer required for the primary air system.
- Low fan coil units of this configuration are available for use under windows with sills.
- This ratio is the ration of the primary airflow to a given space divided by the transmission per degree of that space.

To brush up on the facts behind this month's clues, refer to Chapter 3 ("In-Room Terminal Systems) in the *2004 ASHRAE Handbook — HVAC Systems and Equipment*.

Liescheidt is owner of SPPECS Consulting, LLC in St. Louis. E-mail him at speccs@sbc-global.net.



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