

**Interpretation IC 180-2008-1 of
ANSI/ASHRAE/ACCA Standard 180-2008
Standard Practice for Inspection and Maintenance of
Commercial Building HVAC Systems**

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Reference: This request for interpretation refers to the requirements in ANSI/ASHRAE/ACCA Standard 180-2008, Section 5 and Table 5-20, regarding the check refrigerant system pressures or temperatures inspection/maintenance task.

Background: Table 5-20 includes numerous tasks that impact operation of the refrigerant system/circuit. For example, operation of cooling coil, inspect air-cooled condenser surfaces. Repair or clean as needed. One of these includes, "...adjust refrigerant to achieve optimal operating levels." This has been interpreted by some as a mandate to adjust refrigerant levels as the first option (and sometimes only) or independent of the other associated tasks to be considered when servicing a direct expansion system in an effort to achieve optimal operating levels.

Interpretation: Our interpretation is that all of the applicable inspection tasks must be followed and that refrigerant charge should be adjusted only if it is shown to be incorrect after all of the other inspection tasks have been completed and the associated conditions corrected. If, at that point, refrigerant charge is incorrect it also should be corrected. Refrigerant charge should never be the only factor or independent of the other tasks in achieving optimal operating levels.

Question: Is this interpretation correct?

Answer: Yes.

Comments:

There is a logical sequence in performing the various inspection / maintenance tasks. In regards to checking / optimizing refrigerant charge, this task needs to be done after other inspection and maintenance tasks are completed and any needed corrective actions undertaken. Ensuring proper airflow (i.e., clean filters, correct fan belt tension, proper operation of variable frequency drives, fan blade and housing are in good condition, etc.) as well as verifying that the indoor and outdoor heat exchanger coils are not impeding heat exchange (i.e., correct any buildup or fouling on the heat exchanger surfaces, coil fins are not damaged, etc.) are key to properly determining that the refrigerant temperature within a refrigeration system are within acceptable tolerances.

It is well recognized that low airflow over the coil, and/or a dirty coil, can cause the refrigerant temperature within the evaporator coil to be lower than operating guidelines, thereby prompting a service person to assume that there is too much refrigerant in the system. The possible resultant action of removing refrigerant from an otherwise correctly charged unit is incorrect. In this instance, the appropriate action would be to first address the underlying cause of improper airflow or impeded heat transfer.

Note: Table 5-20 (*Rooftop Units*) in Standard 180-2008 has been renumbered to Table 5-22 (*Rooftop Units*) in Standard 180-2012. Additionally, the inspection / maintenance tasks have been grouped based on task frequency and the tasks within Table 5-22 have been numbered for reference.