Design

Strategic Management Office | Facilities Quality Service

Deparrtment of Veterans Affairs | Office of Construction & Facilities Management

CFM

ALERT

VA ADOPTION OF PLENUM FANS FOR AIR-HANDLING UNITS APPLICATION

A. ISSUE:

Application of plenum fans in the central air-handling units.

B. BACKGROUND:

The Facilities Quality Service has reviewed the recent advances in the plenum fan technology and contacted private consulting engineers, and manufacturers to obtain the latest information about the performance and certification requirements.

C. DISCUSSION:

Based on the information obtained so far, use of the plenum fans in the factory-fabricated air-handling units shall be permitted only when the project-specific evaluation demonstrates equal or improved energy efficiency and suitability for the specific application.

C.1 Mandatory Selection Parameters for Plenum Fans

(a) Each fan shall be individually AMCA certified. It is recognized that that AMCA certification for multiple fans in an array is pending.

(b) The performance of a single air-handling unit shall be AHRI 430 certified (for airflow capacity) and AHRI 260 certified (for sound data).

(c) The performance of an air-handling unit with multiple fans in an array shall be rated and factory-tested in accordance with the AHRI 430 (for airflow capacity) and AHRI 260 (for sound data) in the final application form. Field test is optional.

(d) Fan wheels shall be fabricated from aluminum and shall be direct-driven with variable speed drives. Use of the belt-driven fans is not permitted.

(e) Maximum fans in an array shall not exceed four.

(f) Per VA Master Specifications, all fans shall be dynamically balanced and equipped with vibration isolators.

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(g) As far as possible, the synchronous speed of the fan motors shall be 1,800 RPM. Selections at higher speeds shall be permitted if the limits of critical speed, noise and vibrations limitations, and sound levels are not in excess of the manufacturer's recommendations.

C.2 Evaluation Criteria

The evaluation and recommendations shall be based on an analysis of the following parameters:

- BHP Absorbed and Motor Input
- Sound Power Levels
- Overall Space Requirements
- Impact of the project-specific criteria such as location of the after-filters, discharge conditioned etc.

D. ADDITIONAL INFORMATION: Contact Kurt Knight (202-461-8063) kurt.knight@va.gov, or Mulraj (Manu) Dhokai (202-461-8295) mulraj.dhokai@va.gov