Fans shall be Model CHF Housed Centrifugal High Pressure/High Volume Fan utilizing either a backward curved or airfoil bladed impeller, as manufactured by Aerovent, Minneapolis, Minnesota.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 208 (fan energy index), 211 (air performance) and 311 (sound performance). Fans shall be tested in accordance with ANSI/AMCA Standard 210 (air performance) and 300 (sound performance) in an AMCA-accredited laboratory. Fans shall be licensed to bear the AMCA certified ratings seal for sound, air and Fan Energy Index (FEI).

Fans shall have a sharply rising pressure characteristic extending through the operating range and continuing to rise beyond the peak efficiency to ensure quiet and stable operation. Fans shall have a non-overloading design with self-limiting horsepower characteristics and shall reach a peak in the normal selection area. All fans shall be capable of operating over the minimum pressure class limits as specified in AMCA Standard 99.

CONSTRUCTION — Fan housings and bearing pedestals shall be heavy-gauge, formed steel and welded construction. Housings shall be suitably braced to prevent vibration or pulsation. Discharge flanges shall be provided for rigidity and duct connection. Discharge flanges are punched as standard. All units are furnished with lifting lugs.

IMPELLER — Backward curved (BC) impellers shall be single thickness, designed for maximum efficiency and quiet operation. The CHF will also offer an airfoil (AF) type impeller of extruded aluminum designed for maximum efficiency and quiet operation. All impellers shall be statically and dynamically balanced.

SHAFT — Shafts shall be AISI 1045 hot rolled steel, accurately turned, ground, polished and ring-gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.43 times the maximum speed.

BEARINGS — Bearings shall be heavy-duty, grease lubricated, anti-friction ball or roller, self-aligning, pillow block type and selected for a minimum average bearing life (ABMA L-50) in excess of 200,000 hours at the maximum fan RPM.

DRIVE — Motor sheaves shall be cast iron, variable pitch on applications 20 HP and smaller, and fixed pitch on 25 HP and larger. Drives and belts shall be located external to the fan casing and rated for 150% of the required motor HP.

FINISH AND COATING — The entire fan assembly, excluding the shaft, shall be thoroughly degreased and deburred before application of a rust-preventative primer. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly. The fan shaft shall be coated with a petroleum-based rust protectant. Aluminum components shall be unpainted.

ACCESSORIES — When specified, accessories such as access doors, drains, inlet and outlet flanges, belt guards, shaft and bearing guards, outlet screens, outlet dampers, spark resistant construction, split housings, high temperature construction, shaft seals, inlet boxes and shaft coolers shall be provided by Aerovent to maintain one-source responsibility.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at the specified operating speed or maximum RPM allowed for the particular construction type. Each impeller shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 “Balance Quality and Vibration Levels for Fans” to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.