



BCMPA Series (Low to Medium Volume FRP Fans)

SPECIFICATIONS

1 GENERAL

- a) The fan is designed and constructed so that the gas stream only contacts solid FRP surfaces.
- b) All steel fasteners within the gas contact area will be stainless steel and encapsulated with a minimum of 0.1875" (3 mm) of FRP lay-up.
- c) All fan shafts will be fully protected from exposure to the gas stream with FRP shaft sleeves.
- d) The fan shall be constructed as per AMCA Standards 99.
- e) Manufacture of acceptance: Plasticair Inc.

2 AIR PERFORMANCE

- a) The performance ratings are to be in accordance with AMCA standard 210.
- b) The fan must bear the AMCA Air Performance Seal.
- c) Alternate bidders must not exceed scheduled RPM or BHP.

3 IMPELLER CONSTRUCTION

- a) The impeller is to be of a high efficiency backward inclined design.
- b) The material of construction is to be vinyl ester resin (premium quality Derakane 510) and reinforcing glass throughout.
- c) The method of construction is to be hand lay-up only.
- d) The entire surface of the impeller exposed to the gas stream will be complete with a resin rich corrosion barrier consisting of C-veil and a smooth finish. Impeller will be constructed of clear resin to detect imperfections.
- e) The shaft is to be attached to the back-plate of the impeller by way of a taper lock bushing and a one-piece sprocket hub. The entire shaft attachment assembly is to be completely covered with a minimum 0.25"(6 mm) of FRP lay-up.
- f) Radial blade fans are not permitted.

4 HOUSING CONSTRUCTION

- a) The fan housing is solid FRP throughout. The outlet and inlet flanges are to be of heavy industrial quality.
- b) All flanges are to have factory flat finishes.
- c) The material of construction will be vinyl ester resin (premium quality Derakane 510) and reinforcing glass throughout. The method of construction will be hand lay-up only.



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- d) The entire surface exposed to the gas stream will be complete with a resin-rich corrosion barrier consisting of C-veil and a smooth finish. The outer surface of the housing will be of a heavy UV stabilized gel coat.
- e) The housing shall include a machined Teflon shaft seal to limit gas leakage.
- f) A sound enclosure is not permitted

5 STEEL FAN BASE

- a) The fan base is to be of a heavy-duty industrial quality design to minimize vibration and to ensure long life.
- b) The bearing shaft pedestal is to be constructed of heavy gauge steel.
- c) The fabrication method is to be all welded.
- d) After welding is complete, prior to the fan assembly, the fan base is to be sandblasted white and clad with FRP to a total of 3/16" thickness.
- e) The base is to be rust proof. Painted bases are not acceptable.

6 BEARINGS

- a) Bearings are to be solid pillow block, self-aligning type. The bearings are to be rated and designed for a minimum L-10 life of 200,000 hours. The bearings are to be located out of the air stream.
- b) The method of lubrication will be grease per the motor manufacturer's recommendations

7 SHAFT

- a) Fan shaft will be 1045 carbon steel complete with the correct keyways to accept V-belt drive selections.
- b) The diameter of the shaft shall be sized to ensure that the critical speed of the fan is at least 25% above the fan operating speed.
- c) The impeller side of the shaft shall be complete with an FRP shaft sleeve, which is bonded to the back-plate of the impeller and protrudes through the housing.
- d) The outside diameter of the sleeve is machined to provide a minimum clearance gap with the Teflon shaft seal.

8 MOTOR

- a) Motor will be a foot mounted totally enclosed fan cooled motor with a 1.15 service factor.



9 BELT DRIVE

- a) V-belt drive shall be sized with a safety factor of 1.5 times the motor horsepower.
- b) An adjustable base will be provided under the motor to permit setting the belt tension.

10 GUARDS

- a) Weatherproof steel guards complying with the OSHA standard will protect the shaft and v-belt drive.
- b) Guards will be vented for proper motor ventilation.

11 BALANCING AND TESTING

- a) Balancing of the impeller shall be achieved only with the use of the identical material used to fabricate the impeller. Balancing shall be in accordance with ASTM D-4167.
- b) The fan shall be test run at operating speed and not shipped until vibration readings are within acceptable limits
- c) Records shall be maintained and a written copy shall be available upon request

12 WARRANTY

- a) The supplier shall warrant that all fan components shall be free from defects in materials and workmanship for a period of 15 months from date shipped or 12 months from equipment startup, whichever occurs first.