GIF Series (Medium to High Volume FRP Fans)

SPECIFICATIONS

# General

1. The fan is designed and constructed so that the gas stream only contacts solid FRP surfaces.
2. 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.
3. All fan shafts will be fully protected from exposure to the gas stream with FRP shaft sleeves.
4. The fan shall be constructed as per AMCA Standards 99.
5. Manufacture of acceptance: Plasticair Inc.

# Air Performance

1. The performance ratings are to be in accordance with AMCA standard 210.
2. The fan must bear the AMCA Air & Sound Performance Seal.
3. Alternate bidders must not exceed scheduled RPM, Sound levels or BHP.

# Impeller Construction

1. The impeller is to be of a high efficiency backward inclined design.
2. The material of construction is to be vinyl ester resin (premium quality Derakane 510) and reinforcing glass throughout.
3. The method of construction is to be hand lay-up only.
4. 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.
5. Impeller will be constructed of clear resin to detect imperfections.
6. 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.
7. Radial blade fans are not permitted.

# Housing Construction

1. The fan housing is solid FRP throughout. The outlet and inlet flanges are to be of heavy industrial quality. All flanges are to have factory flat finishes.
2. The material of construction will be vinyl ester resin (premium quality Derakane 510) and reinforcing glass throughout.
3. The method of construction will be hand lay-up only. 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.
4. The housing shall include a machined Teflon shaft seal to limit gas leakage.
5. A sound enclosure is not permitted.

# Steel Fan Base

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

# Bearings

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

# Shaft

1. Fan shaft will be 1045 carbon steel complete with the correct keyways to accept V-belt drive selections.
2. 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.
3. 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.
4. The outside diameter of the sleeve is machined to provide a minimum clearance gap with the Teflon shaft seal.

# Motor

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

# Belt Drive

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

# Guards

1. Weatherproof FRP guards complying with the OSHA standard will protect the shaft and v-belt drive.
2. Guards will be vented for proper motor ventilation.

# Balancing and Testing

1. 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.
2. The fan shall be test run at operating speed and not shipped until vibration readings are within acceptable limits.
3. Records shall be maintained and a written copy shall be available upon request.

# Flame spread rating

1. If indicated on the fan scheduled 0-25 flame spread is required; fan housing and impeller will be constructed of Derakane 510-C throughout and will meet ASTM-E84 class 1 (0-25 flame spread).

# Warranty

1. 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.