



## Advantages of Moore Aluminum Fan Blades

The below information is to assist in explaining the advantages of the Moore aluminum fabricated blades in comparison to fiberglass, cast aluminum or extruded aluminum.

### Efficiency

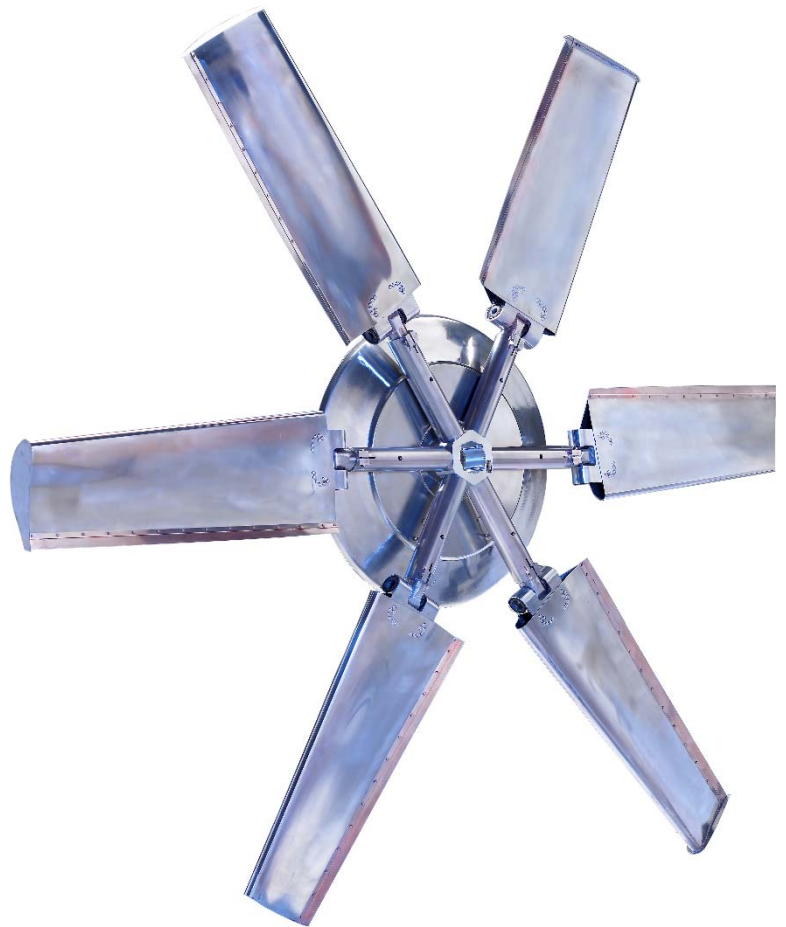
Fan rotor efficiency does not depend upon materials of construction but does depend upon a good airfoil section. FRP fans may have a higher efficiency than some aluminum fans, such as cast or extruded fan blades, however FRP fans do not have a higher efficiency than the Moore Fan. The Moore fan blade is a fabricated blade of stressed skin construction. The Moore design provides a highly efficient design by providing the blade with a twist (that gives a higher angle at the blade root and decreases to the blade tip) and a taper (which gives a wider blade at the blade root and tapers to the fan tip). This fabricated blade design provides uniform air flow and is the most efficient design available.

### Weight

It is a commonly held belief that FRP fans are lighter weight than aluminum fans. While this may be true when comparing FRP to extruded or cast aluminum, it is not the case in comparison to Moore Fans. We guarantee that our fan is lighter weight than FRP fan of the same size and number of blades. The lighter weight of the Moore Fan provides numerous benefits including being easier to install, ship, and providing longer bearing life.

### Non-Sparking and Flammability

Aluminum does not burn and is considered to be non-sparking (per American Society for Metals) and is of particular importance in explosive atmospheres, aluminum alloys find wide use in the manufacturing of explosives. Moore Fans takes this one step further and can provide ATEX certification on any job required. This is in contrast to FRP products that are based on petroleum-based resins that can burn energetically once started.



### **Hub Construction**

Most fans with any type of blade construction utilize a galvanized steel hub with a cast iron bushing. This is in contrast with the Moore Fan hub that is manufactured from aluminum. Not only is aluminum lighter, but it also has a better corrosion resistance than galvanized steel giving the Moore Fan a further advantage.

### **Blade Construction**

The Moore fabricated aluminum blade is manufactured from 5052 marine alloy low copper content aluminum that has a particularly good resistance to salt water corrosion (per the Aluminum Association). This design has been fully tested in our salt spray testing chamber and has been used in thousands of seaside or offshore applications. This testing and decades of experience provides Moore Fans with 100% confidence in all applications that the fans may experience some sort of salt spray. A further advantage of the Moore blade is that it is not necessary to provide a special coating or materials to resist sunlight and erosion/pitting from the sand. Moore Fans standard design takes this into consideration and will perform without additional modification or cost.

### **Resilient Mounted Blades**

The Moore Fan blade is resiliently mounted which substantially reduces the stress transmitted to the drive thereby increasing the bearing life. This design makes the Moore fan ideal in applications where the fan is susceptible to wind gusts and severe applications. Also resonant frequencies are eliminated which permits operation at any speed. Further information regarding resonant frequencies is available in the Moore engineering document, "Resonances of Pivoted Blades".

### **Moore Fan Installation and Adjustment**

Compared with any other make of fan, the Moore fan is quicker and easier to install and maintain. The weight advantage of the Moore fan allows it to be installed easily and quickly which saves valuable labor costs. For any given job, each blade is moment balanced to the same moment, therefore any blade can be installed on any fan where the diameter and hub series are the same. This saves expensive match marking of blades and minimizes the possibility of erection mistakes. It also is an advantage for replacement and spare parts where one blade can fit and be balanced to match several different fans.



### **Adjustable Diameter**

To improve performance, it is possible to easily adjust the diameter of the Moore fan thereby fitting the fan rotor to suit the fan ring. By reducing the fan tip clearance the air performance and noise levels will both improve.

### **Design Angle**

The design angle is preset at the factory so it does not need to be set during installation. If the angle does require adjustment it can be easily done in the most time efficient and accurate way ever designed.