Spark Resistant Construction

When a fan's air stream is combustible, whether due to flammable gases or particulates, it is important that the fan's construction does not lend itself towards creating a spark. If this were to occur, a spark could lead to ignition of the air stream leading to a fire or explosion.

One widely used set of standards to specify fan spark resistance characteristics is the Air Movement and Control Association (AMCA) set of spark resistant construction standards. This standard has three classes of construction, A, B, and C. These three classes build upon one another and become more stringent as one goes from C to A.

AMCA Class C: Fans of this classification are designed such that two ferrous (iron containing, and therefore spark creating) components will not come into contact, even if components move or come loose during the life of the unit. Rupp Class C fans are made with an aluminum inlet and drive components isolated from the air stream. Remaining assembly is such that the possibility of ferrous contact is further reduced.

AMCA Class B: This classification requires a nonferrous impeller as well as a nonferrous rubbing ring around the fan shaft hole (belt drive only). Locking systems are required to prevent shifting in the fan impeller, shaft, or bearings. Rupp Class B fans are assembled with aluminum inlets and impellers. Drive components are isolated from the airstream; rubbing rings and bearing locking systems are included as appropriate.

AMCA Class A: This classification requires that all fan components be constructed out of non-ferrous materials. This classification is not available at this time through Rupp Air Management.

In addition to the requirements outlined above, every fan with AMCA spark resistant construction is required to be electrically grounded. This prevents sparking and subsequent ignition via the accumulation of static electricity in the fan. Note that ground installation is the responsibility of the end user.