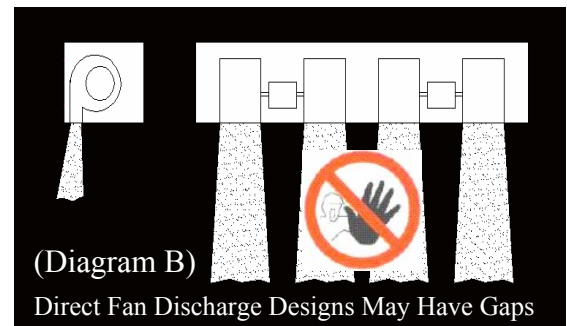
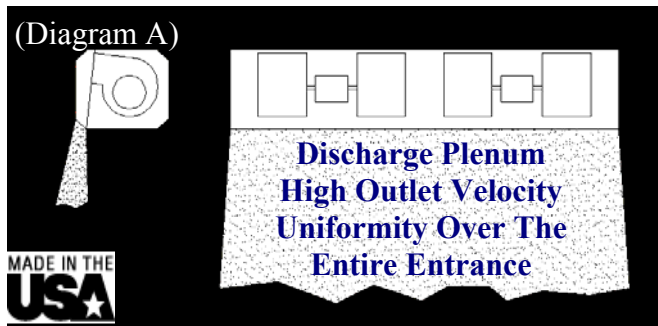


Tech Talk - Specifiable Air Door Performance Criteria

ASHRAE indicates that the air door provides “an airstream across the entire entrance” in the 2004 Systems and Equipment section of the HANDBOOK, Page 17.9. The key word in this sentence is “entire”. This can be done best with an air door that has a high outlet velocity rating. This is a specifiable performance factor. One way to achieve a high outlet velocity uniformity is to use an air door that is designed with the fans indirectly blowing air through a discharge plenum (Diagram A) as opposed to directly down out of the fan where gaps in the airstream can occur (Diagram B).



Noise may be a concern for some air door application locations. The discharge plenum design not only provides a high outlet velocity uniformity, it also provides an added sound reduction factor by eliminating the line of sight of the fan discharge and adds an additional angle that the sound must take.

When air doors are specified the intent is to deliver an air flow volume at an effective airflow velocity. This is the purpose of the air door and this is the criteria that should be specified clearly in order to ensure that the basis-of-design intent is provided by whatever manufacturer is successful in getting the job. When an “or equal” spec is used or “other acceptable manufacturers” listed, it should be made clear that the performance of the air door is part of the “or equal” or “acceptable” criteria by which submittals will be reviewed and approved. Anything short of evaluating performance is a disservice to the client.

When heating or cooling is desired as part of the air door there are a variety of energy sources that are available from the major manufacturers of air doors - electric, hot water, steam, indirect or direct fired gas. Installation savings can be achieved by specifying that the unit be provide with a single point power connection when electric heaters are used. When hot water coils are used these can be made integral to the air door casing to provide a better appearance as a single unit. Where gas heat is used the building codes need to be consulted to determine whether to use direct or indirect fire burner assemblies.

Application Consideration

Suggested specification criteria to include in your air door specification or equipment schedule based on the Powered Aire model that you use as your basis-of-design are noted below. Contact your local Powered Aire rep or the factory for assistance in application selection and specification.

- Provide a minimum outlet velocity uniformity rating of ____% or greater.
- Provide a minimum air flow rating of ____ CFM.
- Provide an outlet velocity of ____ FPM.
- Provide an air door with have a maximum noise rating of ____ dbA.
- (Optional Heating) Provide an air door with (electric, hot water, steam, gas) heating as indicated. When electric heat is provided provide single point power connection to the air door of ____ Volt-____ Ph ____ Hz.

