

Air Enterprises: Right From the Base Aluminum vs. Steel Comparison

Air Enterprises air-handling unit aluminum bases have substantial advantages and life long benefits over steel fabricated bases.

1. The Air Enterprise base:

- The base is fabricated with *all aluminum perimeter structural members*.
- The perimeter and cross support channels are *fully welded*.
- The 1/8-inch floor plate is turned up at the channels and fully welded to *assure a watertight structure*. (Figure 1)
- The floor acts as the unit's pan. All floor seams throughout *the entire base are fully welded to provide a guaranteed watertight base*.
- The base incorporates intermediate supports so as to be *self-supporting from the perimeter channel*.
- Aluminum Cleanout *drains is provided in all sections*. Those drains not used for condensate removal are furnished with an aluminum-threaded cap. *Figure 1*
- The underside of the *base is fully foam insulated*.
- All components are *mounted above the floor* on structural members. Drilling into the floor is not permitted.
- *Fan isolator mounts are mounted above the floor* to prevent penetrations through the floor. This provides for future isolator change minimized chance for leakage. (Figure 2)
- *All openings through the floor are framed and fully welded* with angles or other structural members.
- Base openings are provided with an *all aluminum grate*. Figure 3
- *Air Enterprises true thermal break design base features* a non-through metal path between the interior and exterior surface of the base, casing at all panel frames, joining mullions, or corners.

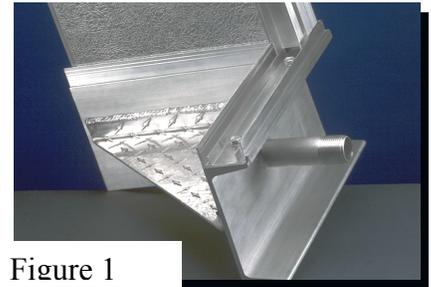


Figure 1



Figure 2



Figure 3

2. Air Enterprises Base Benefits:

- Lighter weight *reduces rigging and structural initial installation costs*.
- Corrosion resistance promotes *increased air-handling life*.
- *Reduced maintenance* costs.



3. Steel Bases:

- The panel depth is based on the size of the air-handling unit. The panel is simply a skin attached to the unit's structural frame. Most custom units are large and hence the use of the four inch tubular members.
- The "panel" frame is a tubular structural member that forms the structural frame of the unit. Panel skins are simply *zipped screwed to the tubular support frame*. First one side, insulation is applied and then the other skin is zip screwed in place.
- The panel skins may be galvanized or coated. The skins are sheered and drilled to accept the zip screws. *The galvanized or sheet coating integrity is compromised with the sheering and drilling* immediately making the panel skin susceptible to corrosion and deterioration.
- Even though some manufactures claim to caulk the panel skins to the tubular members, the fact the panel skin is drilled and screwed to a common tubular cavity makes their leakage inherently many times greater than that of Air Enterprises. They also attach *component support and flashing to the skins thereby creating a leakage path of both moisture and air*.
- Since the structural frame of the four-inch panel is steel, *thermal break construction is usually an ineffective thin foam gasket at the skin attachment*.

(Provide photos or sketches.

Show figure numbers at above bullets and corresponding photo.)

4. Competitors door and removable panels:

- The doors are *one of the weakest features of competitors units*. Since skins are simply attached to structural frames, doors are difficult to maintain and have huge leakage issues.
- The *door gasket is usually attached with an adhesive and is in sheering tension* when the door is closed. Hence it is not unusual to see installations with *door gasket hanging* from the door and *hearing audible excessive air leakage*.
- Some unit manufactures make an effort to provide refrigeration hardware and hinges to spruce up their door image. That is usually window dressing to the horror that becomes visible once the door is opened.

(Provide photos or sketches.

Show figure numbers at above bullets and corresponding photo.)

5. The difference:

- Air Enterprises structural panel system provides it's strength without addition for a structural frame members.
- The weight is lower than competitors, which can affect installation and rigging costs.
- The deflection of the Air Enterprises panel system is less than 1/200th of a span.
- *Air Enterprises guarantees .5 % leakage* when tested at 1.5 times design operating pressure. The industry leakage at operating pressures is 3-6%.
- *The energy cost difference is substantial*. Please contact Air Enterprises for an energy savings estimate for your specific application.



6. Suggested specifications:

- Each air handling unit shall be constructed on an aluminum structural base. Galvanized steel or painted carbon steel are not acceptable. The base shall be braced to support internal components without sagging or pulsating. The entire base shall be guaranteed waterproof and have at least a 3" deep sump where necessary to serve as a drain pan to prevent building water damage from the unit and to facilitate unit washdown. Base floor shall be 3/16" aluminum safety tread plate continuously welded to the aluminum channel. Caulk seals or gaskets to guarantee water tightness are not acceptable. The perimeter support member shall be at least an 8" structural channel. The underside of the base shall be insulated and have a vapor barrier. The sides shall be insulated and flashed by the unit manufacturer with aluminum flashing. Each section of the base shall contain a drain to facilitate system washdown maintenance and condensate removal. Areas in the unit where potential standing water cannot be removed through a drain are not acceptable..