

Marlo Provides Food Grade Units For Kellogg's

By Kevin Taylor

When Kellogg's company in Battlecreek, Michigan needed food grade air handling units for a new production line, Marlo accepted the challenge. Food grade units pose a unique challenge:

- The unit could not have cracks or crevasses where bacteria or mold could form.
- All welds must be ground and polished smooth.
- The floors must be pitched for a wash-down application.
- No glass could be used inside the air stream of the unit, which meant that a new type of light had to be found.

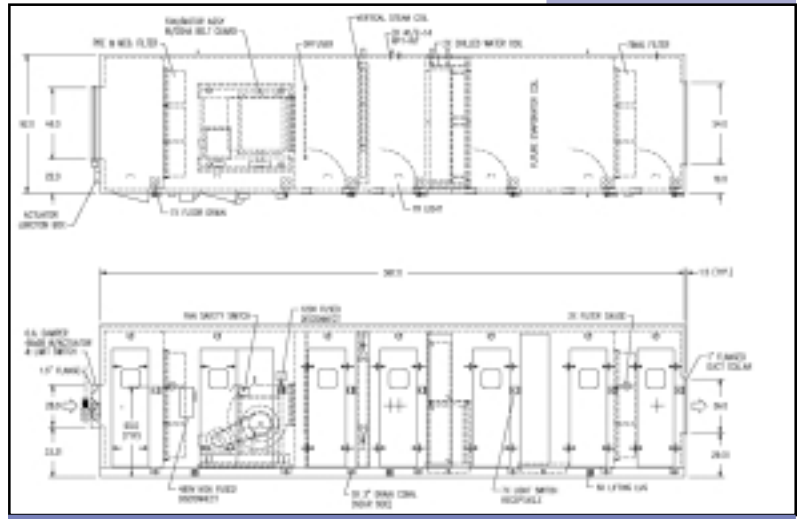
Marlo had to find a way to solve several problems at once since standard construction design uses screws in the interior of the unit for the tongue and groove walls, and the floors are not pitched.

WALL DESIGN

The first design challenge to meet was the overall design of the cabinet. Marlo decided to use a design that is currently used for "Glat" style pharmaceutical units. This design "flips" the wall panels around so that the pressure boundary is in the inside of the unit and the liner is on the exterior. This means that the interior walls are smooth with no screws. The seams were filled with a clear food grade silicone caulk. This smooth interior can then be easily cleaned without worry of out-gassing. Marlo had never tried this design for a unit larger than 7,565 scfm. The wall panels are not a true tongue and groove design. Instead, the panels are butted end to end, which must be made to exact dimensions for the walls to fit properly.

FLOOR DESIGN

The floors were to be pitched towards bucket style drains in each section. Marlo had never built units with pitched floors. Using pitched base frame members solved the problem. The floor sheets were then attached to the base frame members and bucket drains were welded to the underside. This turned out to be a clever solution since this meant that walk grates were not required over large drain pans in each section. This allows for easy cleaning of the unit without any grate removal.



SUPPLY FANS AND MOTORS

Marlo turned to Barry Blower to supply the food grade plenum fans. Barry Blower is unique in that it is the only fan manufacturer that can build food grade fans. This means that all welds on the fan wheel and housing had to be ground smooth. The fan was also painted with an epoxy paint suitable for food grade applications. Baldor supplied the premium efficiency motors that were built with wash-down construction. The hat channels that the isolators sat on were capped at each end so that contamination could not collect below the hat channels.

DAMPERS AND ACTUATORS

Greenheck VCD-43 aluminum air-foil blade dampers were used with Johnson Controls electric actuators. Since this was a wash-down application, it was necessary to keep the actuators out of the air stream. The dampers were mounted on the exterior of the unit so that the actuators could be kept out of the air-stream.

MARLO FOOD GRADE CONSTRUCTION DESIGN FEATURES

- Indoor Unit Construction
- Stainless Steel Interior
- Galvanized Steel Exterior
- Pitched and Fully Welded Floors
- Interior Pressure Boundary with Smooth Walls
- Structural Steel Isolator Base
- Belt-Driven Premium Efficiency TEFC Motor
- Epoxy Coated Food Grade Plenum Fan
- Aluminum Airfoil Blade Dampers
- Type 8 Stainless Steel Filter Holding Frames
- G.E. Silicone Caulk
- ExtraLite Plastic Globe Marine Lights

Contact your local representative for digital photos or CAD drawings.