



## ALDI Inc. – Punta Gorda, FL Equipment Support Solution



ALDI was founded by the Albrecht family in 1961 in Germany, making ALDI the first discounter in the world.

Headquartered in Batavia, IL, ALDI now has more than 1,600 stores across the United States. They have been steadily growing since opening its first US store in Iowa in 1976.

Since 2008, APD has managed ALDI's US Prototype Program. This program has included numerous redesigns over the years.

### Executive Summary

Southern Florida has High Velocity Hurricane Zones (HVHZ) and APD takes this into account for their designs.

### Challenges

According to Florida Building Code 1510.10, *"Roof mounted mechanical units shall be mounted on curbs raised a minimum of 8 inches (203mm) above the roof surface, or where roofing materials extend beneath the unit, on raised equipment supports providing a minimum clearance height in accordance with Table 1510.10."*

When APD started working for ALDI in South Florida the existing drawings placed the refrigeration system on what was called the 'rack' and was 48" above the roof surface. The reference to a medieval torture device was appropriate, as it was painful to deal with for ALDI and their Contractors.

The major complication was the size, due to the height of the finished rack and refrigeration unit, and the requirement that it all be assembled and then hot-dipped galvanized to prevent rust. This is costly.

Because we were dealing with possible hurricanes, the rack and its connection to the roof structure were also heavy duty.

In addition, in many municipalities, equipment needs to be hidden from view by equipment screens. The  $\pm 10'$  height of the rack and equipment meant the equipment screen panels were large and could act like a sail in a hurricane.

## The Solution

APD's Project Manager knew there had to be a better way. If all the other equipment goes on roof curbs, why can't the refrigeration system? Fabrication of the refrigeration racks is required to be designed by a structural engineer. Designing and fabrication of the rack is costly and has no room for errors. In order to ensure success, APD consulted with the structural engineer, ALDI's Construction Manager, the refrigeration vendor, and the company that makes the roof curbs for the rest of the equipment.

The final design has the equipment placed on a curb that is roughly 8" off the roof surface instead of 48". The engineering of the curb, including the attachment of the equipment to it, is handled by the curb manufacturer for hurricane compliance and does not require a Structural Engineer. The equipment screens can be much shorter which means less cost. Nothing gets hot-dipped galvanized.

## Results and Future Plans

Due to the research undertaken by the design team, it was determined that future Southern Florida stores will be designed using rooftop curbs. They have been determined to be more efficient and cost effective. Moving forward, this will exponentially save time and money on additional ALDI projects in Southern Florida.

