Doubling the size of an airport terminal which served 2.9 million passengers in 2011 is no small feat. As a top 75-ranking airport in the U.S., the Birmingham-Shuttlesworth International Airport in Birmingham, AL is undergoing a $201.6 million expansion and renovation that includes the use of 106,000 square feet of SYNTHEON ACCEL-E panels. The facility is Alabama’s largest airport, serving the Greater Birmingham area and surrounding Southeastern cities. It offers 130 daily flights to 48 cities throughout the United States. The modernization project will add a federal customs inspection station to facilitate direct international air traffic.

The project’s commitment to achieving a LEED® Silver certification, in addition to its construction time constraints and unique site considerations, made high-performance ACCEL-E panels an appealing option for the building envelope specifiers.

“Our desire was to give the owner (the Birmingham Airport Authority) a very low-maintenance and high-efficiency building envelope,” says Dale Schexnayder, AIA, CSI, CCS, LEED AP, Architect and Director of Specifications for KPS Group, an architectural firm with broad experience in specialized buildings.

ACCEL-E panels deliver three crucial benefits to the project: impressive and consistent thermal efficiency, easy and fast installation, and sound attenuation to mitigate the inherently loud atmosphere of an airport.

“During the design process there were several things we did not want to do,” Schexnayder says. “We did not want to start with steel studs and batt insulation. We have learned over the years that this conventional wall system is very inefficient because of gaps in the insulation and thermal short circuits through the steel studs.”

**PROJECT FACTS**

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>106,000 square feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURPOSE:</td>
<td>Airport terminal</td>
</tr>
<tr>
<td>MAXIMUM WALL HEIGHT:</td>
<td>35 feet</td>
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<tr>
<td>PANEL DEPTH:</td>
<td>8 inches</td>
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<tr>
<td>WALL TYPE:</td>
<td>Non-load bearing exterior infill and bypass walls</td>
</tr>
<tr>
<td>OWNER:</td>
<td>The Birmingham Airport Authority</td>
</tr>
<tr>
<td>ARCHITECT:</td>
<td>KPS Group</td>
</tr>
<tr>
<td>CONTRACTOR:</td>
<td>Brasfield &amp; Gorrie</td>
</tr>
</tbody>
</table>

**SYNTHEON SOLUTION**

ACCEL-E panels deliver three crucial benefits to the project: impressive and consistent thermal efficiency, easy and fast installation, and sound attenuation to mitigate the inherently loud atmosphere of an airport.

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THERMAL PERFORMANCE AND DESIGN SOLUTIONS

“Utilizing a highly energy-efficient wall panel gave us the opportunity to optimize energy performance, while assuring a high percentage of LEED credits.”

To overcome these common performance issues, the project team selected highly thermally-efficient ACCEL-E wall panels. ACCEL-E utilizes the time-tested insulative capabilities of EPS, which is factory formed and mechanically fused to specially-designed cold-formed steel studs, slotted to virtually eliminate thermal bridging. No other wall system combines framing, cavity insulation and continuous rigid foam insulation in such an easy, one-step installation process.

In addition to providing superior thermal performance, ACCEL-E panels span any height, limited only by mode of panel transport. As a result, multiple floors can be completed by installing a single panel. And unlike batt insulation, the ACCEL-E system’s EPS is unaffected by moisture and provides an effective air barrier in any climate zone.

CUSTOM DESIGN AND EASE OF INSTALLATION

All ACCEL-E panels arrive at the job site prefabricated for each project with pre-cuts for windows and doors.

“In response to the exterior wall cladding manufacturer’s requirements for 16 gauge stud backup, SYNTHEON manufactured special 16 gauge panels specifically for this project,” Schexnayder says. “We were very impressed that these specially-designed panels were delivered to the site on schedule, as promised. As a result, SYNTHEON has earned our confidence.”

Accordingly, to achieve the 16 gauge requirement, SYNTHEON developed 8”-thick panels with steel studs made from stronger .054”-thick steel. This product is now a standard offering.

Further, the speed of installation of ACCEL-E panels enables buildings to get dried-in in a third of the time, allowing interior trades to commence work sooner. This was a critical factor for the tight time constraints of the airport project.

“The infill has gone quickly,” says Shane Swords, Project Manager for Brasfield & Gorrie, and general contractor for the project. “We’re saving time because we don’t have to come back and insulate the panels. It makes it a lot quicker, a lot easier.”

PRODUCT PROFILE

The SYNTHEON ACCEL-E Steel Thermal Efficient Panel is a lightweight, easy-to-install, high performance wall system that shortens construction time, optimizes crew use, greatly improves energy efficiency – and does it all in just one step. The secret behind the exceptional construction efficiency of ACCEL-E is an exclusive manufacturing process that combines the strength and performance of cold-formed steel framing with the superior insulation properties of expanded polystyrene (EPS). This unique fusion process provides each panel with the highest levels of engineered performance, yet delivers thermal efficiency so exceptional it exceeds new ASHRAE 2007 90.1 and IECC 2009 requirements for the building envelope. Plus, the materials used in the panels resist mold and mildew. No other wall system combines framing, cavity insulation and continuous rigid foam insulation in such an easy, one-step installation process.

The ACCEL-E panels are produced in thicknesses of 5-1/2, 6 and 8 inches, and can be manufactured in virtually any height, limited only by the mode of transport.

SYNTHEON Inc.
25 Avenue A
Leetsdale, PA 15056-4076 USA
888-922-2353

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