



Denver International Airport, Concourse B-West expansion

Denver, CO, USA



Project Information

Project category:
Transportation

Year of construction:
2020

Year of MAPEI involvement:
2020

Architect:
HNTB

MAPEI coordinator:
Bart Wilde

Project owner:
Denver International Airport

General contractor:
Turner-Flatiron, Joint Venture

Installer:
Brekhus Tile & Stone, Inc.

Project size:
12,507 sq. ft. (1 162 m²)



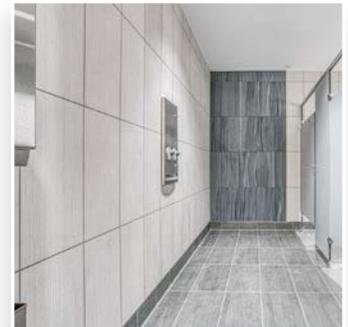
Project Overview

Working at Denver International Airport (DIA) presents distinct challenges. Every employee must go through a thorough training and security process to be allowed to work at the airport. In addition, the crew members who worked on DIA's Concourse B-West expansion project not only had to go through the airport's training and security process, they also had to be trained to handle and install the large porcelain panels that were specified as part of the project. Any deviation from the Tile Council of North America's (TCNA's) tolerances could not be accepted for the installation of these panels. The jobsite was rife with unusual challenges — and then COVID-19 hit...



Products Used

ECO Prim Grip™
Kerapoxy® CQ
MAPEI Ultralite™ Mortar Pro
MAPEI Ultralite S2
Mapelastix® AquaDefense
Mapesil™ T
Reinforcing Fabric
Ultrabond ECO® GPT
Ultracolor® Plus FA
Ultraflex™ LFT™



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MAPEI solution brings airport job to safe landing

Rising like a series of white tents in an echo of the Native American teepees that once dotted the area, Denver International Airport (DIA) sits on the edge of the Great Plains and at the foothills of the Rocky Mountains. According to flydenver.com, approximately 35 million people travel through DIA each year using it as first or last points of a one-way itinerary. According to the same Website, the airport served a total of 64.5 million passengers in 2018, making it the fifth largest airport in the United States.

Although DIA officially opened in 1995, by 2018 it was clear that an expansion was in order and three new concourses – A, B and C – were designed. A wide variety of MAPEI setting materials were specified for use throughout the extensive new Concourse B-West expansion.

A strict jobsite

The expansion specification called for the installation of porcelain floor and wall tile, as well as large-format gauged porcelain tile. The areas to be tiled included three sets of restrooms for airport employees and airline crews, concourse-level public restrooms, a pet-relief area and other areas throughout the interior of the public concourse.

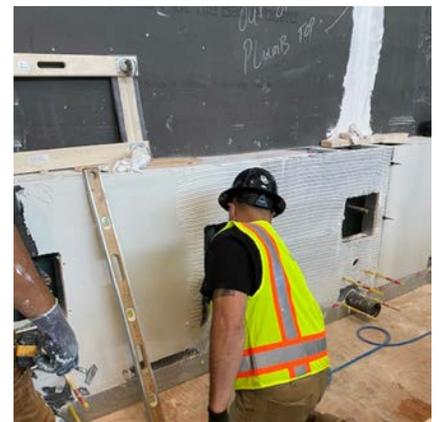
The floor-and-wall tile work in the employee restrooms took place on a level of the airport referred to as the “apron” — this is also known as

the tarmac level. (On an aviation side note, the term “apron” is thought to derive from the theatrical term “stage apron,” as this is the level where planes are “staged” for departure.) In total, the DIA tile specification landed at 12,507 square feet (1 162 m²).

While the travelers flying in and out of DIA may have thought that they were on adventures, the real adventure was waiting for the crew members of Brekhus Tile & Stone, Inc. They faced real challenges every day just getting to the jobsite.

Because the jobsite was located on the grounds of an airport, each member of the Brekhus team had to undergo extensive background checks before he/she could even be assigned to the DIA crew. These checks included federal background checks, drug testing and specific safety training, as well as an orientation program that was required by the general contractor, Turner-Flatiron, Joint Venture.

In order to drive onto the airport grounds, Brekhus crew members also had to pass driving tests and be issued special permits and badges. Further, every company vehicle had to have airport-issued markings in order to pass onto the grounds. Airport security remained high and with so many tradespeople coming in and out of the construction zone, the background check and training processes were strict.



MAPEI solution brings airport job to safe landing

Once the crew members made it onto the jobsite, the strict training procedures and processes continued.

“Installation of the large porcelain panels required factory-advanced, comprehensive training by the large-format-tile manufacturer, StonePeak Ceramics,” said Krystian Banach, Brekhus’ Junior Project Manager. “The tiles were specially manufactured for DIA at StonePeak’s plant in Sassuolo, Italy. Special cutting and setting equipment were needed to complete the installation, which also required its own training.”

The Brekhus crew used modular, connectable worktables for cutting and processing large-format tiles. Made to be mobile on jobsites, these worktables allowed crew members to lay the large-format tile and cut using a cutting system.

“The cutting system has suction cups and a rail guide that allowed for a precision score and snap of the material. The handling and setting equipment included a sturdy crossbar frame with attached electronic suction cups,” Banach continued. “We also used a special vibrating tool designed to vibrate the surface of the large-format tiles and help any air pocket escape from underneath the material to ensure a full bond to the setting material and prevent potential cracking.”

MAPEI on the job

ECO Prim Grip primer was used to prepare the substrates before installation began. Other products used throughout the jobsite included **MAPEI AquaDefense** membrane, **Kerapoxy CQ** grout and mortar, **Ultraflex LFT** mortar, **Mapesil T** sealant, **Reinforcing Fabric**, **Ultracolor Plus FA** grout, **MAPEI Ultralite Mortar Pro** mortar, **MAPEI Ultralite S2** mortar and **Ultrabond ECO GPT** adhesive.

“All of the large-format tile was installed using MAPEI’s **Ultrabond ECO GPT**. This was a great product for this project. The product was ready to use, which saved a lot of time and made the installation very efficient,” Banach said. “In addition, this product eliminated the pre-mixing that was required with the **MAPEI Ultralite S2**. This helped in the reduction of working area, water was not needed, there was significantly less cleanup and no silica exposure.”



Saving time and reducing the size of the working area became a big issue during the job when COVID-19 struck. In addition to all the “regular” challenges that Brekhus crew members faced getting to this unusual jobsite, they had to face the challenges of a jobsite during a deadly pandemic — right in the middle of the project.

In addition to their normal personal protective equipment (PPE), all workers always had to wear face masks. They had to have their temperature checked throughout the day. Tools had to be disinfected after every shift. And, there were limits placed on the number of workers that could enter a given space at any given time — everyone

had to follow strict social distancing requirements. Placing large-format tiles to strict standards under those rules proved to be a new type of adventure.

But, thanks in no small part to **Ultrabond ECO GPT** and its time-saving properties, the Brekhus crew finished on schedule and DIA’s new 11-gate Concourse B-West opened on time. Now, when you fly into Denver on United Airlines, there is a good chance that you will pass through Concourse B-West. When you do, look around, admire the work and think about the challenges that were surpassed by the Brekhus crew and MAPEI.

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