

Amazon Distribution Center



The Background

Construction of a new Amazon fulfillment center in Salinas, California, commenced in the fall of 2024. Located within the Ag-Industrial Center of Salinas, the primary facility is a five-story structure encompassing three million square feet. As the site was previously used for agriculture, extensive infrastructure development was required before vertical construction could begin. A key component of this preliminary work involved ground improvement measures to reinforce the soft, former farmland soil and ensure it could support the weight and stability of the new building.

Project:

Goat

Location:

Salinas, California

Owner/s:

Amazon.

Concrete Contractor:

Advanced Geosolutions, Inc. (AGI)

Designer:

Advanced Geosolutions, Inc. (AGI)

Market Sector:

Foundation Engineering

Products Used:

MasterGlenium® 7920



The Challenge

Advanced Geosolutions, Inc. (AGI) employed the Rigid Inclusion (RI) technique for ground improvement, which involved the installation of unreinforced, grouted cement columns into the weak, highly compressible soils to mitigate settlement, enhance bearing capacity, and provide structural support for shallow foundations. The grout columns serve to transfer structural loads to deeper, more competent strata, thereby improving the overall performance of the subgrade.

To meet the project's performance specifications, AGI needed to batch and mix the grout on site, presenting a range of technical challenges. Achieving the optimal mix design necessitated careful calibration to satisfy a comprehensive set of performance criteria – including compressive, flexural, and tensile strength; flowability and workability; setting time and curing behavior; volumetric stability; long-term durability; and permeability. Additionally, cost-efficiency remained a key consideration throughout the grout formulation process, requiring a balance between material performance and economic feasibility.

The Solution

The team from Master Builders Solutions collaborated closely with AGI's engineering staff, providing hands-on support throughout the grout optimization process. Leveraging deep expertise in construction materials, our specialists conducted a comprehensive review of the grout components and proposed high-performance alternatives tailored to the project's unique demands. By introducing advanced chemical admixtures and fine-tuning the mix design, we helped AGI enhance the grout's performance while driving efficiency and cost-effectiveness.

Project facts at a glance:

- Alternative sand sources were utilized in the grout mix design, improving material efficiency and availability.
- MasterGlenium 7920, a high-range water-reducing admixture, was incorporated to enhance grout performance, including flowability, strength, and workability.
- All cement columns were installed with exceptional precision, with zero rework required – demonstrating superior mix reliability and execution.

Customer's benefits:

- All specified performance requirements for the grout were successfully met, including strength, set time, durability, and volume stability.
- AGI completed the ground improvement scope on time, contributing to overall project schedule adherence.
- Cement usage was reduced by 10% through mix design optimization, delivering significant cost savings and a reduced environmental footprint.

About Master Builders Solutions

Master Builders Solutions is a leading global manufacturer of concrete admixtures, as well as other sustainable solutions for the construction industry, focussed on delivering its vision: **Inspiring people to build better**. Master Builders Solutions provides value-added technology and market-leading R&D capabilities to improve the performance

of construction materials and to enable the reduction of CO₂ emissions in the production of concrete. Founded in 1909, Master Builders Solutions has ca. 1 600 employees operating 35 production sites globally, supporting their customers in mastering their building challenges of today – for a decarbonised future.

Master Builders Solutions Admixtures US, LLC

23700 Chagrin Boulevard
Beachwood, OH 44122 USA
(800) 628-9990

master-builders-solutions.com/en-us
admixtures@masterbuilders.com

Master Builders Solutions Canada, Inc

1800 Clark Boulevard
Brampton, Ontario L6T 4M7 CANADA
(289) 360-1300

master-builders-solutions.com/en-ca

