

SmartMix™

SmartMix™ is a web-based dashboard that enables producers to optimize concrete materials and predict the performance of their mixes. With the SmartMix dashboard, producers can adjust the proportions of their concrete mixes, such as the use of chemical admixtures and amount of cement. With the help of Roxi™ and access to millions of datapoints used to train the artificial intelligence algorithm, the dashboard's suggestions ensure that these adjustments will meet a mix's designed compressive strength and other performance criteria.

Performance Prediction

- Predict mix performance, such as compressive strength, workability, and air content of concrete, based on a mix's proportions, raw material characteristics, ambient conditions, etc.
- Meet performance specifications and prescriptive requirements such as specified slump, strength at different ages, minimum cement content, etc.

Mix Optimization

- Analyze and evaluate the influence of mix adjustments, such as the use of chemical admixtures or supplementary cementitious materials on concrete performance.
- Formulate concrete mixes at minimal costs and with a reduced carbon footprint.
- Integrate Roxi, SmartRock's AI program, with other concrete data management platforms using our comprehensive REST API, accessing more insights into the quality control and quality assurance of concrete.

Giaterc received funding of \$2.4 million from Sustainable Development Technology Canada (SDTC) to help with the training, research, and development of Roxi and SmartMix as well as \$800,000 from the National Research Council of Canada Industrial Research Assistance Program (NRC IRAP).

"The SmartMix platform has helped us communicate with our customers and provide transparency. We can give them better insights into when our mixes will achieve a specified early-age strength to help them with their construction schedule."

Patrick Frawley, P.E., Director of Quality Assurance, Central Concrete.

"This means that a producer can meet concrete mix specifications set out by a project engineer, while cutting down on both material costs and CO2 emissions. SmartMix can help address the sustainability issues in the concrete industry that are responsible for 8% of global CO2 emissions."

Andrew Fahim, Senior Manager of R&D, Giaterc.