



CASE STUDY

Al Kifah Ready Mix & Blocks (KRB)

How CarbonCure's early adopter in the Middle East is revolutionizing sustainable concrete in the region.

Introduction

Al Kifah Ready Mix & Blocks (KRB) is a key player in the Saudi construction sector, with a legacy spanning over 40 years. The company expanded from just one factory in 1980 to more than 27 branches across the kingdom today.

KRB is an environmentally conscious company dedicated to offering high-quality products and services to its clients. With a strong focus on sustainability — and a commitment to reduce CO₂ emissions by 30% — the KRB team implemented CarbonCure's ready mix technology to reduce the carbon footprint of its ready mix concrete without compromising the performance.

KRB's Environmental Focus

Since 2017, KRB has been on a mission to reduce the environmental footprint of its concrete products. Recognizing that there is no one-size-fits-all solution to decarbonizing concrete, KRB has implemented various innovative technologies in its ready mix and precast businesses over the years, including:

1. Use of local or in-house materials to reduce transportation emissions

KRB sources high-quality limestone and non-calcareous aggregates from sister company Al Kifah Crushers and admixtures from its sister company TFCA.

2. Waste control

KRB uses concrete reclaimers to reprocess returned concrete and new technologies for concrete waste and aggregate recycling.

3. Use of recycled materials

KRB recycles steel manufacturing waste to produce aggregates (i.e., metal slag and silicomanganese) that can create ultra-high strength concrete with minimum cement.

CarbonCure was the natural next step for KRB to lower CO₂ emissions. As construction demands in the Middle East continue to grow, technologies like CarbonCure are paramount for leading players like KRB to ensure sustainable growth.

By adopting CarbonCure, KRB will reduce its cement consumption and mineralize CO₂ in its concrete while maintaining the high-quality standards it is known for.

"CarbonCure has played an important role in reducing the carbon footprint of our concrete products without affecting the performance or quality."

Ahmed Taha

R&D/Technical Manager | Al Kifah Ready Mix & Blocks

KRB and CarbonCure

Adopting any new technology can be challenging — especially one without a track record in Saudi Arabia. Management had some initial concerns about the performance of CarbonCure and how the market would react to the technology. Despite the hesitations, KRB decided to give CarbonCure a shot since it had the potential to accelerate KRB's goal of reducing emissions by 30%.

Initial Implementation

The first six months were crucial. This was the period where KRB ran pilot tests to see if the CarbonCure technology was up to the task. Throughout the implementation process, CarbonCure provided comprehensive support to the KRB team—from installation to testing—ensuring that they could fully capitalize on the benefits of the technology.

Results

The results were promising. The team was able to cut the cement content in their mixes by 3% without affecting compressive strength. It also enabled the reduction of CO₂ emissions by about 10-15 kg per cubic meter of concrete. Moreover, they found that the performance remained consistent, and costs went down after optimizing the mix.

“After finalizing the pilot study, we discovered we can reduce about 10-15kg of CO₂ emissions per cubic meter of concrete and cut costs through mix optimization”

Ahmed Taha

R&D/Technical Manager | Al Kifah Ready Mix & Blocks

Driving Market Adoption

So far, CarbonCure has been used with KRB's local customers, specifically in the residential market, for the construction of villas. The response has been extremely positive.

There is also demand for CarbonCure from the Ministry of Energy in Saudi Arabia — demonstrating the national-level importance and potential of sustainable construction technologies.

Despite this demand, it can be difficult to gain buy-in from specifiers, contractors, and end users. Saudi Arabian construction projects have rigid requirements and are often based on prescriptive rather than performance specifications.

To address these challenges, KRB is currently working on getting the necessary certifications for CarbonCure, specifically from SASO, the Saudi Standards body. This certification will pave the way for a wider adoption of the technology in various projects.

What's Next for KRB?

KRB is already seeing the cost-effectiveness of the mix optimization enabled by CarbonCure and is looking forward to the carbon credit earning potential that will drive profitability even further.

While KRB's journey with CarbonCure is still in its early stages, the prospects look promising for a partnership that will redefine the future of sustainable construction in the Middle East.

Build your business. Build with CarbonCure.

CarbonCure has been used on thousands of projects ranging from healthcare to higher education, residential developments, and corporate campuses.

For more information about building with CarbonCure concrete, visit carboncure.com. To get in touch with a CarbonCure representative, send us an email at info@carboncure.com or give us a call at +1 (902) 448-4100 (Worldwide) or +1 (844) 407-0032 (North America).