



Atlantic Industries Limited

# PROJECT PROFILE



March 26, 2019

## AIL's innovative Ultra•Cor used in Guinness-World-Record-breaking Dubai project

### World's largest metal buried bridge span: 32.39 m

The Shamal Bridge near Dubai, United Arab Emirates (UAE), recently earned a Guinness World Record for having the world's largest metal buried bridge with a span of 32.39 m. The AIL Group is very proud of this achievement for both our Ultra•Cor Structural Steel Plate and our European Licensee, ViaCon Group.

The Shamal grade separation is part of the UAE's mega RAK Ring Road project that is establishing a more robust transportation corridor between the northern Emirate of Ras Al Khaimah (RAK) and the rest of the Emirates.

#### Product developed by AIL's New Brunswick R&D Team

AIL Group CEO, Mike Wilson, attended the official opening and Guinness award ceremony hosted by the UAE's Ministry of Infrastructure Development on March 6, 2019. "I feel this is quite

### Project at a glance:

**Name:** Shamal Bridge

**Location:** Ras Al Khamaih, near Dubai, UAE

**Owner:** UAE Ministry of Infrastructure Development

**Engineer:** Core Engineering Consultancy

**Design and Manufacture:** ViaCon Poland (AIL Group Licencee)

**Plate Assembly:** ECO, UAE

**Contractor:** Top Link Contracting & General Transport LLC

**Sector:** Transportation

**Application:** Grade Separation

**Product:** Three Ultra•Cor Arches

**Largest Arch Dimensions:** Span 32.39 m, Rise 9.68 m, Thickness 12 mm

**Cover Depth:** 2.81 m





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an accomplishment for a product that was developed by our R&D Team in Dorchester and Sackville, New Brunswick," comments Wilson. "As more and more Ultra•Cor projects are installed overseas, I see a great potential for the product here in North America."

### **"Much better than concrete bridges in terms of economic advantages."**

His Excellency Dr. Abdullah Bin Mohammed Belhaif Al Nuaimi, Minister of Infrastructure Development, addressed the gathered dignitaries and guests. "The Shamal arch steel bridge is much better than concrete bridges in terms of economic advantages," H.E. Abdullah Al Nuaimi remarked. "It has been completed in half the time needed for regular concrete bridges, it can take heavy weights and it has a lifetime of over 100 years."

The grade separation serves as an interchange to carry road traffic over the new highway. The two larger arches can accommodate up to six lanes of traffic, while the third arch is designed for up to three future rail lines.

### **AIL's Engineering Team collaborated with ViaCon on several aspects of this project**

During the design process, AIL's Engineering Team collaborated with ViaCon on the technical aspects. These included: construction sequence, shape optimization, soil-structure interaction modelling, geotechnical considerations and structural design. The structure was also instrumented to gain an in-depth understanding of stresses during construction and under operation conditions. The instrumentation results will be utilized by AIL and ViaCon R&D Teams to push the boundaries for future Ultra•Cor spans.

The Ultra•Cor structure was designed and manufactured by ViaCon at their Poland location. The epoxy-coated plates were then shipped to the UAE site in containers. The project itself was led by ViaCon's Turkish team with support from ViaCon UAE.

### **AIL's Ultra•Cor: the strongest, deep-corrugated structural plate available**

One of AIL's latest innovations, Ultra•Cor Structural Steel Plate is taking engineered structural plate to new dimensions in capability and performance. With an impressive 500 mm pitch and 237 mm depth, its ultra-deep corrugations allow it to reach greater spans and withstand the highest cover depths and the heaviest of loads.

Available in a variety of Arch geometries as well as Box Culverts, Ultra•Cor is appealing to DOTs as an economical alternative to short-to-medium span bridges, tunnels, underpasses and river crossings. Mining companies specify it for larger haul road crossings, stockpile tunnels, portals and canopies. Ultra•Cor is manufactured in accordance with CHBDC, AASHTO, ASTM and AREMA design requirements.

View 3D Animation / Time-Lapse Video



View Official Opening Video

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We'd like to thank ViaCon for both their continued partnership with The AIL Group and their great work on the Shamal Bridge project.



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