KRAMPE HAREX®

KNOW WHY.

Reference | Tunnel

WAKRAH & WUKAIR DRAINAGE TUNNEL

METROPOLITAN AREA DOHA | QATAR

AUCC Factory, subcontractor for PHM JV for segments production

PROJECT INFORMATION

Project	Wakrah & Wukair Sewage Tunnel
Location	Al Wakrah & Al Wukair, Qatar
Length	13 km
Diameter	4.5 m
Component	Drainage tunnel
Delivery period	2021 – 2022
Requirement	According to fib Model Code 2010: Class 5 D

Concrete	C 50/60
Fibre type	DE 60/0.9 H
Dosage rate	40 kg/m³
Total volume	2,300t steel fibres

SPECIAL FEATURE

The tunnel, with a diameter of 4.5 m, will carry wastewater from the city of Al Wakrah and the municipality of Al Wukair to treatment plants. The gravity tunnel, which is designed for a service life of 100 years, is one of the biggest drainage tunnels in Qatar.

KrampeHarex GmbH & Co. KG **Strahlmittel und Fasern** · Abrasives and fibres **Anschrift** Pferdekamp 6–8 · D-59075 Hamm
Fon +49 (0)2381 - 977 977 **Fax** +49 (0)2381 - 977 955 **Internet** www.krampeharex.com **E-Mail** info@krampeharex.com

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A REGION BOOMING - **FRESH WATER FOR DOHA**

In the middle of the Qatari desert, today's megacity Doha was once built. The capital of the Emirate of Qatar is home to 1.2 million inhabitants. The Doha metropolitan region is the center of Qatar's history, politics and culture. The region has been growing rapidly for years and, with its increasing population, poses major challenges for the water and wastewater infrastructure.

The giant Wakrah & Wukair Drainage Tunnel Doha wastewater project is designed to relieve the current drainage network and distribute the drainage flows of a gigantic area.

The project is located in the southern part of Doha near the cities of Al Wakrah and Al Wukair. The project includes the design and construction of a 13.3 km long wastewater tunnel using a double-shell construction method with an internal diameter of 4,500 mm and a depth of up to 61 m, eight access shafts and drop structures.

150

million liters of wastewater per day are consumed by the inhabitants of Doha.

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The 13 km long tunnel consists of steel-fibre-reinforced tunnel lining segments. The DE 60/0.9 H from KrampeHarex is used here. This cold-drawn wire fibre has a length of 60 mm, a diameter of 0.9 mm and a tensile strength of 1,900 N/mm². With experience from numerous projects and research activity in KrampeHarex's in-house concrete laboratory, this fibre proved to be the best choice and provides optimal reinforcement for the tunnel while increasing durability, service life and significantly reducing CO2 emissions, compared to conventional reinforcement with steel bars.

8.108.823.487 Fibres

4.811 BigBags

121 Container

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"The cooperation with KrampeHarex on this project is professional, cooperative and uncomplicated. In addition, the fibre impresses with its impressive quality."

Tomas Posker
Project Director, Wakrah & Wukair Drainage Tunnel – C853/2

You can find more interesting projects and current topics about fibre-reinforced concrete on our website. Visit: **krampeharex.com/fibres**

OTHER **PROJECTS**

MESAIMEER TUNNEL
Doha / QATAR

Application: Tunnel
Length: 10 km
Volume: 1.400t
Fibre type: DE 60/0,9 H

STORMWATER
Dubai / UAE

Application: Tunnel
Length: 10,4 km
Volume: 5.000t
Fibre type: DE 60/0,9 H

DTSS2 T07 INNER SHELL
Singapore

Application: Tunnel
Length: 12 km
Volume: 2.500t
Fibre type: DE 60/0,9 H

DTSS2 T10
Singapore

Application: Tunnel
Lenght: 8 km
Diameter: 3,50-6,0 m
Fibre type: DE 60/0,9 H

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