

HOBAS® CC-GRP Jacking Pipes Premiere in Dubai – Trenchless Installation in the United Arab Emirates

The “Nad Al Sheba 4 Sewage & Drainage” project was initiated to provide Nad Al Sheba 4 across the Emirates Road to Dubai Academic City and parts of the Dubai Silicon Oasis area with an upstream GRP drainage trunk, large enough to accommodate the current and anticipated flow until 2030. In order to avoid traffic disruptions on the heavily frequented 6 to 16-lane Emirates Road and adjacent service roads, it was decided to opt for trenchless installation. One of these microtunneled sections was realized with HOBAS CC-GRP Pipes.

Along with massive infrastructural developments on the Arabian Peninsula, particularly the United Arab Emirates, Qatar, and Saudi Arabia see a strong tendency to employing non-disruptive trenchless techniques such as pipe jacking when planned pipe routes intersect with busy highways or streets. A premier for Dubai is, however, the installation of HOBAS CC-GRP Jacking Pipes. Their numerous technical as well as economic benefits convinced the contractors to jump on the bandwagon. HOBAS Pipes have after all a proven international track record of over 30 years in the trenchless pipe market in Europe, the US, and Australia.

The small outside to inside diameter ratio of the pipe (60 mm wall thickness in this project) allowed the use of an AVN1200 (D_e 1505 mm) instead of AVN1400 (D_e 1740 mm) microtunneling machine and besides reduced the excavation material by 26 % in this project. Due to the easy handling of the CC-GRP Jacking Pipes and their push-to-fit jointing system, the microtunneling experts only needed a couple of pipes to become familiar with the premiering HOBAS System.

The drive depth of the 3-m-long pipes D_e 1499 mm in diameter and a stiffness of SN 64000 lay around 8.6 meters through hard rock and 3.9 meter water table. Thanks to the products’ smooth almost non-absorbing exterior, light weight, and uniform diameter, microtunneling specialist Al Naboodah jacked the complete CC-GRP Jacking section at an average installation speed of 40-50 mm per minute. The subcontractor was also pleased with the extremely low necessary drive forces of approximately 490 kN equaling about 50 tons for the pipes which were designed for a maximal allowable jacking force of 4822 kN. Even after a five-day break the so-called cold start did not necessitate an increase in force.

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Year of construction
2013

Pipe specifications
D_e 1499, PN 1, SN 64000

Application
Stormwater drainage

Client
Dubai Municipality

Consultant
MWH

Contractor
Kier Dubai

Subcontractor Jacking
Al Naboodah Specialist Services

Advantages
Smooth outer surface, low weight, quick installation, easy handling

