

BITUTHENE® Waterproofing Accelerates Development of Military Architecture

Oman Ministry of Defence Military Base ensures highest waterproofing integrity and protection.



Project	Ministry of Defence Military Base in Oman
Owner	Ministry of Defence
Main Contractors	Dawood Contracting LLC, Steel Building LLC, Al-badi Contracting
Engineer	Hill International, Majan Engineering Consultants
Distributor	Khimji Ramdas LLC
GCP Solutions	Bituthene® waterproofing

The Overview

The Project

The Ministry of Defence Military Base in Adam, Oman is a major base consisting of several military architecture structures including administrative and operative buildings and accommodation blocks.

"GCP Applied Technologies and Khimji Ramdas' added value and cost savings to this demanding military architecture project from the beginning through completion with technical expertise, on-site contractor training, timely delivery of supplies and high performing products offering lifetime protection."

The Challenge

The initial specification was for a 1 mm Light Density Polyethylene (LDPE) loose laid membrane, to be applied to the foundations and individual footings designed as a raft construction.

The military architecture project was located in sandy terrain, where often high-speed wind, dust and unexpected sand storms cause low visibility. The specified membrane had to protect the concrete from these aggressive ground conditions and high temperatures and humidity. To overcome these climatic challenges, a simple, fast, secure and bonded membrane waterproofing solution requiring the least possible site logistics was needed.

High Density Polyethylene (HDPE) durability and Bituthene®'s proven track record in similar ground conditions and climatic challenges motivated the engineering team to reconsider the original specification for the commercial building.



The Solution

GCP Applied Technologies proposed BITUTHENE®3000HC, an adhesive membrane that is chemically resistant and provides superior protection against aggressive soils, ground water, methane, carbon dioxide and radon gases. BITUTHENE®'s twin seal overlap system ensured highest waterproofing integrity and protection for the lifetime of military architecture.

GCP's local distributor, Khimji Ramdas, supplied approximately 120,000 m² of BITUTHENE®membrane combined with 40,000 m² of GCP Protection Boards and 12,000 litres of fast drying primer formulated for BITUTHENE®products to this remote location in a timely manner, ensuring that the project was able to continue progressing on schedule.

BITUTHENE®production and performance is audited for yearly independent Factory Production Control. Since 1997, BITUTHENE®product application and suitability has been certified by the British Board of Agreement (BBA) for water-tightness, durability and gas resistance.

Advantages of BITUTHENE® 3000HC

Waterproofing with Lifetime Protection

- Full-width, cross-laminated HDPE film with self-adhesive edge-to-edge twin sealing for waterproofing and protection against chemicals and gases.

Fast, Easy, Safe and Cost Efficient Application

- Contractors can use their own labor to instal, avoiding scheduling challenges, project delays and added costs.
- No additional equipment needed avoiding logistical planning and added costs.
- No additional measures to keep in place during high winds.
- Membrane application within one hour of priming with BITUTHENE®B1.
- Minimum 50 mm overlaps without marking at site.
- Does not require a hot works permit or emit harmful fumes.

Less Waste

- Unique bonding characteristics allow 'repositioning' during application.
- Quality packaging with crush resistant core ensures product from transport to application.
- Silicon release paper retains smooth quality even at high +55 °C (131°F) site temperature.

Key Winning Points

- Product Performance — outstanding concrete protection with high chemical and gas resistance.
- Fully Bonded Technology — adhesive twin seal overlap system protects structures from capillary action.
- Fast, Easy, & Safe Application — cold application within one hour of priming avoids harmful fumes as well as sand and dust accumulation to overcome high-speed wind issues.
- Training and Site Support — consultation and commercial building contractor application training provided by the Blue360SM Field Advantage and Khimji Ramdas' technical experts.
- Material Availability — materials readily supplied by Khimji Ramdas to the remote location of the project.
- Credibility and Proven Track Record — GCP and Khimji Ramdas' long standing track record of partnerships and project successes in the region.

gcpat.uk | United Kingdom customer service: +44 (0) 1480 478421

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Alpharetta, GA 30009, USA

GCP Applied Technologies (UK) Ltd, 487-488 Ipswich Road, Slough, SL1 4EP

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