



SIKA AT WORK

CONDUCTOR REPAIR FOR GAS FIELD COMPLEX, OFFSHORE SARAWAK, MALAYSIA

OFFSHORE & MARINE CONSTRUCTION
CONVENTIONAL ENERGY

BUILDING TRUST



CONDUCTOR REPAIR FOR GAS FIELD COMPLEX, OFFSHORE SARAWAK, MALAYSIA



PROJECT DESCRIPTION

In March 2012, Sika worked in collaboration with Sarawak Shell Sdn. Bhd. to carry out structural reinstatement and corrosion repair of a conductor on an offshore platform in the Sarawak gas field. The conductor, located in the splash and tidal zones, exhibited severe corrosion that compromised its structural performance and exposed the inner casing to further degradation.

Due to the risk of overstressing and failure under increasing well loads, a permanent strengthening solution was required. The repair strategy was executed in 26 days, delivering structural reliability with minimal offshore disruption.

Project name: Conductor Repair for Gas Field Complex
Client: Sarawak Shell Sdn. Bhd.
Location: Offshore Sarawak, East Malaysia
Year: 2012
Application: Well integrity
Product: UHPC grout (20 tons)

Any product name or reference reflects the Sika product name at the time of creation of this document and may differ from the product name or reference during past events.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

PROJECT REQUIREMENTS

The 26-inch conductor had corroded extensively, with suspected damage also affecting the 18 5/8-inch inner casing. In this condition, well loads were being redistributed across the remaining intact casings, raising the risk of structural failure. The client required a durable, diver-free repair that could restore bending and shear capacity across the affected zone while minimizing offshore equipment footprint and avoiding hot-work operations.

SIKA SOLUTIONS

Sika provided a full-service well integrity solution using Ultra-High-Performance Concrete (UHPC) grout and a custom-designed formwork system. The repair involved the installation of vertical steel rebars to restore bending resistance, with shear studs included to ensure effective shear transfer between the conductor and the repair material.

Prior to installation, marine growth was removed using ultra-high-pressure water jetting to ensure clean bonding surfaces. The prefabricated mold was then installed from the bottom of the spider deck to -4 meters below mean sea level. All work was carried out from the platform's main deck, with no divers required.

The UHPC grout was injected into the formwork to fully encapsulate the conductor and inner casing. Due to the rapid strength development of the UHPC, the formwork was safely removed just 24 hours after casting. The repair method and structural behavior were validated using Finite Element Modelling (FEM) analysis.

CUSTOMER BENEFITS

Sika's cold-work solution restored full design capacity to the corroded conductor using a cost-effective, efficient, and long-lasting method. The UHPC grout and external reinforcement system delivered superior strength and durability compared to conventional materials, while eliminating the need for diving operations or hot-work offshore.

The minimal equipment footprint and rapid setting time significantly reduced vessel and crew requirements, saving time and cost for the operator. This project showcased the long-term value of UHPC-based conductor repair methods, now increasingly favored across brownfield offshore installations.

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