



# SIKA AT WORK

## UNDERWATER STRUCTURAL REPAIR OF HC PLATFORM

OFFSHORE & MARINE CONSTRUCTION  
CONVENTIONAL ENERGY

BUILDING TRUST



# UNDERWATER STRUCTURAL REPAIR OF HC PLATFORM



## PROJECT DESCRIPTION

In December 2017 and January 2018, Sika carried out underwater structural repair and strengthening works on the HC Platform located in the Heera Field within the Mumbai High offshore development, India. The platform is situated in approximately 60 meters of water depth and forms part of the offshore infrastructure operated by Oil and Natural Gas Corporation Limited.

During inspection activities, the framing at Level-C, located at approximately EL -6.0 m, was found to have detached from the platform structure. Sika was subsequently engaged by Dolphin Offshore Enterprises (India) Limited to develop and execute an underwater repair solution capable of replacing the entire framing system using grouted clamp methodology without interrupting platform operations.

Project name: Structural Repair of HC Platform in Heera Field of NGH Asset  
Location: Heera Field, Mumbai High, India  
Year: 2017-18  
Customer: Dolphin Offshore Enterprises (India) Limited  
Application: Repair & maintenance  
Product: SikaGrout®-9550

## PROJECT REQUIREMENTS

The project required the complete replacement of the detached Level-C framing structure while maintaining the operational integrity of the offshore platform. The repair methodology needed to avoid underwater welding and eliminate the requirement for platform shutdown during installation.

In addition to the offshore repair execution, the scope required detailed engineering assessments including inspection reviews, in-place structural analysis, fatigue analysis, pushover analysis, and finite element analysis (FEA) to verify the suitability and long-term performance of the proposed strengthening solution.

The installation sequence also presented significant offshore execution challenges. Multiple interconnected clamps had to be installed and grouted simultaneously to form a single integrated structural system. This required highly coordinated rigging arrangements and precise installation sequencing to maintain alignment and structural stability throughout the operation.

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## SIKA SOLUTIONS

Sika delivered a complete engineering and offshore grouting solution for the underwater structural reinstatement of the HC Platform framing system using high-performance cementitious grouted clamp technology. The scope included pre-engineering support, inspection and structural assessment, in-place analysis, fatigue and pushover analysis, and finite element modeling to develop the repair methodology. Sika also supplied SikaGrout®-9550, together with grouting facilities, offshore equipment, cube casting and testing services, and specialist offshore engineering and grouting personnel.

The repair methodology involved the installation and grouting of multiple interconnected clamps to replace the damaged Level-C framing system. Due to the complexity of the structural arrangement, all clamps were grouted in a single coordinated operation rather than individually. The installation sequence was carefully managed by progressively installing leg clamps while maintaining alignment and stability through dedicated rigging arrangements.

Through detailed engineering planning and controlled offshore execution, Sika successfully completed the underwater member replacement using grouted clamp methodology in a highly constrained offshore environment.

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## CUSTOMER BENEFITS

The grouted clamp repair methodology enabled the complete replacement of the Level-C framing structure without underwater welding or shutdown of the offshore platform, significantly reducing operational disruption and offshore risk.

The solution restored the structural integrity of the jacket to acceptable operating margins while providing a safe and efficient alternative to conventional underwater repair methods. All project deliverables were completed successfully, achieving high standards of execution quality, technical performance, and client satisfaction.



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