

Bondstrand composite solutions provide lightweight, corrosion-resistant piping systems for deepwater Egina FPSO development

Our proven GRE piping and fittings installed faster and stay in service longer than similar metallic systems.



Background

Discovered in 2003, the Egina field is located about 150 km (93 miles) offshore Nigeria in water depths between 1,400 m and 1,700 m (4,593 ft and 5,578 ft). The development connects 44 subsea wells to the Egina floating production, storage, and offloading (FPSO) vessel, which has a storage capacity of 2.3 million barrels of oil and can process up to 200,000 barrels per day.

Given the scale of the project, the operator needed piping solutions to serve critical hull and topsides systems while helping the project team manage weight, limit corrosion exposure, improve installation efficiency, and support long-term maintenance needs.

Solutions

NOV Fiber Glass Systems supplied a broad scope of Bondstrand™ composite solutions for the Egina FPSO's hull and topsides applications, including glass-reinforced epoxy (GRE) pipe and fittings, as well as fiber-reinforced polymer (FRP) grating. GRE piping is typically one-third the weight of metallic equivalents, which helped the project team manage loads across the large, complex floating production system.

Our scope included more than 35 km (21.75 miles) of corrosion-resistant composite piping, along with 34,000 fittings, 21,500 flanges, and more than 13,000 spools prefabricated at the yard. Prefabrication helped ensure consistent fit-up during construction and improved installation efficiency.

Our engineering team also provided surge and stress analysis to support system integrity across the specified services. Field service support continued through installation and commissioning, helping ensure the piping systems were delivered and installed for their intended operating applications.

Case study facts

Location: Offshore Nigeria

Operator: Total

Project: Egina FPSO

Project Date: 2015

Water depth: 1,400 m to 1,700 m

Products and services:

- More than 35 km (21.75 miles) of Bondstrand™ glass-reinforced epoxy (GRE) piping
- 34,000 fittings
- 21,500 flanges
- More than 13,000 prefabricated spools
- Fiber-reinforced polymer (FRP) grating
- Surge and stress analysis
- Site field service support

Applications

Firewater, ballast water, seawater services, open drains, water injection, and caisson piping

Results

Bondstrand composite solutions helped the Egina project team deliver a broad piping and grating scope across one of the industry's most complex deepwater FPSO developments.

The solution supported the project through:

- **Weight management:** Lightweight composite piping and grating helped reduce load across hull and topsides applications.
- **Corrosion resistance:** GRE and FRP materials supported long-term offshore service without coatings or cathodic protection in the specified applications.
- **Installation efficiency:** Yard-prefabricated spools and lightweight components simplified handling and shortened installation time.
- **Lifecycle reliability:** Corrosion-resistant materials helped reduce the need for repainting, surface treatment, and ongoing maintenance over the asset life.
- **Engineering certainty and support:** Surge and stress analysis, supported by field service, helped align the piping systems with project and commissioning requirements.

From engineering through field service, NOV Fiber Glass Systems helped deliver reliable composite piping, grating, and technical support for Egina FPSO's critical onboard systems.