

Optimized Pressure Distribution

Terminal Oceânico, Barra do Dande, Angola



Application
Oil & Gas Terminals

Type
SPC Cone Fenders

Date 2025

Reference 5713

A CLOSER LOOK AT THE CASE

This terminal is located in Dande Municipality, just north of the country's capital and an important area in Angola's coastal region. Meant to **strengthen Angola's logistics capacity**, the facility is used to ensure the country's fuel supply while also enabling fuel exports. The first phase of the Barra do Dande project was the **construction of a 1,700 m jetty to accommodate large vessels**.

OECI – Odebrecht Engenharia e Construção Internacional, who had been awarded the project, have entrusted ShibataFenderTeam the task of designing and supplying the fender systems for this berth. We designed and delivered two Cone Fender Systems (SPC 1600, G1.4) with closed-box steel panels measuring 2300×5200 mm, and four Cone Fender Systems (SPC 1300, G1.5) with steel panels of 2300×3600 mm. Both solutions featured **UHMW-PE pads with an unusual thickness of 80 mm**, selected to support the intended service life of the fendering application.

Project Scope

- ▶ 2 Cone Fender Systems (SPC 1600, G1.4) with closed-box steel panels measuring 2300×5200 mm
- ▶ 4 Cone Fender Systems (SPC 1300, G1.5) with steel panels of 2300×3600 mm

CHALLENGE AND SOLUTION

The high reaction forces developed by the fender systems mean that large panel dimensions are essential to ensure safety and efficient performance. For example, the **SPC 1600 systems generate up to 1,929kN of reaction force**, which necessitated the use of **panels over five meters in length**. To meet the vessel hull pressure limit of less than 200 kN/m², our in-house engineering team designed the **panels with optimized pressure distribution**, ensuring safety without compromising the system's ability to absorb energy effectively and within the hull pressure limits of the project.

In response to the project's rigorous quality requirements, we conducted combined **compression and shear testing** of the rubber units at our **state-of-the-art facility in Malaysia**. The ability to carry out these tests and witness the results firsthand reinforced confidence in the reliability of the fender systems and demonstrated **SFT full compliance with international standards**, including the updated PIANC Fender Guidelines 2024.



Terminal Oceânico | Barra do Dande | Angola

The Barra do Dande Ocean Terminal **supports the country's energy infrastructure** by securing the domestic market and enabling future fuel exports.



SFT provided a full scope of services—from consulting and engineering to manufacturing, testing, and after-sales support—proving our reliability in large-scale infrastructure projects worldwide. Explore more SFT Case Studies or Contact Your Nearest Office.

