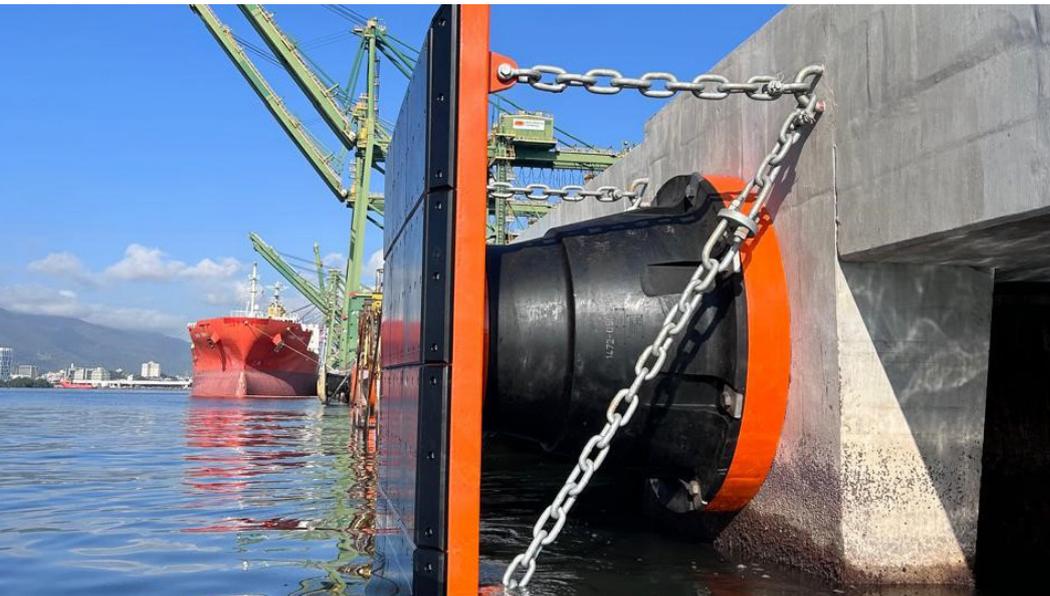


Fender System Optimization

ICTSI Terminal 1, Rio de Janeiro, Brazil



Application
Container Terminals

Type
SPC Cone Fenders

Date 2024

Reference 1472, 1450

A CLOSER LOOK AT THE CASE

International Container Terminal Services, Inc. (ICTSI) carried out a significant expansion at its ICTSI – Terminal 1, located in Brazil's largest commercial hub, Port of Rio de Janeiro. The project included a **100-meter berth extension**, enabled the terminal **to accommodate the simultaneous berthing of larger vessels** and increase its operational capacity.

Carioca Engenharia, the renowned engineering firm leading the project, entrusted ShibataFenderTeam with designing the fender solution—a customized system comprising five Cone Fender systems (SPC 1300, G2.5) with closed-box panels (3300x4250 mm) and 17 bollards with 100- and 150-ton capacities.

Project Scope

- ▶ 5 Cone Fender Systems (SPC 1300, G2.5) with closed-box panels (3300x4250 mm)
- ▶ 17 bollards capacity 100t and 150t

CHALLENGE AND SOLUTION

What appeared to be a straightforward solution, was in fact, the result of our in-house engineering expertise. The **existing installation featured Cone Fenders in an inverted or non-standard orientation** which typically lead to increased maintenance expenses and a reduction in lifespan of the fenders.

Addressing these challenges and carefully considering the full fender system, — including the rubber units, supporting structure, and overall design requirements — **the SFT in-house engineering team advocated for the standard orientation as recommended by the new PIANC Guidelines**. By mounting the cone fender's wider footprint to the supporting structure, this solution ensures greater durability, enhanced reliability, and an extended design life for the fender systems.



ICTSI – Terminal 1 | Rio de Janeiro | Brazil

This project highlights both the necessity of adopting a **Holistic Approach** (advocated by SFT since 2017) — which considers the entire fender system, including project conditions, components, design, and manufacturing in the fender selection and design process — and the importance of aligning with PIANC's recommendations and adhering to industry best practices.



ICTSI – Terminal 1 is now equipped with five Cone Fender Solutions in their standard orientation, following the recommendation of the PIANC Fender Guidelines 2024. Explore more SFT Case Studies or Contact Your Nearest Office.

