

Ever Alot

The world's largest container ship

Hudong-Zhonghua Shipbuilding Group Co., a subsidiary of China State Shipbuilding Corp., has delivered the world's largest container ship to Taiwanese shipping company Evergreen Marine.

The Ever Alot is the seventh vessel in the Evergreen A class and the first in the world to surpass the 24,000 twenty-foot equivalent unit (TEU) mark. Once in operation, it will serve trade routes between Europe and the Far East.

As the world's largest container ship, the Ever Alot has a carrying capacity of 24,004 TEU and is a colossal 400 m long, 61.5 m wide, with a draft of 17 m.

Problem

Due to the International Maritime Organization (IMO) 2020 regulation—set in the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI—that limits sulfur content in ships' fuel oil, our client needed to install an exhaust gas cleaning system (EGCS), also known as a scrubber, to reduce sulfur dioxide emissions into the environment.

Our client needed to ensure that the products installed for the scrubber would handle the corrosive environment, as the seawater/effluent outlet piping is prone to acidic corrosion.

The purpose of container ships is to transport as many goods and products in one journey as possible. Our client also wanted to keep the vessel lightweight to ensure optimal performance.

Solution

We installed a Bondstrand™ scrubber piping system to comply with IMO 2020. As our products are corrosion-resistant and lightweight, this solved the challenge of the corrosion concern while reducing the overall weight of the vessel.

We also—for the first time—supplied 56-in. glass-reinforced epoxy piping for the marine system. Because of the space constraint in the machinery area, we mitered the elbow onboard the vessel to ensure that the spool could fit perfectly into the tight space. This also meant a quicker and smoother installation for our client.

Furthermore, to avoid flange misalignment of the connecting 56-in. flange to the scrubber outlet, our engineering and design team designed an innovative stub end flange to avoid any installation issues.

Supply Details

Applications

EGCS/Scrubber

Design Specifications

IMO Standard

ISO 14692

Quantity

800 fittings

700 m of Bondstrand piping

100 joints

Largest piping is 56 in.

Time frame

December 2020–October 2021

CAPEX Benefits

- Lightweight, typically $\frac{2}{3}$ lighter than steel
- Fast installation
- High strength
- Meets offshore fire endurance requirements

OPEX Benefits

- Minimal maintenance
- Excellent corrosion resistance
- Non-sparking, no earthing
- Proven durability
- Enhanced safety

