



# AEGION®

## Stronger. Safer. Infrastructure.®



### Repair of Structural Defects on Concrete Pier at Luzon Port

Luzon Port in the Philippines caters mainly to shipping vessels transporting general and Roll-on Roll-off (RORO) cargo and passengers to other provinces. It forms part of the Central RORO Spine that provides a critical transport link to the many islands of the Philippines. This reinforced concrete pier structure was in a severely deteriorated state due to years of use with no regular maintenance or repair. The use of fiber reinforced polymers (FRP) was proposed by the port consultant for the proposed structural upgrade.

The Tyfo® SEH System using the Tyfo® SW-1 and SW-1S underwater curing epoxies were used to restore and strengthen the structure. The severely corroded steel rebars were replaced and the surface the concrete members were restored to their original profile using specially formulated epoxy mortar. The structural members such as piles, beams and deck slab were wrapped with the designed layers of the Tyfo® SEH System for strengthening and corrosion protection.

The Port Management could not afford any major disruption to their operations during the retrofit works. The Tyfo® Fibrwrap® Systems have been proven to be very responsive to this need due to ease of installation. The retrofit works caused no disruptions to the day to day operation of the pier resulting in an upgraded pier structure with need of only minimal maintenance in the years ahead. The project was successfully completed in May 2012.