



GANTREX®
ON TRACK. WITH YOU.

Crane rails for Shipyards

Multiple solutions for multiple applications

Shipyards are places where ships are built, maintained and/or repaired. Ships can vary in size from personal sailing boats to large container ships designed to travel around the globe. Shipyards can be equipped to operate on vessels both on- and off-shore, and different technologies for transferring vessels on-shore are in existence. The different areas within the shipyard require different rail solutions.

The overall Marine design includes the civil design of the various areas, which will include individual load conditions and may include civil expansion joints to accommodate thermal expansion.

Gantrex liaise with the designers to ensure the rail systems are appropriate for the individual site as they vary significantly according to the loads and the environment.

Boasting more than 45 years of experience and unparalleled references, Gantrex has implemented its solutions around the world, and has become the industry market leader. Our 300+ staff work locally with you to provide specific solutions and installation services for your new or existing installation, enabling Gantrex to be **ON TRACK. WITH YOU.**





Generally, the rail applications can be identified, starting with the process of elevating the vessel out of the water, which could be by a shiplift or a slipway.

When the vessels are transferred to the land the carriages are moved using either a single or dual level system.

Additional to these major applications, crane rails are also found in maintenance buildings supporting EOT cranes, on the ground floor, for the Goliath gantry cranes of ship block assembly and the portal jib/level luffing cranes of ship outfitting, or as runway of floating dock cranes.

Ship lifting

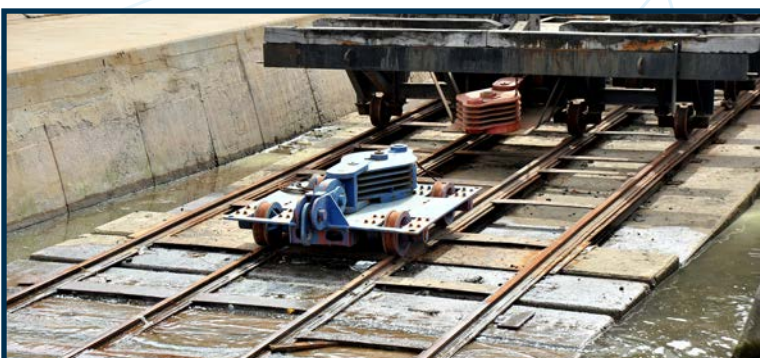
Shiplifts

Vessels are lifted in & out of the water vertically by the use of a shiplift with a number of hoists, and transported to the dry berths on trolleys or cradles.

The lift platforms are normally articulated to allow for deflection under load. The rail system is designed to suit the projected deflection and so it is typically shimmed to the design unloaded position, and secured with hard clamps on welded studs. Under load the platform deflects, and the rail system is designed to ensure a smooth transfer to the landside system.



Slipway



A slipway is a ramp on the shore by which vessels can be moved to and from the water. Rails are installed at a slope and care should be given to longitudinal rail movement due to gravitational and braking forces. Rails can be installed on concrete foundation, steel girder, or a combination of both. Different solutions are available depending on the foundation, and special attention should be paid to corrosion protection in the tidal area.

Transfer Systems

The transfer area is where the boats are transported, on trolleys or cradles, to or from construction and maintenance berths and buildings. This zone can be built in a single or double level, each with its specific design for the rail system. Special attention should be paid to the rail transition areas between the shiplift, carriages and the dry berths.

Single Level Transfer

The normal single level system is where rails are installed at ground level with cross overs to provide a system that allows the transfer of carriages from sea to land and then at 90 degrees. This means the vessels can be moved around the yard with maximum flexibility use.



Dual Level Transfer

In some yards the transfer is carried out at two levels, where the vessels are transferred to specific dry berths. These could be washdown, painting or welding areas.

Dry Docks and Dry Berths

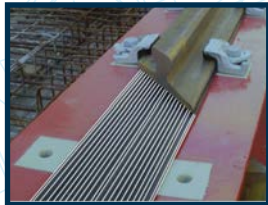
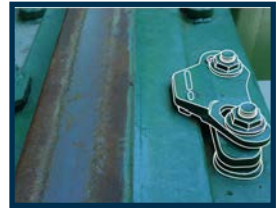
A dry dock is a narrow basin which is flooded or drained to allow one vessel at a time to be located on a dry support; the dry berths are the large platforms at quay level where many ships can be parked. The Gantry and Jib Cranes are installed on concrete or steel beams, supported on a steel girder or concrete foundation. Each application requires a specific solution.



State of the Arts Solutions & Benefits

Gantrex solutions increase the productivity of the shipyard cranes thanks to the reliability of the crane rail solutions proposed. They involve the latest technology in crane and specialty rail track components and services, including:

- **RailLok™ adjustable crane rail clips** which support installation and maintenance of critical rail tolerances while allowing for longitudinal rail float.



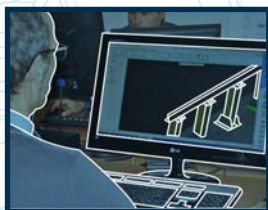
- **RailLok™ crane rail pad** which reduces stresses into the runway structure while minimizing shock, vibration and noise to critical crane components and the surrounding operational area.

- **Rail and rail cross overs selection and supply.** Via its global experience, direct access to rolling mills and its distribution network, Gantrex can provide the most efficient rail solution for your application.



- **Gantrex® Shipyard Clamps.** Where the most appropriate technical solution is a hard fixing, Gantrex can supply the K15+ clamp. This rail fixing device is adjustable, and has been tested to accept a 120 kN side load.

- **Continuous and intermittent soleplates** designed to suit the operating loads and conditions of the application



- **System Design** to suit the individual shipyard layout.

- **Installation services.** Gantrex specially trained installation teams can provide any number of services to suit your application and local market conditions including turnkey installation, rail welding services, rail surveys and inspections or supervision.

