

GLM Lasermesstechnik GmbH – Floating dock

Floating dock

A floating dock consists of a steel floating body which is lowered and pumped empty again after the ship has swum in. When the dock comes up, the ship is lifted completely out of the water.

Swim in process

Marineschiffbau: Wie ein großes Puzzle
Quelle: Bundeswehr Link

During the swim-in process the ship must be positioned exactly in the dock. The position of the ship is determined by the reference system of the floating dock. With the help of the 3D measuring system you can quickly measure in the reference system and with the monitoring function you can continuously monitor the position of the ship. The deviation from the desired position is specified in X, Y and Z coordinates, so that the relevant corrections can be easily made by the employees.

- Exact positioning of the ship or individual segments in the dock
- Quick and understandable instructions for the employees
- Shortening of the swim in process
- Avoiding misalignment

Dock Monitoring

During normal operation, the floating dock is mechanically deformed by various influences such as rising and falling water (tidal range), uneven heating by solar radiation, wind load and crane movements in the dock.

Therefore the reliable measurement of the deflection is part of the most important tasks of floating dock operation. A fully automatic measurement and evaluation in real time helps to prevent structural damage to the dock, as the deflection can be compensated in time by taking appropriate actions. Our dock monitoring system includes a motorised total station, which is freely positioned in the dock. Usually the measuring instrument is positioned in the middle of a side deck. The measuring targets are positioned along the side deck. The tolerated deviation of the deflection measurement is up to maximum of 0.25mm – for a length of 100m and depending on the instrument.

Our dock monitoring system is particularly resistant to the rough environmental conditions (such as salt mist, temperature gradients, high humidity etc.) and is designed for 24/7 operation. Our dock monitoring system graphically displays the status of the dock and a trend display shows the direction of movement of the dock.

3D measurement in floating dock

Due to the continuous movement of the floating dock, modern 3D systems have reached their limits, as they are dependent on the tilt compensator in the device. Our 3D measuring system does not need this. You can simply switch it off. Three measuring points in the floating dock are sufficient for orientation.