

WHAT DO THE 2024 CHANGES TO THE LLOYD'S LIFTING CODE MEAN FOR SHIPYARDS INTERESTED IN INSTALLING SHIPLIFT FACILITIES?

Today we are discussing recent changes to the Lloyd's Code for Lifting Appliances in a Marine Environment commonly referred to as the CLAME code. This code governs design standards for shiplift and transfer systems. These updates are intended to improve safety.

WHAT ARE THE MAIN CHANGES TO THE DESIGN CODE?

One clarifies system capacity rating. Three focus on safety in design. Formal risk analysis is now required. Hoist mechanisms with gear boxes and brakes must be fitted with automatic, dual, redundant braking systems. Wire rope fleet angles must now be compliant with a recognized design standard.

WHAT IS THE NEWLY REQUIRED RISK ASSESSMENT AND WHO PERFORMS THIS ANALYSIS? WHO'S RESPONSIBLE AND DOES IT NEED TO BE REVIEWED THROUGHOUT THE LIFE OF THE SYSTEM?

Risk analysis is used in many industries to find and mitigate potential dangers. Four International Standards Organization or (ISO) code references are provided for guidance on performing this analysis. For shiplift systems, the risk assessment is performed by the system designer following these recognized standards.

WHAT IS A RISK COEFFICIENT? HOW ARE THOSE REQUIREMENTS CHANGING?

Risk coefficients increase the safety factor applied to single points of failure in the load path to reduce this risk of failure.

WHAT IS A NOMINAL LIFT CAPACITY AND WHY IS THE INDUSTRY MOVING AWAY FROM USING IT?

The earlier version of the CLAME code defined system capacity using three metrics; Maximum Distributed Load, Maximum Lifting Capacity and Nominal Lifting Capacity. The Nominal Lift Capacity was intended to provide operators with guidance to avoid overloading the system. This led to confusion about system capacity. Capacity is now defined by the Maximum Distributed Load and Maximum Lifting Capacity.

WHAT IS A FLEET ANGLE? HOW HAVE FLEET ANGLE REQUIREMENTS CHANGED?

The fleet angle is defined as the largest angle of the rope between the first sheave and the drum flange, relative to the center line of the drum. The largest fleet angle must now follow a recognized design standard.

ARE BARDEX SYSTEMS AFFECTED BY THE CHANGES?

BarDEX shiplift systems already comply with these new safety requirements.

WHEN DO THESE CHANGES TAKE EFFECT?

These changes go into effect as of July 1, 2024.

IF LARGER DRUMS BECOME NECESSARY, WHAT ARE THE CONSEQUENCES TO COST AND DESIGN?

Wire rope shiplift hoist drums are a single layer, grooved design. The diameter and length of the drum must be adequate to store the wire rope. The proximity of the drum to the fixed upper sheave results in high fleet angles during operation as the rope spools on the drum. Increasing the drum diameter and length to store more or larger cables will increase the footprint of the lift station and increase the fleet angle.

WHAT IS THE DIFFERENCE BETWEEN AN ARTICULATED AND RIGID SHIPLIFT PLATFORM? DO THESE CHANGES AFFECT THEM BOTH?

The terms Articulated and Rigid refer to the structural design of the shiplift platform, specifically the force transfer between platform sections. The code changes do not affect the platform design.

Articulated platforms commonly have seated pin connections. When a rope failure occurs, this connection can separate and lead to a progressive collapse of the platform. The root cause of the failure is the loss of support from the lifting device. The connection can be improved by using a captured pin to mitigate the risk of progressive collapse when rope failures occur. This requirement is not currently contained in the code but should be considered as part of the risk assessment evaluation process.

Platforms designed with shear and moment transfer capability are redundant structures. Forces are transferred between platform sections helping to distribute the unequal load the ship places on the platform. This capability should not be confused with lift station load path redundancy intended to prevent loss of support.

HOW CAN REDUNDANCY BE ACHIEVED IN ROPE AND CHAIN JACK LIFT STATIONS?

BarDEX chain jacks are designed with redundant load connectivity. Each chain jack is fitted with two chains connecting the lifting device to the shiplift platform. Each chain is sized for 150% of the load.

Redundant wire rope hoists exist and have been used in the "High Risk" lifting applications for decades. Single failure-proof (SPF) cranes are designed for moving critical loads that cannot be dropped under any circumstances. This technology has not been adapted by the shiplift industry.

HOW DOES BARDEX COMPARE TO OTHER COMPETITORS WHEN IT COMES TO SAFETY AND RELIABILITY?

BarDEX shiplift systems are the only systems in the industry that have a perfect operational safety record. No BarDEX shiplift system has ever had a failure that resulted in damage to a vessel, damage to the system or personal injury.

Thank you for taking time to watch this video and learn about the CLAME code changes now in effect. Please visit our website at [BARDEX.com](https://www.barDEX.com) to learn more about our company, products and services. If you have questions regarding shiplift and transfer systems or would like to discuss acquiring a shiplift system or transfer system for your facility, please contact us.