

Design Life Analysis





Know your safe working limits

Frequent inspections, while necessary, cannot always catch machinery failure that may be caused by extremely fast crack propagation. A calculation of design life will give you the information you need to help you assess your safe working limits.

The Konecranes Design Life Analysis calculates the remaining design life of the structures and machineries of your crane. A qualified and trained inspector collects the data, including production history, process observations, operator interviews and crane documentation and a qualified engineer verifies all calculations.

Design life calculation for safety and compliance

Calculating crane design life is a vital part of safe and productive lifting operations. ISO 12482-2014: Cranes — Monitoring for crane design working period, requires a Design Working Period (DWP)

calculation for all major components of a crane, in conjunction with periodic inspections at 12-month intervals. These components include hoisting machinery, crane and trolley steel structure and trolley and bridge traveling machineries.

Cranes do not exhaust their life in calendar time, but in relation to work cycles and running hours. Every crane is designed for a certain amount of these cycles and hours, while taking the payload into consideration. Calculating the remaining design life is the only way to make sure the crane is still operating within these parameters. Design Life Analysis also allows you to plan cost-efficient modernizations and component replacements.

The analysis report for your crane will include design life calculations, conclusions and recommendations to help in planning the continued use of your crane.

Design class determines usable design life

Design class indicates how many times a load can be lifted, and how many operational hours the machinery is rated to endure. Lifting the same load repeatedly, a lower class of crane will not last as long as a higher class of crane.

A8/M8*

Structure = 1,000,000 lifts
Machinery = 12,500 hours

VS.

A4/M4*

Structure = 64,000 lifts
Machinery = 800 hours

* According to ISO, FEM and BS with full nominal load



Design life and predictive maintenance

Predictive maintenance utilizes condition monitoring, advanced inspections and data analytics to predict the need for maintenance due to component wear or fatigue. Incorporating predictive maintenance elements—like Design Life Analysis—as part of a Konecranes service program can further optimize maintenance activities, reduce unplanned downtime and improve equipment safety, productivity and lifecycle value.

➔ Benefits of a Design Life Analysis

- Provides information detailing the current remaining design life of your crane.
- Helps in planning actions to ensure the continued use of a crane.
- Fulfills the requirements for a yearly DWP calculation of ISO 12482-2014.



Konecranes is a global leader in material handling solutions, serving a broad range of customers across multiple industries. We consistently set the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because we know we can always find a safer, more productive and sustainable way. That's why, with around 16,600 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2023, Group sales totaled EUR 4.0 billion. Konecranes shares are listed on Nasdaq Helsinki (symbol: KCR).

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