



LANKHORST
ENGINEERED PRODUCTS

LET'S BUILD
RAILROADS
FOR THE
FUTURE.

Sustainable polymer
railway sleepers



THE WHY

- THE SOLUTION
- THE PRODUCTS
- THE HISTORY

THE WHY

SUSTAINABLE AND
MAINTENANCE FREE

MEET THE KLP® HYBRID POLYMER SLEEPER

The increasing scarcity of hardwood, deforestation, and the ban on creosote, together with spiralling track maintenance costs, were the main drivers for Lankhorst to develop the KLP® Hybrid Polymer Sleeper.

Providing ease of installation, machinability and a product weight comparable to wood, the KLP® Hybrid Polymer Sleeper seamlessly integrates into existing railway infrastructure. Moreover, thanks to its adaptable design, the KLP® sleeper provides the ideal solution when dimensional restrictions come into play.



OVER 50 YEARS SERVICE LIFE, AND THEN RECYCLABLE

The KLP® Hybrid Polymer Sleeper presents a durable alternative for wooden sleepers, while extending the service life of track infrastructure, even in the most challenging environments.

Over 20 years ago, Lankhorst was the first European company to begin development of the polymer sleeper, and since then it has consistently led the industry in sleeper design and long-term sleeper testing. Manufactured entirely from 100% recycled materials, KLP® sleepers are fully recyclable again after their long service life of over 50 years: a solid investment delivering Low Life Cycle Costs.

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THE SOLUTION

KLP® HYBRID POLYMER SLEEPER

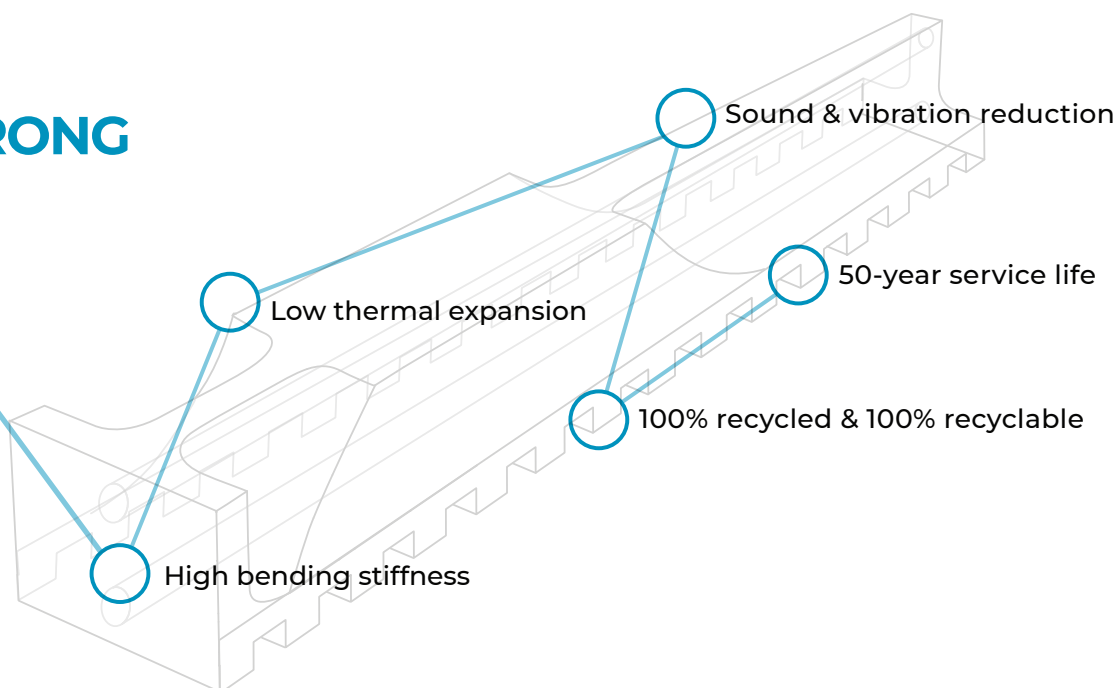
THE KLP® HYBRID POLYMER SLEEPER DESIGN

The maintenance free KLP® Hybrid Polymer Sleeper is manufactured from high quality, ductile polymer with steel bars encased. This provides high strength properties, low thermal expansion and excellent damping characteristics.

The KLP® Hybrid Polymer Sleeper steel reinforcement is placed where most effective and does not interfere with fastening systems. This results in the longitudinal and lateral stiffness needed to maintain the track gauge under all load and climate conditions, and makes it suitable for strength critical and impact critical situations. Simultaneously, the recycled polymer serves as an efficient impact absorber and sound damper, contributing to reduced noise levels and enhancing the longevity of rail infrastructure.



THE STRONG POINTS



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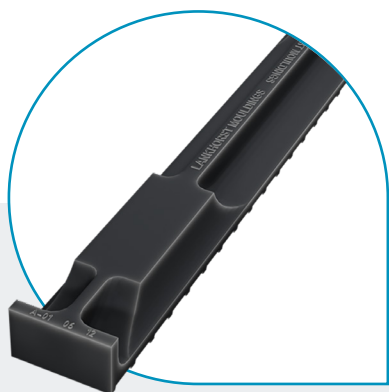
THE PRODUCTS

OPTIMIZED SLEEPERS FOR
DIFFERENT APPLICATIONS

TAILORED TO EACH APPLICATION

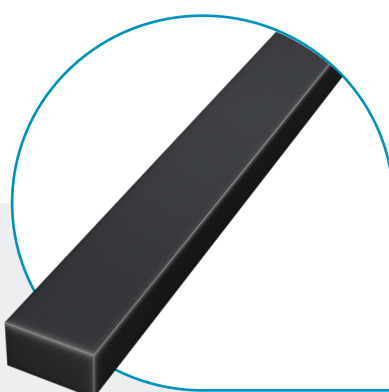
For the first time in nearly two centuries, track owners have the flexibility to precisely adjust their choice of railway sleepers and address operational and environmental challenges. The KLP® Hybrid Polymer Sleeper range is defined by its optimized designs, specifically developed for a diverse range of applications, including tracks, turnouts, bridges and tunnels.

The KLP® Hybrid Polymer Sleepers have been subjected to the design approval tests as described in the ISO 12856-2:2020 standard for polymeric composite sleepers, bearers and transoms.



100SERIES

KLP® TRACK
SLEEPERS



200SERIES

KLP® TURNOUT
BEARERS



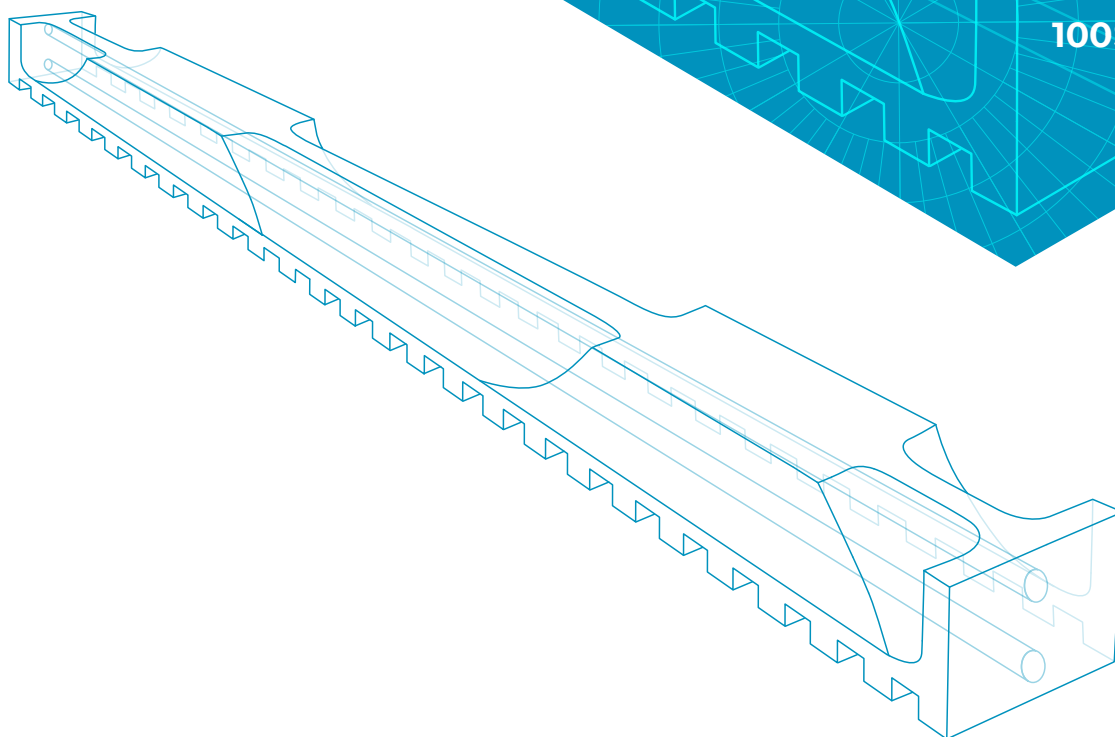
400SERIES

KLP® BRIDGE
TRANSOMS

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TRACK SLEEPERS

100SERIES



KLP[®] HYBRID POLYMER TRACK SLEEPER



Fully embedded in ballast-bed for high lateral and vertical resistance



For axle loads up to 25 tons



Customizable for 3rd rail track configurations



Available for narrow, standard and broad rail gauges



Optimizable height for tunnel applications

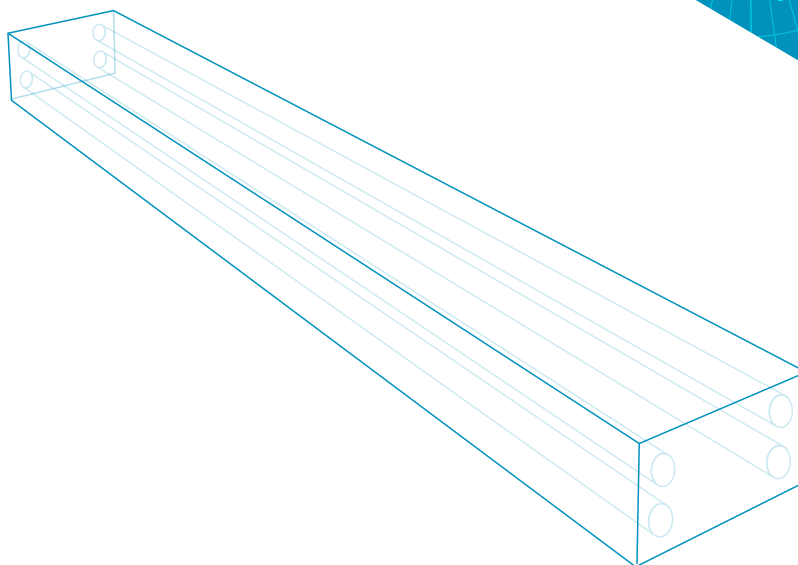


B_{fl}-s1 fire and smoke classification (EN13501-1)

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TURNOUT BEARERS

200SERIES



KLP[®] HYBRID POLYMER TURNOUT BEARER



Suitable for turnouts and main track



For axle loads up to 25 tons and 35 tons



Versatility in baseplate type and positioning



Single bearer length up to 5200 mm

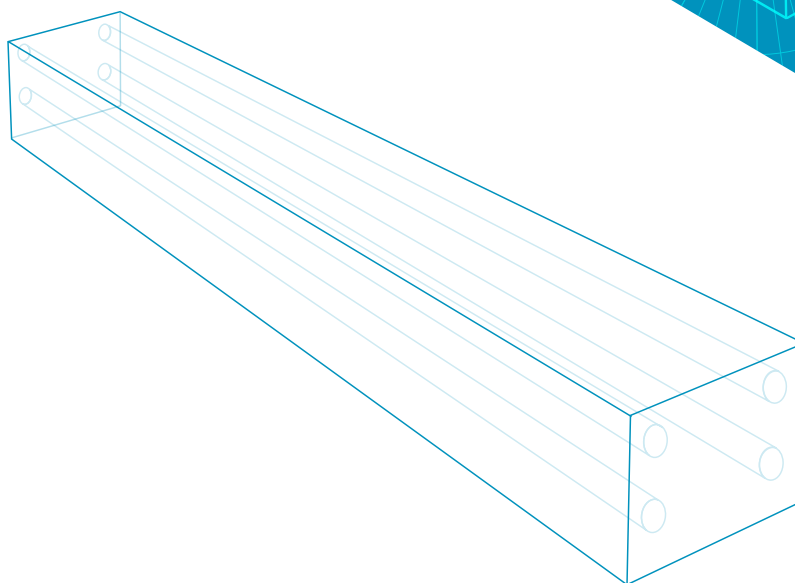


Connectable bearer for lengths up to 9600 mm

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BRIDGE TRANSOMS

400SERIES



KLP[®] HYBRID POLYMER BRIDGE TRANSOM



Best suitable for steel girder bridges



For bridges with offset, non-offset and canted conditions



Millable layer to compensate for height differences



Available in various thicknesses



Noise reduction of 3-5 dB compared to wooden transoms

THE HISTORY

OF LANKHORST

1803

Nicolaas Jurjan Lankhorst started a rope manufacturing company in Sneek, the Netherlands. Natural fibres were used for production of the ropes.

1964

Synthetics were introduced in rope production, resulting in a more consistent product quality and longer service life.

1975

The waste material of synthetic rope production proved to be useful. Lankhorst started to manufacture the first products made from 100% recycled polymers.

2004

Due to the intended European ban on creosoted wood, Lankhorst started development of the KLP® Hybrid Polymers Sleeper.

2006

First KLP® Hybrid Polymer Sleepers installed in the Netherlands, still performing without any signs of wear and tear.

2018

Numerous rail infrastructure projects in Europe, North America, South-East Asia, Africa, Australia and New Zealand are experiencing the benefits of KLP® Hybrid Polymer Sleepers.

2024

The production of KLP® Hybrid Polymer Sleepers has repurposed over 10 million kilograms of plastic waste, preventing it from incineration or becoming landfill.

