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Pandrol

Under Sleeper Pads in Heavy Haul: Extending the Life of the Railway



On the up in heavy haul

On the Up in Heavy Haul

Recent years have seen a rapid growth in the use of Pandrol's Under Sleeper Pads (USPs) in heavy-haul railways. So why are USPs so useful when loads are high?

Extending Railway Life

The main benefit of USPs in heavy haul is track protection. Introducing an elastic element to the base of

sleepers improves load distribution over the track and its components, both longitudinally and transversely.

Without USPs, ballast is the first elastic track element to consider. Fasteners and ground are also resilient, whereas the wheel, track and sleepers are all rigid. When heavy loads pass over the track, the ballast is compressed and, with a ballast sleeper contact area of between 5 to 8% of the total surface, the compacted ballast gets stiffer.

USPs introduce an additional elastic element between the ballast and the sleeper. As a result, the contact surface increases to over 30%, improving load distribution, consistency of track stiffness and overall track quality. Different USP specifications are available to provide the ideal elasticity for specific rail infrastructures. Elastic levels need to be controlled to ensure that while the stiffness of the system is decreased, the elasticity doesn't cause too much track deflection.

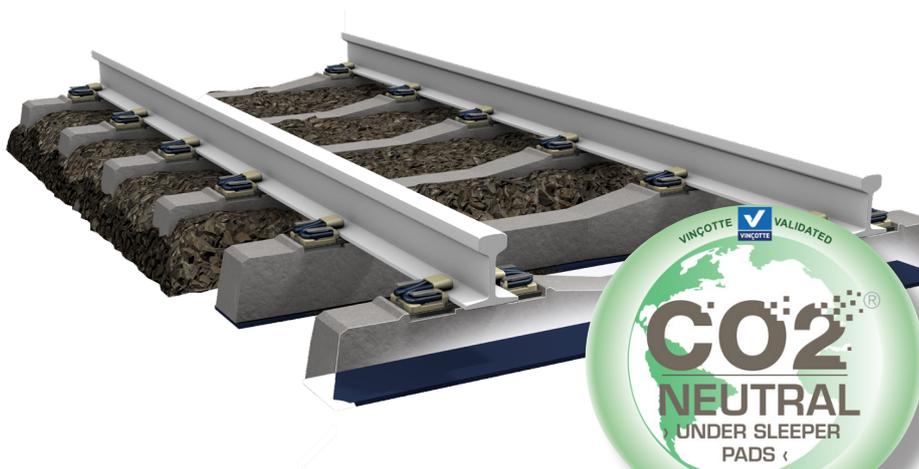
In the long term, maintenance costs are reduced and the life of the track superstructure is extended. There is less rail corrugation (especially on curves). The frequency of levelling, lining and tamping (LLT) can be reduced by a minimum factor of two.

On Track to Carbon Neutral (SRS Product Range)

Pandrol Receives World First CO2-Neutral Label for Under Sleeper Pad

Global rail fastening specialist Pandrol has underlined its commitment to working collaboratively towards global carbon neutrality, supporting certified climate projects across the world to reduce its total carbon impact.

Pandrol's Under Sleeper Pads (USPs) are made from end-of-life tyres, using around 2.3kg per sleeper, producing a carbon footprint that is less than half of the same product made using virgin material. Every kilometre of railway track installed



Pandrol's CO2-neutral Under Sleeper Pad

with Pandrol's Under Sleeper Pads saves 3,000 tyres from landfill or burning.

Pandrol is fully committed to helping to reduce the impact of remaining CO2 emissions from Under Sleeper Pad production, by financing labelled green energy production projects in developing countries.

Pandrol's ambitious approach to this product has an outstanding impact, verified by Belgian-accredited inspection and certification organisation Vinçotte.

This commitment contributes to the collective goals of carbon neutrality Pandrol shares with many other

organisations and companies across the world.

During their own life-cycle, Under Sleeper Pads will also contribute to reducing the carbon footprint of railway lines, by increasing their lifespan and reducing the need for maintenance.

Thomas Lorent, Head of Sustainable Resilient Systems (SRS) at Pandrol, comments: *“Last year, we took action to understand the carbon footprint of the Pandrol SRS products, conducting a full life-cycle assessment. Since then, we have taken action to reduce our environmental footprint for the products which can be most improved.*”

“This change will limit the carbon impact of our Under Sleeper Pads, allowing us to reduce our footprint and support certified climate projects at the same time to ‘offset’ our remaining low CO2 footprint.”



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At Pandrol we believe in quality above all else – a commitment that stretches from the products we make to the service we provide. We share our global knowledge so our partners can reach objectives quickly and efficiently. We invest as much time in developing our service and relationships as we do developing new solutions.

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