TRACKELAST

Specialist Rail Solutions

UNDER SLEEPER PADS

Ballast Protection

UNDER SLEEPER PADS - USP

Trackelast have been supplying Under Sleeper Pads for over 20 years. These were originally developed as soft pads in order to reduce ground borne noise being transmitted through the ground to adjacent building structures. New techniques have been successfully developed for integrally fixing Under Sleeper Pads during the production of concrete sleepers, producing a composite sleeper/pad solution.

Research undertaken in Europe on mixed mode and heavy rail tracks has established that resilient Under Sleeper Pads with a relatively high stiffness have a significant positive effect on track quality with a significant reduction in the costs of maintenance. The payback period for the increased cost of sleepers has been estimated to be between 3 and 7 years.

For heavy haul lines the use of Under Sleeper Pads to improve track quality will give a quick pay back by reduction in the frequency of re-grinding, less frequent ballast tamping and cleaning. Additional benefits include reduced wear on wheels and it is anticipated that there will be lower incidents of rail breakage.

Reduced dynamic loading of ballast

It is possible to reduce the static and dynamic loading between the sleeper and the ballast. In a conventional track, the sleeper is supported by a series of point contacts from the ballast. The dynamic loads then cause wear and breakdown of the ballast, so called “ballast attrition”, which results in more dust, and greater deflection of the track.

It has been proven that by fitting a resilient pad to the sleeper soffit face, the ballast stones embed themselves into the pad and as a result there is a greater surface area now supporting the track load thus reducing the loads transmitted to the ballast. The resilient pad acts as a spring to reduce the level of dynamic impact reducing the peak loading on the ballast. This combination of effects significantly reduces the track deterioration and increases the time between grinding and ballast cleaning and tamping.

TRANSITION ZONES

Where there are transition zones from ballasted track to slab track or bridges there will be an abrupt change of track stiffness which can result in deterioration of track quality. Therefore it is necessary to have a transition zone with an intermediate stiffness. This can be achieved using different grades of under sleeper pads provided by Trackelast.

NOISE & VIBRATION MITIGATION:

Trackelast can also offer Under Sleeper Pads, ballast mats or structure protection mats for use on concrete and steel bridges. These tend to be purpose designed to take into account axle loads, track speeds and local environmental conditions.

Retrospective fitting of USP's

Whilst most USP's are now fitted at the time of the sleeper manufacture, USP's can also be fitted to wood or concrete sleepers at a later stage. This applies to new sleepers as well as to reusable sleepers.

Rather than buy new sleepers, this facility allows older rail sleepers to be re-used in less heavily used lines.

Our R&D and manufacturing capability

Trackelast USP's are designed and manufactured to the requirements of National / rail authority specifications globally. This may involve the bespoke design and manufacturer of specialist products. These can be made for use with wooden or concrete sleepers (Mono-bloc or bi-bloc).

Our in-house design team, technical support and the flexibility of our ISO9001 accredited manufacturing plant makes Trackelast the ideal supplier of your rail product requirements.

Please contact us with your requirements/drawings.

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COMPLETE RAIL PRODUCT RANGE

- Rail Seating Pads
- Baseplate/Chair Pads
- Rail Seating Strip Pads
- Rail Strips
- Under Sleeper Pads
- Sole-plate Pads
- Ballast Mats
- Signalling Applications
- DC Electrification Systems
- FST Bearings

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