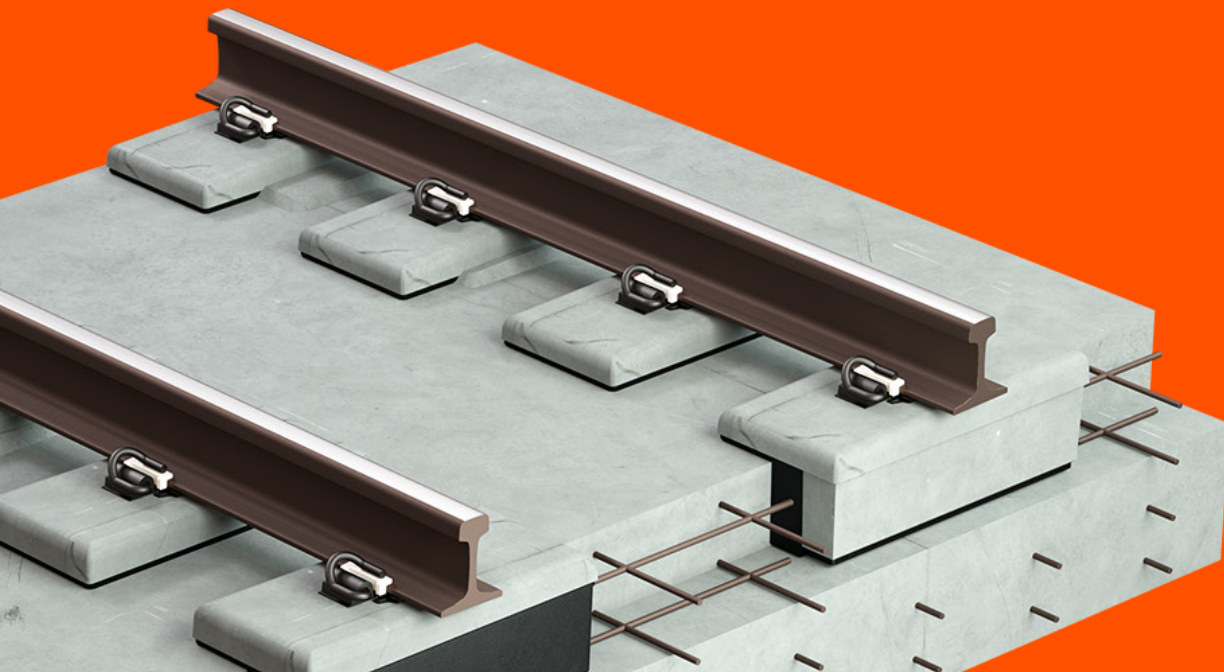


Sleeper Boots for Slab Track



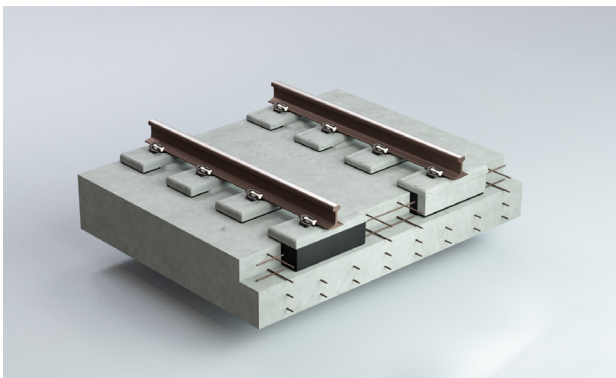
Metro
Commuter
Main Lines
High-Speed Lines

Applications

Sleeper Boots

Sleeper boots reduce noise and vibration, and promote smooth track deflection. Rubber sleeper boots also provide a degree of elasticity to the otherwise rigid slab track. Concrete sleepers rest directly on microcell foam

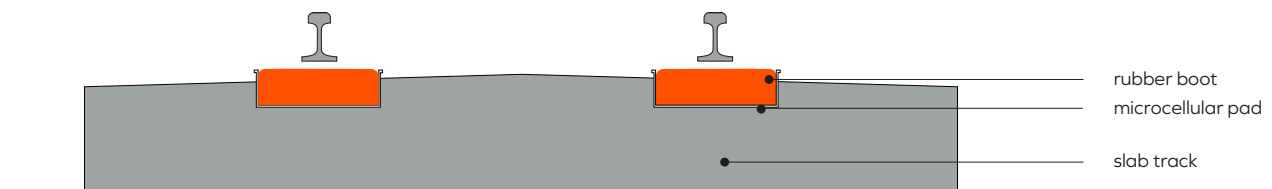
pads inside the rubber sleeper boots. The noise and vibration-absorbing sleeper boots are then partially embedded in slab concrete.



Rubber Sleeper Boots in a Slab Track



Sleeper Boot and Pad



Cross-section: Sleeper Boots Installation

Technical Product Information

Sleeper boots are available with different degrees of elasticity, to meet customer specifications for load distribution and isolation efficiency. Standard sleeper boots include a molded (EPDM) rubber boot, and a microcell foam pad insert with low stiffening properties and high isolation efficiency.

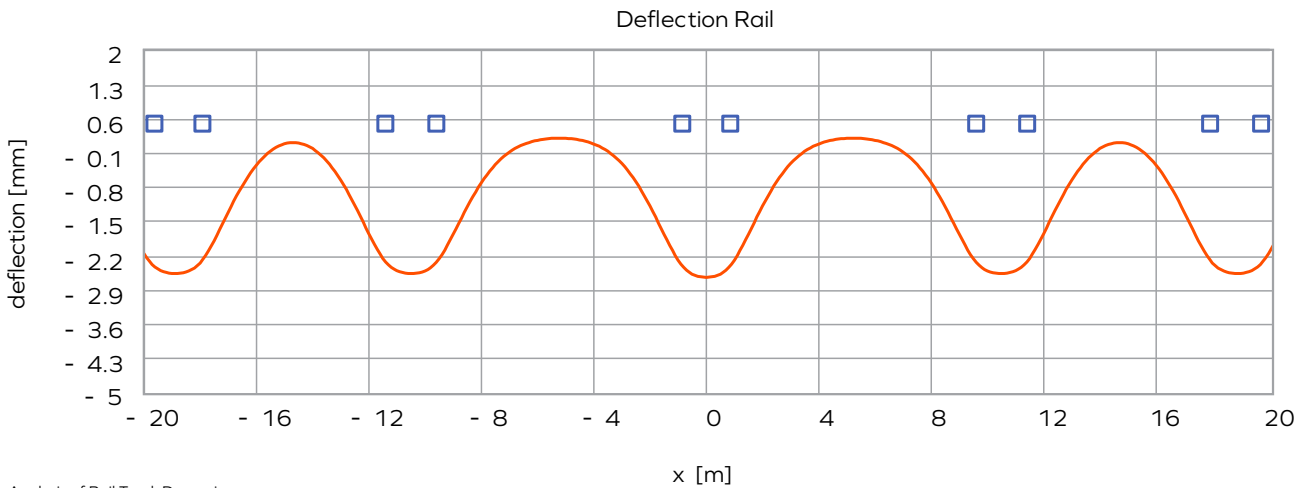
Product Range Specification

Application	Sleeper boots size (mm)	Vertical stiffness (kN/mm)	Stiffening
Heavy Haul	680x290x178	70-100	<1.8
Main Line	680x290x178	60-90	<1.8
Metro, Long Sleeper	820x294x180	14-22	<1.5
Metro Bi-Block Sleeper	720x294x180	14-22	<1.5

Engineering Services

Tiantie engineers use highly specialized computer modeling to reliably predict achievable vibration

reduction and optimum track dynamics, including rail deflection under various loads.



Analysis of Rail Track Dynamics

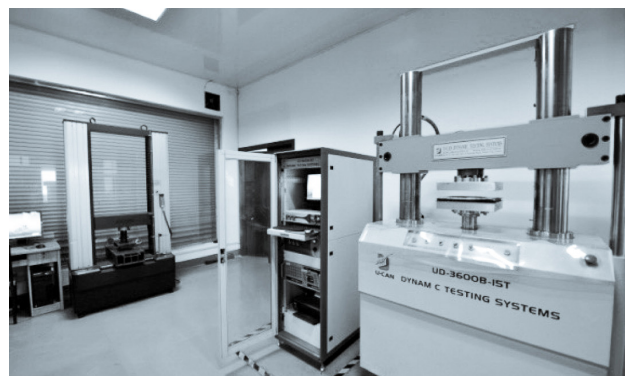
In addition to Tiantie’s wide range of noise and vibration mitigation products, the company also provides expert installation services and supervision. Highly qualified and experienced engineers are available for installation and commissioning of our products, as well as for on-site monitoring and final system adjustments. Installation reports detailing “as-built” characteristics can also be

provided.

Innovation and product development are the essence of Tiantie’s corporate philosophy. Engineering experts actively participate in national and international committees, and are working in close collaboration with universities, consulting firms and customers.



Installation of Sleeper Boots



Inhouse Test Lab

Product Testing

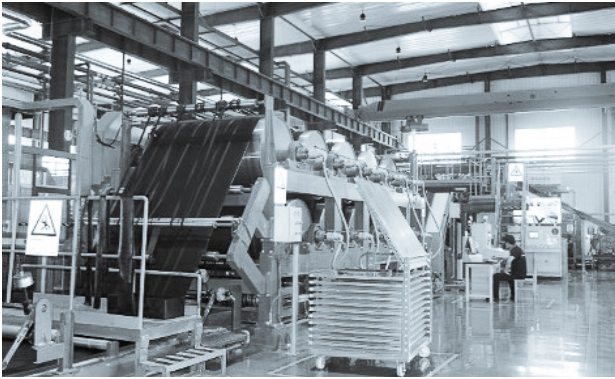
Product and performance testing is carried out at our in-house test lab. This allows for fast turn-around and quick response to customers. To keep pace with technical

requirements and latest industry trends and innovations, Tiantie’s lab and test facilities are continuously expanded with new equipment and processes.

Production

Wholly-owned Zhejiang Tiantie production plants are large scale manufacturing facilities. State-of-the-art production equipment and processes ensure highest quality products that meet customer needs, on-time

delivery, as well as regulatory requirements for the protection of the environment. Tiantie has an annual production capacity of > 300,000 sets.



Production Lines

Quality Control

Global markets require compliance with a variety of different standards. The Tiantie Quality Management System ensures that product and process standards are

consistent, in compliance, and documented in accordance with standards. Test reports, certifications and customer testimonials are available on request.



Environmental Management System according to ISO 14001



Quality Management System according to ISO 9001



Occupational Health and Safety System according to ISO 45001

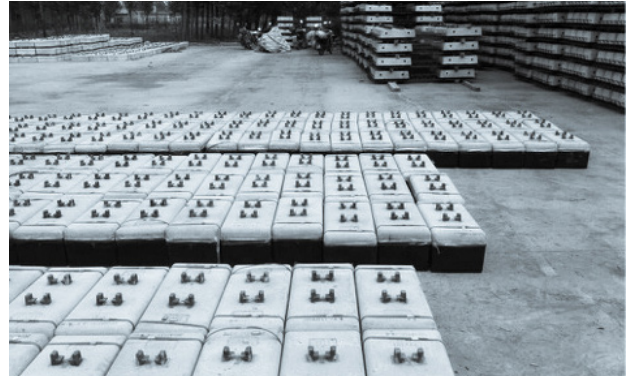
References

Tiantie sleeper boots have been successfully installed at numerous rail projects, covering a total distance of

almost 1680 km. Projects include high-speed rail lines, main, commuter and metro lines.



Beijing Line 16



Shanxi Railway



Huzhune Railway

Select Sleeper Boots - Projects

Tracktype	Project name	Axle Load	quantity (sets)
Metro	Beijing Metro Line 16	15t	85190
Passenger and cargo line	Newly built Sichuan-Tibet Railway Lhasa to Linzhi section	25 t	126019
Passenger and cargo line	Yuhuai Railway (Chongqing - Huaihua)	25 t	314116
Passenger and cargo line	Quning Railway Fujian Section	25 t	180104
Passenger and cargo line	Inner Mongolia-Jiangxi Railway MHPJ-2 Bid section	25 t	795814
Heavy haul railway	Central and Southern Shanxi Railway	30 t	199141
Heavy haul railway	Central and Southern Shanxi Railway	30 t	458131
Metro	Beijing Metro Line 16	15t	85190

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