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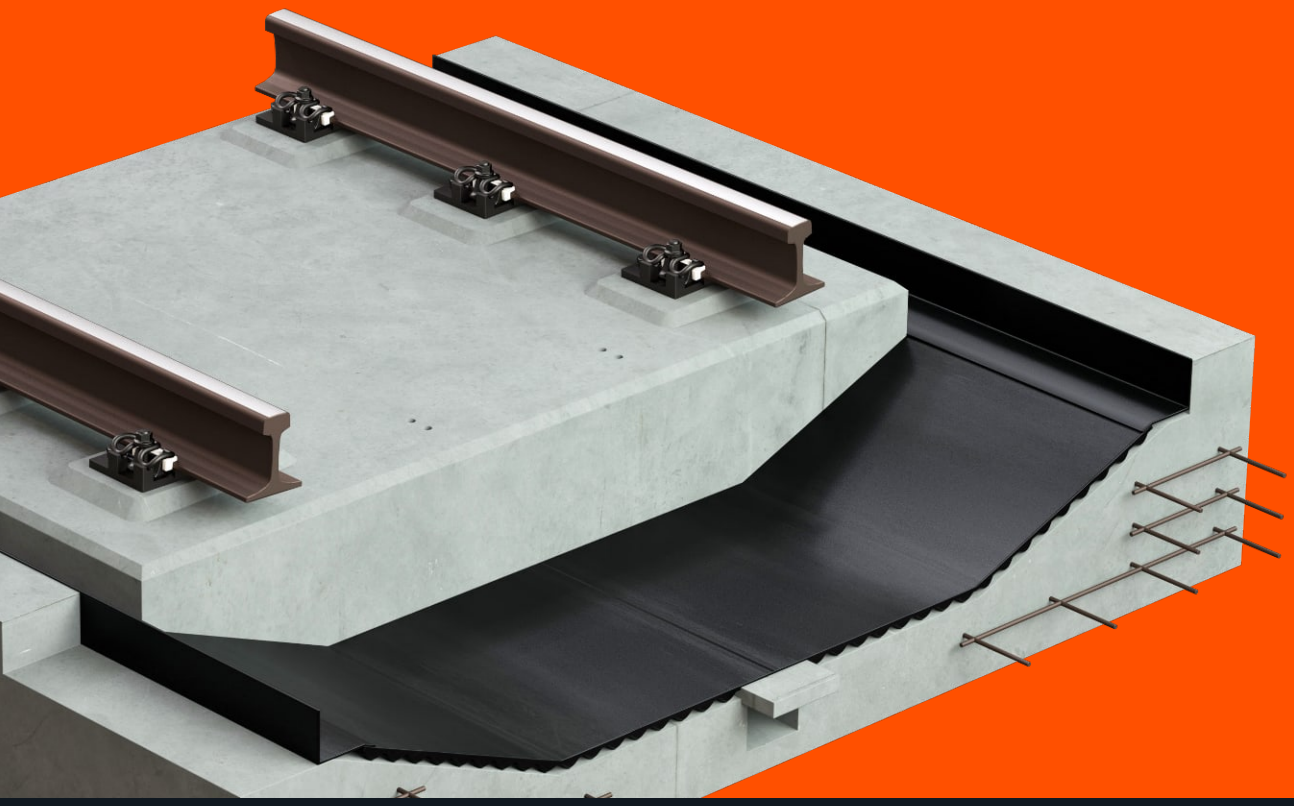
Track Mats



Metro
Commuter
Main Lines
High-Speed Lines

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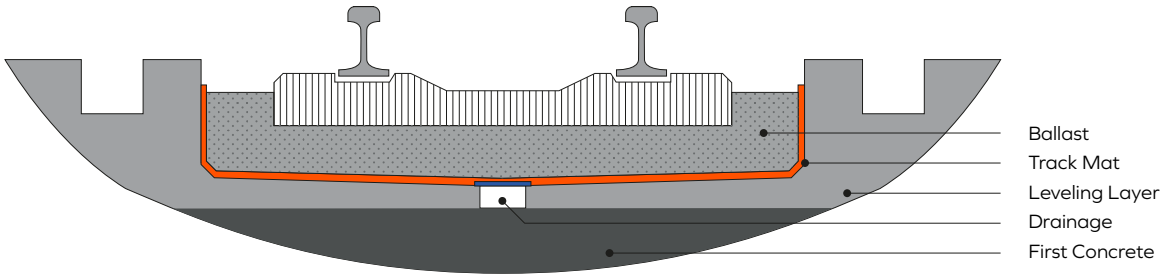
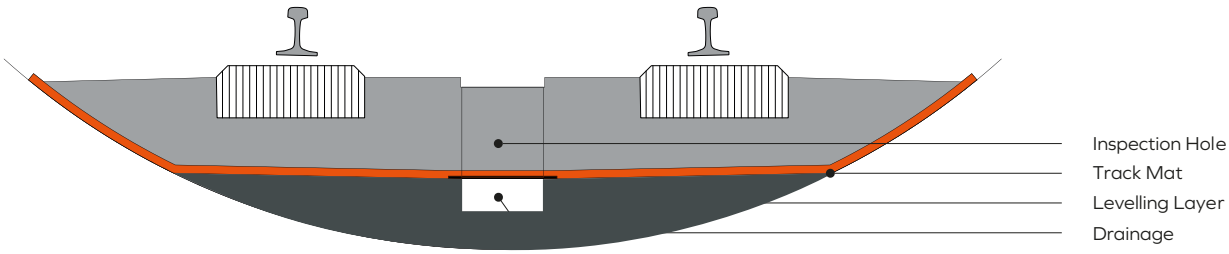
Applications

Track mats are one of the most effective methods for reducing vibration transmission in both, ballast track and slab track. In ballast track, track mats (ballast mats) are installed between the concrete leveling layer and the ballast, isolating the rail-supporting track structure from the foundation. Resulting vibration attenuation can be as high as 20 dB.



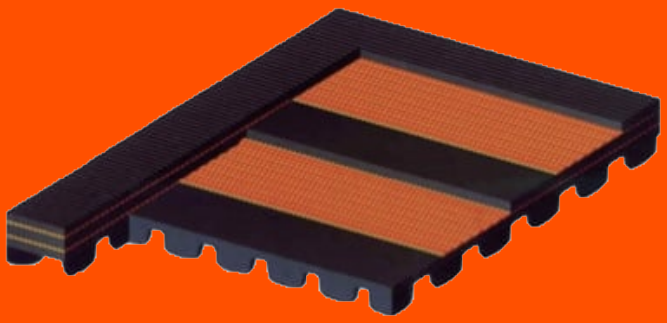
Track Mat Installation: Ballast Track

Today, high resiliency track mats are in use at most Metro and Light Rail Systems around the world, especially in applications where tunnels or bridges create ground-borne noise. Tiantie high-resiliency track mats are the ideal solution. After installing the track mats onto the top surface of the concrete base, leveling-layer concrete is cast directly over the mats.

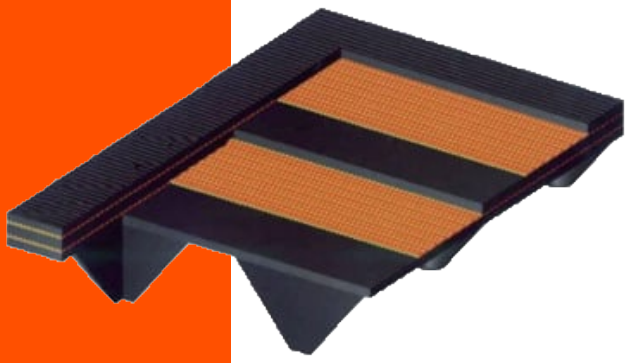


Track Mat Installation: Slab Track

Tiantie high resiliency track mats are designed for optimum static and dynamic performance, and are well suited for applications with main line, urban light rail, and metro axle loads. Tiantie track mats are proven to perform reliably over a very long service life, and under any climatic condition.



USM-Series: Cylindrical Stud Profile Track Mat



USM-Series: Conical Stud Profile Track Mat

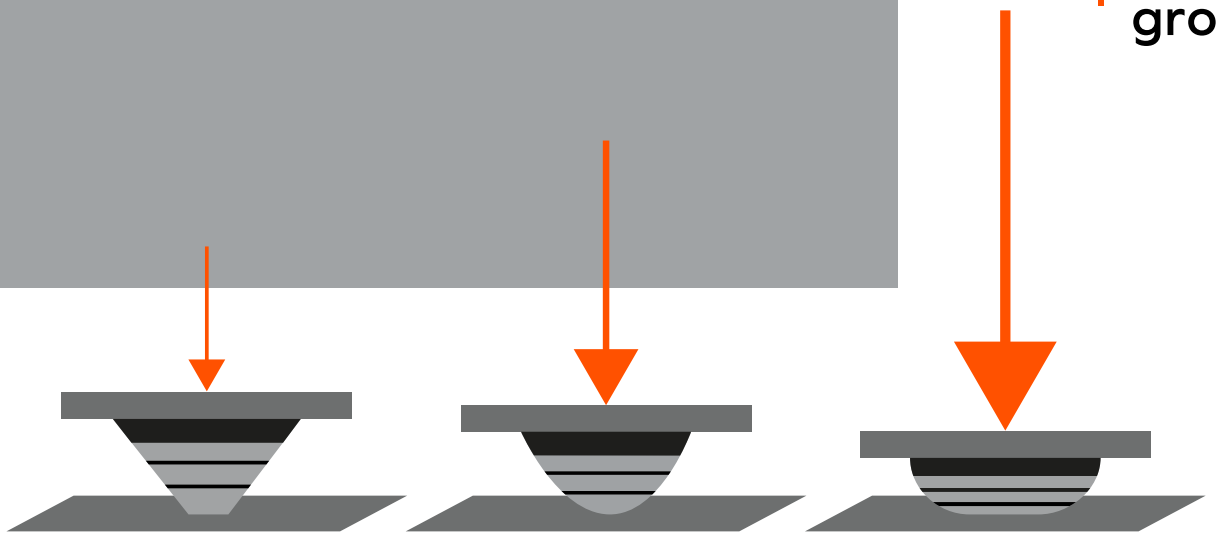
G-Series: Flat Sheet Track Mat

Technical Product Information

Tiantie offers two basic types of high-resiliency rubber track mats, the G-Series flat sheet, and the USM-Series with conical, or cylindrical studs.

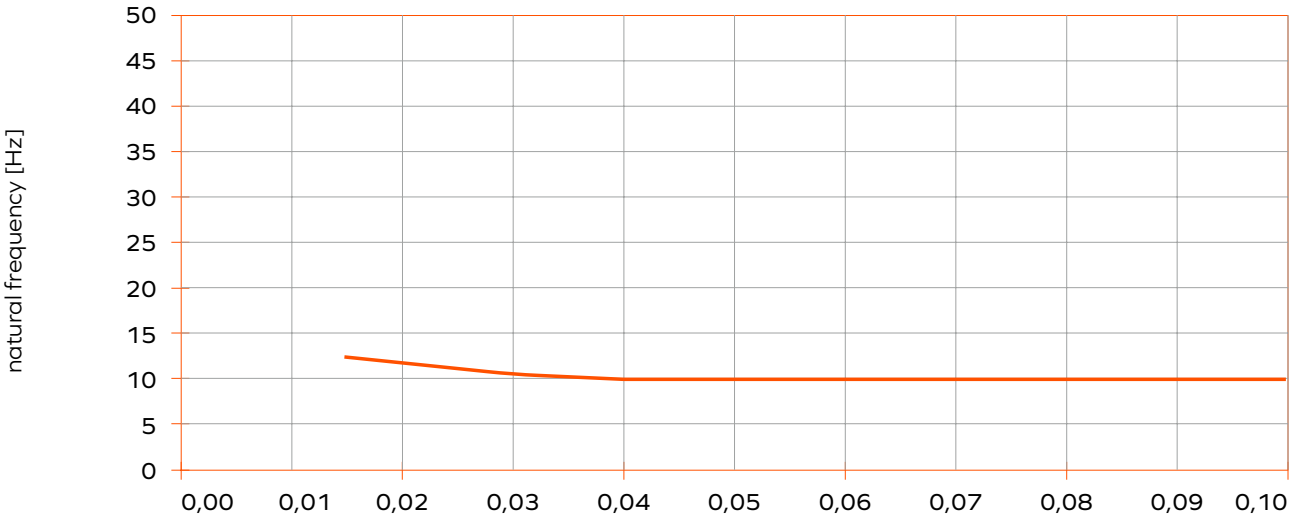
Both product series consist of over ten different versions, designed to meet specific technical requirements, such as speed, stiffness, etc. G-Series flat sheet mats consist of three layers. High-quality rubber component particles are sandwiched between two layers of strong and wear-resistant rubber material.

USM-Series track mats feature truncated cones, or cylindrical shaped spring elements on the mat underside. Air spaces created by these shapes allow unrestricted sub-surface drainage in all directions. For improved overall trackbed stability, the top surface is textured to help keep ballast material in place. This improves load distribution and protects against contaminants that may filter through ballast material over time. Reinforced fabric provides additional strength on the sub-surface.



USM-Series: Deflection of Conical Studs under Load

Key features of Tiantie's USM-series profiled track mats include their ability to maintain a constant system frequency and isolation efficiency, regardless of traffic load.



USM-Series: System Frequency vs. Load

Features and Benefits

- Industry-leading Profile Sheet Technology
- Enhanced Acoustic Performance
- Low Dynamic Stiffening
- Reduces Stress on Structures
- Bridge Deck and Moisture Protection
- Lowers Maintenance Cost

Product Range

Tiantie offers an extensive range of G Series, and USM Series track mats. Our products are engineered and tested to meet customer needs and performance criteria for specific projects. Design considerations include type of track mat to be used, thickness, stiffness, rail type, speed of rolling stock, axle load, proximity of rail line to building structures, and ground condition frequency range.

Mat Type	Width (mm)	Thickness (mm)	Static Bedding Modulus (N/mm^3)
G 1015	1550	15	0.100
G 1023	1500	23	0.060
G 1027	1500	27	0.030
G 1032	1550	32	0.020
USM 1000	1550	30	0.019
USM 1000W	1550	30	0.016
USM 2020	1550	27	0.020
USM 2025	1550	27	0.025
USM 2030	1550	27	0.030
USM 3000	1550	27	0.041
USM 3060	1550	27	0.060
USM 3080	1550	27	0.080
USM 4015	1550	14	0.150

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.

In addition to the wide range of track mat products, highly qualified and experienced engineers are available for installation and commissioning of all Tiantie products, including on-site performance monitoring and final system adjustments. Installation reports detailing “as-built” characteristics can also be provided.

Installation of Track Mats

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.

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.

In-House Test Lab

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.

Production Lines

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Quality Control

Global markets require compliance with a variety of different standards. Tiantie's Quality Management System ensures that product and process standards are consistent and in compliance and documented in accordance with standards. Test reports, certifications and cu tomer testimonials are available on request.

Building on continuous product improvement, Tiantie engineers collaborate with technical institutes and design consultants, to conduct product performance assessments, on an ongoing basis.

ENVIRONMENTAL MANAGEMENT SYSTEMS CERTIFICATION

Certificate No. : 17323E20429R1M

This is to certify that

Zhejiang Tiantie Science & Technology Co., Ltd.

Unified social credit code: 91331000757095033XC

Registered address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Operating address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Production address: No.12 Hexin Road, Hongyan Functional Zone, Sanhe Town, Tiantai County, Taizhou City, Zhejiang Province

is in conformity with

GB/T 24001-2016/ISO 14001:2015 standard

for the scope of

Design, production, and sales of railway rubber products (damper pad, crossing plates, boots, rubber pad, rubber spring floating plates, rail absorbers, polyester pads, rubber flange grooves), rubber conveyor belts, rubber sealing products (O-shaped rubber sealing rings, waterstops/strips, rubber elastic sealing pads), steel spring floating plates, seismic supports and hangers, waste tire mechanical crushing production lines, building vibration reduction/isolation rubber products; Steel joint (Rebar adapter)fireproof materials (magnesium bleach-bead high-crystal composite duct and plate) for buildings And office-related environmental management activities

Issue Date:Jul.08, 2020 Reissue Date:Feb.13, 2025 Valid Until:Jul.07, 2026

IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C173-M

Beijing Zhongjiaoyuanhang Certification Co., Ltd.

Environmental Management System according to ISO 14001

QUALITY MANAGEMENT SYSTEMS CERTIFICATION

Certificate No. : 17323Q20806R1M

This is to certify that

Zhejiang Tiantie Science & Technology Co., Ltd.

Unified social credit code: 91331000757095033XC

Registered address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Operating address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Production address: No.12 Hexin Road, Hongyan Functional Zone, Sanhe Town, Tiantai County, Taizhou City, Zhejiang Province

is in conformity with

GB/T 19001-2016/ISO 9001:2015 standard

for the scope of

Design, production, and sales of railway rubber products (damper pad, crossing plates, boots, rubber pad, rubber spring floating plates, rail absorbers, polyester pads, rubber flange grooves), rubber conveyor belts, rubber sealing products (O-shaped rubber sealing rings, waterstops/strips, rubber elastic sealing pads), steel spring floating plates, seismic supports and hangers, waste tire mechanical crushing production lines, building vibration reduction/isolation rubber products; Steel joint (Rebar adapter)fireproof materials (magnesium bleach-bead high-crystal composite duct and plate) for buildings

Issue Date:Jul.08, 2020 Reissue Date:Feb.13, 2025 Valid Until:Jul.07, 2026

IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C173-M

Beijing Zhongjiaoyuanhang Certification Co., Ltd.

Quality Management System according to ISO 9001

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS CERTIFICATION

Certificate No. : 17323S20412R1M

This is to certify that

Zhejiang Tiantie Science & Technology Co., Ltd.

Unified social credit code: 91331000757095033XC

Registered address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Operating address: No. 928, Renmin East Road, Tiantai County, Taizhou, Zhejiang

Production address: No.12 Hexin Road, Hongyan Functional Zone, Sanhe Town, Tiantai County, Taizhou City, Zhejiang Province

is in conformity with

GB/T45001-2020/ISO45001:2018 standard

for the scope of

Design, production, and sales of railway rubber products (damper pad, crossing plates, boots, rubber pad, rubber spring floating plates, rail absorbers, polyester pads, rubber flange grooves), rubber conveyor belts, rubber sealing products (O-shaped rubber sealing rings, waterstops/strips, rubber elastic sealing pads), steel spring floating plates, seismic supports and hangers, waste tire mechanical crushing production lines, building vibration reduction/isolation rubber products; Steel joint (Rebar adapter)fireproof materials (magnesium bleach-bead high-crystal composite duct and plate) for buildings And office-related environmental management activities And office related occupational health and safety management activities

Issue Date:Jul.08, 2020 Reissue Date:Feb.13, 2025 Valid Until:Jul.07, 2026

IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C173-M

Beijing Zhongjiaoyuanhang Certification Co., Ltd.

Occupational Health and Safety System according to ISO 45001

References

Over 1046 km of Tiantie track mats have been successfully installed at high-speed lines, main lines, commuter and metro lines.

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Tiantie Track Mats Selected Projects

Hig-Speed Lines

		Design speed (km/h)	Quantity (m^2)
Guangzhou, Shenzhen, Hong Kong	Guangzhou, Shenzhen, Hong Kong Passenger Line	350	76300
Shanghai, Kunming	Shanghai, Kunming Passenger Line Hangzhou-Changsha Section	350	2275
Shanghai, Kunming	Shanghai, Kunming Passenger Line Hunan Section	350	3150
Lanzhou, Wulumuqi	Lanzhou-Wulumuqi High-speed Railway	350	3150
Datong, Xi'an	1550	350	3500
Hong Kong	1550	350	1150

Main Lines

		Design speed (km/h)	Quantity (m^2)
Changsha, Zhuzhou, Xiangtan	Changsha, Zhuzhou, Xiangtan Intercity railway	200	44992
Hankou, Xiaogan	Hankou, Xiaogan Intercity railway	200	5400
Qingdao	Qingdao Hongdao -Jiaonan Intercity line	120	6664
Qingdao	Qingdao Blue Silicon Valley Intercity line	120	5428
Nanjing	Nanjing line S8 Lukou New city South station to Gaochun section	100	7389
Nanjing	Nanjing Metro Intercity line	100	17338

Metro Lines

		Design speed (km/h)	Quantity (m^2)
Shenzhen	Shenzhen Metro Line 1	120	29400
Nanjing	Nanjing Metro Line 3	80	44044
Wenzhou	Wenzhou Intercity Line S1	120	51094
Fuzhou	Fuzhou rail transit Line 1	80	56875
Hangzhou	Hangzhou Metro Line 1	80	75990
Beijing	Beijing Metro Line 16	80	86213
Shenzhen	Shenzhen Metro Line 11	120	42000
Guangzhou	Guangzhou rail transit lines 18 and 22	160	93583
Wenzhou	Wenzhou Intercity Line S2	140	133450
Jinan	Jinan rail transit line R2 phase I	80	39900
Hangzhou	Hangzhou Airport Line (Line 17) depot	80	49748
Qingdao	Qingdao Metro Line 2	80	29484
Chongqing	Chongqing Rail Transit Line 9	100	28173
Ningbo	Ningbo line 4	80	27200
Tianjin	Tianjin Metro Line 10 phase I Project	100	24248
Shanghai	Shanghai line 18	80	11290
Wuhan	Wuhan Metro Line 6	80	20700
Beijing	Beijing Metro Line 8	80	25624
Shenzhen	Shenzhen Metro Line 6	100	61990
Foshan	Foshan Rail Transit Line 2	100	53166
Changsha	Changsha Metro Line 1	120	19162
Fuzhou	Fuzhou rail transit Line 4	80	27860

Corporate Offices, Tiantai Zheijang

Company

Zhejiang Tiantie Science & Technology Co Ltd.

Competences

Noise and Vibration Control, Rubber Technology

Founded

2003

Industries

Railway, Buildings, Industry

Revenue

$ 267 Mio. USD (Group) 2021

Headquarters

Tiantai, China

Employees

940 (Group)

Affiliates

20

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Taizhou, Zhejiang, China

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