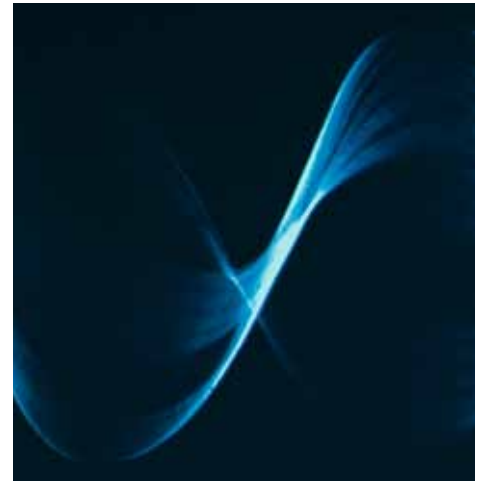




K KRAIBURG
RELASTE C



SUB-BALLAST MAT AND MASS-SPRING SYSTEM

made from recycled rubber

Protection and Isolation for Rails

DAMTEC[®]
KRAIBURG USM

DAMTEC[®] PRODUCT

DAMTEC[®] KRAIBURG USM

DAMTEC[®] KRAIBURG USM is a protecting and decoupling underlay for tram, subway, city train and railway, to reduce the static and dynamic forces operating on the ballast bed and on the supporting structure.



FEATURES AND BENEFITS

- protection of the sensitive sealing (waterproofing) layer against damage from ballast
- reduction of structure-borne noise
- protection of the neighbouring constructions by reduction of vibrations
- easy installation
- extremely cost-effective
- environment-friendly
- extremely long lifetime
- permeable to water
- position and level of the track remain stable in long term
- prolongs the lifetime of the ballast

Static stiffness

With 10 mm thickness for axle load < 25 to and $V > 200$ km/h.

Temperature	Specimen No.	C_{stat1} [N/mm ³] between 0.02 - 0.10 [N/mm ²]	C_{stat2} [N/mm ³] between 0.02 - 0.20 [N/mm ²]
+23°C	1	0.127	0.144
	2	0.128	0.145
	3	0.137	0.157
	mean value	0.131	0.149
-20°C	1	0.217	0.248
	2	0.217	0.252
	3	0.257	0.297
	mean value	0.230	0.266
+30°C	2	0.131	0.148
+/-0°C	2	0.139	0.160
-10°C	2	0.158	0.185

DBS 918071-1, chapter 2.3 defines a permissible range of the static stiffness at room temperature of $0.10 \text{ N/mm}^3 \leq \text{zul } C_{stat1} \leq 0.15 \text{ N/mm}^3$ ($V > 230$ km/h) for sub-ballast mats with the purpose to reduce ballast pressure. The determined nominal values C_{stat1} at room temperature of sub-ballast mat DAMTEC[®] KRAIBURG USM are inside the application ranges.

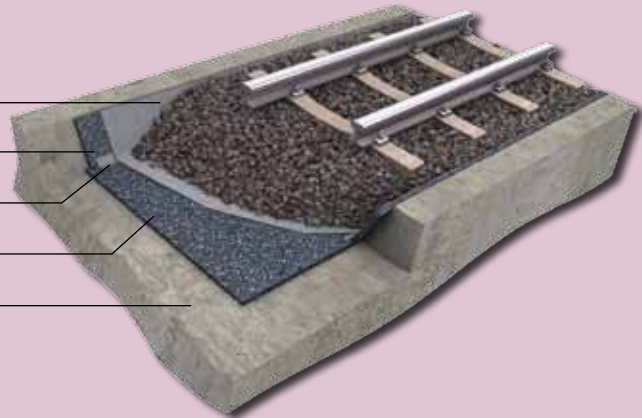


DAMTEC® APPLICATIONS

Track on Ballast (open superstructure)

The installation of the sub-ballast mat DAMTEC® KRAIBURG USM allows to reduce the peak pressure in the ballast, to increase the stability of the track geometry, to effectively reduce the structure-borne sound.

geotextile _____
side mat **DAMTEC®** KRAIBURG USM* _____
suitable adhesive tape _____
sub-ballast mat **DAMTEC®** KRAIBURG USM* _____
substrate _____

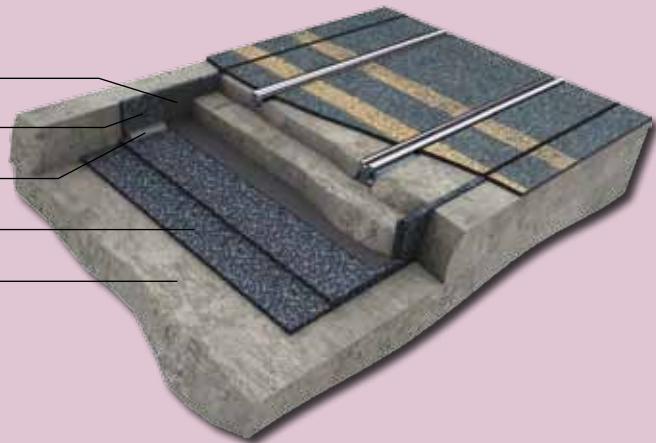


Mass-Spring System

A mass-spring system is produced by embedding the entire body of the track system into DAMTEC® KRAIBURG USM. With the appropriate dimensioning you get a highly effective impact sound insulation. Particularly suitable under complicated track geometries.

In mass-spring systems DAMTEC® KRAIBURG USM shall be installed covering the whole track bed. The mass-spring systems in form of track support plates and track troughs are usually special solutions, which we shall gladly work out for you.

PE membrane (in case of cast-in-situ concrete) _____
side mat **DAMTEC®** KRAIBURG USM* _____
suitable adhesive tape _____
sub-ballast mat **DAMTEC®** KRAIBURG USM* _____
substrate _____



* Standard thicknesses: 10/15/20/23/25 mm.
Combined systems (single, two or three layers) are possible.

Test reports

1. According to E DIN 45673-5 (DBS 918071-01)
Test report No. 2519 (2009) TU Munich
Test report No. M76 612/1 Müller BBM Planegg
2. According to DBS 918071-01
Test reports No. 32, 33, 35 and 36/08 TU Dresden
3. According to the Technical Requirements of
"Wiener Linien" for rubber mats for the city
railway in Vienna.
Test report No. 304.209 (2004) OFI Wien



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