



## PRODUCT DESCRIPTION

**DAMTEC® SBM K 20** is a 20mm thick isolation and protection mat for railway track construction, tested in accordance with DIN 45673-5 – Mechanical Vibrations – Resilient elements used in railway tracks – Part 5: Laboratory test procedures for under-ballast mats. SBM K 20 absorbs vibration and reduces acoustic emission, as well as structure-borne sound transmission. SBM K 20 increases the lifespan of ballast by reducing vibration and better distributing loads.

## USES

**DAMTEC® SBM K 20** is used for main line railways to increase the lifespan of ballast and reduce vibration and noise.

## ADVANTAGES

- Environmentally friendly, made from 100% recycled materials
- Made from only virgin rubber and polyurethane foam
- Cost-effective alternative to other ballast mat systems
- Easy to install

## PHYSICAL PROPERTIES

Thickness		0.4 in. (10mm)
Width		4 ft. (1,250mm)
Length		13 ft. (4,000mm)
Weight		2.7 lbs/ft <sup>2</sup> (13 kg/m <sup>2</sup> )
Tensile Strength	ISO 1798	0.15-0.55 N/mm <sup>2</sup>
Elongation	ISO 1798	40-70%
Thermal Resistance		-22°F to 176°F (-30°C to 80°C)
Static Bedding Modulus (C <sub>stat1</sub> ) <sup>1</sup>		0.06 N/mm <sup>3</sup>
Static Bedding Modulus (C <sub>stat2</sub> ) <sup>1</sup>		0.061 N/mm <sup>3</sup>
Dynamic Bedding Modulus (C <sub>dyn1</sub> )		0.073 N/mm <sup>3</sup> to 0.107 N/mm <sup>3</sup> (varies per thickness, load, & frequency)
C <sub>dyn1</sub> (10Hz)	At -20°C	0.386 N/mm <sup>3</sup>
C <sub>dyn1</sub> (10Hz)	At -10°C	0.232 N/mm <sup>3</sup>
C <sub>dyn1</sub> (10Hz)	At 0°C	0.153 N/mm <sup>3</sup>
C <sub>dyn1</sub> (10Hz)	At +30°C	0.094 N/mm <sup>3</sup>
Horizontal Static Modulus (G <sub>stat</sub> )		0.021 N/mm <sup>3</sup>
Horizontal Deflection		s = 0.26mm < 0.4mm
Water/Frost Resistance		-20% for dynamic stiffness
Resistance to Aging		+6% change to static stiffness at 23°C +7% change to static stiffness at -20°C -0.16% change to weight

<sup>1</sup>Static bedding modulus measured in accordance with DIN 45673-5.

### Static Stiffness for Different Load Ranges:

Max. Load [N/mm <sup>2</sup> ]	Secant Modulus			C <sub>stat1</sub> [N/mm <sup>3</sup> ]	Secant Modulus		C <sub>stat2</sub> [N/mm <sup>3</sup> ]
	[N/mm <sup>2</sup> ]	[N/mm <sup>2</sup> ]	[N/mm <sup>2</sup> ]		[N/mm <sup>2</sup> ]	[N/mm <sup>2</sup> ]	
0.15	0.02	0.06	0.060	0.02	0.12	0.062	
0.20	0.02	0.08	0.059	0.02	0.16	0.061	
0.25	0.02	0.10	0.057	0.02	0.20	0.062	
0.35	0.02	0.14	0.056	0.02	0.28	0.066	

## Mechanical Fatigue Strength:

Load Phase 1 –  $F_o/F_u = 75/10kN$  – 10 million load changes

Load Phase 2 –  $F_o/F_u = 100/10kN$  – 2.5 million load changes

Before Load Phase 1

$C_{stat1} = 0.062N/mm^3$

$C_{stat2} = 0.065N/mm^3$

After Load Phase 1

$C_{stat1} = 0.063N/mm^3$

$C_{stat2} = 0.071N/mm^3$

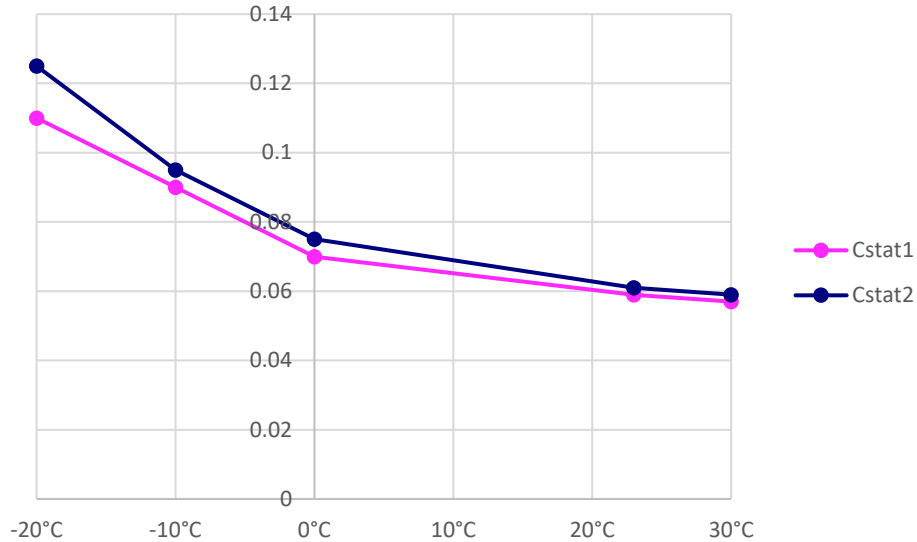
After Load Phase 2

$C_{stat1} = 0.091N/mm^3$

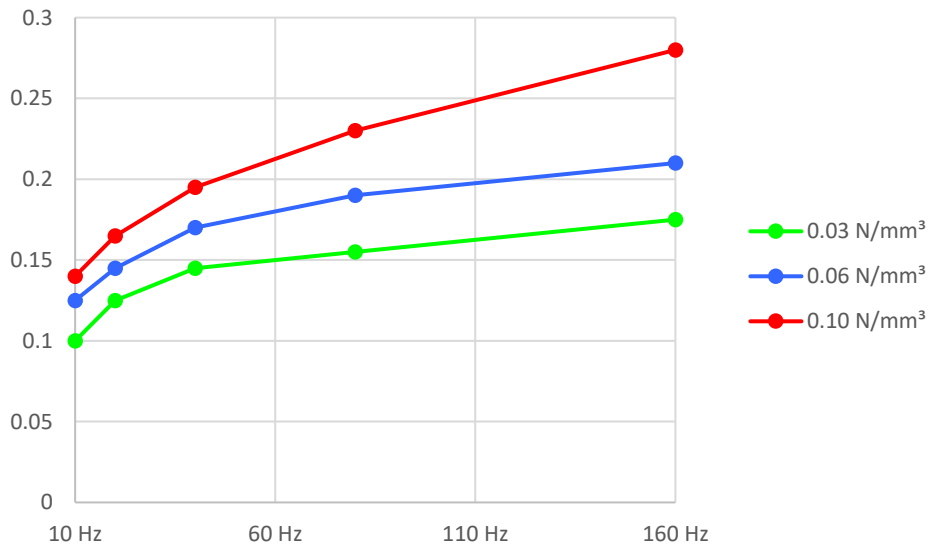
$C_{stat2} = 0.119N/mm^3$

After 12.5 million load changes, surface of DAMTEC SBM K 10 had minor impressions from contact with ballast. No cracks, tears, or perforations of the SBM K 10 were visible after completion of testing.

## Influence of Temperature on $C_{stat}$ :



## Dynamic Bedding Modulus ( $C_{dyn2}$ ):



## PACKAGING

- 52 ft<sup>2</sup> rolls (4 ft. wide x 13 ft. long)
- Custom dimensions may be available to meet certain project requirements

## INSTALLATION

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Refer to the **Sub Ballast Mat Installation Instructions** document for detailed installation instructions.

## STORAGE

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Store in a clean, dry, protected location. Do not store in direct sunlight. For longer periods of time, the rolls should remain shrink wrapped and stored vertically to avoid deformation of the roll's core, which will make unrolling more difficult during installation.

## WARRANTY

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**Bridge Preservation** will refund the price or replace, at its election, product it finds to be defective provided the product has been stored and used properly. Except as expressly stated above, the Company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, expressed or implied, of any nature whatsoever with respect to the product or its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special, or consequential damages, or for any charges or expenses of any nature incurred without its written consent.