MSS 2022 (double-layer Ciprotec 2022)

Resilient element for floating slab system (REFS)

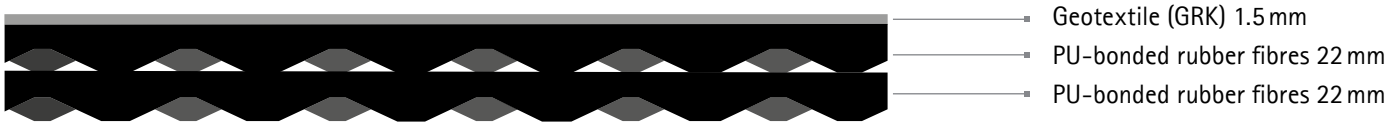
Field of Application

The profiled MSS 2022 REFS is a proven elastomeric product providing effective reduction of vibration and structure-borne sound emissions caused by rail-bound traffic. The mat is designed for ballast tracks and floating slab tracks, covering various axle loads and speeds, and guarantees maximum effectiveness. The mat is mainly used in tunnels underneath buildings, track sections adjacent to buildings, and on bridges. MSS 2022 provides high-grade rubber qualities, such as recycled rubber fibers with excellent dynamic properties.

Description

MSS 2022 is a black elastic mat made of PU-bound rubber fibers, laminated on top with a geotextile layer of robustness class GRK 5. The lower side of type 2022 is profiled. The table below shows the main properties of the product.

Product Structure and Data



Dimensions and Weight	Values
Length [m]	≈ 10
Width [mm]	≈ 1250
Thickness [mm]	≈ 45.5
Weight [kg/m^2]	≈ 18

Installation and Quality Standards

The MSS 2022 is laid to a well-swept subfloor. Projecting concrete edges or similar, protruding reinforcement parts, etc. must be removed. Longitudinal or transverse joints between single mats facing the concrete slab track shall be closed with a suitable covering strip or tape. The same applies to possible corner joints between floor- and side mats. If requested, the mat can also be glued in whole or in part to the surface of the subfloor.

Testing according to DIN 45673-7. The test according to DIN45673-7 was carried out in the load range between 0.01 N/mm^2 and 0.10 N/mm^2.

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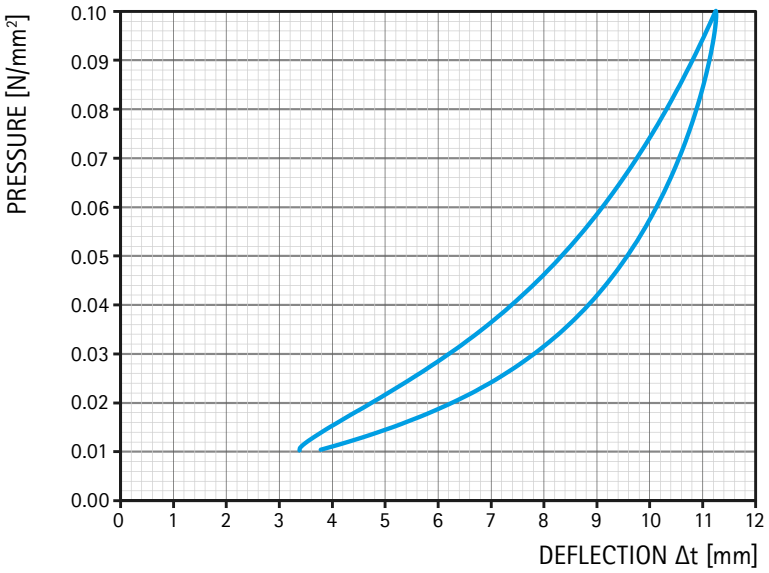
Diagram



DEFLECTION CURVE

The figure shows the examination of static bedding modulus C_{stat} in accordance to DIN 45673-7.

Deflection at:
$S_{0,01\ N/mm^2}$ = 3.38 mm
S_0 = 3.38 mm
S_1 = 6.16 mm
S_2 = 9.10 mm

$C_{stat,\ Z1}$	0,0072 N/mm³
$C_{stat,\ Z2}$	0,0087 N/mm³
$C_{stat,\ Z3}$	0,0087 N/mm³

Vertical preloads (dynamic)

(determination of the dynamic bedding modulus)

$\sigma_{V,1}$	0.01 N/mm²
$\sigma_{V,2}$	0.03 N/mm²
$\sigma_{V,3}$	0.06 N/mm²

Test frequency	Vertical dynamic bedding modulus [N/mm³]			Loss factor		
	$C_{dyn,1}$	$C_{dyn,2}$	$C_{dyn,3}$	η_1	η_2	η_3
Vertical preload	$\sigma_{V,1}$	$\sigma_{V,2}$	$\sigma_{V,3}$	$\sigma_{V,1}$	$\sigma_{V,2}$	$\sigma_{V,3}$
5 Hz	0.0083	0.0188	0.0385	0.160	0.158	0.159
10 Hz	0.0095	0.0213	0.0434	0.158	0.151	0.149
20 Hz	0.0110	0.0237	0.0473	0.159	0.145	0.1543
30 Hz	0.0094	0.0227	0.0468	0.147	0.137	0.138

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