

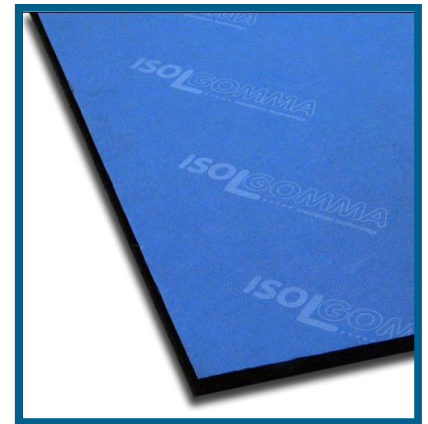
# TECHNICAL DATA

## Matrack Line AVC 700

### Vibration insulation in railways and tramways

#### Product description and Technical Specification

Anti-vibration material supplied in panels, thickness of 15 to 50 mm, produced using fibres and granules of SBR rubber (Stirene Butadiene Rubber) selected and compacted using a polyurethane glue in a hot process; density 500 kg/m<sup>3</sup>. A non-woven, non-stretch synthetic membrane is applied on one side of panel, for added protection.



- high mitigation performances
- self-draining product and ice resistant
- mat dimensions available upon customers' request

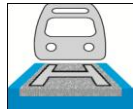
AREA OF APPLICATION	Axle load kN	Speed km/h	Ballast track Load $\sigma$ (N/mm <sup>2</sup> )	Suggested thickness	Floating slab track Load $\sigma$ (N/mm <sup>2</sup> )	Suggested thickness
Tram	≤ 100	≤ 100	$0,020 \leq \sigma \leq 0,030$	from 15 to 50	$0,007 \leq \sigma \leq 0,016$	from 15 to 50
Metro	≤ 130	≤ 120	$0,030 \leq \sigma \leq 0,040$	from 15 to 50	$0,013 \leq \sigma \leq 0,029$	from 15 to 50
Railway	≤ 225	≤ 200	$0,040 \leq \sigma \leq 0,070$	from 15 to 50	$0,017 \leq \sigma \leq 0,050$	from 15 to 50
High-Speed Railway	≤ 170	≤ 250	$0,040 \leq \sigma \leq 0,060$	from 15 to 25	$0,017 \leq \sigma \leq 0,036$	from 15 to 25

PHYSICAL CHARACTERISTICS	Unit	Matrack AVC 700						Tolerance
Nominal thickness	mm	15	20	25	30	40	50	± 5
Length	m	up to 3,0						± 1
Width	m	up to 1,2						± 1
Density	kg/m <sup>3</sup>	700						± 5%
Backing superficial mass	g/m <sup>2</sup>	120						
Colour		black/blue						

TECHNICAL CHARACTERISTICS	Norm	Unit	Matrack AVC 700						Tolerance
Static Stiffnes ks	UNI 11059 - UNI 10570	N/mm <sup>3</sup>	0,113	0,083	0,072	0,069	0,058	0,039	± 10%
Dynamic Stiffness kd	UNI 11059 - UNI 10570	N/mm <sup>3</sup>	0,276	0,190	0,160	0,139	0,110	0,068	± 10%
Static Modulus of Elasticity Es	UNI 11059	N/mm <sup>2</sup>	1,770	1,760	1,900	2,090	2,340	1,960	± 10%
Dynamic Modulus of Elasticity Ed	UNI 11059	N/mm <sup>2</sup>	4,320	4,030	4,230	4,220	4,440	3,420	± 10%

PHYSICAL & CHEMICAL PROPERTIES	Norm	Unit	Matrack AVC 700						Tolerance
Temperature range of use	UNICHIM 87/1970	°C	-20 °C / +115 °C						
Inflammability	DIN 4102		B2						
Water absorption by volume	DIN 52103/A		< 5%						
Water absorption in weight	DIN 52103/A		< 5%						
Thermal conductivity	EN 12667	W/m x °C	0,113						
Electrical resistance	UNI 5572/CEI15-23	$\Omega$ x cm	≥ 10 <sup>6</sup>						
Resistance ozone	DIN 53509/1		no cracks						

The suggestions and technical information given above represent our knowledge regarding the properties and the product's uses. ISO GOMMA reserve the right to modify or update this data without prior notice. This document is the property of ISO GOMMA and all rights are therefore reserved

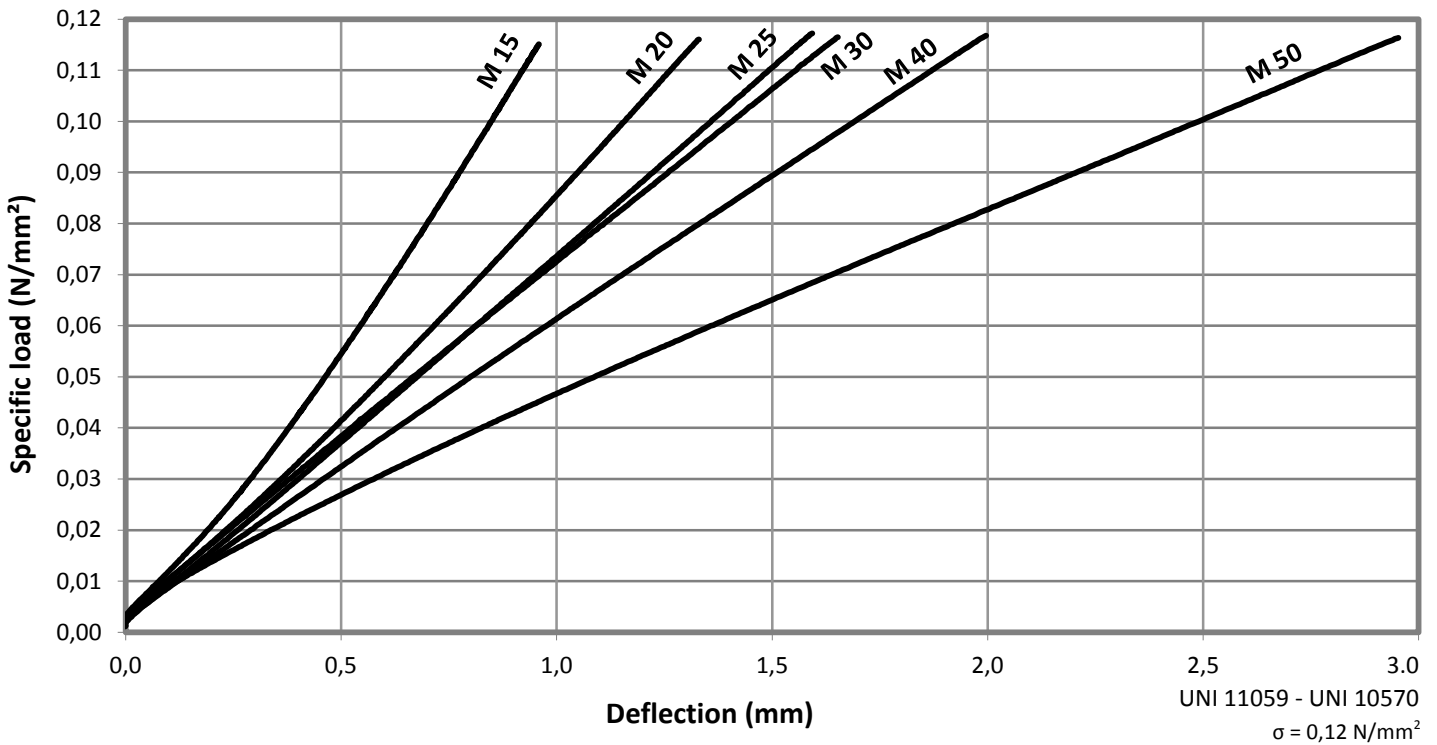


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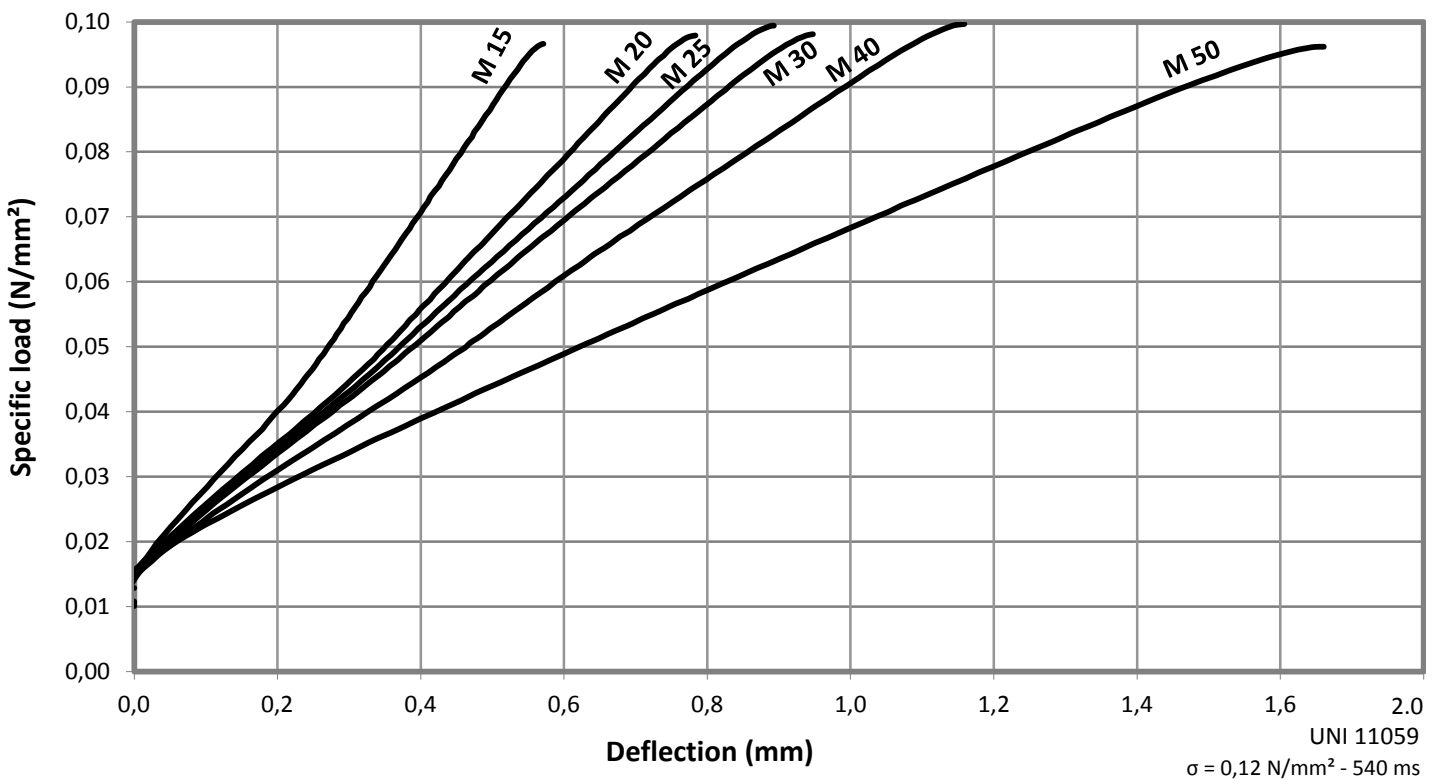
*Matrack Line AVC 700*

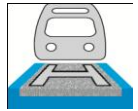
Vibration insulation in railways and tramways

Quasi-static stiffness



Simulation stiffness



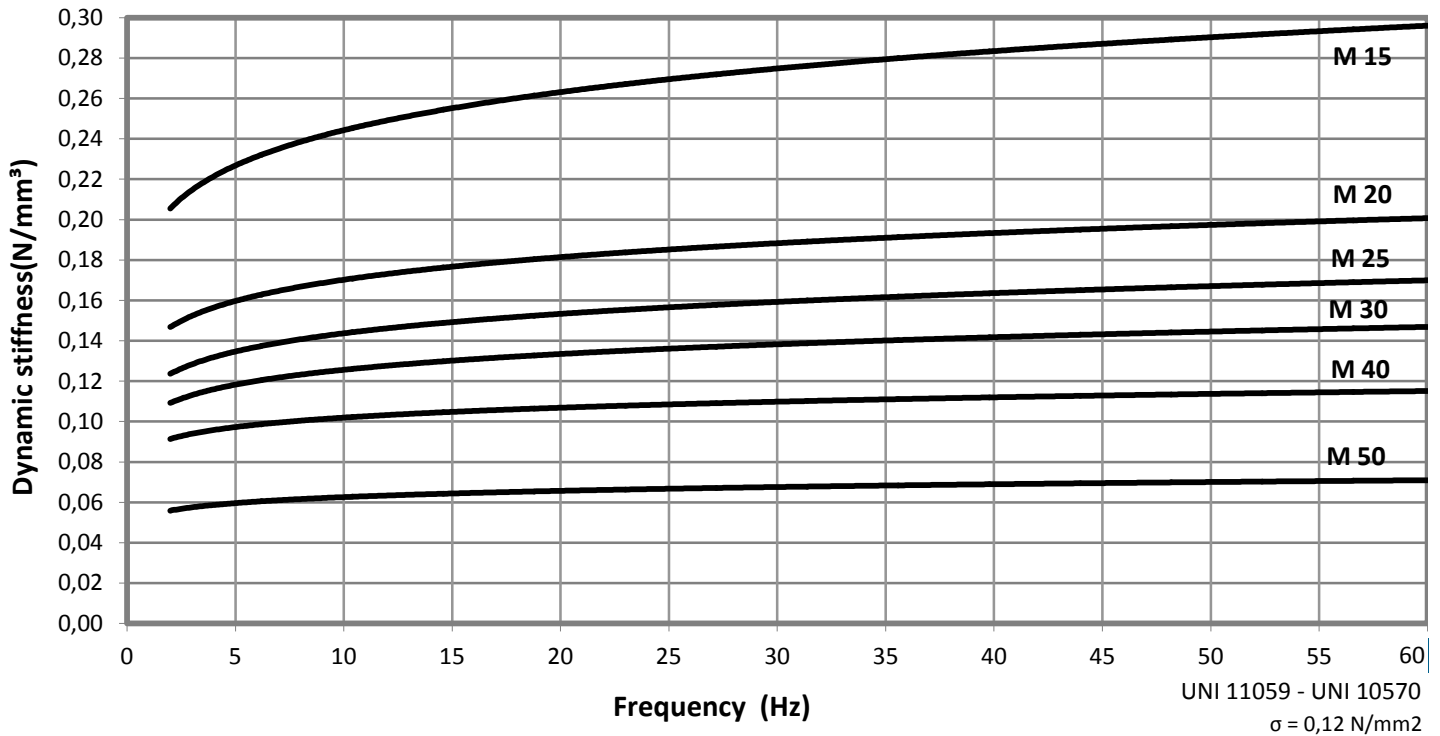


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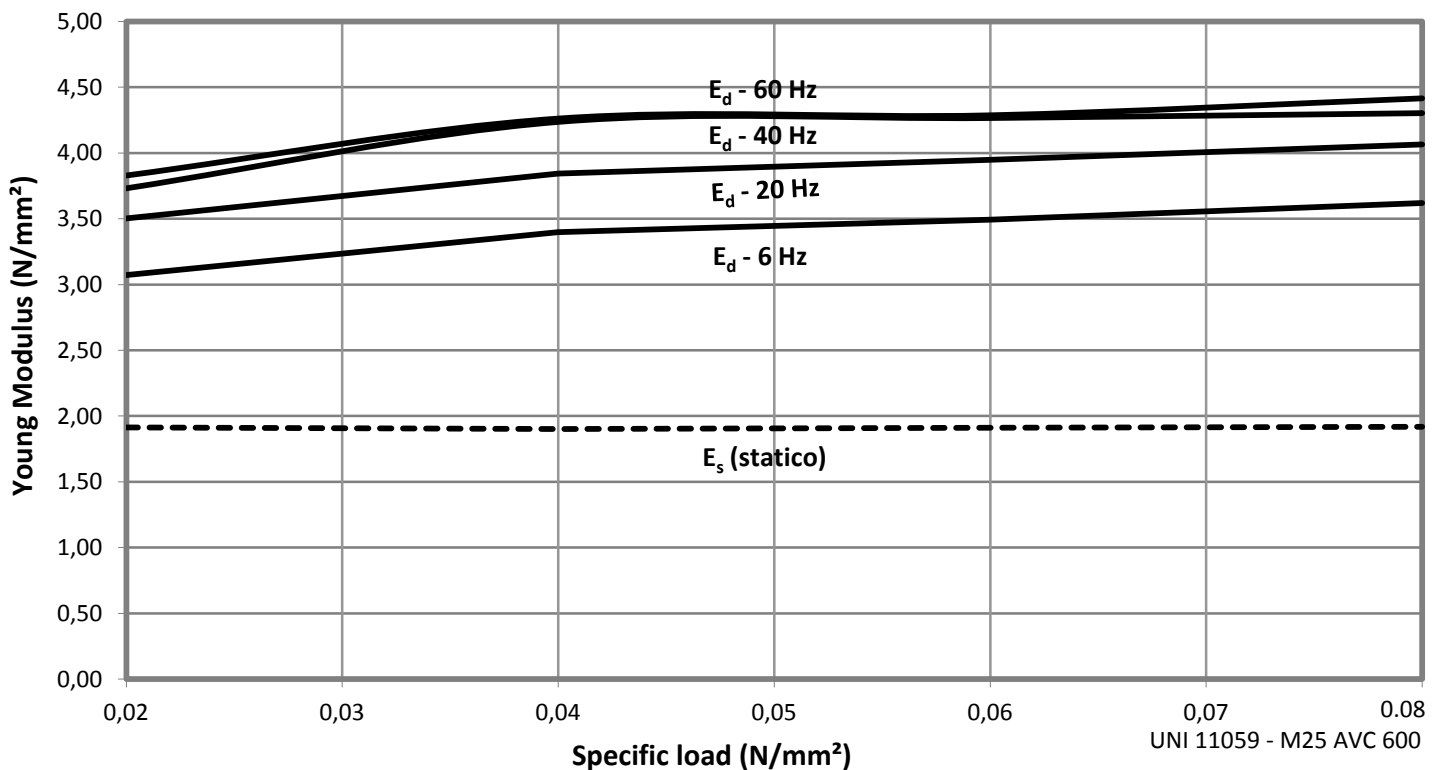
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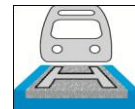
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**Dynamic stiffness**



**Dynamic Modulus of Elasticity**



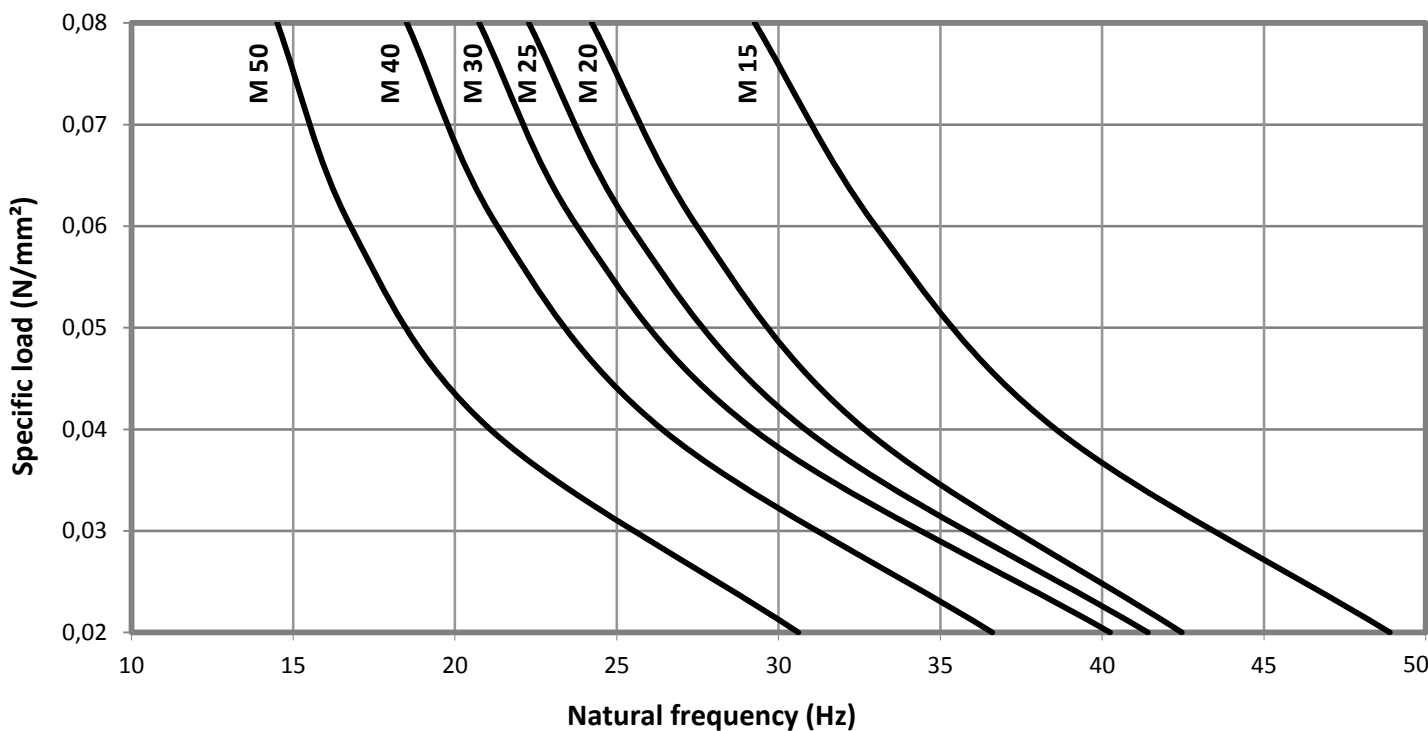


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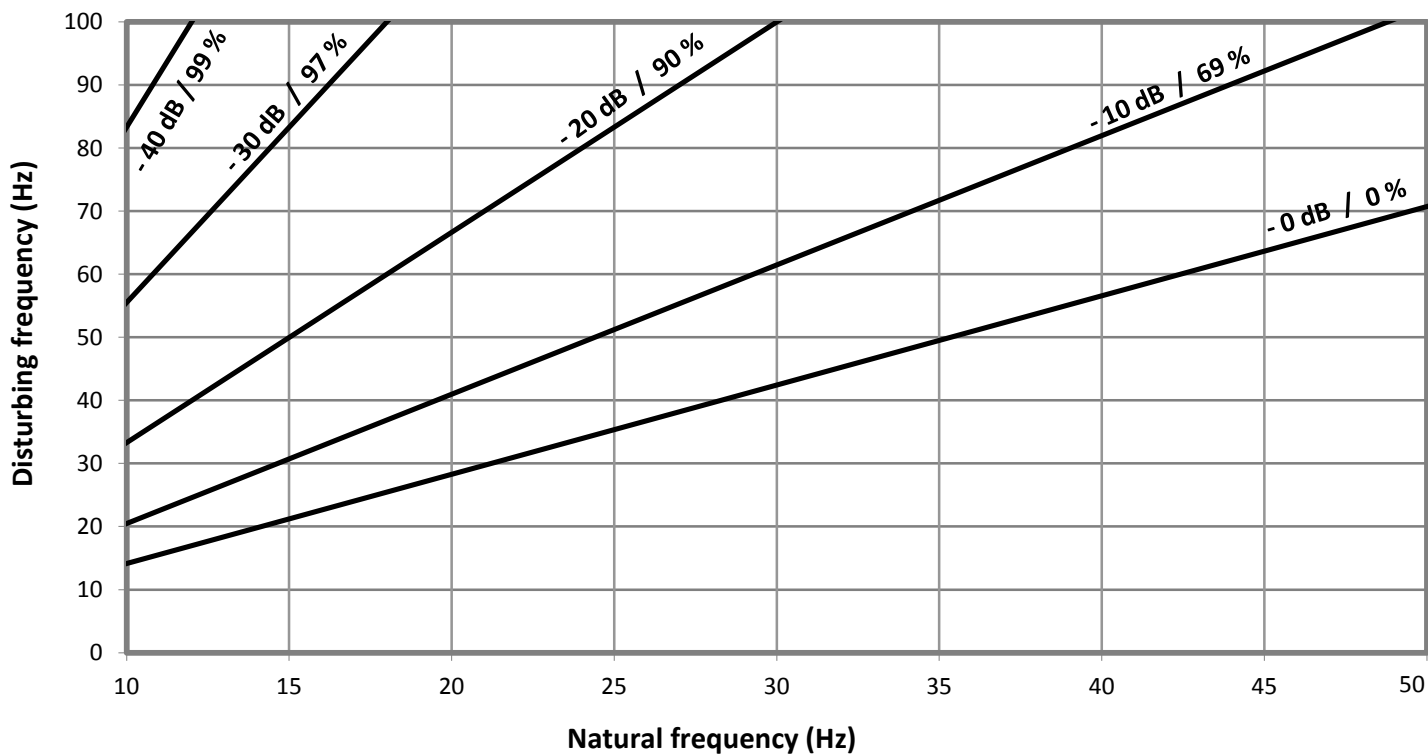
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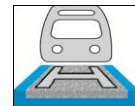
Vibration insulation in railways and tramways

Natural frequency



Degree insulation



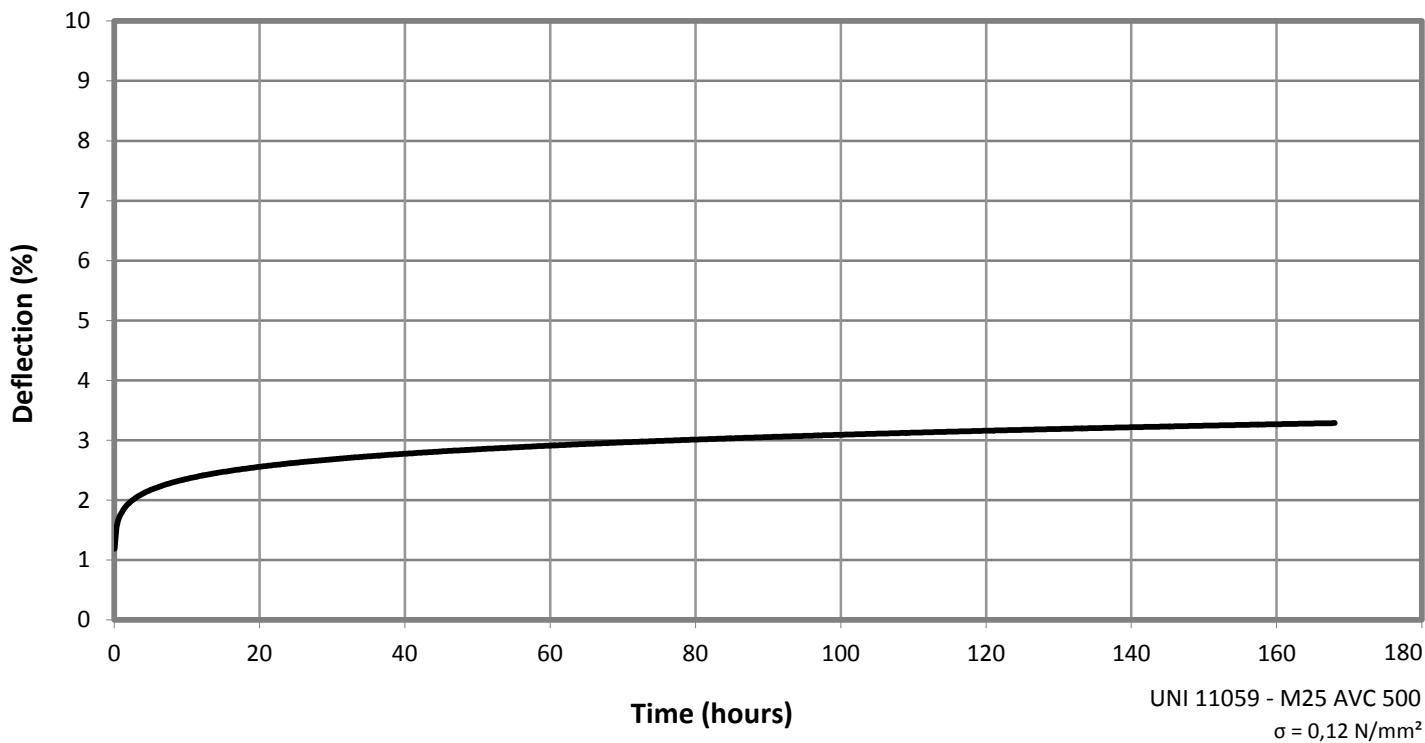


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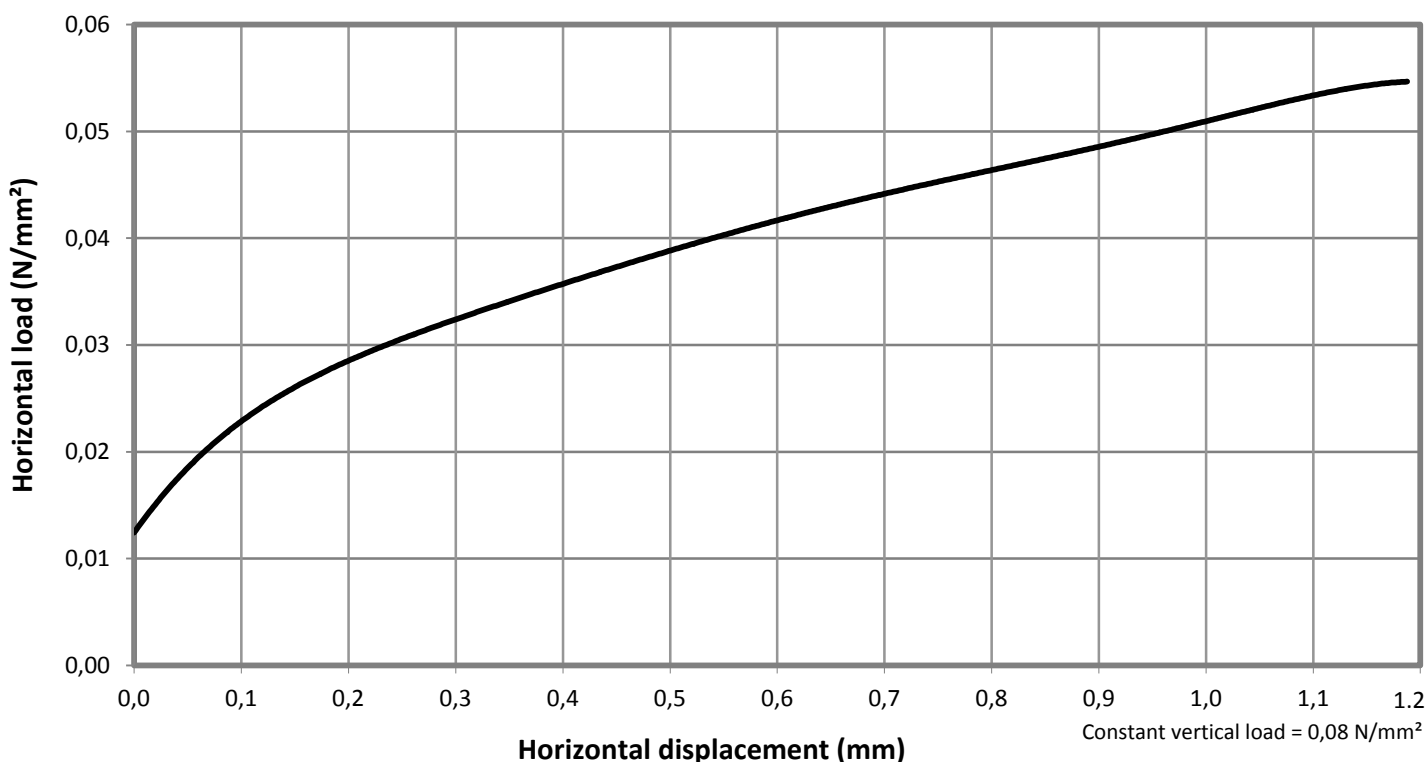
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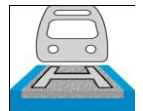
Vibration insulation in railways and tramways

Permanent load



Shear test





# TECHNICAL DATA

# Matrack Line AVC 700

## Vibration insulation in railways and tramways

### Forced aging test

<b>Frost strength test with water</b>	<b>Laboratory test</b>	<b>Standard UNI 11059</b>	
Dynamic stiffness variation (%) after 3x10 <sup>5</sup> cycles (-25°C)	2,0%	≤	20%

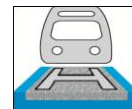
<b>Fatigue test</b>	<b>Laboratory test</b>	<b>Standard UNI 11059</b>	
Thickness variation (%) after 3x10 <sup>6</sup> cycles	1,9%	≤	15%
Quasi-static stiffness variation (%) after 3x10 <sup>6</sup> cycles	8,4%	≤	20%
Static stiffness variation (%) after 50x10 <sup>6</sup> cycles at 50 Hz under ballast plate (DB-TL 918071/2000)	≤ 12%		

<b>Atmospheric conditions strength test</b>	<b>Laboratory test</b>	<b>Standard UNI 11059</b>	
Dynamic stiffness variation (%) in air at 70 °C	6,0%	≤	10%
Dynamic stiffness variation (%) in water at 50°C	12,0%	≤	15%
Dynamic stiffness variation (%) in ozone	6,4%	≤	20%

<b>Adequacy of mats to be put on lines</b>	<b>Laboratory test</b>	<b>Standard UNI 11059</b>	
Thickness variation (%)	3,2%	≤	20%
Dynamic stiffness variation (%)	2,9%	≤	20%



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Vibration insulation in railways and tramways

LAYING INSTRUCTIONS



1 Lay the Matrack mats on the pit, without leaving gaps between adjacent mats or along the edges



2 Seal the edges of the mats with Stik WP tape, taking care of the good adhesion of the tape to the mats



3 All the lines of junction have to be taped



4 Place the Matrack mats vertically



5 Fix the vertical mats with large headed screws or with adequate glue



6 Seal the vertical joints of the mats with the Stik WP tape



7 Fix the "Z" profile on the top border of the vertical mat



Example of a complete lay for a ballast track



Example of a complete lay for a floating slab track