TECHNICAL DATA
Matrack M15 AVC 500

ISOLGOMMA
★★★★★ insulation technology

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Description

Anti-vibration material supplied in panels, thickness 15 mm produced using fibres and granules of SBR rubber (Styrene Butadiene Rubber) and granules of EPDM rubber (Ethylene Propylene Diene Monomer) selected, compacted using a polyurethane glue in a hot process. A non woven, anti-punched synthetic membrane is applied on both sides of the panel; density 500 kg/m^3.

Application

Vibrations insulation of rail, tram and subway structures, such as elastomeric mat under slab in reinforced concrete and under ballast.

PHYSICAL CHARACTERISTICS	Unit	Value	Tolerance
Nominal thickness	mm	15	± 5%
Length	m	up to 3,0	± 1%
Width	m	up to 1,2	± 1%
Density (without backing)	kg/m³	500	± 5%
Backing superficial mass	g/m²	120	
Colour		black	

TECHNICAL CHARACTERISTICS	Norm		Value	Tolerance
Static Stiffnes ks	UNI 11059 - UNI 10570	N/mm^3	0,035 ÷ 0,05	± 10%
Dynamic Stiffness kd	UNI 11059 - UNI 10570	N/mm^3	0,08 ÷ 0,1	± 10%
Static Modulus of Elasticity Es	EN 826 - UNI 11059	N/mm^2	0,82	± 10%
Dynamic Modulus of Elasticity Ed	EN 826 - UNI 11059	N/mm^2	1,22 ÷ 1,6	± 10%

PHYSICAL AND CHEMICAL PROPERTIES			
Temperature range of use	UNICHIM 87/1970	°C	-20 ÷ 115
Inflammability	DIN 4102		B2
Water absorption by volume	DIN 52103/A		< 5%
Water absorption in weight	DIN 52103/A		< 5%
Coefficient of thermal conductivity	EN 12667	W/m x °C	0,113
Electrical resistivity	UNI 5572/CEI15-23	Ω x cm	10^6
Resistance to ozone	DIN 53509/1		no cracks

PACKING AND STORING - METHOD OF USE

The panels are placed on pallets and the packaging is made with the winding of a polyethylene film. The panels are placed together in dry or glued to points (it is recommended that you glue to points placed upright panels). The panels are to be reached through a adhesive tape of anti-tear woven type "stik".
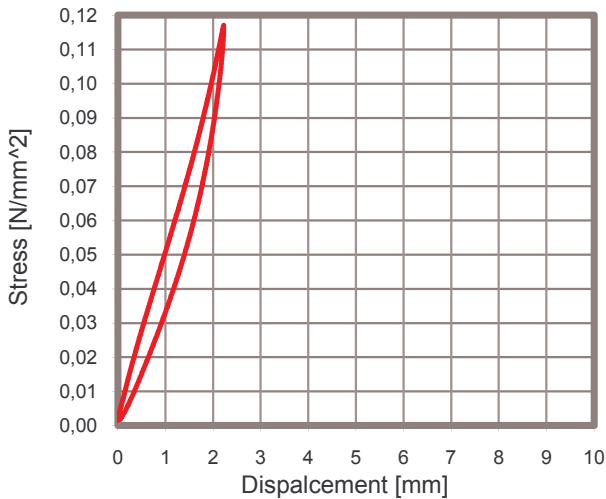
HEALTH & SAFETY

The product and the used rubber granules don't contain dangerous and toxic materials in accordance with the provisions of the "Implementation of Directive 2000/33/CE". It's not subject to the obligations settled in Directive 67/648/CEE.

Compression - Static Stiffness ks - Dynamic Stiffness kd

Norm UNI 10570
k_s = 0,048 N/mm^3
σ_{max} = 0,12 N/mm^2
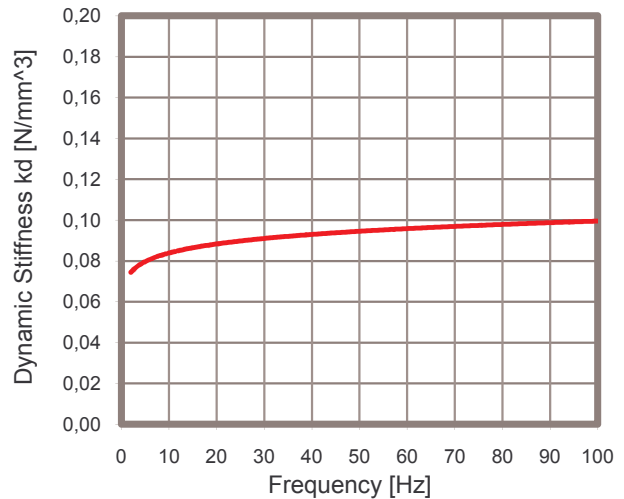
Norm UNI 10570
k_d = 0,094 N/mm^3
σ_s + σ_d = 0,12 N/mm^2 - σ_d = % σ_s

Static and Dynamic Modulus of Elasticity - Deformation over Time

Legend:
- E static
- Ed- 6Hz
- Ed- 20Hz
- Ed- 40Hz
- Ed- 80Hz

Static and Dynamic Modulus of Elasticity
EN 826 - UNI 11059

Permanent load test
UNI 11059

Natural Frequency - Degree of Insulation

Stress [N/mm^2] vs Natural Frequency f0 [Hz]

Norma UNI 11059
f_0 = 22,21 Hz
σ_{max} = 0,1 N/mm^2

Disturbing Frequency [Hz] vs Natural Frequency [Hz]

- $\Delta L_w / \eta$ -40 dB / 99%
- $\Delta L_w / \eta$ -30 dB / 97%
- $\Delta L_w / \eta$ -20 dB / 90%
- $\Delta L_w / \eta$ -10 dB / 69%
- $\Delta L_w / \eta$ -0 dB / 0%

ΔL_w	η
Decrease of transmission in dB	degree of insulation on percentage

Forced Aging Tests

Fatigue test
UNI 11059 / DB-TL 918071
3x10^6 cycles / 50x10^6 cycles
% variation of the thickness $\Delta h \leq 15\%$
% variation of the Static Stiffness $\Delta k_s \leq 20\%$

Frost strength test with water
UNI 11059
3x10^5 cycles -25°C
% variation of the Dynamic Stiffness $\Delta k_d \leq 20\%$
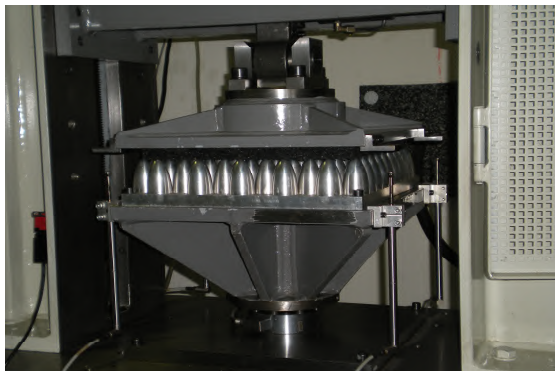
Atmospheric conditions strength test
Air 70°C - Water 50°C - Ozone
UNI 11059
% variation of the Dynamic Stiffness :
Δk_d air $\leq 10\%$ - Δk_d water $\leq 15\%$ - Δk_d ozone $\leq 20\%$

Worksite vehicle transitability test
Adequacy of mats to be put along lines
UNI 11059
% variation of the thickness $\Delta h \leq 3\%$
% variation of the Dynamic Stiffness $\Delta k_d \leq 20\%$