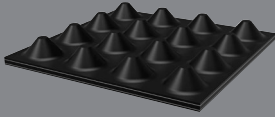


USM 2025

Track Bed Mat

TENDER TEXT



The track bed mat type USM 2025 consists of fabric-reinforced sheets of high-grade rubber qualities (sandwich) with resilient conical studs on the underside. The top of the mat, either facing ballast or a concrete slab must be resistant to abrasion, oil, ozone and environmental influences.

The damping layer with the conical studs shall be made from high resilient solid natural rubber with excellent dynamic properties. The special studded design of the mat shall allow for water drainage below the mat. The cover layer protects the damping layer against any kind of mechanical damage. For easy, jointless and tight laying of USM track bed mats a lateral overlap strip shall be vulcanised to the mat.

The elastomer material shall be compounded with the reinforcing agents, antioxidants, antiozonants, etc. to provide the mat with long service life, weathering and ageing properties. The elastomer material shall be formulated, mixed and processed in a manner adequate to give stable static and dynamic properties.

The vulcanised track bed mat shall not absorb water, adherence of water on its surface however, shall be allowed.

The maximum test value for water absorption shall be less than 3%.

Track bed mat type USM 2025 is mainly used for vibration- and structure-borne sound mitigation purposes, e.g. in floating slab tracks.

PARAMETERS

Standard size (cuts on request)	Thickness: 27 mm Width: ca. 1.54 m Length: max. approx. 120 m
Weight	approx. 14.5 kg/m ²
Water absorbency	< 3 %
Flammability	class E
Service life	at least 60 years

PPRINCIPLE CHARACTERISTICS
OF THE TRACK BED MAT ACC. DIN 45673

Stat. bed modulus	Dyn. bed modulus
$C_{stat} = 0.025 \text{ N/mm}^3 (\pm 15\%)$ between the compression stress range of 0.02 N/mm^2 and 0.10 N/mm^2 .	Dynamic bed modulus at 40 Hz and a tolerance of $\pm 15\%$ shall be as follows: $C_{dyn.} = 0.026 \text{ N/mm}^3$, with a preload $\sigma = 0.030 \text{ N/mm}^2$ $C_{dyn.} = 0.039 \text{ N/mm}^3$, with a preload $\sigma = 0.060 \text{ N/mm}^2$ $C_{dyn.} = 0.052 \text{ N/mm}^3$, with a preload $\sigma = 0.100 \text{ N/mm}^2$

MATERIAL CHARACTERISTICS OF TRACK BED MAT TYPE USM 2025 SHALL BE AS FOLLOWS:

Item	Cover Layer	Natural Rubber Damping Layer
Tensile strength (DIN 53504)	$\geq 10 \text{ Mpa}$	$\geq 17 \text{ MPa}$
Elongation at break (DIN 53504)	$\geq 350 \%$	$\geq 500 \%$
Tear resistance (DIN ISO 34-1:A)	$\geq 5 \text{ N/mm}$	$\geq 5 \text{ N/mm}$
Compression set (DIN ISO 815-1)	$\leq 30 \%$	$\leq 25 \%$
After ageing at 70°C for 168 hrs (DIN 53508)		
Tensile strength	-	$\geq 15 \text{ MPa}$
Elongation at break	-	$\geq 450 \%$

Supplier:

Calenberg Ingenieure GmbH | Am Knübel 2-4 | 31020 Salzhemmendorf | Germany

Tel. +49 51 53 – 94 00-0 | Fax: +49 51 53 – 94 00-49 | info@calenberg-ingenieure.de | www.calenberg-ingenieure.de

Subject to change

© Copyright – Calenberg Ingenieure GmbH – 2020

Version 0

30 April 2020

Calenberg Ingenieure GmbH | Am Knübel 2-4 | 31020 Salzhemmendorf | Germany | info@calenberg-ingenieure.de | www.calenberg-ingenieure.de