CDM-FSM-L6

General Properties of the Resilient Material

This FSM is made of high quality resin-bonded rubber (CDM-RR material)

Property	*Typical value*
Colour	Black
Thickness	40 mm
Number of layers	2
Bottom surface	Wavy (2)
Standard roll dimensions (1)	10m x 1.25m
Density	710 kg/m³
Weight	21,3 kg/m²
Static load range	0.01 - 0.15 MPa
Maximum total load	0.2 MPa
Maximum occasional load	2.0 MPa
Environmental impact	> 90% recycled 100 % recyclable

(1) Tolerance on length (-0m;+0,3m); width (-0,02m;+0,025m)

(2) A flat and rigid track foundation is required.

Field of Application

Track category	*Typical axle load*	*Vibration isolation*
Tramway / Urban Light Rail	100 kN	✓
Underground railway	130 kN	✓
Suburban Rapid transit	160kN	✓
Main-line railway	225 kN (250 kN freight)	✓

System Stiffness - Following DIN 45673-7

Typical load cases [N/mm²] for determination of bedding modulus - (500mm slab)	*Load case Tramway/Urban Light Rail*	*Load case Underground Railway*	*Load case Suburban Rapid Transit*	*Load case Main-line Railway*
Load stage σ_0	0,013	0,013	0,013	0,013
Load stage σ_1	0,027	0,028	0,035	0,044
Load stage σ_2	0,027	0,028	0,035	0,044
Load stage σv_2	0,019	0,020	0,023	0,027

Bedding modulus [MN/m³] (3)	*Load case Tramway/Urban Light Rail*	*Load case Underground Railway*	*Load case Suburban Rapid Transit*	*Load case Main-line Railway*
Cstat,z1 (deformation calculation)	8,1	8,2	9,0	9,9
Cstat,z2 (static analysis)	7,7	7,8	8,6	9,5
Cstat,z3 (track base plate bending deformation)	8,1	8,2	9,0	9,9
Cdyn vibration @ σv_2 - 10Hz	17,8	18,5	20,5	23,1
Cdyn deflection	-	-	-	-

(3) A tolerance of ± 20% on these values is acceptable.

Data provided in this document has been collected using tests compliant with internationally recognized test procedures. All data provided is given in good faith using state of the art practices and production tolerances and it may be used for calculation and design purposes. This data cannot be considered a warranty as there may be factors, outside our knowledge and control, which affect the performance of our product and therefore Pandrol CDM Track cannot be held responsible for the project specific performance of our product. Please contact Pandrol CDM Track technical department for application recommendations. Pandrol CDM Track reserve the right to modify our data and product without notice.

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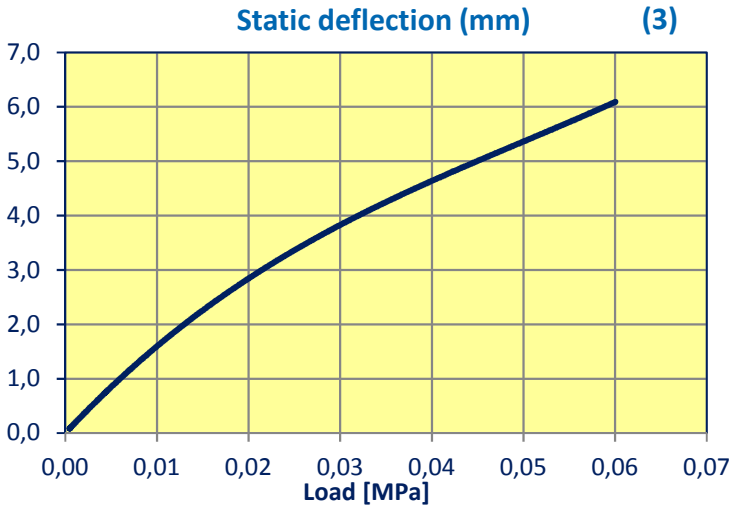

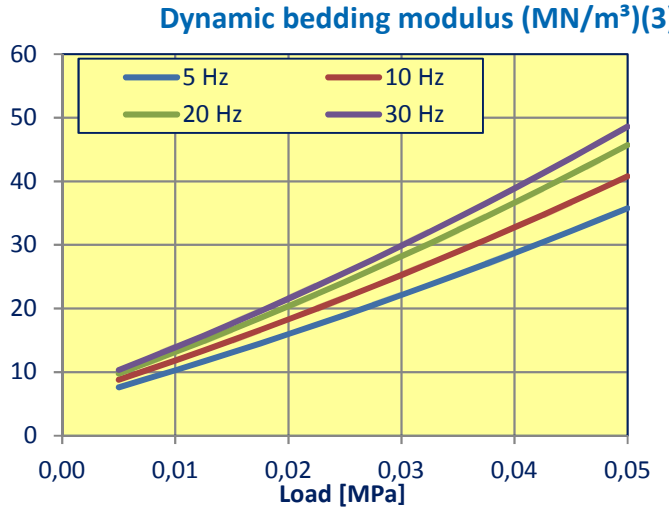

Material Performance Tests

Parameter	Method	Result
Tensile strength	ISO-37	≥ 0.30 MPa
Elongation at break	ISO-37	≥ 35%
Creep rate at 0.01 MPa	Based on ISO-8013	≤ 1%/decade
Elastic recuperation	Based on ISO-8013	≥ 95%
Compression set (50%/23°C/72h)	ISO-815-1	≤ 10%
Stiffening factor after fatigue	DIN 45673-7	≤ 30%
Water absorption (volume change)	Internal procedure	≤ 2%
Water resistance	DIN 45673-7	Tensile strength ≥ 0.25 MPa Elongation at break ≥35%
Frost resistance	BN 918071-1	≤ 20% change in static stiffness
Immersion in solutions with pH 3 and pH 12	Internal procedure (24h at 40°C)	≤ 20% change in static stiffness
Resistance to fire	DIN 4102-1	B2

Protection Layer - Non Woven Geotextile (4)

Parameter	Method	Typical value
Material	Polypropylene	
Thickness under 2 kPa	EN ISO 9863-1	1.8 mm
Weight	EN ISO 9864	325 g/m^2
Tensile strength	EN ISO 10319	26 kN/m
Elongation at break	EN ISO 10319	0,5
CBR puncture resistance	EN ISO 12236	4.35 kN

(4) should not be exposed to direct sunlight for more than 14 days and can be replaced by PE-foil for some applications.

System Build-up