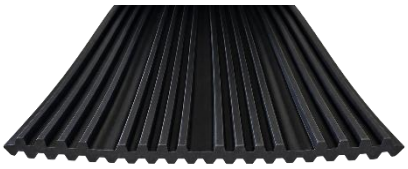
TECHNICAL DATA SHEET

PROFILED ELASTOMERIC BEARINGS – STRIPS FOR IMPACT SOUND INSULATION

Profiled elastomeric strips are used to support structural members and to insulate impact sound and vibration. Thanks to the trapezoidal profile on both faces, the strip compresses readily under low loads: it evens out irregularities of the bearing surfaces, transfers the load centrally and allows the supported member to rotate without inducing additional stresses in the support. As the load increases, the profile compresses and the strip acts as a stiff structural bearing.

Areas of application:
- Bearings for precast stair flights and landings (impact sound insulation);
- Bearings for precast and cast-in-place reinforced concrete structures;
- Bearings for steel structures;
- Bearings for floor slabs and other structures requiring vibration isolation.



TYPE W

TYPE W elastomeric strips are made of unreinforced EPDM elastomer with a hardness of 70 Sh A, resistant to ageing, weathering and ozone.

TYPE W (t=10 mm)		
Width b, mm	**Design load-bearing capacity, F_{Rd} [kN/m']**	**Recommended load for impact sound insulation, $F_{k,ak}$ [kN/m']**
50	885	≤ 45
100	1770	≤ 90
150	2655	≤ 135
200	3540	≤ 180

Intermediate values may be determined by interpolation. $F_{k,ak}$ – recommended maximum load at which the characteristic compressive stress in the strip $\sigma_k \leq 0.9$ N/mm^2.

IMPACT SOUND INSULATION

The best impact sound and vibration insulation is achieved when the characteristic compressive stress in the strip does not exceed 0.9 N/mm^2. Impact sound reduction $\Delta L_w = 24$ dB. The bearing joint must be free of sound bridges such as mortar, stones, timber wedges or any other rigid inclusions.

DESIGN

The load-bearing capacity of the strip depends on the shape factor $S = a \cdot b / (2 \cdot t \cdot (a+b))$, where a is the shorter side, b the longer side and t the thickness of the strip. The area of any boreholes must be deducted from the bearing area. The rotation of the supported member has to be considered in the design, adding the deviation from plane parallelism and the unevenness of the bearing surfaces. The maximum permissible angle of rotation is $\alpha \leq 2500/a$ ‰, but not more than 40 ‰, where a is the strip width in mm (50 mm – 40 ‰, 100 mm – 25 ‰, 150 mm – 16.7 ‰, 200 mm – 12.5 ‰). The elastomeric strip must not be used to absorb constant external shear forces.

INSTALLATION

Unreinforced strips expand under load, therefore an edge distance of at least 25 mm (including chamfers) from the edge of the supporting member to the elastomeric strip is normally recommended; the strip must remain within the

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reinforcement. In precast structures the strip is placed in the centre of the bearing surface. In cast-in-place structures the gaps around the strip must be covered so that no concrete can penetrate the profile – a rigid connection is not permitted. Before installation, make sure that the strip and the bearing surfaces are free of dirt, grease, solvents, ice and oil. Stacking strips on top of each other is not permitted.

SIZES, SHAPES AND DIMENSIONAL TOLERANCES

Standard strip widths are 50, 100, 150 and 200 mm, thickness 10 mm. Supplied in rolls up to 10 m long or cut to project dimensions; boreholes and cut-outs are available. For cast-in-place structures the strip is supplied with a protective casing – permanent formwork that prevents concrete from entering the profile and avoids a rigid connection.

Tolerances:
Hardness ± 5 Sh A, length ± 5 mm, width ± 3 mm, thickness ± 1 mm.

TENDER / SPECIFICATION TEXT

Profiled unreinforced elastomeric bearing strip for impact sound insulation and structural support, hardness 70 ± 5 Sh A.

Product: METALBETA TYPE W ☐ without protective casing ☐ with protective casing
Strip width: _____ mm Thickness: 10 mm
Total bearing width: _____ mm
Quantity: _____ m

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