

# Multi-Plate Rubber Bearings for Building Isolation

High Load Capacity Rubber Bearings, up to 3580 kN

## APPLICATION

Multi-plate bearings are high capacity bearings used to isolate buildings and other structures from ground-borne vibration sources such as railway lines, heavy road traffic or adjacent heavy machinery.

Within building structures, bearings may be deployed to isolate vibration caused by mechanical services, heavy generating and similar equipment, or swimming pools, especially in critical applications where transmission of low frequency noise and vibration must be eliminated.

## FEATURES

- Construction – natural rubber interleaved with steel plates
- Load – standard capacity up to 3,580 kN
- Low Natural Frequency – designed to achieve high levels of isolation
- Standard testing – to 150% of max load
- Dynamic testing – to ensure low natural frequency of the bearing
- 7-8mm Static Deflection

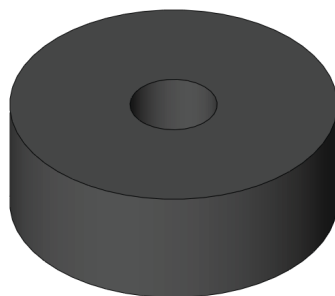
## CHARACTERISTICS

Elastomer Hardness:	53 ± 3
Nominal Deflection at NWL:	7mm
Natural Frequency at NWL:	8.4Hz ± 0.5Hz
Maximum Shear Displacement:	10mm

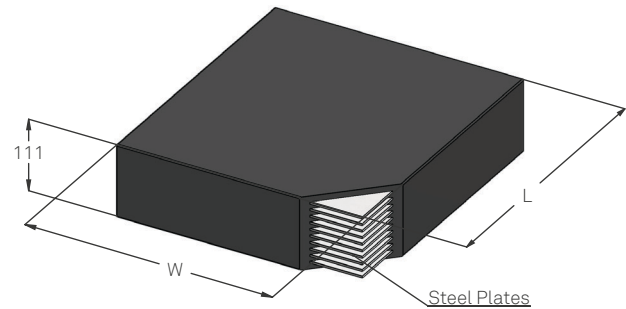
## CUSTOM BEARINGS

Bespoke bearings can be designed to achieve higher working loads, which may require a larger bearing size or higher stiffness buildup. Bearing dimensions can also be customized to better suit project spatial constraints.

For lower frequencies down to 5.5Hz, bearings with annular geometry can be designed (pictured below). Please contact Embelton Engineering for details.



DYNAMIC TESTING /ANNULAR RUBBER BEARING



MULTI-PLATE RUBBER BEARING

## MRB PRODUCT GUIDE

Length mm	Width mm	Normal Working Load kN	Max Load kN	Approx. Max Deflection mm
200	200	46	50	7.0
230	200	60	60	7.0
230	220	70	75	7.5
240	240	90	100	7.5
260	240	110	120	7.5
280	250	130	140	7.5
280	280	170	195	8.0
300	280	190	217	8.0
300	300	215	260	8.0
340	320	310	370	8.0
340	340	345	430	8.0
350	280	250	270	7.5
380	300	330	370	7.5
380	340	430	520	8.0
380	360	480	600	8.0
400	360	530	650	8.0
400	400	650	840	8.0
420	380	650	800	8.0
440	380	700	860	8.0
480	380	830	980	8.0
500	400	980	1,150	7.8
500	450	1,250	1,600	8.2
500	500	1,540	2,050	8.5
600	450	1,740	2,100	8.0
600	500	2,150	2,650	8.0
600	540	2,540	3,110	8.0
600	600	3,100	3,580	7.7

Note 1 - If bearings are inclined to the horizontal, opposing pairs must be used and loading characteristics change.

Note 2 - Maximum loads above zero are at zero shear. Capacity at 10mm shear is reduced by 5% to 10%. In both instances, refer to Embelton for exact characteristics.

## LATERAL RESTRAINT

With bearing stiffness in the horizontal direction being typically less than 5% of vertical stiffness, isolation of most structures, whether complete buildings or structural elements such as swimming pools, will require lateral restraint bearings for stability.

Laterally loaded bearings are generally of similar design to vertical bearings, or may comprise of natural rubber or ribbed neoprene pads such as Supershearflex.

## TESTING

### Load Capacity

Standard test schedules require all bearings to be loaded to 150% of normal working load. Embelton tests all rubber bearings to 150% max load. Testing for shear (horizontal) capacity and rotation loading can also be undertaken if required.

### Materials

Compliance testing of the rubber compounds for tensile strength, elongation at break, tear resistance and ozone resistance is in accordance with the requirements of AS 5100.4 Table B1.

## INSTALLATION GUIDELINES

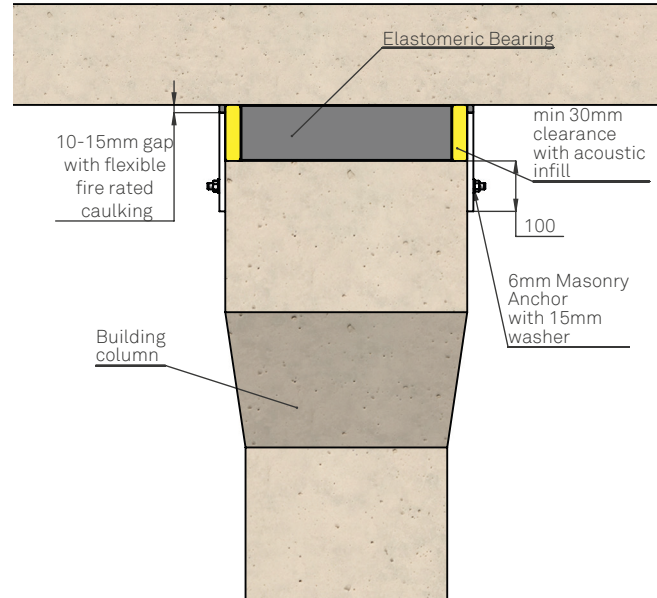
Bearings are installed on concrete columns, beams or slabs, usually at foundation level with contact surfaces level and flat – within 1mm over bearing area. Minimum clearance around single bearing should be 30mm or 50mm minimum spacing between multiple bearings, to allow for bulge.

## TECHNICAL ASSISTANCE

All Embelton offices can provide detailed technical assistance on the use of this product in specific applications.

## CONDITIONS OF SALE

These products are sold subject to the published Embelton General Conditions of Sale, copies of which may be inspected on request.



TECHNICAL APPLICATION



EXAMPLE OF COLUMN ISOLATION

## SPECIFICATION

Vibration isolation shall be provided by elastomeric pads. Each pad shall have interleaved steel plates and be of type MRB in a size to suit the application, as supplied by Embelton.