

SPHERICAL  
BEARING  
SYSTEMS  
***-POLYSPHERE***

**Polymet Industries LLC**

P.O Box – 85685

Ras Al Khaimah,

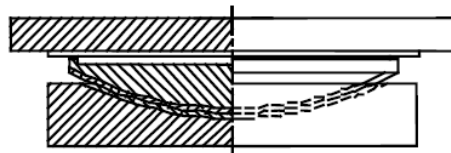
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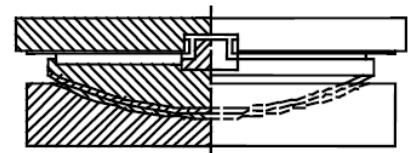
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# SPHERICAL BEARING SYSTEM

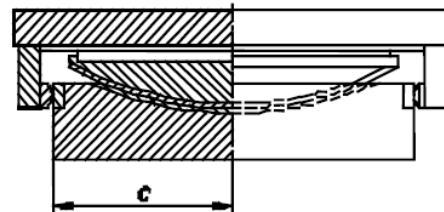
## POLYMET-*POLYSPHERE*



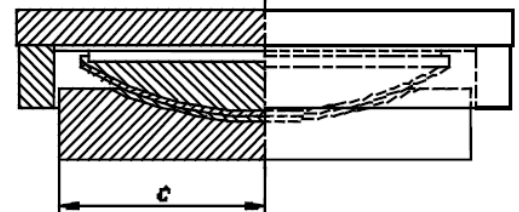
a) free for displacements in any direction (3.5)



b) guided by an internal guide for displacements in one direction (3.4)



c) guided by external guides for displacements in one direction (3.3)



d) fixed by a restraining ring (3.1)

### TECHNICAL SUPPORT

Polymet technical engineers are available to support in design, procurement & site installation of Polymet POLYSPHERE

### MADE IN UAE

Polymet POLYSPHERE

Spherical Bearings are made in United Arab Emirates and can be shipped to any destination within GCC in short period of time.

### TURNKEY SOLUTIONS

Polymet offers customized solutions for projects that require custom sizes.

For more information on any of our products or services please visit us on the Web at:  
[www.pretread.com](http://www.pretread.com)

### Material specification

Designed to AASHTO / BS 5400 / EN Specifications.

Maintenance free installation.

Designed for vertical axial load, horizontal movements and rotation in combination.

High Rotation in any plane  $\pm 3^\circ$  (0.05 radians)

Sliding plates are made out of structural steel, with high quality stainless steel ( SS 316 )

Sliding surface are lined with pure 100% virgin PTFE to BS 6564 specs.

All permanent exposed steel plates are fully corrosion protected with hot dipped galvanizing and polyurethane paint system.

### Types:

**Fixed:** Fixed horizontal movement- allowable rotation on all direction.

**Free:** Free horizontal movement- allowable rotation on all direction.

**Guided:** Guided horizontal movement- allowable rotation on all direction.

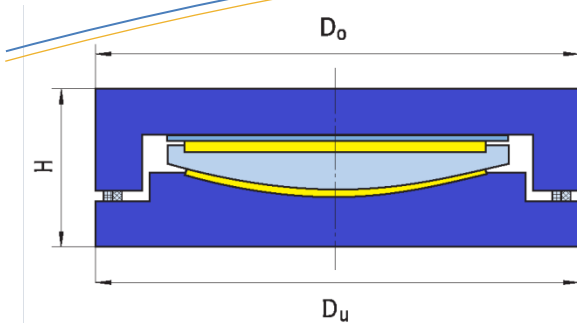
**Uplift:** Uplift locked with fixed horizontal movement- allowable rotation on all direction.

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# SPHERICAL BEARING *POLYSPHERE*



## FIXED SPHERICAL BEARING *POLYSPHERE-FSB*

### Design specification

Size based on mean permissible pressure of 25 MPa at concrete connections & Min Load on the bearings as 50% of Design load and Maximum Horizontal Resultant load - 10% of Design Load.

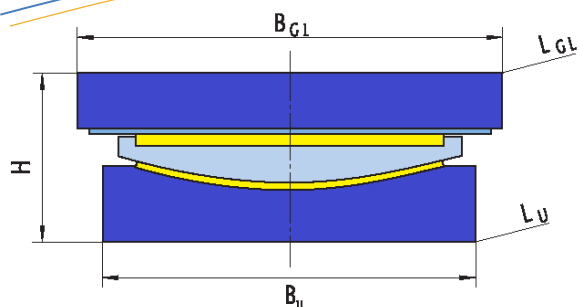
Bearing Code	Design Load	Min Vertical Load	Horizontal Resultant Load	Angular Rotation	H	Du	Do	Weight
	kN	kN	kN	rad	mm	mm	mm	kg
FSB - 1	1000	500	100	±0.01	116	330	330	80
FSB - 2	2000	1000	200	±0.01	120	400	400	110
FSB - 3	3000	1500	300	±0.01	120	460	460	150
FSB - 4	4000	2000	400	±0.01	125	530	530	195
FSB - 5	5000	2500	500	±0.01	135	580	580	250
FSB - 6	6000	3000	600	±0.01	140	620	620	350
FSB - 7	7000	3500	700	±0.01	150	680	680	400
FSB - 8	8000	4000	800	±0.01	155	720	720	470
FSB - 9	9000	4500	900	±0.01	165	770	770	570
FSB - 10	10000	5000	1000	±0.01	170	830	830	650
FSB - 11	11000	5500	1100	±0.01	180	870	870	700
FSB - 12	12000	6000	1200	±0.01	195	910	910	850

Sizes & construction may vary – please consult with POLYMET Technical Dept.

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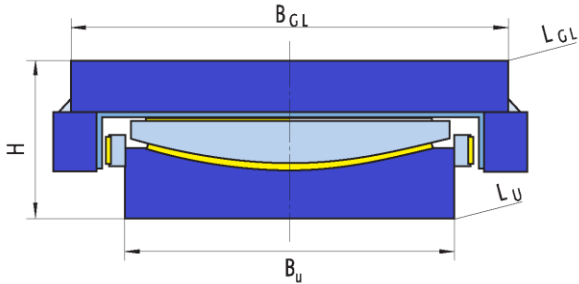
## FREE SPHERICAL BEARING *POLYSPHERE - MSB*

Bearing Code	Design Load	Min Vertical Load	Angular Rotation	H	Bu Lu	B <sub>GL</sub>	ex = ± 100mm L <sub>GL</sub>	Weight
	kN	kN	rad	mm	mm	mm	mm	kg
MSB - 1	1000	500	±0.01	116	330	400	550	95
MSB - 2	2000	1000	±0.01	120	400	470	620	145
MSB - 3	3000	1500	±0.01	120	460	530	680	190
MSB - 4	4000	2000	±0.01	125	530	600	750	250
MSB - 5	5000	2500	±0.01	135	580	650	800	320
MSB - 6	6000	3000	±0.01	140	620	690	840	375
MSB - 7	7000	3500	±0.01	150	680	750	900	470
MSB - 8	8000	4000	±0.01	155	720	790	940	550
MSB - 9	9000	4500	±0.01	165	770	840	990	630
MSB - 10	10000	5000	±0.01	170	830	900	1050	700
MSB - 11	11000	5500	±0.01	180	870	940	1090	800
MSB - 12	12000	6000	±0.01	195	910	980	1130	950

### Design specification

Size based on mean permissible pressure of 25 MPa at concrete connections & Min Load on the bearings as 50% of Design load and Maximum Horizontal Resultant load - 10% of Design Load.

Sizes & construction may vary – please consult with POLYMET Technical Dept.



## GUIDED SPHERICAL BEARING *POLYSPHERE - GSB*

### Design specification

Size based on mean  
permissible pressure of 25 MPa  
at concrete connections & Min  
Load on the bearings as 50% of  
Design load and Maximum  
Horizontal Resultant load - 10%  
of Design Load.

Bearing Code	Design Load	Min Vertical Load	Angular Rotation	H	B <sub>u</sub> L <sub>u</sub>	B <sub>GL</sub>	ex = ± 100mm L <sub>GL</sub>	Weight
	<i>kN</i>	<i>kN</i>	<i>rad</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>mm</i>	<i>kg</i>
GSB - 1	1000	500	±0.01	135	330	400	550	95
GSB - 2	2000	1000	±0.01	140	400	470	620	145
GSB - 3	3000	1500	±0.01	150	460	530	680	190
GSB - 4	4000	2000	±0.01	160	530	600	750	250
GSB - 5	5000	2500	±0.01	165	580	650	800	320
GSB - 6	6000	3000	±0.01	170	620	690	840	375
GSB - 7	7000	3500	±0.01	175	680	750	900	470
GSB - 8	8000	4000	±0.01	180	720	790	940	550
GSB - 9	9000	4500	±0.01	190	770	840	990	630
GSB - 10	10000	5000	±0.01	195	830	900	1050	700
GSB - 11	11000	5500	±0.01	200	870	940	1090	800
GSB - 12	12000	6000	±0.01	215	910	980	1130	950

Sizes & construction may vary – please consult with POLYMET Technical Dept.

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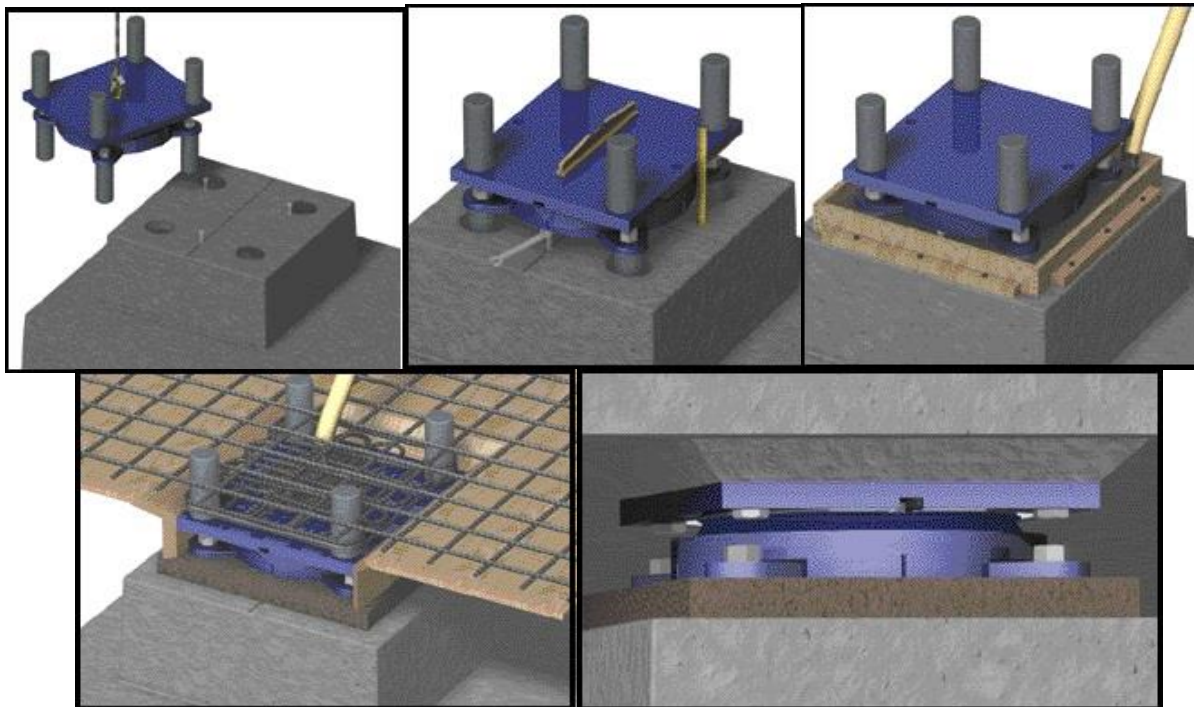
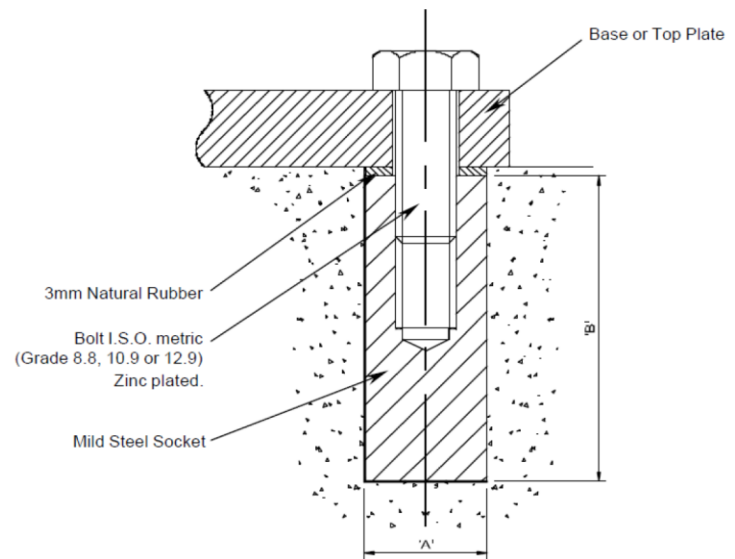
# SPHERICAL BEARING

## *POLYSPHERE*

### Fixing Detail

All bearings have provision for Grade 8.8 fixing bolt which are designed to cater for the horizontal force to which each specific type may be subjected, with some assistance from friction due to the minimum vertical load normally present in service.

Bolt	Ø'A'	'B'
M12	25	60
M16	40	70
M20	40	100
M24	40	160
M30	50	220
M36	70	220
M42	90	220
M48	100	250
M56	100	350
M64	120	400



# SPHERICAL BEARING *POLYSPHERE*

## TESTING

In house Testing facility in UAE with up to 12,000kN Vertical load and 1000kN Horizontal Load.

### Testing Standards

Design based on AASHTO /BS - EN 1337

### Types of Bearings

- Fixed - FSB
- Free Sliding with PTFE - MSB
- Guided Sliding with PTFE - GSB

