

Enterprise Policy

Exist by product quality, make progresses on the-innovation.
Strive for benefit with scientific management, unite to go right and forge ahead.



• SPLENDID MEMORY

Contents

• Content

• Page

Laminated Elastomeric Bearings for Highway Bridges	01
GPZ(II)Pot Bearings	08
Table 1 Dimension of Fixed Bearing	12
OVM – QPZ Pot Bearings	17
QZ Spherical Steel Bearings	24
OVM Series Rubber Expansion Joints	30
Type OVM – MF Series Expansion Joint's Structure	30
Design Principle of Type OVM – MF Expansion Joints	31
Technical Property and Dimensions	32
Low-bedding Expansion Joints	34
Installation	37
Selecting of OVM Series Expansion Joints	37
Installation of Expansion Joints Type OVM – MF	38
Maintenance	40
Laminated Rubber Expansion Joints	40
SD Series Rubber Expansion Joints	45
GSF Finger Expansion Joint	47
ZSF Finger Expansion Joint	50
SF Finger Expansion Joint	53

New Product Series

Type DFKZ Seismic Rubber Bearing	55
Seismic Tension Spherical Bearing	61
Lead Rod Damping Seismic Bearing (LRB)	66
Viscous Hydro – Damper	76

BRIEF INTRODUCTION

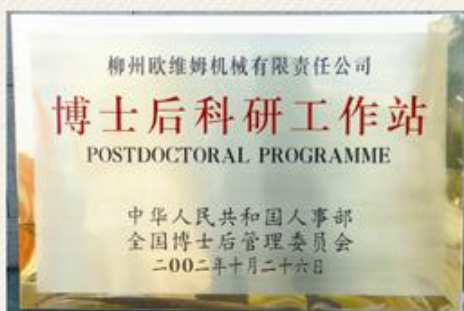


Liuzhou Orient Engineering Rubber Products Co.Ltd is specialized in the manufacture of engineering Rubber Products,which are widely applied in works of highways,railways,bridges, city viaducts and water conservaneyns. The registered address of our company is in No5. Jila Road,Liuzhou city, Guangxi, PRC. We have completed facilities and instruments for production and test,and have a annual productivity for various kinds of laminated Elastomeric Bearigs about 200,000 picecs,Pot Rubber Bearings ,Spherical Steel Bearings about 25,000 sets, Expansion Joints 100,000 meters,and other engineering rubber products more than 6000 tons.

Our company established quality management system in accordance with ISO9001-2000,mean while has certified the registry of ISO9001 by CQC in 1995,and BSI (British Standard Institute) in 1996.We are the only organization possessing both two certificates in thisfield in China and the products quality is reliable .In strict compliance with standards JT/T4-2004. JT391-1999 and JT/327-1997 issued by the Ministry of communication of PRC ,our company manufactures highway bridge plate rubber bearings , elastomeric pot bearing and expansion Joints.Our production may also comply with JIS ,the Japan standard,AASHTO,as well as American standard,BS5400,EN1337.

During the past years , by cooperation with the Huazhong University of Science and Technology ,Planning and Design Institute under the Ministry of communications , the Science Research Institute under the Ministry of Railway,the Shanghai Municipal Civil Design Institute and Tongji University , our products including laminated Rubber Bearings ,Pot-type Rubber Bearings , Expansion Joints, facilities have been subjected to inspection and test by the Communication Engineering Inspecting Center under the Ministry of Communications ,Construction Research Institute under Ministry of Railway.The Civil Engineering Inspecting Centerin Tongji University. The result satisfies the relevant standards domestically and internationally in this field . The products sell well in domestic market ,and also export to South Korea, Japan,Kingdom of Saudi Arabia ,Egypt,Tanzania,UAE,HongKong, Vietnam, Pakistan and other Southeast Asia countries and regions.Especially,we developed the Lead Rod Damping Seismic Bearing and Viscous Hydro-Damper,ect.The production of struction damping,already reached the international advanced level,they have been slathered in The Weihe Bridge in Sanxi province,especially in the Weihe Bridge project,the Lead Rod Damping Seismic Bearing has stood in great Wenchuan Earthquake and our ampany became the only one company that had such project achievement in the country.

We'll hold on the principle of "Quality the First、 Customer the Priority " with high-class products and service to satisfy clients.



E XAMPLES OF ENGINEERING



Changjiang bridge in Shutong, Jiangsu province

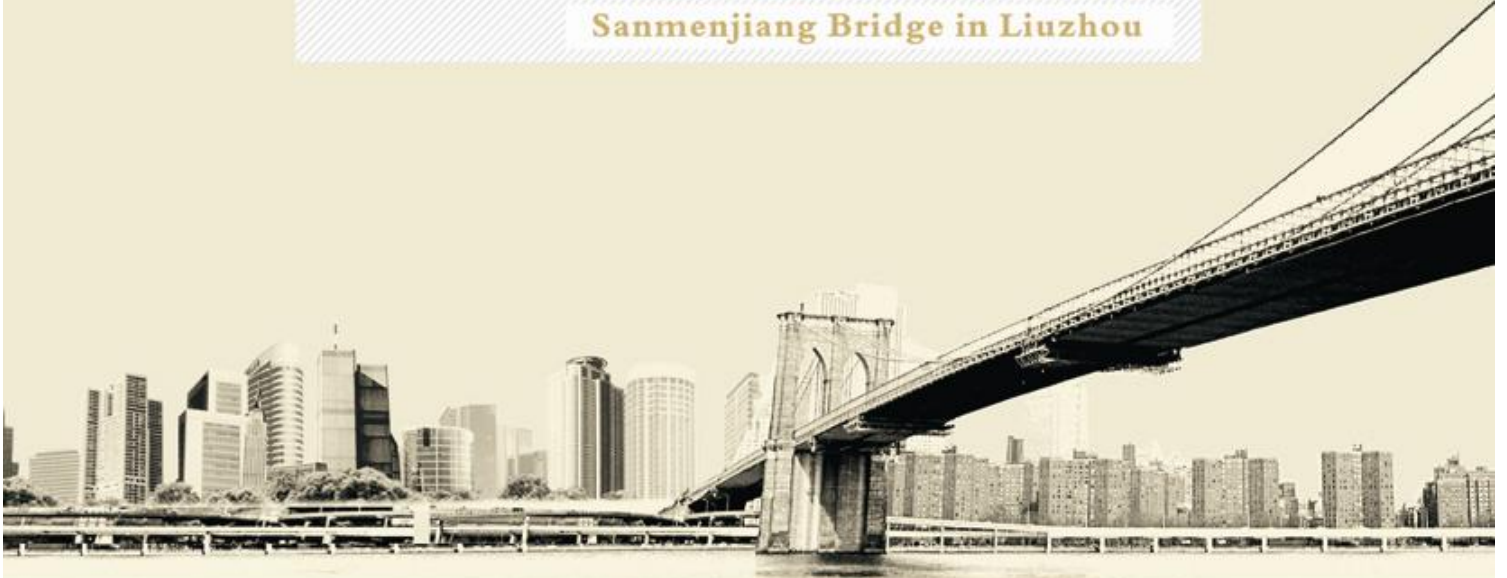


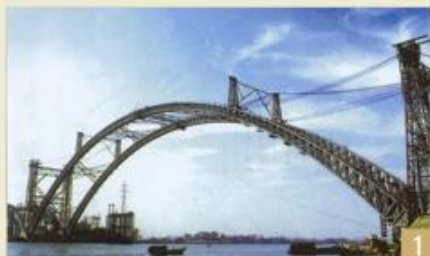


Nanning Bridge



Sanmenjiang Bridge in Liuzhou





- 1 The Yajisha Bridge in Guangzhou
- 2 Special Highway at Xianyang international airport in Xian.
- 3 Yangji Changjiang Bridge in Wuhan
- 4 The Albuha Bridge(Saudi Arabia)
- 5 The New Duong Bridge (Vietnam)





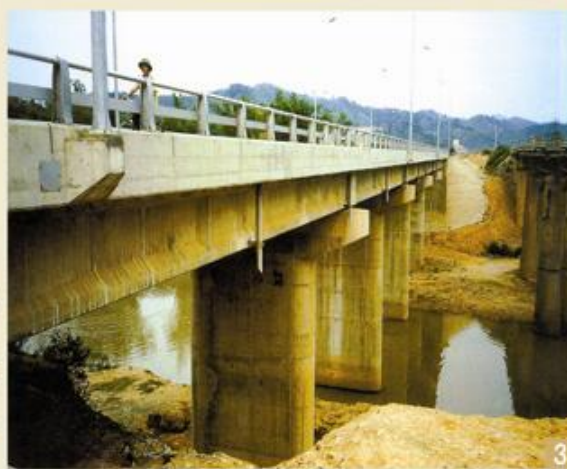
1

1 The Yen Lenh Bridge(Vietnam)



2

2 Access Approach at Noi Bai
Airport(Vietnam)



3

3 No.10 Bridge on Ha Noi-Lang
Son Expressway(Vietnam)

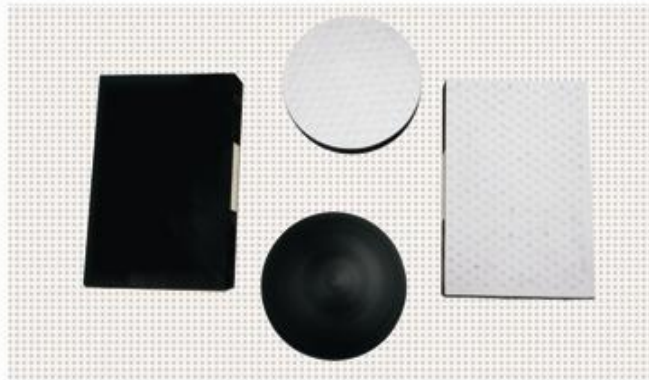


4

4 manah bridge (Bangladesh)



Laminated Elastomeric Bearings for Highway Bridges



Physical Property Parameters of Rubber (According with Standard JT Industry of the Ministry of Communications)

Items		Polychloroprene rubber	Natural rubber
Hardness (IRHD)		60 ± 5	60 ± 5
Tensile strength (MPa)		≥ 17.0	≥ 18
Elongation at break (%)		≥ 400	≥ 450
Peel strength of rubber bonded to steel plate (KN/m)		> 10	> 10
Peel strength of rubber bonded to PTFE plate (KN/m)		> 7	> 7
Brittle temperature (°C)		≤ -40	≤ -50
Permanent deformation at constant compression (%) (70°C × 24h)		≤ 15	≤ 30
Ozone resistance aging (Testing conditions; 20% of elongation, 40 °C × 96h)		100pphm	25pphm
		No cracks	No cracks
Hot air-oven aging test	Testing conditions (°C × h)	100 × 70	70 × 168
	Reduction of tensile strength (%)	-15	-15
	Reduction of elongation at break (%)	-40	-20
	Hardness changeable range (IRHD)	0, +10	-5, +10
Applicable temperature range		-25 C ~ +60 C	-40 C ~ +60 C

**Mechanical Property Parameters of the Laminated Elastomeric Bearing
(According with Standard JT Industry of the Ministry of Communications)**

Items		Specifications	Note
Limited compressive strength(MPa)		70	G=1 E=5.4G · S ² For rectangular bearing
Tolerable average compression stress (MPa)		10	
Compressive elasticity modulus E (MPa)		E ± E × 20%	S= $\frac{(La - 10) \times (Lb - 10)}{2 \times [(La - 10) + (Lb - 10)] \times \delta_1}$ For circular bearing
Shear elasticity modulus G (MPa)		G ± G × 15%	
Minimum tolerable angle rotation tangent tg θ	Reinforced steel concrete bridge	≥ 1/300	Where, S-Form factor La-Short edge dimension(mm) Lb-Long edge dimension of rectangular bearing(mm)
	Steel bridge	≥ 1/500	
Friction coefficient between pure PTFE plate and stainless steel μ f		≤ 0.03	δ ₁ -Thickness of single laminated rubber piece(mm) d-Diameter of circular bearing(mm)

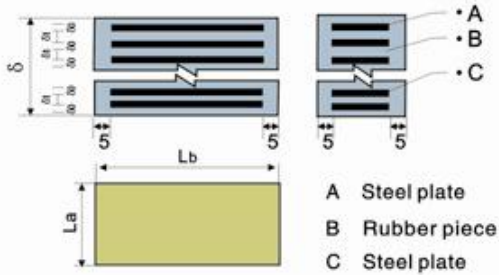
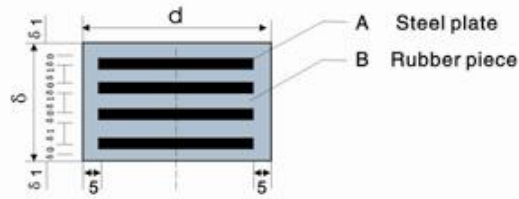
**Physical Property Parameters of Rubber
(According with Standard AASHTO)**

Items		Polychloroprene rubber			Natural rubber		
Hardness (IRHD) ASTM D2240		50 ± 5	60 ± 5	70 ± 5	50 ± 5	60 ± 5	70 ± 5
Tensile strength (MPa) ASTM D412		≥ 15.5			≥ 15.5		
Elongation at break (%) ASTM D412		≥ 400	≥ 350	≥ 300	≥ 450	≥ 400	≥ 300
Peel strength of rubber bonded to steel plate (KN/m) D429,B		≥ 7.0			≥ 7.0		
Low temperature brittleness (°C) ASTM D746		≤ -40			≤ -40		
Permanent deformation at constant compression (%) ASTM D395		100°C × 22 h			70°C × 22 h		
		≤ 35			≤ 25		
Ozone resistance ageing 100pphm,20%(37.8°C × 100h) of elongation ASTM D1149		100pphm			25pphm		
		No cracks			No cracks		
Hot air-oven ageing test ASTM D573	Testing conditions (°C×h)	100°C × 70 h			70°C × 70 h		
	Reduction of tensile strength, Maximum (%)	-15			-25		
	Reduction of elongation at break, Maximum (%)	-40			-25		
	Hardness changeable range, Maximum Points (IRHD)	15			10		

Rectangular and Circular Laminated Elastomeric Bearings

GJZ series rectangular and GYZ series circular plate-type elastomeric bearings are the simplest ones in structures but characterized with:

1. Sufficient vertical rigidities to bear perpendicular load and to transmit the counterforce of the upper structures to the piers.
2. Good flexibilities to adapt the rotation of beam ends.
3. Considerable shear deformations to satisfy the horizontal displacement of the upper structures.
4. Perfect antivibration function to reduce the impact of dynamic load acting on spanstructures and piers of Bridges.



Structure Drawing of Rectangular Laminated Elastomeric Bearing

- δ - Total thickness of elastomeric bearing
- δ 1 - Thickness of rubber piece in the mediate layer
- δ 0 - Thickness of single-laminated steel plate
- La - Short edge dimension of bearing
- Lb - Long edge dimension of bearing (Cross direction)

Unit: (In mm)

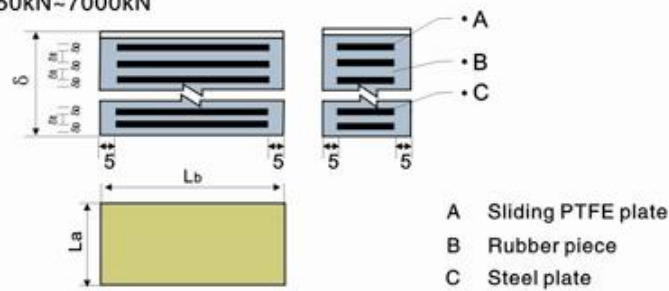
Interpretation for Tokens of Laminated Elastomeric Bearings(JT Satandard)

Name	GJZ rectangular bearings for highway bridges GYZ Circular bearings for highway bridges
Type	F ₄ (added here stands for sliding PTFE bearings)
Specification	Rectangular La × Lb × δ (mm) Circular D × δ (mm)
Kind of rubber	NR CR

Sliding PTFE Elastomeric Bearings

The GJZF₄ series and GYZF₄ series sliding PTFE elastomeric bearings are made from ordinary Laminated elastomeric bearings of which surfaces are bonded PTFE plates equal to the bearings in dimensions. Except properties of the ordinary, their prominent characteristics are that low friction coefficients ($\mu f \leq 0.08$) between PTFE plates and stainless steel plates under beams are adoptable so that the horizontal upper structures shall not be limited.

Load classification: 150kN~7000kN

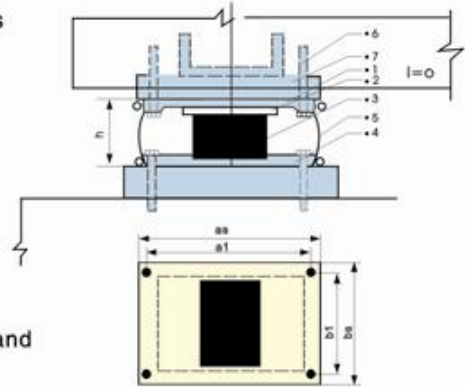


Structure drawing of GJZF₄ rectangular bearing

Assembly illu, of GJZF₄ and GYZ F₄ series elastomeric bearings

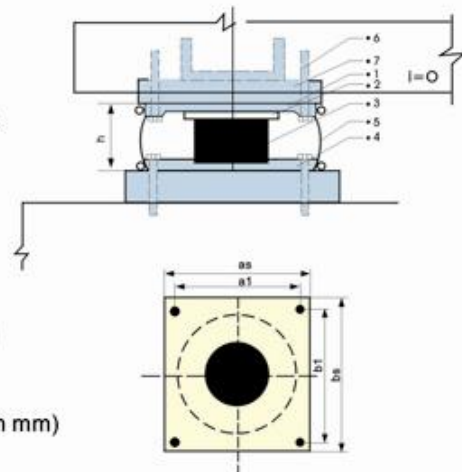
Assembly illu, of GJZF₄ series

- Where: 1.Upper steel plate 2.Stainless steel plate
3.GJZF₄ rectangular bearing 4.down steel plate
5.dust-proofed sleere 6.bolt
7.pre-embeded steel plate under beam
h—Assembled height of bearing(in mm)
a1 and b1—Space between hloes for bolts for the upper and down steel plates(in mm)
as and bs—dimensions of the upper and down steel plates(in mm)



Assembly illu, of GYZF₄ series multiway

- Where: 1.Upper steel plate 2.Stainless steel plate
3.GYZF₄ circular bearing 4.down steel plate
5.dust-proofed sleere 6.bolt
7.pre-embed steel plate under beam
h—Assembled height of bearing(in mm)
a1=b1—Space between holes for bolts for the upper and down steel plates(in mm)
as=bs—dimensions of the upper and down steel plates(in mm)



Grade of Laminated Elastomeric Bearing Capacity

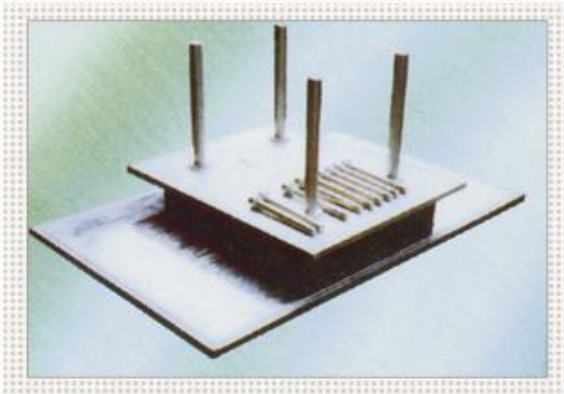
150–7000KN ,The client may request the production of some special types through consultation with factory.

Specifications of GJZ and GJZF₄ Rectangular Bearings

Plane sizes La × Lb(mm)	Bearing Capacity (KN)		GJZ(JBZ)Series		GJZF ₄ (JBZF ₄)Series		
	AASHTO	JT	Overall thickness (δ) (mm)	Allowed horizontal displacement Max. (braking force excluded)	Overall thickness (δ) (mm)	Bearing displacement(mm)	
						Longitudinal	Transverse
100 × 150	150	101	21,28	5.0,7.5	23,30	± 30	± 20
100 × 200	200	137	21,28	5.0,7.5	23,30	± 30	± 20
150 × 150	225	196	21,28,35,42	5.0,7.5,10.0,12.5	23,30,37,44	± 30	± 20
150 × 200	300	266	21,28,35,42	5.0,7.5,10.0,12.5	23,30,37,44	± 30	± 20
150 × 250	375	336	28,35,42	7.5,10.0,12.5	30,37,44	± 30	± 20
150 × 300	450	406	28,35,42	7.5,10.0,12.5	30,37,44	± 30	± 20
200 × 200	400	361	35,42,49,56	10.0,12.5,15.0,17.5	37,44,51,58	± 30	± 20
200 × 250	500	456	42,49,56	12.5,15.0,17.5	44,51,58	± 30	± 20
200 × 300	600	551	30,41,52	8.0,12.0,16.0	32,43,54	± 30	± 20
200 × 350	700	646	30,41,52	8.0,12.0,16.0	32,43,54	± 30	± 20
200 × 400	800	741	30,41,52	8.0,12.0,16.0	32,43,54	± 30	± 20
250 × 250	625	576	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
250 × 300	750	696	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
250 × 350	875	816	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
250 × 400	1000	936	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
250 × 450	1125	1056	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
250 × 500	1250	1176	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	± 50	± 20
300 × 300	900	841	52,63,74,85	16.0,20.0,24.0,28.0	54,65,76,87	± 70	± 30
300 × 350	1050	986	52,63,74,85	16.0,20.0,24.0,28.0	54,65,76,87	± 70	± 30
300 × 400	1200	1131	52,63,74,85	16.0,20.0,24.0,28.0	54,65,76,87	± 70	± 30
300 × 450	1350	1276	63,74,85	20.0,24.0,28.0	65,76,87	± 70	± 30
300 × 500	1500	1421	54,69,84	16.5,22.0,27.5	56,71,86	± 70	± 30
300 × 550	1650	1566	54,69,84	16.5,22.0,27.5	57,72,87	± 70	± 30
300 × 600	1800	1711	54,69,84	16.5,22.0,27.5	57,72,87	± 70	± 30
350 × 350	1225	1156	63,74,85,96	20.0,24.0,28.0,32.0	65,76,87,98	± 90	± 40
350 × 400	1400	1326	54,69,84,99	16.5,22.0,27.5,33.0	56,71,86,101	± 90	± 40
350 × 450	1575	1496	54,69,84,99	16.5,22.0,27.5,33.0	56,71,86,101	± 90	± 40
350 × 500	1750	1666	54,69,84,99	16.5,22.0,27.5,33.0	56,71,86,101	± 90	± 40
350 × 550	1925	1836	54,69,84,99	16.5,22.0,27.5,33.0	57,72,87,102	± 90	± 40
350 × 600	2100	2006	54,69,84,99	16.5,22.0,27.5,33.0	57,72,87,102	± 90	± 40

Plane sizes La × Lb (mm)	Bearing Capacity (KN)		GJZ(JBZ)Series		GJZF ₄ (JBZF ₄)Series		
	AASHTO	JT	Overall thickness (δ) (mm)	Allowed horizontal displacement Max. (braking force excluded)	Overall thickness (δ) (mm)	Bearing displacement(mm)	
						Longitudinal	Transverse
400 × 400	1600	1521	54,69,84,99	16.5,22.0,27.5,33.0	56,71,86,101	±90	±40
400 × 450	1800	1716	69,84,99,114	22.0,27.5,33.0,38.5	71,86,101,116	±90	±40
400 × 500	2000	1911	69,84,99,114	22.0,27.5,33.0,38.5	71,86,101,116	±90	±40
400 × 550	2200	2106	69,84,99	22.0,27.5,33.0	72,87,102	±90	±40
400 × 600	2400	2301	69,84,99	22.0,27.5,33.0	72,87,102	±90	±40
400 × 650	2600	2496	69,84,99	22.0,27.5,33.0	72,87,102	±90	±40
450 × 450	2025	1936	69,84,99,114	22.0,27.5,33.0,38.5	71,86,101,116	±110	±40
450 × 500	2250	2156	84,99,114	27.5,33.0,38.5	86,101,116	±110	±40
450 × 550	2475	2376	84,99,114	27.5,33.0,38.5	87,102,117	±110	±40
450 × 600	2700	2596	70,90,110	22.5,30.0,37.5	73,93,113	±110	±40
450 × 650	2925	2816	70,90,110	22.5,30.0,37.5	73,93,113	±110	±40
500 × 500	2500	2401	70,90,110,130	22.5,30.0,37.5,45.0	72,92,112,132	±130	±40
500 × 550	2750	2646	70,90,110,130	22.5,30.0,37.5,45.0	73,93,113,133	±130	±40
500 × 600	3000	2891	70,90,110,130	22.5,30.0,37.5,45.0	73,93,113,133	±130	±40
500 × 650	3250	3136	70,90,110,130	22.5,30.0,37.5,45.0	73,93,113,133	±130	±40
500 × 700	3500	3381	70,90,110,130	22.5,30.0,37.5,45.0	73,93,113,133	±130	±40
550 × 550	3025	2916	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
550 × 600	3300	3186	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
550 × 650	3575	3456	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
600 × 600	3600	3481	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
600 × 650	3900	3776	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
600 × 700	4200	4071	110,130,150	37.5,45.0,52.5	113,133,153	±150	±40
600 × 750	4500	4366	110,130,150	37.5,45.0,52.5	113,133,153	±150	±40
650 × 650	4225	4096	110,130,150,170	37.5,45.0,52.5,60.0	113,133,153,173	±150	±40
650 × 700	4550	4416	102,125,148,171	36.0,45.0,54.0,63.0	105,128,151,174	±150	±40
650 × 750	4875	4736	102,125,148,171	36.0,45.0,54.0,63.0	105,128,151,174	±150	±40
700 × 700	4900	4761	102,125,148,171	36.0,45.0,54.0,63.0	105,128,151,174	±150	±40

Note: GJZF₄ (JBZF₄) Series certificate of division of family property one-way and multi-direction freely movable bearing, in table support's displacement quantity is more for multi-direction freely movable bearing's displacement quantity; The unidirectional freely movable bearing's longitudinal displacement quantity is the same with multi-direction support's, the unidirectional freely movable bearing's transverse displacement is ±3mm.



The New Duong Bridge(Vietnam) adopt the sliding bearing produced by our company.

Specifications of GYZ and GYZF₄ Circular Laminated Elastomeric Bearings

Bearing diameter d (mm)	Bearing Capacity (KN)		GJZ(YBZ)Series		GJZF ₄ (YBZF ₄)Series		
	AASHTO	JT	Overall thickness (δ) (mm)	Allowed horizontal displacement Max. (braking force excluded)	Overall thickness (δ) (mm)	Bearing displacement(mm)	
						Longitudinal	Transverse
150	176	154	21,28,35,42	5.0,7.5,10.0,12.5	23,30,37,44	±30	±20
200	314	284	35,42,49,56	10.0,12.5,15.0,17.5	37,44,51,58	±30	±20
250	490	452	41,52,63,74	12.0,16.0,20.0,24.0	43,54,65,76	±60	±30
300	706	661	52,63,74,85	16.0,20.0,24.0,28.0	54,65,76,87	±60	±30
350	962	908	63,74,85,96	20.0,24.0,28.0,32.0	65,76,87,98	±90	±40
400	1257	1195	54,69,84,99	16.5,22.0,27.5,33.0	56,71,86,101	±90	±40
450	1590	1521	69,84,99,114	22.0,27.5,33.0,38.5	71,86,101,116	±110	±40
500	1963	1886	70,90,110,130	22.5,30.0,37.5,45.0	72,92,112,132	±110	±40
550	2370	2290	90,110,130,150	30,37.5,45.0,52.5	93,113,133,153	±130	±40
600	2827	2734	90,110,130,150	30.0,37.5,45.0,52.5	93,113,133,153	±130	±40
650	3318	3217	110,130,150,170	37.5,45.0,52.5,60.0	113,133,153,173	±150	±40
700	3848	3739	102,125,148,171	36.0,45.0,54.0,63.0	105,128,151,174	±150	±40
750	4418	4301	125,148,171,194	45.0,54.0,63.0,72.0	128,151,174,197	±180	±40
800	5027	4902	125,148,171,194	45.0,54.0,63.0,72.0	128,151,174,197	±180	±40

Note: GJZF₄ (YBZF₄) Series certificate of division of family property one-way and multi-direction freely movable bearing, in table support's displacement quantity is more for multi-direction freely movable bearing's displacement quantity; The unidirectional freely movable bearing's longitudinal displacement quantity is the same with multi-direction support's, the unidirectional freely movable bearing's transverse displacement is ±3mm

GPZ(II) Pot Bearings

Properties and Characteristics

GPZ(II) pot bearings are designed as per standard JT391-1999, which are replacement of the previous GPZ pot bearings of standard JT3141-90. GPZ(II) pot bearings are a new kinds of bridge bearings made up of the steel components and rubbers. It features with high loading capacity, great horizontal displacement, smooth rotation, etc. Compared with other types of pot bearings and cast steel roller bearings, it is lighter in weight, more compact and simple in structure, lower in construction height and easier for manufacture. Besides, it is much cheaper as less steel is used. This bearing is desirable for large span bridges. The loading capacity of this series of bearings is now of 31 grades, from 0.8MN-60MN, which can generally meet the demand of domestic construction of large bridges, with a service life of more than 50 years.

Physical Property Parameters of Rubber for the Pot Bearing (According with Standard JT)

Items		Polychloroprene rubber	Natural rubber
Hardness (IRHD)		60 ± 3	60 ± 3
Tensile strength (MPa)		≥ 17.0	≥ 18.0
Elongation at break (%)		≥ 400	≥ 450
Brittle temperature (°C)		≤ -40	≤ -55
Permanent deformation at constant compression 70°C × 22h (%)		≤ 20	≤ 25
Ozone resistance ageing, 20% of elongation, 40 °C × 96h)		25 ~ 50 PPhm	25 ~ 50 PPhm
		No cracks	No cracks
Hot air-oven ageing test	Testing conditions (°C × h)	100°C × 70h	70°C × 168h
	Reduction of tensile strength (%)	< 15	< 15
	Reduction of elongation at break (%)	< 40	< 20
	Hardness changeable range (IRHD)	< +15	± 10

**Physical Property Parameters of Rubber for the Pot Bearing
(According with Standard AASHTO)**

Items		Polychloroprene rubber			Natural rubber		
Hardness (IRHD) ASTM D2240		50±5	60±5	70±5	50±5	60±5	70±5
Tensile strength (MPa) ASTM D412		≥15.5			≥15.5		
Elongation at break (%) ASTM D412		≥400	≥350	≥300	≥450	≥400	≥300
Low temperature brittleness (°C) ASTM D746		≤-40			≤-40		
Permanent deformation at constant compression (%) ASTM D395		100°C × 22 h			70°C × 22 h		
		≤35			≤25		
Ozone resistance ageing 100pphm,20% of elongation ASTM D1149		37.8°C × 100 h			37.8°C × 48 h		
		100pphm			25pphm		
		No cracks			No cracks		
Hot air-oven ageing test ASTM D573	Testing conditions (°C×h)	100°C × 70 h			70°C × 70 h		
	Reduction of tensile strength, Maximum (%)	≥-15			≥-25		
	Reduction of elongation at break, Maximum (%)	≥-40			≥-25		
	Hardness changeable range, Maximum Points (IRHD)	≤15			≤10		

Grade of Bearing Capacity

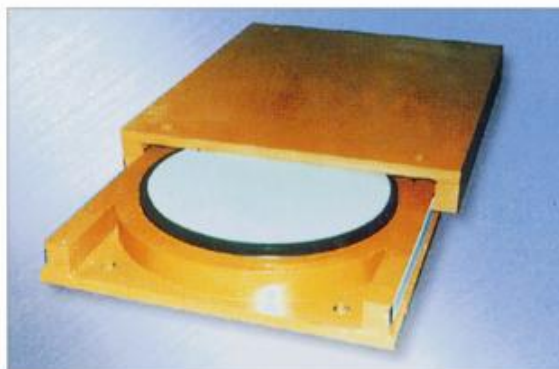
The client may request the production of some special types through consultation with the factory.

Range of Temperature Adaptable

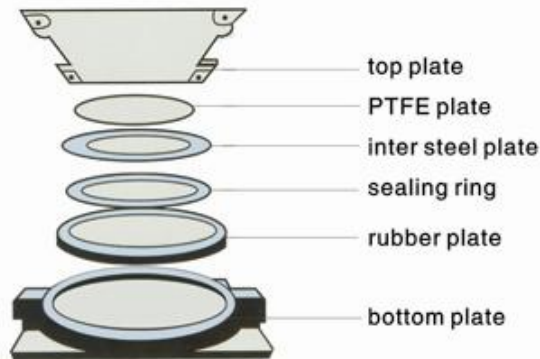
Normal temperature:-25°C~+60°C Cold resistant:-40°C~+60°C

Specification of Series GPZ(II)Pot Bearings

Refer to 3 in the standard JT391-1999,and Tables1,2and3.



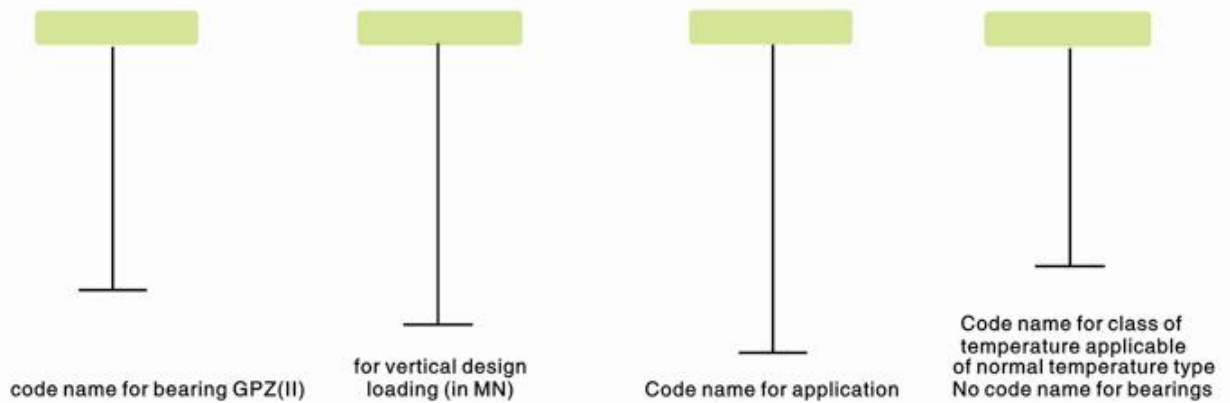
GPZ(II)Pot Rubber Bearing



Structure of GPZ(II)Pot Rubber Bearing

Denotation for Series GPZ(II)Pot Bearings

3.2 in standard JT391-1999



- E.g. 1. "GPZ(II)5SXF" denotes the highway bridge Pot bearing ,with the vertical design loading of 5MN,two-way movable and cold resistant.
2. "GPZ(II)1.5DX" denotes the highway bridge Pot bearing , with the vertical design loading of 1.5 MN, one way movable and for normal temperature.
 3. "GPZ(II)8GD" denotes the fixed highway bridge Pot bearing ,with the vertical design loading of 8MN(GD denotes the vertical rotation only).

Installation of Pot Bearings GPZ(II)

7.1 Preparations for Installation

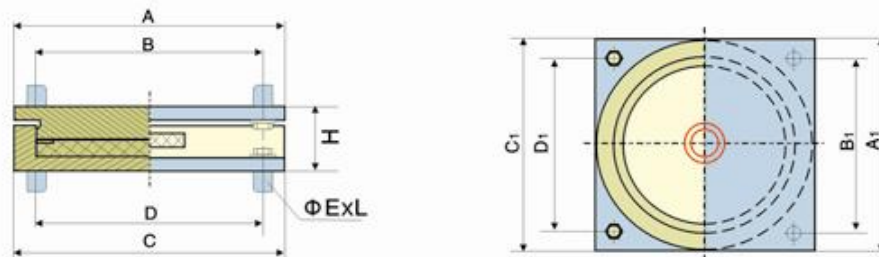
- 7.1.1 It is recommended that a pad stone be placed under the pot bearing . With holes preset in accordance with the space between the anchor bolts , and the specification of the sleeve nut . The pad stone shall have a surface flat and smooth .The level at the top of the pad stone shall include the thickness of the epoxy mortar under the preset bearing base plate.The pad stone outside the base plate shall be made into a graded surface for fear of dead water.
- 7.1.2 The packing shall not be opened until installation of the bearing , and it shall be checked up for each part against the packing list . Prior to installation, the bearing shall not be dismantled without relevant approval.

7.2 Procedure and Instructions for Installation

- 7.2.1 Mark the centerline at the design position of the bearing , and also at its top and bottom plates.
- 7.2.2 Put the anchor bolt through the hole in the bottom or top plate and turn it into the sleeve nut.Between the bottom plate and the sleeve nut place the rubber gasket whose diameter is slightly larger than that of the sleeve nut.
- 7.2.3 Once the bearing is in place , centered and leveled , fill up the anchor bolt hole and the padding layer of the bottom plate with epoxy mortar or high grade cement mortar,After the mortar is set hard,remove the pad used for adjusting the level of the bearing , and fill up the space left by the removed pad . Epoxy grouting shall be compact and solid.
- 7.2.4 If the bearing is welded to the structure,steel plates shall be embedded in advance at the top and bottom plates of the bearing. Once in place , the bearing shall be welded intermittently .Care shall be taken during welding to protect the rubber and PTFE plates against any possible damage caused by overheat . The welded part shall be treated against rust.
- 7.2.5 If the pot bearing is used on the T-beam , temporary support shall be provided at the end of the beam during installation to prevent it from leaning,which shall not be removed until the diaphragm between two T-beams is welded into a whole structure.
- 7.2.6 Once the sliding bearing is unpacked , measures shall be taken to protect the PTFE and stainless steel plates against any scratching or dirtsticking to their surface,and it shall be checked up whether 5201-2 silicone grease is filled up.
- 7.2.7 The centerline of the bearing shall overlap or in Parallel to that of the main beam . During installation of the sliding guided bearing ,the upper and lower guide blocks shall keep in parallel,and the crossing angle shall not be greater than 5'.
- 7.2.8 When the temporary anchor device is cut for shifting the system of a continuous beam bridge, measures shall be taken to keep the heat from damaging the rubber and PTFE plates.

Table 1 Dimension of Fixed Bearing

Type	Capacity (MN)	Structure size(Install size)mm					Sleeve nut $\Phi E \times L$
		A, A ₁	B, B ₁	C, C ₁	D, D ₁	H	
GPZ(II)0.8GD	0.8	250	210	250	210	70	$\Phi 20 \times 100$
GPZ(II)1GD	1	280	235	280	235	71	$\Phi 20 \times 100$
GPZ(II)1.25GD	1.25	305	255	305	255	73	$\Phi 20 \times 100$
GPZ(II)1.5GD	1.5	335	280	335	280	74	$\Phi 35 \times 150$
GPZ(II)2GD	2	385	330	385	330	82	$\Phi 35 \times 150$
GPZ(II)2.5GD	2.5	430	370	430	370	92	$\Phi 35 \times 150$
GPZ(II)3GD	3	470	400	470	400	95	$\Phi 40 \times 150$
GPZ(II)3.5GD	3.5	505	420	505	420	99	$\Phi 40 \times 150$
GPZ(II)4GD	4	540	460	540	460	111	$\Phi 40 \times 150$
GPZ(II)5GD	5	605	510	605	510	120	$\Phi 50 \times 200$
GPZ(II)6GD	6	660	560	660	560	133	$\Phi 50 \times 200$
GPZ(II)7GD	7	720	610	720	610	138	$\Phi 50 \times 200$
GPZ(II)8GD	8	770	660	770	660	154	$\Phi 60 \times 250$
GPZ(II)9GD	9	810	690	810	690	158	$\Phi 60 \times 250$
GPZ(II)10GD	10	860	740	860	740	164	$\Phi 60 \times 250$
GPZ(II)12.5GD	12.5	950	820	950	820	180	$\Phi 70 \times 300$
GPZ(II)15GD	15	1050	900	1050	900	194	$\Phi 70 \times 300$
GPZ(II)17.5GD	17.5	1130	960	1130	960	199	$\Phi 80 \times 350$
GPZ(II)20GD	20	1205	1020	1205	1020	204	$\Phi 80 \times 350$
GPZ(II)22.5GD	22.5	1290	1100	1290	1100	228	$\Phi 90 \times 400$
GPZ(II)25GD	25	1360	1160	1360	1160	232	$\Phi 90 \times 400$
GPZ(II)27.5GD	27.5	1420	1220	1420	1220	236	$\Phi 90 \times 400$
GPZ(II)30GD	30	1480	1270	1480	1270	239	$\Phi 100 \times 400$
GPZ(II)32.5GD	32.5	1535	1320	1535	1320	257	$\Phi 100 \times 400$
GPZ(II)35GD	35	1595	1370	1595	1370	266	$\Phi 100 \times 400$
GPZ(II)37.5GD	37.5	1660	1440	1660	1440	269	$\Phi 100 \times 400$
GPZ(II)40GD	40	1710	1480	1710	1480	272	$\Phi 110 \times 450$
GPZ(II)45GD	45	1810	1560	1810	1560	293	$\Phi 110 \times 450$
GPZ(II)50GD	50	1900	1640	1900	1640	302	$\Phi 110 \times 450$
GPZ(II)55GD	55	2000	1720	2000	1720	323	$\Phi 120 \times 450$
GPZ(II)60GD	60	2080	1790	2080	1790	327	$\Phi 120 \times 450$



Series GPZ (II) Fixed pot bearings (Model GD)