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EXPO 2020 إكسبو
دبي، الإمارات العربية المتحدة
DUBAI, UNITED ARAB EMIRATES

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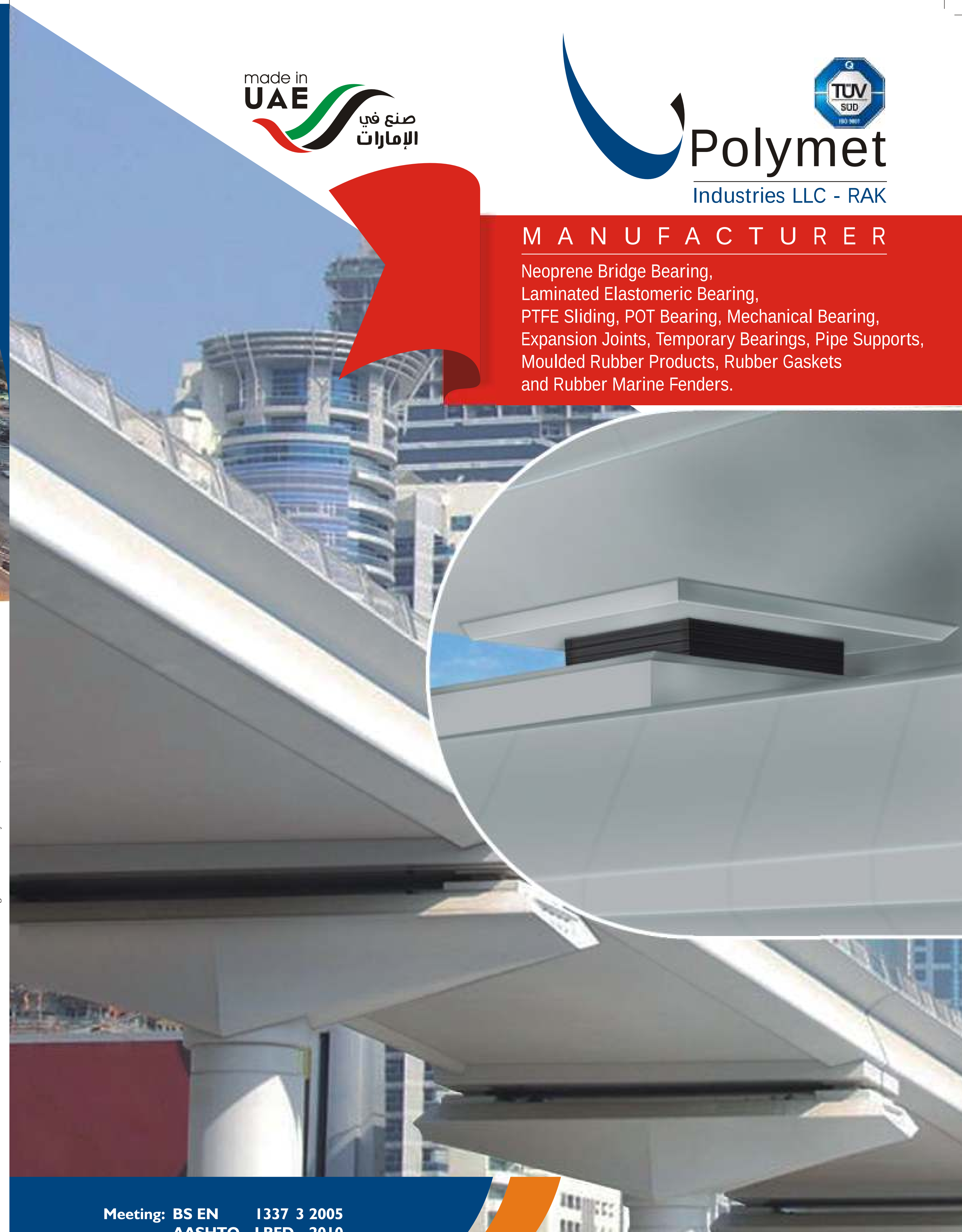
Industries LLC - RAK

M A N U F A C T U R E R

Neoprene Bridge Bearing,
Laminated Elastomeric Bearing,
PTFE Sliding, POT Bearing, Mechanical Bearing,
Expansion Joints, Temporary Bearings, Pipe Supports,
Moulded Rubber Products, Rubber Gaskets
and Rubber Marine Fenders.



Meeting: **BS EN 1337 3 2005**
AASHTO LRFD 2010
AASHTO M251 06
DIN-4141

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your reliable source for...
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Laminated Elastomeric Bearing,
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Meeting:	**BS EN**	**1337**	**3 2005**
	AASHTO	**LRFD**	**2010**
	AASHTO	**M251**	**06**
	DIN-4141		

Why use laminated elastomeric rubber bearings for Bridges and buildings?

A bridge basically consists of bridge deck supported by piers. In order to avoid damage by movements of thermal expansion, vehicular movement, loading to piers, bridge bearings are used to accommodate these movements so as to reduce reaction forces and bending movement to within safety limits of structure. Neoprene as well as Natural Rubber is an ideal engineering material for bridge bearings as it is highly elastic and sufficiently soft to accommodate these movements without transmitting harmful stress and also it absorbs and isolates energy from impacts and vibrations. Bridge bearings are devices for transferring loads and movements from deck to piers.

Pretread.com is direct manufacturer of Laminated Neoprene Bridge Bearings and Laminate Elastomeric Bearings, PTFE Teflon sliding bearings. We at pretread.com, manufacture neoprene bridge bearings, elastomeric, pads, high damping rubber bearing, expansion joints, PTFE sliding bearing, sliding bearings to AASHTO / BS / DIN specifications for the first time in the Middle East, U.A.E. Laminated Elastomeric Bearings, Bridge Bearings, Bridge Bearing Pads, High Damping Bearing Pads are manufactured mostly in neoprene elastomeric compounds.

Different Types of bearing cross sections

EN 1337 - 3 - 2005

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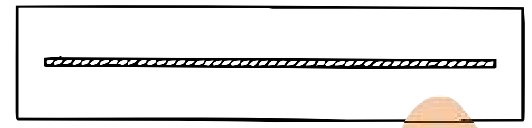
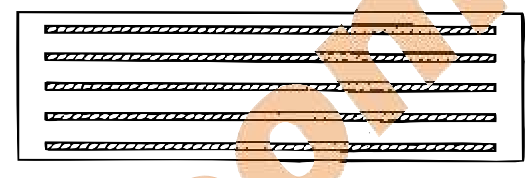
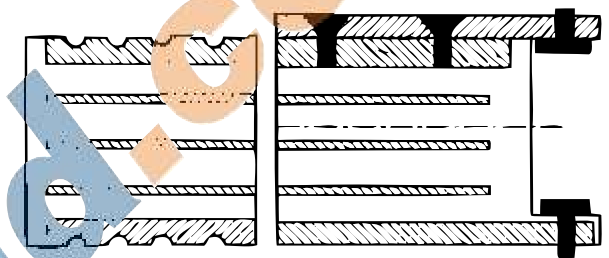
Type A: Laminated bearing fully covered with elastomer comprising only one steel reinforcing plate.



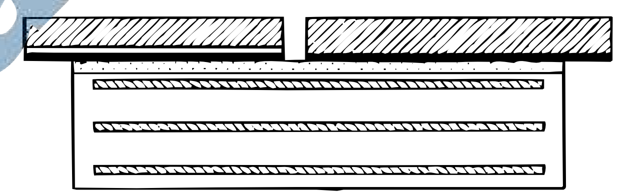
Type B: Laminated bearing fully covered with elastomer comprising at least two steel reinforcing plates.



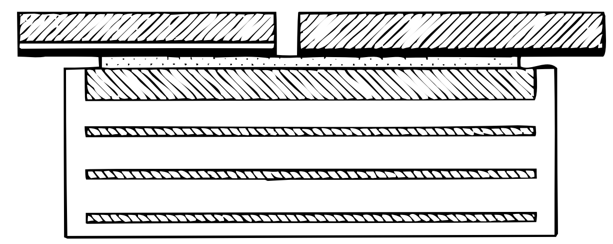
Type C: Laminated bearing with outer steel plates (profiled or allowing fixing). NOTE The sketch shows examples of a few fixing methods; other methods can be used by agreement.



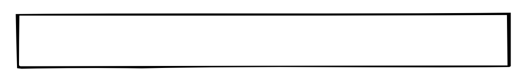
Type D: Type B with PTFE sheet bonded to the elastomer.



Type E: Type C with one outer plate bonded to the elastomer and PTFE sheet recessed in the steel.



Type F: Plain pad bearings and strip bearings.



NOTE : Features of the above types can be combined.

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Plain Elastomeric Bearing Pads

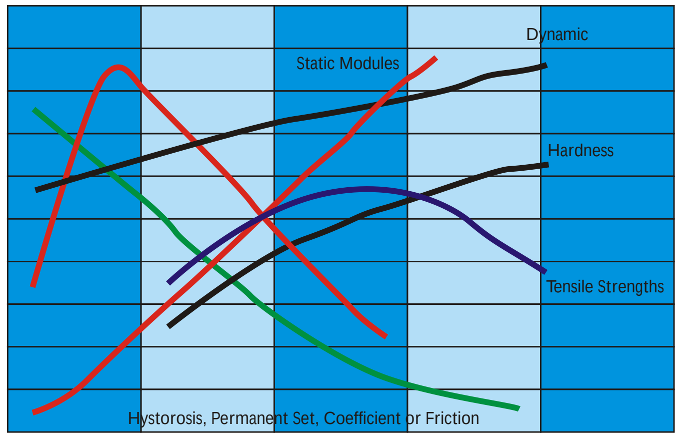
POLYPAD

Plain elastomeric bearing pads of various sizes are manufactured from 8 mm to 250 mm thickness as individually compression moulded.

Using a combination of VIRGIN NEOPRENE & POLY ISOPRENE rubber compound, our plain Neoprene Bearing Pad permits lateral displacement to designed requirements. Maximum permissible pressure applicable on rubber sheet will be up to 5N/mm² with a vertical deflection of 10 % in thickness.

These pads meets both specifications.

En 1337-3-2005
AASHTO M 251-06



Cross-link Density of rubber pads

Uses:

Used in low load / low shear area of civil structures to provide cushion and transmit low level of force /structural expansions and vibrations.

Note: Please note that hand cut pads from commercially manufactured rubber sheet into smaller pad size will always damage the edges of pad which can develop into cracks under vertical load and heavy lateral sheer forces exerted by thermal expansion of precast beams. We strongly recommend using individually moulded pads for such application. During manufacturing process of pads more volume of materials are highly compressed in a confined steel mould to give a higher molecular compression .

Plain and Laminated Elastomeric Bearings

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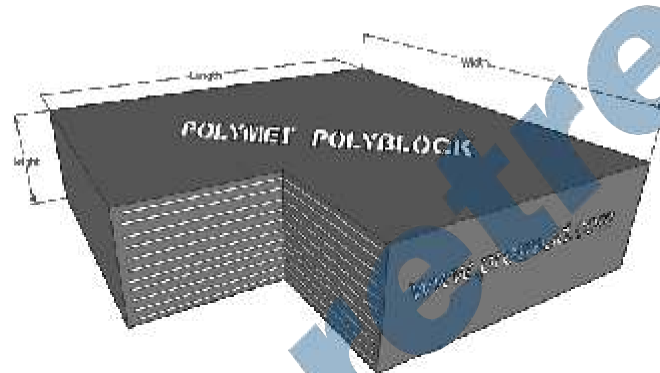
POLYBLOCK



Design advantages of
POLYMET-LAMINATED ELSTOMERIC BEARINGS:

Elastomer is bonded with Mild Steel Shims as Reinforcement.
Elastomeric bearing core is covered on all sides by Elastomer as a seal.
MS Shims of A 36 used for reinforcement will be totally encapsulated with polymer.
Complete system will be packed and delivered to site.
Easy to install with in-site concreting.
Manufactured in UAE, less delivery time.

Some salient features and benefits of
POLYMET-LAMINATED ELASTOMERIC BEARINGS:

Do not have a shape limit factor, can be custom manufactured to your requirements.
Exhibit relatively high damping (C/Cc -.14)
Creep effects are reduced to a limit of 5% of original thickness
Operating temperature limits are -65°F (-55°C) to 200°F (95°C).
Max compressive strength of Laminated Bearings will be 15 N/mm²
Resist effects of steam, water, mild dew and brine.
Supplied as a system in nominal thickness of 20 mm to 250 mm
Combination of both vertical load and horizontal movements with rotation.

Design parameters followed for POLYMET LAMINATED ELASTOMERIC BEARINGS when bearings are designed by us.

For DESIGN:
Designed in accordance with BS 5400 Part 9 and EN 1337- 3 : 2005 / Particular recommendations for Plain & Laminated Elastomeric Bearings.

For MAXIMUM AVERAGE CONTACT PRESSURE:
BS 5400 Part 9 and EN 1337- 3 : 2005 - AASHTO M 251
Allowable bearing pressure for Laminated Bearings - for permanent design load effects -15 N/mm ² - for Laminated bearing. AASHTO M 251

Some practical aspects and considerations when using POLYMET-LAMINATED ELASTOMERIC BEARINGS:
Provides vertical stability and allow controlled motion.
Should be used with flat rigid support for best performance.
Recommend applying of a high strength epoxy mortar on bottom of Pad and an Epoxy resin to work as a key between concrete and bearing
Connections to isolating system should be made flexible.

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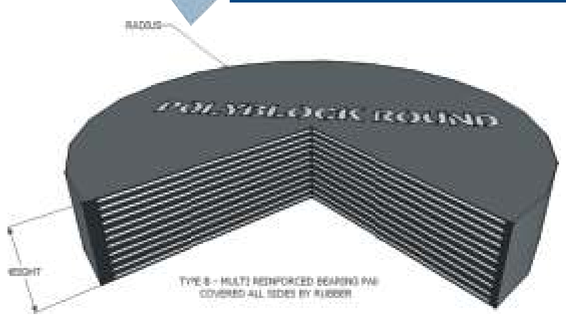
Plain and Laminated Elastomeric Bearings

POLYROUND

Circular elastomeric bearings are manufactured using the same process for rectangular bearings, but Circular bearings have the advantage for standardization because only one dimension can vary in plan. They are suitable for use in curved and large skewed bridge as they could accommodate movement and rotations in multiple directions.

Advantages of Pretread Bearings Offer

Circular bearings are tailor made bearings for optimized solutions: for large or sophisticated bearings, also carries out custom designs for special bearings or features, such as seismic, to accommodate any special design requirement design according to different standards including norms such as Euronorm EN 1337-5:2005 or AASHTO revisions.Short delivery times from our factory in UAE due to integrated in-house design and manufacturing capabilities , turnkey services including installation, and further removal or replacement when needed, experience of an international specialist, to design and optimize durable solutions.



Manufacturing procedure -

Compression moulding:

Elastomeric bearings shall be composed of multiple laminate of elastomeric material separated by steel reinforcing. The overall size of the bearing, the number of laminate and thickness of laminate are designed in accordance to the requirement of Load to be transferred. Bearings having steel plates as reinforcement shall be cast/compression moulded/vulcanized as a single unit in a mould under pressure and heat.

Internal Laminate

Internal plates shall be ASTM A 36/A 36M or A 570/A 570M, Grade 36 or Grade 40. All plates shall be deburred. The internal plates shall not be less than 2.00 mm (0.074 inch) thick.The steel plates separating the elastomeric layers will be completely bonded by vulcanization to the elastomeric material on all surfaces using special metal to rubber bonding adhesive. All external load bearing steel plate(s) if present, shall be factory vulcanized to the elastomeric bearings during the primary moulding process.

Bearing Acceptance Tests

Acceptance Tests of the pads and bearings shall be according to Level I acceptance criteria of Article 18.2.5. This testing shall be included in the price bid for the bearings.

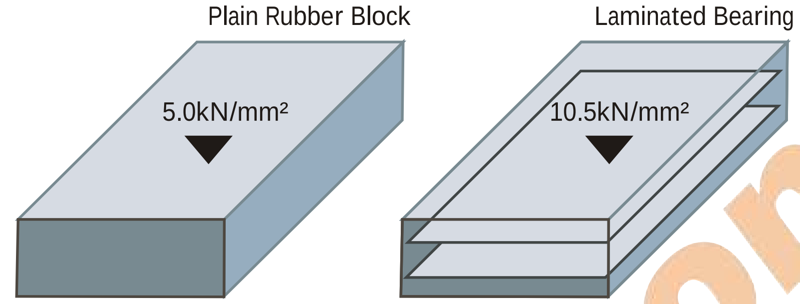
Testing of Neoprene Bridge Bearings

In house Quick Production Test of all bearings shall be done at Clients/Representative presence. Tests confirming to AASHTO specification in accordance with Acceptance Testing on either Level I or Level II or Short/Long-Duration Compression Test up to10,000 kN with horizontal shear up to 600kN can be carried out in our facility.

BS 5400 - with Natural Rubber.

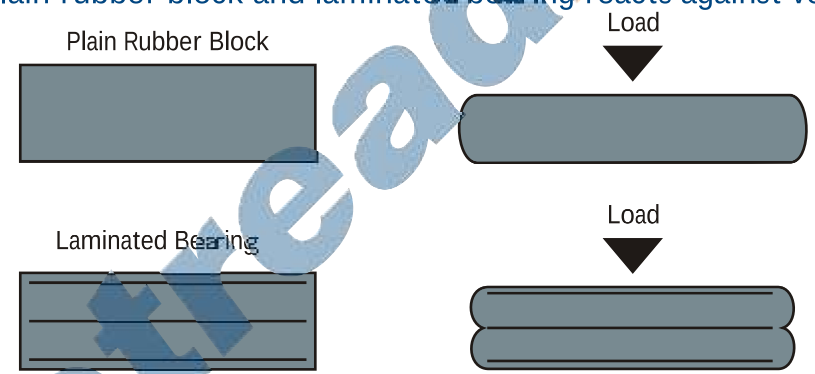
Natural Rubber Compounds are used where Laminated Elastomeric bearings are designed, manufactured and tested in accordance to requirements with BS 5400 Part 9./ EN 1337-3-2005

Difference between a plain rubber block and laminated elastomeric bearings



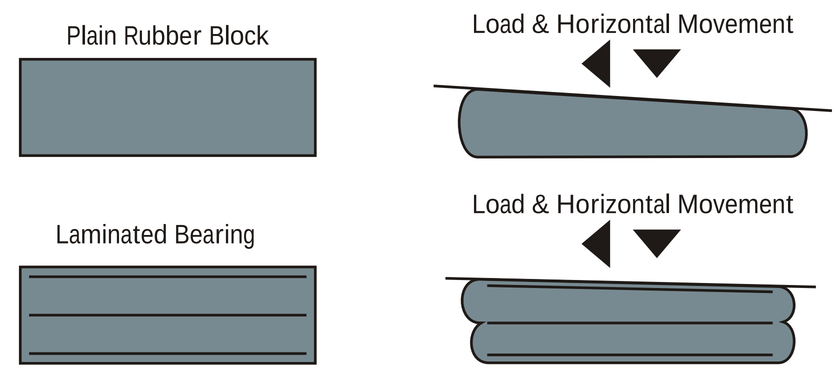
The capability of plain rubber block to carry vertical load increases as the number of laminations..mild steel shims increases.

How a plain rubber block and laminated bearing reacts against vertical load.



Plain rubber block under vertical load compressed down where as a laminated bearing bulge out with each laminations absorbing most of the vertical load.

How a plain rubber block and laminated bearing reacts against horizontal load.



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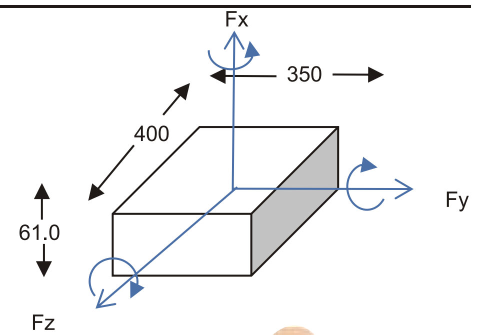
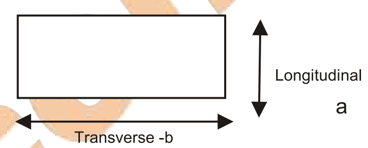
Bearing Load Calculations

Let us verify load calculations for your bearings. Send us sizes, construction and load details of your bearings and we will send results on design parameters compared to AASHTO LRFD.

Standard Laminated Elastomeric Bearing Design Sheet

BEARING DIMENSIONS					
	a	Overall Width	mm	350.0	
	b	Overall Length	mm	400.0	
	c	Edge Cover of Elastomer	mm	4.0	
	a_e	Effective Width	mm	342.0	
	b_e	Effective Length	mm	392.0	
	n_i	Number of inner Elastomer Layers		4.0	
	t_i	Thickness of an inner Layer	mm	10.0	
	n_o	No. of Outer Cover Layer		2.0	
	t'	Thickness of outer Cover Layer -	mm	3.0	
	n_r	No. of reinforcing plates		5.0	
	t	Thickness of reinforcing plates	mm	3.0	
	h_{ptfe}	Thickness of PTFE used	mm	0.0	
	h_e	Actual thickness of Elastomer	mm	40.0	
	h	Overall thickness of Bearing incl PTFE	mm	61.0	
ELASTOMER PROPERTIES					
	H	Nominal Hardness acc to EN 1337	IRHD	60.0	
	G_l	long term shear modulus	N/mm^2	0.90	
	G_s	short term shear modulus / dynamic	N/mm^2	0.90	
	E_b	bulk modulus	N/mm^2	2000.0	
	Cc	Compression Stiffness as per design	kN/mm	921.0	
DESIGN CALCULATIONS					
DESIGN LOADS			SLS	ULS	
Vertical Loads KN)	V_p	permanent	1350	1350	
	V_l	live /seismic	400	450	
	Vmin	minimum	1350	1350	
	V_d	design load = $V_p + V_l$	1750.00	1800.00	<- Max Design Load
Horizontal Loads (KN)	H_{pb}	permanent // to length b - Transverse Force	0	0	
	H_{lb}	live /seismic //to length b - Transverse Force	0	0	
	H_{pa}	permanent // to width a - Longitudinal Force	0	0	
	H_{la}	live /seismic //to width a - Longitudinal Force	70	100	<- Horizontal Load
DISPLACEMENTS & ROTATION			SLS	ULS	
Disp. in (mm)	δ pa	permanent disp // to width a - Longitudinal	0.0	0.0	
	δ pb	permanent disp // to length b - Transverse	0.0	0.0	
	δ pa	Live /reversible disp // to width a - Longitudinal	0.0	0.0	
	δ pb	Live /reversible disp // to length b - Transverse	0.0	0.0	
Rotations (rad)	α c	const tolerance	0.0050	0.0050	
	α pa	Longitudinal permanent rotation	0.0050	0.0050	<- Rotation
	α pb	Transverse permanent rotation	0.0000	0.0000	<- Rotation
	α' a	αpa + αc	0.0100	0.0100	
	α' b	αpb + αc	0.0050	0.0050	
	α la	Longitudinal live/seismic rotation	0.0000	0.0000	
	α lb	Transverse live/seismic rotation	0.0000	0.0000	
	α ma	Longitudinal maximum rotation		0.0100	
	α mb	Transverse maximum rotation		0.0050	
SHAPE FACTOR			SLS	ULS	
	S	Shape Factor	9.132	9.132	
	A_1	Effective plan area (mm^2)	134064	134064	
	Ip	Force Free Parameter (mm)	1468	1468	
DISPLACEMENTS DUE TO LIVE LOAD			SLS	ULS	
	Kd	dynamic stiffness (KN/mm)	3.02	3.02	<- Calculated Shear Stiffness Value
	Ks	static shear stiffness(KN/mm)	3.02	3.02	
	δ la	permanent disp // width a (mm) - Longitudinal - Horizontal Load	0.00	0.00	
	δ lb	permanent disp // length b (mm) - Transverse - Horizontal Load	0.00	0.00	
	δ la	live/seismic disp // width a (mm) - Longitudinal	23.21	33.15	
	δ lb	live/seismic disp // length b (mm) - Transverse	0.00	0.00	
DISPLACEMENT DUE TO SHEAR LOAD			SLS	ULS	
	δ a	displacement in direction width - a (mm) - Longitudinal	23.21	33.15	
	δ b	displacement in direction length - b (mm) - Transverse	0.00	0.00	





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In-house compound Testing facilities

- Shore A Hardness
- Tensile Testing
- Tear Testing
- Elongation %
- UTM
- Rheometer
- Compression Testing
- Oven ageing – for conditioning testing.
- Ozone – Chamber (one & only in Middle East)

Details on in-house bearing Testing facility

Load Testing Machine – 1

Vertical load : Maximum : 4200kN
Horizontal Load : Maximum : 320 kN

Lateral movement : 150 mm

Maximum size of bearing that can be tested
800 x 800 X100 mm or for 3400 kN vertical load

Load Testing Machine – 2

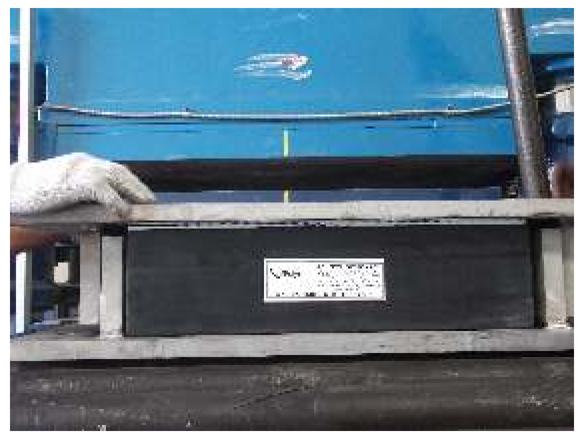
Vertical load : Maximum : 10,000kN
(one & only in Middle east)

Horizontal Load : Maximum : 600 kN
Lateral movement : ±150 mm

Net movement : 200 mm

Maximum size of bearing that can be tested
1000 x 1000 X 250 mm or for 10000 kN vertical load

Elastomeric bearing testing.



100 mm

Ours is the first and only laminated bearing manufacturing facility in Middle East to have an in-house laminated bearing load testing facility to carry out tests confirming to AASHTO M 251 -2006 and EN 1337-3-2005 specification in accordance with Acceptance Testing on either Level I or Level II as well as Short/Long-Duration Compression Test. Our bearing testing machine can test bearings to Vertical load of 10000 kN with horizontal sheer load up to 600kN and at lateral sheer movement to 200 mm.

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Technical Specification of Laminated Elastomeric Bearing
Type B meeting EN 1337-3-2005

a [mm]	x	b [mm]	V [kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation over a (1) ‰	Rotation over b (1) ‰	Total rubber thickness [mm]	Weight [Kg]
100	X	100	100	10,0	14	7,0	4,0	6,0	10	Kg 0,4
100	X	100	100	10,0	21	10,5	8,0	9,0	15	Kg 0,7
100	X	100	100	10,0	28	14,0	12,0	12,0	20	Kg 0,9
100	X	100	100	10,0	35	16,3	16,0	15,0	25	Kg 1,1
100	X	100	100	10,0	42	18,0	20,0	18,0	30	Kg 1,3
100	X	150	150	10,0	14	7,0	4,0	6,0	10	Kg 0,7
100	X	150	150	10,0	21	10,5	8,0	9,0	15	Kg 1,0
100	X	150	150	10,0	28	14,0	12,0	12,0	20	Kg 1,3
100	X	150	150	10,0	35	16,3	16,0	15,0	25	Kg 1,6
100	X	150	150	10,0	42	18,0	20,0	18,0	30	Kg 2,0
150	X	200	300	10,0	14	7,0	3,0	3,0	10	Kg 1,3
150	X	200	300	10,0	21	10,5	6,0	6,0	15	Kg 2,0
150	X	200	300	10,0	28	14,0	9,0	9,0	20	Kg 2,6
150	X	200	300	10,0	35	17,5	12,0	12,0	25	Kg 3,3
150	X	200	300	10,0	42	21,0	15,0	15,0	30	Kg 3,9
150	X	200	300	10,0	49	23,3	18,0	18,0	35	Kg 4,6
150	X	200	300	10,0	56	25,3	21,0	21,0	40	Kg 5,2
150	X	200	300	10,0	63	27	24,0	24,0	45	Kg 5,9
200	X	250	625	12,5	19	9,1	3,0	2,5	13	Kg 3,2
200	X	250	625	12,5	30	14,7	6,0	5,0	21	Kg 4,8
200	X	250	625	12,5	41	20,3	9,0	7,5	29	Kg 6,5
200	X	250	625	12,5	52	25,9	12,0	10,0	37	Kg 8,1
200	X	250	625	12,5	63	30,0	15,0	12,5	45	Kg 9,8
200	X	250	625	12,5	74	33,2	18,0	15,0	53	Kg 11,5
200	X	250	625	12,5	85	36	21,0	17,5	61	Kg 13,1
200	X	300	750	12,5	19	9,1	3,0	2,5	13	Kg 3,8
200	X	300	750	12,5	30	14,7	6,0	5,0	21	Kg 5,8
200	X	300	750	12,5	41	20,3	9,0	7,5	29	Kg 7,8
200	X	300	750	12,5	52	25,9	12,0	10,0	37	Kg 9,8
200	X	300	750	12,5	63	30,0	15,0	12,5	45	Kg 11,8
200	X	300	750	12,5	74	33,2	18,0	15,0	53	Kg 13,8
200	X	300	750	12,5	85	36	21,0	17,5	61	Kg 15,8

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

Technical Specification of Laminated Elastomeric Bearing
Type B meeting EN 1337-3-2005

a [mm]	x	b [mm]	V [kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation over a (1) ‰	Rotation over b (1) ‰	Total rubber thickness [mm]	Weight [Kg]
200	X	400	1000	12,5	19	9,1	3,0	1,2	13	Kg 5,0
200	X	400	1000	12,5	30	14,7	6,0	2,4	21	Kg 7,7
200	X	400	1000	12,5	41	20,3	9,0	3,6	29	Kg 10,4
200	X	400	1000	12,5	52	25,9	12,0	4,8	37	Kg 13,0
200	X	400	1000	12,5	63	30,0	15,0	6,0	45	Kg 15,7
200	X	400	1000	12,5	74	33,2	18,0	7,2	53	Kg 18,4
200	X	400	1000	12,5	85	36	21,0	8,4	61	Kg 21,0
250	X	400	1250	12,5	19	9,1	2,5	1,2	13	Kg 6,3
250	X	400	1250	12,5	30	14,7	5,0	2,4	21	Kg 9,6
250	X	400	1250	12,5	41	20,3	7,5	3,6	29	Kg 13,0
250	X	400	1250	12,5	52	25,9	10,0	4,8	37	Kg 16,3
250	X	400	1250	12,5	63	31,5	12,5	6,0	45	Kg 19,6
250	X	400	1250	12,5	74	36,2	15,0	7,2	53	Kg 22,9
250	X	400	1250	12,5	85	39,4	17,5	8,4	61	Kg 26,3
250	X	400	1250	12,5	96	42,6	20,0	9,6	69	Kg 29,6
300	X	400	1800	15,0	19	9,1	2,0	1,2	13	Kg 7,6
300	X	400	1800	15,0	30	14,7	4,0	2,4	21	Kg 11,6
300	X	400	1800	15,0	41	20,3	6,0	3,6	29	Kg 15,6
300	X	400	1800	15,0	52	25,9	8,0	4,8	37	Kg 19,6
300	X	400	1800	15,0	63	31,5	10,0	6,0	45	Kg 23,5
300	X	400	1800	15,0	74	37,1	12,0	7,2	53	Kg 27,5
300	X	400	1800	15,0	85	42,5	14,0	8,4	61	Kg 31,5
300	X	400	1800	15,0	96	45,6	16,0	9,6	69	Kg 35,5
300	X	400	1800	15,0	107	48,8	18,0	10,8	77	Kg 39,5
300	X	400	1800	15,0	118	52	20,0	12,0	85	Kg 43,5
350	X	450	2362,5	15,0	24	11,2	2,5	2,0	16	Kg 13,0
350	X	450	2362,5	15,0	39	18,9	5,0	4,0	27	Kg 20,1
350	X	450	2362,5	15,0	54	26,6	7,5	6,0	38	Kg 27,1
350	X	450	2362,5	15,0	69	34,3	10,0	8,0	49	Kg 34,2
350	X	450	2362,5	15,0	84	42,0	12,5	10,0	60	Kg 41,2
350	X	450	2362,5	15,0	99	49,5	15,0	12,0	71	Kg 48,3
350	X	450	2362,5	15,0	114	53,8	17,5	14,0	82	Kg 55,3
350	X	450	2362,5	15,0	129	58,2	20,0	16,0	93	Kg 62,4
350	X	450	2362,5	15,0	144	62,6	22,5	18,0	104	Kg 69,4

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

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Technical Specification of Laminated Elastomeric Bearing
Type B meeting EN 1337-3-2005

a [mm]	x	b [mm]	V [kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation over a (1) ‰	Rotation over b (1) ‰	Total rubber thickness [mm]	Weight [Kg]
400	X	500	3000	15,0	24	11,2	2,0	1,5	16	Kg 16,5
400	X	500	3000	15,0	39	18,9	4,0	3,0	27	Kg 25,5
400	X	500	3000	15,0	54	26,6	6,0	4,5	38	Kg 34,4
400	X	500	3000	15,0	69	34,3	8,0	6,0	49	Kg 43,4
400	X	500	3000	15,0	84	42,0	10,0	7,5	60	Kg 52,3
400	X	500	3000	15,0	99	49,7	12,0	9,0	71	Kg 61,3
400	X	500	3000	15,0	114	57,0	14,0	10,5	82	Kg 70,2
400	X	500	3000	15,0	129	61,2	16,0	12,0	93	Kg 79,2
400	X	500	3000	15,0	144	65,6	18,0	13,5	104	Kg 88,1
400	X	500	3000	15,0	159	70,0	20,0	15,0	115	Kg 97,1
400	X	600	3600	15,0	24	11,2	2,0	1,2	16	Kg 19,8
400	X	600	3600	15,0	39	18,9	4,0	2,4	27	Kg 30,6
400	X	600	3600	15,0	54	26,6	6,0	3,6	38	Kg 41,3
400	X	600	3600	15,0	69	34,3	8,0	4,8	49	Kg 52,0
400	X	600	3600	15,0	84	42,0	10,0	6,0	60	Kg 62,8
400	X	600	3600	15,0	99	49,7	12,0	7,2	71	Kg 73,5
400	X	600	3600	15,0	114	57,0	14,0	8,4	82	Kg 84,3
400	X	600	3600	15,0	129	61,2	16,0	9,6	93	Kg 95,0
400	X	600	3600	15,0	144	65,6	18,0	10,8	104	Kg 105,8
400	X	600	3600	15,0	159	70,0	20,0	12,0	115	Kg 116,5
400	X	600	3600	15,0	174	74,4	22,0	13,2	126	Kg 127,2
500	X	600	4500	15,0	24	11,2	2,0	1,2	16	Kg 24,8
500	X	600	4500	15,0	39	18,9	4,0	2,4	27	Kg 38,2
500	X	600	4500	15,0	54	26,6	6,0	3,6	38	Kg 51,6
500	X	600	4500	15,0	69	34,3	8,0	4,8	49	Kg 65,1
500	X	600	4500	15,0	84	42,0	10,0	6,0	60	Kg 78,5
500	X	600	4500	15,0	99	49,7	12,0	7,2	71	Kg 91,9
500	X	600	4500	15,0	114	57,4	14,0	8,4	82	Kg 105,3
500	X	600	4500	15,0	129	65,1	16,0	9,6	93	Kg 118,8
500	X	600	4500	15,0	144	72,0	18,0	10,8	104	Kg 132,2
500	X	600	4500	15,0	159	76,0	20,0	12,0	115	Kg 145,6
500	X	600	4500	15,0	174	80,4	22,0	13,2	126	Kg 159,0
500	X	600	4500	15,0	189	84,8	24,0	14,4	137	Kg 172,5
500	X	600	4500	15,0	204	89,2	26,0	15,6	148	Kg 185,9

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

Technical Specification of Laminated Elastomeric Bearing
Type B meeting EN 1337-3-2005

a [mm]	x	b [mm]	V [kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation over a (1) ‰	Rotation over b (1) ‰	Total rubber thickness [mm]	Weight [Kg]
600	X	700	6300	15,0	30	14,0	2,0	1,5	20	Kg 43,3
600	X	700	6300	15,0	50	24,5	4,0	3,0	35	Kg 67,5
600	X	700	6300	15,0	70	35,0	6,0	4,5	50	Kg 91,6
600	X	700	6300	15,0	90	45,5	8,0	6,0	65	Kg 115,7
600	X	700	6300	15,0	110	56,0	10,0	7,5	80	Kg 139,8
600	X	700	6300	15,0	130	66,5	12,0	9,0	95	Kg 163,9
600	X	700	6300	15,0	150	77,0	14,0	10,5	110	Kg 188,0
600	X	700	6300	15,0	170	86,5	16,0	12,0	125	Kg 212,1
600	X	700	6300	15,0	190	92,0	18,0	13,5	140	Kg 236,2
600	X	700	6300	15,0	210	98,0	20,0	15,0	155	Kg 260,3
600	X	700	6300	15,0	230	104,0	22,0	16,5	170	Kg 284,4
700	X	800	8400	15,0	30	14,0	2,0	1,2	20	Kg 57,8
700	X	800	8400	15,0	50	24,5	4,0	2,4	35	Kg 89,9
700	X	800	8400	15,0	70	35,0	6,0	3,6	50	Kg 122,1
700	X	800	8400	15,0	90	45,5	8,0	4,8	65	Kg 154,2
700	X	800	8400	15,0	110	56,0	10,0	6,0	80	Kg 186,4
700	X	800	8400	15,0	130	66,5	12,0	7,2	95	Kg 218,5
700	X	800	8400	15,0	150	77,0	14,0	8,4	110	Kg 250,7
700	X	800	8400	15,0	170	87,5	16,0	9,6	125	Kg 282,8
700	X	800	8400	15,0	190	98,0	18,0	10,8	140	Kg 314,9
700	X	800	8400	15,0	210	104,0	20,0	12,0	155	Kg 347,1
700	X	800	8400	15,0	230	110,0	22,0	13,2	170	Kg 379,2
700	X	800	8400	15,0	250	116,0	24,0	14,4	185	Kg 411,4
700	X	800	8400	15,0	270	122,0	26,0	15,6	200	Kg 443,5
800	X	800	9600	15,0	33	16,1	2,0	2,0	23	Kg 68,3
800	X	800	9600	15,0	56	28,7	4,0	4,0	41	Kg 107,2
800	X	800	9600	15,0	79	41,3	6,0	6,0	59	Kg 146,2
800	X	800	9600	15,0	102	53,9	8,0	8,0	77	Kg 185,2
800	X	800	9600	15,0	125	66,5	10,0	10,0	95	Kg 224,1
800	X	800	9600	15,0	148	79,1	12,0	12,0	113	Kg 263,1
800	X	800	9600	15,0	171	91,7	14,0	14,0	131	Kg 302,1
800	X	800	9600	15,0	194	104,3	16,0	16,0	149	Kg 341,0
800	X	800	9600	15,0	217	114,8	18,0	18,0	167	Kg 380,0
800	X	800	9600	15,0	240	122,0	20,0	20,0	185	Kg 418,9
800	X	800	9600	15,0	263	129,2	22,0	22,0	203	Kg 457,9
800	X	800	9600	15,0	286	136,4	24,0	24,0	221	Kg 496,9
800	X	800	9600	15,0	309	143,0	26,0	26,0	239	Kg 535,8

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

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Technical Specification of Laminated Elastomeric Bearing Type B meeting EN 1337-3-2005

a [mm]	x	b [mm]	V [kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation over a (1) ‰	Rotation over b (1) ‰	Total rubber thickness [mm]	Weight [Kg]
900	X	900	12150	15,0	33	16,1	1,5	1,5	23	Kg 86,4
900	X	900	12150	15,0	56	28,7	3,0	3,0	41	Kg 135,7
900	X	900	12150	15,0	79	41,3	4,5	4,5	59	Kg 185,0
900	X	900	12150	15,0	102	53,9	6,0	6,0	77	Kg 234,3
900	X	900	12150	15,0	125	66,5	7,5	7,5	95	Kg 283,7
900	X	900	12150	15,0	148	79,1	9,0	9,0	113	Kg 333,0
900	X	900	12150	15,0	171	91,7	10,5	10,5	131	Kg 382,3
900	X	900	12150	15,0	194	104,3	12,0	12,0	149	Kg 431,6
900	X	900	12150	15,0	217	116,9	13,5	13,5	167	Kg 480,9
900	X	900	12150	15,0	240	128,0	15,0	15,0	185	Kg 530,2
900	X	900	12150	15,0	263	135,2	16,5	16,5	203	Kg 579,5
900	X	900	12150	15,0	286	142,4	18,0	18,0	221	Kg 628,9
900	X	900	12150	15,0	309	149,6	19,5	19,5	239	Kg 678,2
900	X	900	12150	15,0	332	156,8	21,0	21,0	257	Kg 727,5

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

Technical Specification of Laminated Elastomeric Bearing Type B Round meeting EN 1337-3-2005

Ø [mm]	V kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation (1) ‰	Total rubber thickness [mm]	Weight [kg]
150	177	10,0	14	7,0	3,0	10	Kg 0,8
150	177	10,0	21	10,5	6,0	15	Kg 1,2
150	177	10,0	28	14,0	9,0	20	Kg 1,5
150	177	10,0	35	17,5	12,0	25	Kg 1,9
150	177	10,0	42	21,0	15,0	30	Kg 2,3
150	177	10,0	49	23,3	18,0	35	Kg 2,7
150	177	10,0	56	25,3	21,0	40	Kg 3,1
150	177	10,0	63	27	24,0	45	Kg 3,5
200	314	10,0	19	9,1	4,0	13	Kg 2,0
200	314	10,0	30	14,7	8,0	21	Kg 3,0
200	314	10,0	41	20,3	12,0	29	Kg 4,1
200	314	10,0	52	25,9	16,0	37	Kg 5,1
200	314	10,0	63	30,0	20,0	45	Kg 6,2
200	314	10,0	74	33,2	24	53	Kg 7,2
200	314	10,0	85	36	28	61	Kg 8,3
250	613	12,5	19	9,1	4,0	13	Kg 3,1
250	613	12,5	30	14,7	8,0	21	Kg 4,7
250	613	12,5	41	20,3	12,0	29	Kg 6,4
250	613	12,5	52	25,9	16,0	37	Kg 8,0
250	613	12,5	63	31,5	20,0	45	Kg 9,6
250	613	12,5	74	36,2	24	53	Kg 11,3
250	613	12,5	85	39,4	28	61	Kg 12,9
250	613	12,5	96	42,6	32	69	Kg 14,5
300	883	12,5	19	9,1	3,0	13	Kg 4,5
300	883	12,5	30	14,7	6,0	21	Kg 6,8
300	883	12,5	41	20,3	9,0	29	Kg 9,2
300	883	12,5	52	25,9	12,0	37	Kg 11,5
300	883	12,5	63	31,5	15,0	45	Kg 13,9
300	883	12,5	74	37,1	18,0	53	Kg 16,2
300	883	12,5	85	42,5	21,0	61	Kg 18,6
300	883	12,5	96	45,6	24,0	69	Kg 20,9
300	883	12,5	107	48,8	27	77	Kg 23,3
300	883	12,5	118	52	30	85	Kg 25,6

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

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Technical Specification of Laminated Elastomeric Bearing
Type B Round meeting EN 1337-3-2005

Ø [mm]	V kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation (1) ‰	Total rubber thickness [mm]	Weight [kg]
350	1.202	12,5	24	11,2	4,0	16	Kg 7,9
350	1.202	12,5	39	18,9	8,0	27	Kg 12,2
350	1.202	12,5	54	26,6	12,0	38	Kg 16,5
350	1.202	12,5	69	34,3	16,0	49	Kg 20,9
350	1.202	12,5	84	42,0	20,0	60	Kg 25,2
350	1.202	12,5	99	49,5	24,0	71	Kg 29,5
350	1.202	12,5	114	53,8	28,0	82	Kg 33,8
350	1.202	12,5	129	58,2	32,0	93	Kg 38,1
350	1.202	12,5	144	62,6	36,0	104	Kg 42,4
400	1.884	15,0	24	11,2	3,0	16	Kg 10,4
400	1.884	15,0	39	18,9	6,0	27	Kg 16,0
400	1.884	15,0	54	26,6	9,0	38	Kg 21,6
400	1.884	15,0	69	34,3	12,0	49	Kg 27,2
400	1.884	15,0	84	42,0	15,0	60	Kg 32,9
400	1.884	15,0	99	49,7	18,0	71	Kg 38,5
400	1.884	15,0	114	57,0	21,0	82	Kg 44,1
400	1.884	15,0	129	61,2	24,0	93	Kg 49,7
400	1.884	15,0	144	65,6	27,0	104	Kg 55,3
400	1.884	15,0	159	70,0	30,0	115	Kg 61,0
500	2.944	15,0	24	11,2	2,0	16	Kg 16,2
500	2.944	15,0	39	18,9	4,0	27	Kg 25,0
500	2.944	15,0	54	26,6	6,0	38	Kg 33,8
500	2.944	15,0	69	34,3	8,0	49	Kg 42,6
500	2.944	15,0	84	42,0	10,0	60	Kg 51,3
500	2.944	15,0	99	49,7	12,0	71	Kg 60,1
500	2.944	15,0	114	57,4	14,0	82	Kg 68,9
500	2.944	15,0	129	65,1	16,0	93	Kg 77,7
500	2.944	15,0	144	72,0	18,0	104	Kg 86,5
500	2.944	15,0	159	76,0	20,0	115	Kg 95,3
500	2.944	15,0	174	80,4	22,0	126	Kg 104,0
500	2.944	15,0	189	84,8	24,0	137	Kg 112,8
500	2.944	15,0	204	89,2	26,0	148	Kg 121,6

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

Technical Specification of Laminated Elastomeric Bearing
Type B Round meeting EN 1337-3-2005

Ø [mm]	V kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation (1) ‰	Total rubber thickness [mm]	Weight [kg]
600	4.239	15,0	30	14,0	2,0	20	Kg 29,2
600	4.239	15,0	50	24,5	4,0	35	Kg 45,4
600	4.239	15,0	70	35,0	6,0	50	Kg 61,6
600	4.239	15,0	90	45,5	8,0	65	Kg 77,8
600	4.239	15,0	110	56,0	10,0	80	Kg 94,0
600	4.239	15,0	130	66,5	12,0	95	Kg 110,3
600	4.239	15,0	150	77,0	14,0	110	Kg 126,5
600	4.239	15,0	170	86,5	16,0	125	Kg 142,7
600	4.239	15,0	190	92,0	18,0	140	Kg 158,9
600	4.239	15,0	210	98,0	20,0	155	Kg 175,2
600	4.239	15,0	230	104,0	22,0	170	Kg 191,4
700	5.770	15,0	30	14,0	2,0	20	Kg 39,7
700	5.770	15,0	50	24,5	4,0	35	Kg 61,8
700	5.770	15,0	70	35,0	6,0	50	Kg 83,9
700	5.770	15,0	90	45,5	8,0	65	Kg 105,9
700	5.770	15,0	110	56,0	10,0	80	Kg 128,0
700	5.770	15,0	130	66,5	12,0	95	Kg 150,1
700	5.770	15,0	150	77,0	14,0	110	Kg 172,2
700	5.770	15,0	170	87,5	16,0	125	Kg 194,2
700	5.770	15,0	190	98,0	18,0	140	Kg 216,3
700	5.770	15,0	210	104,0	20,0	155	Kg 238,4
700	5.770	15,0	230	110,0	22,0	170	Kg 260,5
700	5.770	15,0	250	116,0	24,0	185	Kg 282,6
700	5.770	15,0	270	122,0	26,0	200	Kg 304,6
800	7.536	15,0	33	16,1	2,0	23	Kg 53,6
800	7.536	15,0	56	28,7	4,0	41	Kg 84,2
800	7.536	15,0	79	41,3	6,0	59	Kg 114,8
800	7.536	15,0	102	53,9	8,0	77	Kg 145,4
800	7.536	15,0	125	66,5	10,0	95	Kg 175,9
800	7.536	15,0	148	79,1	12,0	113	Kg 206,5
800	7.536	15,0	171	91,7	14,0	131	Kg 237,1
800	7.536	15,0	194	104,3	16,0	149	Kg 267,7
800	7.536	15,0	217	114,8	18,0	167	Kg 298,3
800	7.536	15,0	240	122,0	20,0	185	Kg 328,9
800	7.536	15,0	263	129,2	22,0	203	Kg 359,5
800	7.536	15,0	286	136,4	24,0	221	Kg 390,0
800	7.536	15,0	309	143,0	26,0	239	Kg 420,6

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

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Technical Specification of Laminated Elastomeric Bearing Type B Round meeting EN 1337-3-2005

Ø [mm]	V kN]	N/mm2	h [mm]	Displacement +/- [mm]	Rotation (1) ‰	Total rubber thickness [mm]	Weight [kg]
850	8.507	15,0	33	16,1	1,5	23	Kg 60,5
850	8.507	15,0	56	28,7	3,0	41	Kg 95,0
850	8.507	15,0	79	41,3	4,5	59	Kg 129,6
850	8.507	15,0	102	53,9	6,0	77	Kg 164,1
850	8.507	15,0	125	66,5	7,5	95	Kg 198,6
850	8.507	15,0	148	79,1	9,0	113	Kg 233,1
850	8.507	15,0	171	91,7	10,5	131	Kg 267,7
850	8.507	15,0	194	104,3	12,0	149	Kg 302,2
850	8.507	15,0	217	116,9	13,5	167	Kg 336,7
850	8.507	15,0	240	128,0	15,0	185	Kg 371,3
850	8.507	15,0	263	135,2	16,5	203	Kg 405,8
850	8.507	15,0	286	142,4	18,0	221	Kg 440,3
850	8.507	15,0	309	149,6	19,5	239	Kg 474,9
850	8.507	15,0	332	156,8	21,0	257	Kg 509,4
900	9.538	15,0	33	16,1	1,5	23	Kg 67,8
900	9.538	15,0	56	28,7	3,0	41	Kg 106,5
900	9.538	15,0	79	41,3	4,5	59	Kg 145,3
900	9.538	15,0	102	53,9	6,0	77	Kg 184,0
900	9.538	15,0	125	66,5	7,5	95	Kg 222,7
900	9.538	15,0	148	79,1	9,0	113	Kg 261,4
900	9.538	15,0	171	91,7	10,5	131	Kg 300,1
900	9.538	15,0	194	104,3	12,0	149	Kg 338,8
900	9.538	15,0	217	116,9	13,5	167	Kg 377,5
900	9.538	15,0	240	128,0	15,0	185	Kg 416,2
900	9.538	15,0	263	135,2	16,5	203	Kg 454,9
900	9.538	15,0	286	142,4	18,0	221	Kg 493,6
900	9.538	15,0	309	149,6	19,5	239	Kg 532,4
900	9.538	15,0	332	156,8	21,0	257	Kg 571,1

Above sizes and loads are for information only bearing size chosen against load has to be rechecked with design calculations

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POLYSLIDE

Design advantages of POLYSLIDE BEARING:

PTFE (Teflon) is hot bonded to Plain Elastomeric Bearing Pad to forming into a bottom sliding pad and mm 316 Mirror finished plate to acting as sliding unit on top.Unfilled PTFE sheets offers low friction of coefficient 0.05 PTFE (Teflon) being self-lubricated, long term smooth sliding even at high pressure of 3 N/mm² is obtained.Easy to install and manufactured in UAE, less delivery time.Lateral shear load to Vertical load ratio will be less than 1:20

Some salient features and benefits of POLYSLIDE BEARING:

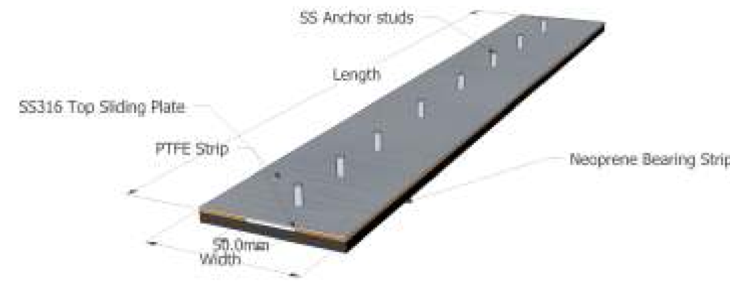
Do not have a shape limit factor, can be custom manufactured to your requirements.Creep effects are reduced to a limit of 5% of original thickness Operating temperature limits are -65°F (-55°C) to 200°F (95°C).Compressive strength of unfilled PTFE will be 30 N/mm²PTFE- TEFLON is impervious to most oil and solvent traces.Resist effects of steam, water, mildew and brine Can be supplied as a system in nominal thickness of 8 mm up to 250 mm Combination of both vertical load and horizontal movements.

Advantages of hot bonding over bi-component RTV adhesives.

PTFE is HOT BONDED with Neoprene Bearing Pad using polymer based hot bonding system.Bonding being taken place at high compression (200 Kg/cm²) and heat (over 145º C) provides high bonding strength.Peel tests have given results over 9.0 kg /cm² and peel off is detected between base materials only.Proven proprietary DS Tech hot bonding agent not conventional bi-component RTV (room Temperature vulcanization)

PSBS system offered here is a very unique design meeting standards of EN 1337:3 - 2005 and been used in many Projects where its functionality has been proved beyond doubt for many climatic cycles. Please note that ptfe sliding bearing strips/ bearing system - as given in our communications are designed and manufactured by us and has been released into the construction industry after many stringent testing's and comes under many registered patents in middle east and details on the same should not be circulated with other manufactures.

Information given here is for general and can be changed without notice. Teflon® Fluor polymer resins are registered trademark of DuPont™ and Neoprene® registered trade mark ofDuPont™ for details on this disclaimer & our STD terms & conditions please contact us by email: polymet@pretread.com



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POT Bearing

POLYPOT

POLYPOT POT BEARINGS can be used in steel or concrete structures. These low profiles, compact bearings are particularly useful to transmit large vertical load while accommodating large movements and multi-directional rotation. Separate mechanisms for rotation and translation (where applicable) provide minimum eccentricity of the load and minimum frictional resistance to movement. High horizontal loads can also be accommodated simultaneously.
Their design advantages make them particularly suitable for medium to long span structures e.g.bridges, pipelines, power stations, off shore platforms etc. The continuous research and development on Pot bearings combine simplicity, design efficiency, versatility and economy.

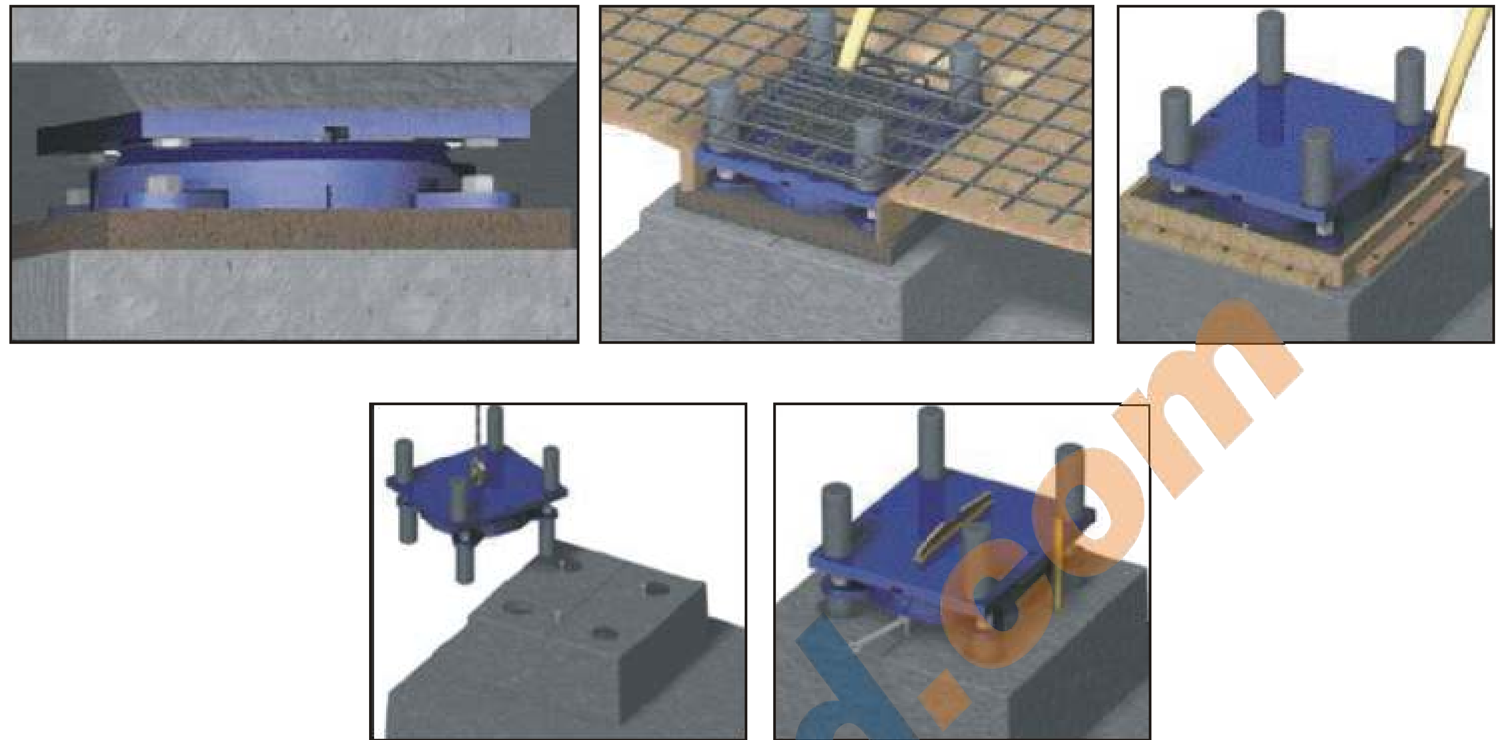
STANDARD TYPES

1.1 Fixed Bearings

Fixed POT bearings consist of a steel piston fitted closely inside a steel cylinder.
Within this cylinder is trapped a Neoprene pad which, when under load, acts as a confined fluid, enabling the piston to tilt, attracting very little eccentricity of load.
This bearing can resist simultaneous vertical and horizontal loads, as well as rotations about any horizontal axis.

1.2 Expansion Bearings (Sliding Guided / Free Sliding)

The Sliding Guided and Free Float bearings are expansion bearings, similar to the fixed bearing, but with the addition of a steel slide plate faced with stainless steel, which slides on a disc of Poly Tetra Fluoro Ethylene (PTFE) recessed into the cylinder or plate piston.
In the case of the [SG] bearings, guides are incorporated to accommodate horizontal loads. These are faced with stainless steel, and slide against low-friction materials.



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Temporary Bearing

POLYTEMP

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POLYMET -TEFLON TEMPORARY BEARING (PTFE Sliding bearing system consisting of PTFE bonded to Steel Plate working with SS 316 mirror finished plate as mating / sliding surfaces) are specially designed, manufactured and assembled against Project requirements.

Using such combinations of SS 316 Mirror finish over PTFE, POLYMET -TEFLON TEMPORARY BEARING permits displacement to required value with maximum permissible pressures to 50.0 N/mm² for temporary applications

Disk Bearing

POLYDISK

Polyether Urethane polymer disk confined between two plates providing high vertical load capacity and horizontal rotation. Vertical forces of up to 30Mpa with high rotation of 0.05 radians.

Uses
Used in Bridge structures, railway structures to provide cushion and transmit level of forces / structural expansions and vibrations.

Design
Design based on AREMA Chapter 15.

Types
- Fixed
- Free Sliding with PTFE
- Guided Sliding with PTFE

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Expansion Joints

POLYEXPAND

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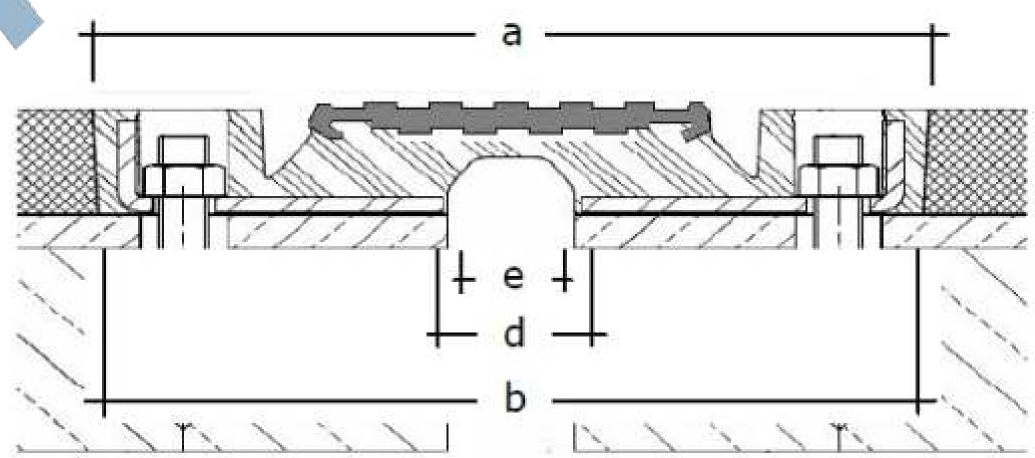
Moulded rubber expansion joint system designed to accommodate structure movements from 20 upto 200mm. Polymet PRJ systems consists of steel reinforced moulded rubber joints.

Physical properties of the Neoprene/ Natural Rubber compound will meet the requirement as mentioned on the table.

Features

- Elasticity, to move without cracking or transmitting unacceptable stresses to bridge deck.
- Skid resistance is achieved by the ribbed pattern on top of the neoprene/natural rubber cover.
- Maintenance free installation with drainage channel & long lasting components.
- Low profile with minimum open drainage channel to prevent debris built up and promotes smooth ride.



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PTFE Teflon pipe supports

POLYPORT

In application as pipe supports, PTFE Slide Bearings are superior to conventional expansion plates, rollers and rocker arm type supports. PTFE Teflon pipe supports, accommodate expansion, contraction and other reciprocating motions of any structure that moves as a result of thermal expansion, Seismic or differential forces. Laminated Bearings for pipe support applications must operate at high loads and low speeds, and under these both conditions the self-lubricating properties of PTFE are exposed to maximum. This factor, together with its no stick-slip and anti-weathering characteristics, is the principle reason on why PTFE has proved to be so successful as a slide bearing material.

Advantages of PTFE Sliding Pipe Supports.

The simplicity of the bearing design and its ease of fabrication and installation make the unit cost efficient. The costs of a construction can be reduced by designing for expansion rather than strain. Coefficient of friction over the bearing surface remains constant, even under worst case conditions. Bearings are maintenance free - PTFE is inherently self - lubricating, while dirt particles are absorbed into the material. Only simple protection is required against the significant increases of dirt.

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MOULDED RUBBER

Moulded Rubber Products, Rubber Gaskets, and Rubber Marine Fenders. Tire Retreading Equipment, PTFE Teflon Sliding Moulded Rubber Products, Moulded Rubber, Shock Absorber Mountings, Moulded Rubber Products etc.

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RUBBER COMPOUND

We offer master and final batches of rubber compounds with following polymer.

1. Neoprene Rubber compounds Shore A 50° to 70° Hardness
2. Natural Rubber compounds Shore A 50° to 70° Hardness
3. EPDM
4. SBR

We have state of the art internal mixers to provide the right quality rubber compounds up to 3.0 Tons per day and all batches will be tested at in house laboratory on the following for consistency. All tests will be meeting ASTM requirements.

1. Rheometer
2. Mooney viscosity
3. Tensile strength
4. Elongation at break
5. Shore A hardness
6. Ozone resistance

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