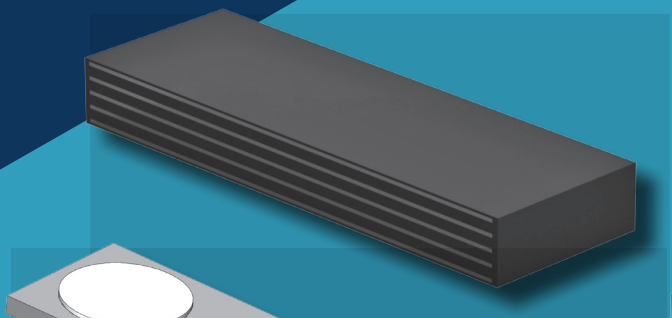
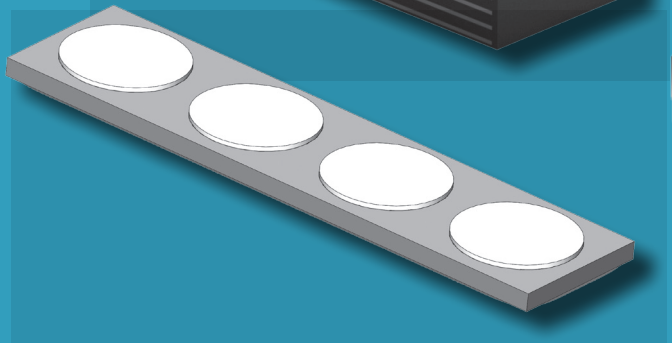
SERVET

INDUSTRIAL BEARINGS & PRODUCTS

EA, EQF, EKE & EKR

BS5400 - EN1337





servetusl.com

EA Series Standard Bearings

These bearings are designed to support a vertical load up to 2000kN with the constant bearing temperature not exceeding 150°C. For bearing applications in excess of this temperature please contact our technicians for further assistance.

Translation in the plane of movement is maintained at a low frictional resistance by the use of the mating surfaces, polished stainless steel and low friction PTFE. Bearings incorporating DU(B) can be supplied for applications up to 280°C.

Attachment and Movement

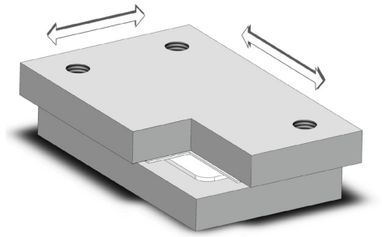
The bearings are available as standards with four methods of attachment. For EAG types customers must ensure that they provide shear connection adequate to react to the applied loads, but excessive welding must be avoided.

Studs on EAJ & EAK types are threaded studs. Seven movement combinations are available including constraint in one axis and to give further flexibility two shapes are available for each load capacity.

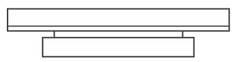
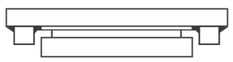
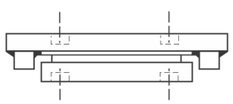
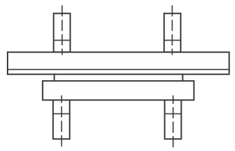
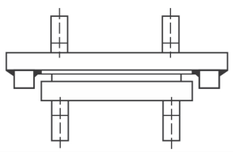
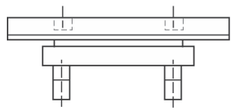
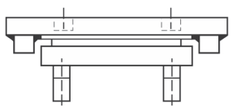
Support and Installation

The bearing support members must provide uniform support. The compressive bearing stress on the supports varies through the range between 6.4N/mm^2 and 11.3N/mm^2. Upon installation, the bearing surfaces must remain parallel to ensure correct bearing functionality. Once the bearing is installed the transportation fixings should be removed. Please note that bearings should not be split by anyone other than an Ekspan Ltd operative to maintain warranties.

The EA range of bearings are intended for industrial applications and are not BS5400/EN1337 compliant.



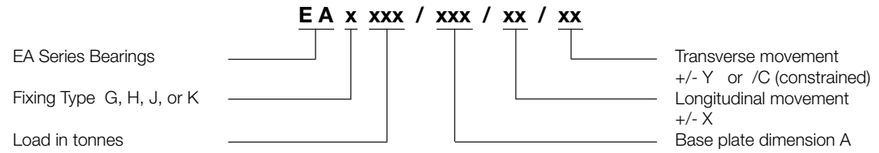
Bearing Types

Bearing Connection	Free		Constrained	
Bonding or welding	EAG		EAG.../C	
Top and base plates with threaded holes.	EAH		EAH.../C	
Threaded studs in top and base plates.	EAJ		EAJ.../C	
Threaded studs in base plate, threaded holes in top plate.	EAK		EAK.../C	

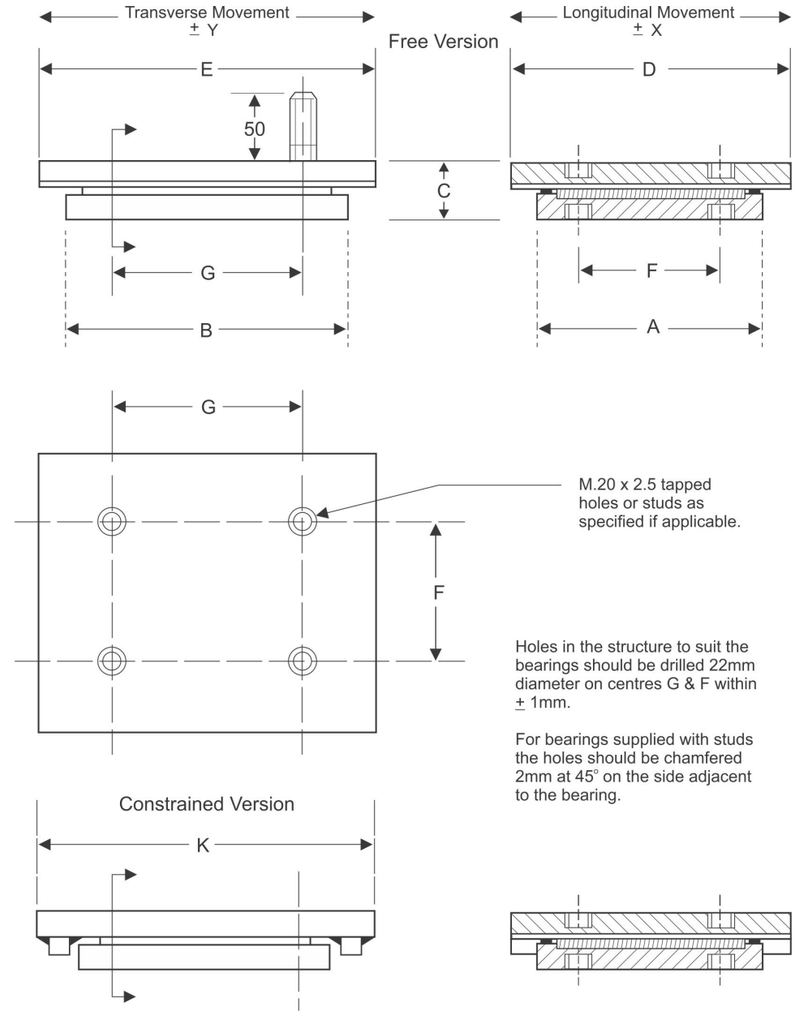
Elastomeric Bearings & Industrial Products

EA Bearings

Part Number



Dimensions in mm



Standard Bearing Selection Table

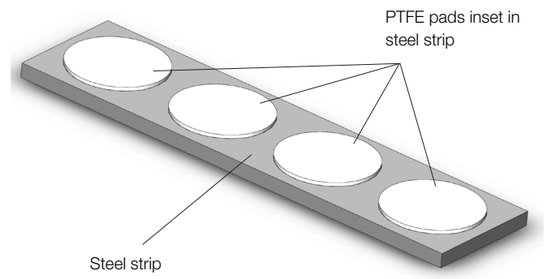
Part Number	Part Number Suffix /						25/25 25/C			50/25 50/C			75/25 75/C			50/50	
	LOAD	Movement +/- X mm +/- Y mm					X=12.5 Y=12.5			X=25 Y=12.5			X=37.5 Y=25			X=25 Y=25	
	kN (TONNES)	A	B	F	G	C	E	D	K	E	D	K	E	D	K	E	D
/10/125	100 (10)	125	125	85	85	55	145	145	180	145	170	180	145	195	180	170	170
/10/95	100 (10)	95	155	55	115	55	175	115	210	175	140	210	175	165	210	200	140
/20/160	200 (20)	160	160	120	120	55	180	180	215	180	205	215	180	230	215	205	205
/20/125	200 (20)	125	210	85	170	55	230	145	265	230	170	265	230	195	265	255	170
/30/185	300 (30)	185	185	135	135	55	205	205	240	205	230	240	205	255	240	230	230
/30/145	300 (30)	145	245	95	195	55	270	165	305	270	190	305	270	215	305	295	190
/40/210	400 (40)	210	210	160	160	55	230	230	265	230	255	265	230	280	265	255	255
/40/160	400 (40)	160	280	110	230	55	300	180	335	300	205	335	300	230	335	325	205
/50/230	500 (50)	230	215	155	155	55	250	250	285	250	275	285	250	300	285	275	275
/50/175	500 (50)	175	295	100	235	55	330	195	365	330	220	365	330	245	365	355	220
/60/250	600 (60)	250	235	175	175	55	270	270	305	270	295	305	270	320	305	295	295
/60/185	600 (60)	185	320	110	260	55	360	210	390	360	235	390	360	260	390	385	235
/70/265	700 (70)	265	250	190	190	55	285	285	320	285	310	320	285	335	320	310	310
/70/195	700 (70)	195	340	120	280	55	375	220	410	375	245	410	375	265	410	400	245
/80/280	800 (80)	280	265	180	180	55	300	300	335	300	325	335	300	350	335	325	325
/80/210	800 (80)	210	365	110	280	55	400	320	435	400	255	435	400	280	435	425	255
/90/290	900(90)	290	275	190	190	55	315	315	350	315	340	350	315	360	350	335	340
/90/215	900(90)	215	380	115	295	55	415	235	450	415	260	450	415	285	450	440	260
/100/305	1000 (100)	305	290	205	205	55	325	325	360	325	350	360	325	375	360	350	350
/100/230	1000 (100)	230	405	130	320	55	440	250	475	440	275	475	440	300	475	465	275
/110/320	1100 (110)	320	305	195	195	55	340	340	375	340	365	375	340	390	375	365	365
/110/240	1100 (110)	240	425	115	315	55	460	260	495	460	285	495	460	310	495	485	285
/120/330	1200 (120)	330	315	205	205	55	350	350	385	350	375	385	350	400	385	375	375
/120/250	1200 (120)	250	445	125	335	55	480	270	515	480	295	515	480	320	515	505	295
/130/345	1300 (130)	345	330	220	220	55	365	365	400	365	390	400	365	415	400	390	390
/130/255	1300 (130)	255	455	130	345	55	490	275	525	490	300	525	490	325	525	515	300
/140/265	1400 (140)	265	475	115	340	55	510	285	545	510	310	545	510	335	545	535	310
/150/370	1500 (150)	370	355	220	220	55	390	390	425	390	415	425	390	440	425	415	415
/150/275	1500 (150)	275	480	125	345	55	515	295	550	515	320	550	515	345	550	540	320
/175/395	1750 (175)	395	380	245	245	55	415	415	450	415	440	450	415	465	450	440	440
/175/290	1750 (175)	290	525	140	390	55	560	310	595	560	335	595	560	360	595	585	335
/200/420	2000 (200)	420	405	270	270	55	440	440	475	440	465	475	440	490	475	465	465
/200/315	2000 (200)	315	565	165	430	55	600	330	635	600	355	635	600	380	635	625	355

EQF Sliding Strip

Modular sliding bearings are used to permit structural movement to take place with the minimum coefficient of friction. Often the excellent properties of PTFE fail to be realised because of the use of inadequate mating surfaces or poor installation.

Ekspan EQF uses PTFE and stainless steel to offer a simple and economical sliding support.

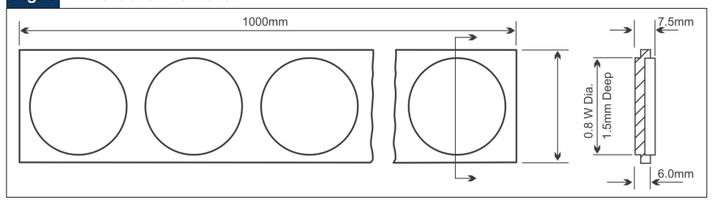
1) Virgin plain PTFE is recessed into a steel base plate
2) Under design load the PTFE will not cold flow
3) The EQF strip is designed for easy installation.
   The base plate can be tack welded or screwed into place.
   Bonding with a suitable adhesive is also possible providing the working conditions permit.



Ekspan EQF is ideal for use in numerous industrial applications where structures are required to move under load. Examples of such applications are as follows:

- Pipes and ducts
- Ovens
- Floors and roofs
- Heavy fabrications during construction
- Slipper pads for moving heavy machinery

Fig. 1 Dimensional Information



Friction

When in operation the Ekspan EQF used in conjunction with a stainless steel sliding plate can give a coefficient of friction of approximately 0.05.

High Temperatures

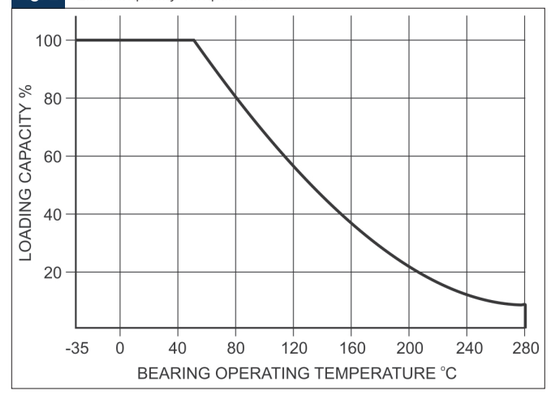
At sustained temperatures above 100°C we recommend the use of an alternative DU bearing material.
Please specify temperature range at enquiry stage so that the appropriate materials can be offered.

Load capabilities are for temperatures ranging -35°C to 50°C. For temperatures more than 50°C please see Fig. 2 for advice on reduced load capacities.

Fig. 3 Loading Information

Part No.	Width mm	Load Capacity Maximum Continuous kN/m	Maximum kN/m
EQF 25	25	250	375
EQF 50	50	500	750
EQF 100	100	1000	1500

Fig. 2 Load Capacity Temperatures



The EQF is intended for industrial applications and is not EN1337 or BS5400 compliant.

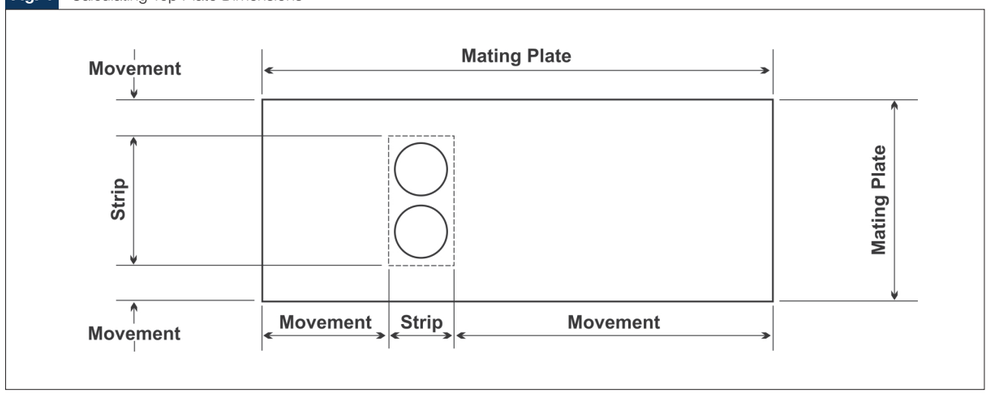
Sliding Top Plate

For optimum performance we recommend that the EQF strip slides against a stainless steel top plate.
We utilise dissimilar welding rods to weld a 3mm stainless steel sheet to a mild steel backing plate that can then be fixed within your structure.

Sliding Top Plate Size

The top plate size should be selected so that the EQF strip is covered at all times during translation. Once total required movements are known, transversely and longitudinally, the following diagram - Fig. 4 can be used to work out the required top plate size.

Fig. 4 Calculating Top Plate Dimensions



Standard Sizes

Ekspan EQF is available in 1 metre lengths. Shorter lengths are available, however the load capability per metre will be reduced accordingly.

Installation

Welding - Ekspan EQF is supplied in a weld prepared coating. A tack weld to a steel sub base is sufficient. When welding make sure that PTFE is protected from welding spatter. Any spatter must be removed before pairing with the stainless steel top plate.

Screws and Rivets – Ekspan EQF can be supplied with drilled holes, countersunk if required to enable the strip to be fixed to a backing plate or concrete plinth.

Bonding – Ensure that the bonding agent is suitable for use with mild steel and the mating surface that you intend to adhere the EQF to. We recommend ensuring that the mating surface is as clean as possible to ensure good adhesion.

Painting – The EQF can be finish painted during installation if required. The PTFE discs should never be painted. If the PTFE does come into contact with the paint it can be wiped clean.

Mating Surfaces

The EQF mating surface should be smooth, flat and capable of providing uniform support.

Failure to install correctly may cause uneven loading of the PTFE resulting in poor performance and possible damage.

Care should be taken to seal the edges around the EQF strip to prevent ingress of moisture that could lead to corrosion.

Special Fabrications

Should you have a bespoke application that you feel the Ekspan EQF strip could be utilised for please do not hesitate to contact us.

Elastomeric Bearings and Strip

Laminated elastomeric bearings consist of natural rubber layers separated by steel plates. Around this makeup a rubber cover encapsulates the bearing (Fig. 1). These items are then vulcanised to create a compact maintenance free bearing.

Natural rubber is not too sensitive to changes in temperature and shows only slight growth in deformation, over the period of deformation at a constant load (low creep).

Natural rubber is highly resistent against ozone, ageing, UV and chemical effects. The vulcanized steel reinforcement plates meet the requirements of BS1449.

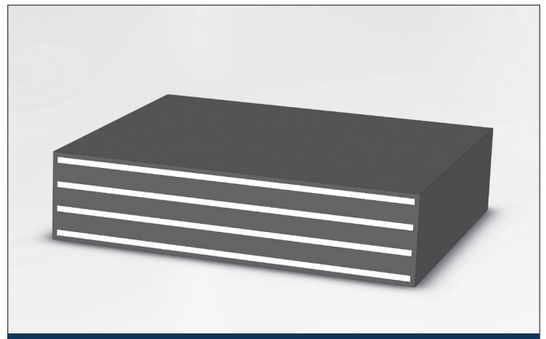


Fig. 1

Natural Rubber strip (Fig. 2) can be utilised to support a concrete diaphragm and natural rubber pads (Fig. 3) are used to support individual beams.

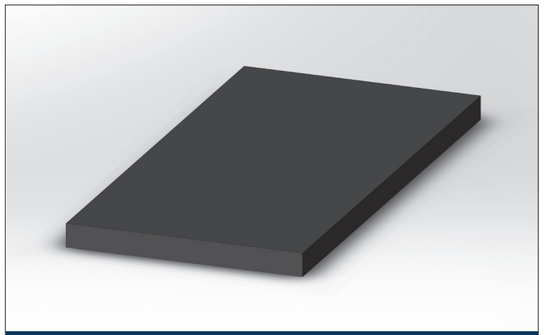


Fig. 2

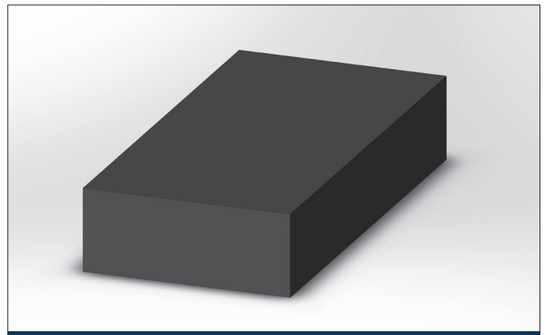


Fig. 3

These products are commonly used where the vertical loads/translations are relatively low.

Where increased vertical load capacity/translations and rotations are required then the preferred option would be to utilise a laminated elastomeric bearing.

EKR Series Elastomeric Strip Bearings - 60 IRHD

Code	Width mm	Thickness mm	Maximum Load kN / m	Shear Deflection mm	Shear Stiffness kN / mm	Rotation Rads / 100kN
EKR100/10	100	10	314	7.0	11.30	0.00344
EKR150/10	150	10	706	7.0	16.95	0.00136
EKR200/10	200	10	1130	7.0	22.60	0.00043
EKR250/10	250	10	1413	7.0	28.25	0.00018
EKR300/10	300	10	1695	7.0	33.90	0.00008
EKR100/15	100	15	209	10.5	7.53	0.02325
EKR150/15	150	15	471	10.5	11.30	0.00459
EKR200/15	200	15	837	10.5	15.07	0.00145
EKR250/15	250	15	1308	10.5	18.83	0.00059
EKR300/15	300	15	1695	10.5	22.60	0.00029
EKR100/20	100	20	157	14.0	5.65	0.05738
EKR150/20	150	20	353	14.0	8.48	0.01087
EKR200/20	200	20	628	14.0	11.30	0.00344
EKR250/20	250	20	981	14.0	14.12	0.00141
EKR300/20	300	20	1412	14.0	16.95	0.00068
EKR100/25	100	25	126	17.5	4.52	0.10714
EKR150/25	150	25	282	17.5	6.78	0.02128
EKR200/25	200	25	502	17.5	9.04	0.00673
EKR250/25	250	25	785	17.5	11.30	0.00275
EKR300/25	300	25	1130	17.5	13.56	0.00133

EKR Series Elastomeric Plain Pad Bearings - 60 IRHD

Code	Length mm	Width mm	Thickness mm	Maximum Load kN	Shear Deflection mm	Shear Stiffness kN	Rotation Rads / 100kN
EKR10	229	152	12	83	8.4	2.61	1.37294
EKR11	320	165	12	150	8.4	3.96	0.53798
EKR12	300	240	12	251	8.4	5.40	0.21163
EKR13	455	220	12	388	8.4	7.51	0.11313
EKR14	420	300	12	577	8.4	9.45	0.05507
EKR15	500	320	12	817	8.4	12.00	0.03181
EKR19	229	152	15	67	10.5	2.09	2.67190
EKR20	320	165	15	120	10.5	3.17	1.04541
EKR21	300	240	15	201	10.5	4.32	0.41022
EKR22	455	220	15	311	10.5	6.01	0.21890
EKR23	420	300	15	461	10.5	7.56	0.10618
EKR24	500	320	15	653	10.5	9.60	0.06115
EKR28	229	152	19	53	13.3	1.65	5.41700
EKR29	320	165	19	95	13.3	2.50	2.11734
EKR30	300	240	19	159	13.3	3.41	0.82944
EKR31	455	220	19	245	13.3	4.74	0.44208
EKR32	420	300	19	364	13.3	5.97	0.21391
EKR33	500	320	19	516	13.3	7.58	0.12294
EKR37	229	152	25	40	17.5	1.25	12.31925
EKR38	320	165	25	72	17.5	1.90	4.81180
EKR39	300	240	25	121	17.5	2.59	1.88272
EKR40	455	220	25	186	17.5	3.60	1.00261
EKR41	420	300	25	277	17.5	4.54	0.48430
EKR42	500	320	25	392	17.5	5.76	0.27793

EKE Series Elastomeric Bearings - 60 IRHD

Code	Plan Size mm	Overall Height mm	Maximum Load (no rotation or shear) kN	Maximum Load (no rotation or max. shear) kN	Maximum Load (max. rotation & no shear) kN	Maximum Load (max rotation & max. shear) kN	Shear Deflection mm	Rotation Rads
EKE1	229 x 152	20	461	353	247	200	9.8	0.0129
EKE2	229 x 152	31	461	338	223	179	15.4	0.0210
EKE3	229 x 152	42	461	322	214	169	21.0	0.0290
EKE4	229 x 152	53	416	307	209	163	26.6	0.0370
EKE5	229 x 152	24	307	230	134	109	12.6	0.0195
EKE6	229 x 152	39	307	215	118	95	21.0	0.0332
EKE7	229 x 152	54	251	197	112	90	29.4	0.0469
EKE8	320 x 165	20	866	668	481	389	9.8	0.0106
EKE9	320 x 165	31	866	641	438	350	15.4	0.0172
EKE10	320 x 165	42	866	615	420	333	21.0	0.0239
EKE11	320 x 165	53	855	588	410	321	26.6	0.0305
EKE12	320 x 165	24	578	436	268	218	12.6	0.0161
EKE13	320 x 165	39	578	410	237	191	21.0	0.0274
EKE14	320 x 165	54	516	383	226	180	29.4	0.0387
EKE15	300 x 240	22	1518	1198	698	570	9.8	0.0050
EKE16	300 x 240	34	1480	1167	635	516	15.4	0.0081
EKE17	300 x 240	46	1480	1136	610	492	21.0	0.0112
EKE18	300 x 240	58	1480	1105	596	478	26.6	0.0143
EKE19	300 x 240	26	1012	788	390	319	12.6	0.0074
EKE20	300 x 240	42	987	757	345	281	21.0	0.0125
EKE21	300 x 240	58	987	726	329	267	29.4	0.0176
EKE22	300 x 240	74	987	695	321	259	37.8	0.0228
EKE25	455 x 220	22	2271	1866	1224	996	9.8	0.0058
EKE26	455 x 220	34	2082	1813	1122	907	15.4	0.0094
EKE27	455 x 220	46	2082	1759	1080	867	21.0	0.0130
EKE28	455 x 220	58	2082	1706	1057	843	26.6	0.0166
EKE29	455 x 220	82	2082	1599	1033	810	37.8	0.0238
EKE30	455 x 220	26	1584	1226	709	579	12.6	0.0087
EKE31	455 x 220	42	1388	1173	631	513	21.0	0.0147
EKE32	455 x 220	58	1388	1119	603	487	29.4	0.0208
EKE33	455 x 220	74	1388	1066	588	472	37.8	0.0268
EKE36	420 x 300	20	2906	2806	1555	1272	9.8	0.0032
EKE37	420 x 300	26	2131	1912	914	749	12.6	0.0046
EKE38	420 x 300	42	1776	1645	816	667	21.0	0.0078
EKE39	420 x 300	58	1776	1593	780	635	29.4	0.0110
EKE40	420 x 300	74	1776	1540	761	618	37.8	0.0142
EKE41	420 x 300	90	1776	1488	750	606	46.2	0.0174
EKE42	420 x 300	106	1776	1436	742	597	54.6	0.0206
EKE43	500 x 320	20	3724	3604	2178	1784	9.8	0.0028
EKE44	500 x 320	24	2731	2618	1316	1080	12.6	0.0040

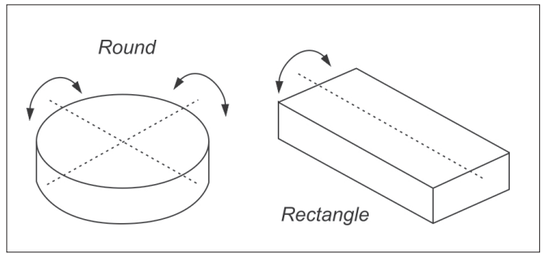
The above dimensions and loadings are for BS5400 compliant bearings.

USL Ekspan also offers a range of EN1337-3 laminated elastomeric bearings. If you have a requirement for these then please do not hesitate to contact one of our sales representatives who will be able to assist further.

The Shape of the Bearings

If the rotation capacity of the laminated elastomeric bearing is such that the requirement is similar in all directions (transversely and longitudinally) then cylindrical bearings are can be utilised. Most commonly rectangular bearings are utilised as in most cases the longitudinal rotation exceeds the transverse figure.

If cylindrical bearings are required then please contact one of our sales representatives who will be able to assist further.



Sliding Bearings

Plain pad, strip and laminated elastomeric bearings all allow a certain amount of shear. In elastomeric bearings this is determined by the internal rubber layers. For larger translations, these products can be modified to incorporate a Polytetrafluoroethylene (PTFE) layer which is either vulcanised to the bearing itself or affixed to a steel plate which has been vulcanised to the bearing. If you have a requirement for this type of product please contact one of our sales representatives who will be able to assist further.

PTFE topped bearings can only be supplied in accordance with BS5400.

RECOMMENDED INSTALLATION

In all cases, USL Ekspan Elastomeric Bearings should be bedded on cementitious or epoxy mortar sufficiently thick (5mm to 20mm) to remove surface irregularities of the structural concrete or steelwork in contact with the bearing. The bedding operation should be carried out while the mortar is plastic.

Positive Location

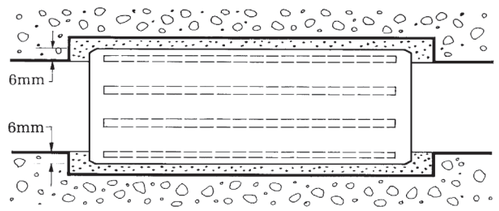
It is possible during construction and under certain temporary loading conditions for a bearing to be subjected to a combination of high shear load coupled with a low vertical load which may give rise to slippage.

In such cases, the bearing will need to be positively located to both the substructure and superstructure.

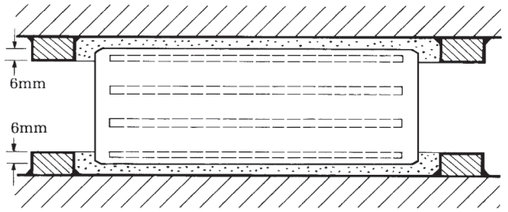
This may be achieved by locating the bearing within 6mm recesses. It should be noted that the depth of recesses reduces the effective height of the bearing and its associated shear movement capacity.

This method of location is preferable to the use of stub dowels which must be accurately positioned.

CONCRETE STRUCTURE



STEEL STRUCTURE



Cast-in-situ Superstructure

It is possible to incorporate the laminated elastomeric bearings into the temporary formwork and cast directly into the concrete. If this method is utilised, then it is important to consider future removability of the bearings. It is preferable, if possible, to post install the elastomeric bearings as this method makes future replaceability much simpler without the need for breaking out of the existing concrete diaphragm / beam.

Once the bearings have been installed it is advisable to wipe off any excess grout materials as this may restrict translations and rotations. We do not recommend using solvents to clean off the materials as these may have an adverse effect on the elastomer.

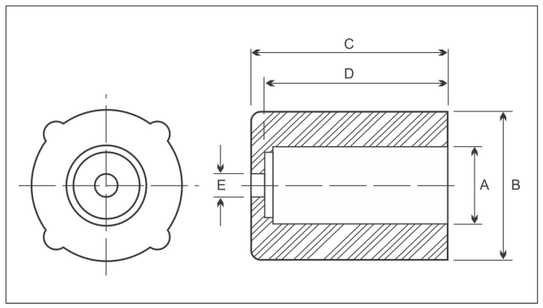
Temporary Support of Beams

It is standard practise to design bearings with all loads being transmitted vertically through the bearing which is seated horizontally on the bearing shelf. If the bearing is not seated horizontally then any eccentric loading applied through the bearing must be considered.
If this is the case then please contact one of our sales representatives who will be able to assist further.

Dowels and Dowel Caps

Fixity may be provided by dowels passing from the sub-structure to the super-structure. One end of each dowel should be fitted with a rubber dowel cap to permit vertical translation and rotation. Dowel bars should be located outside the bearing area thus facilitating easy bearing removal during routine bridge maintenance procedures.

The use of Ekspan mechanical pin and guide bearings (Fig. 1) should be considered in conjunction with elastomeric bearings to resist horizontal forces. The resulting combination of mechanical and elastomeric bearings provides a practical solution.



Dimensions -	Dowel Pin		Dowel Cap		
Part Number	A Diameter (mm)	D Length (mm)	B Diameter (mm)	C Length (mm)	E Diameter (mm)
EKDC1	20	76.5	63.5	82.5	7
EKDC2	25	76.5	63.5	82.5	7
EKDC3	32	76.5	63.5	82.5	7
EKDC4	40	76.5	63.5	82.5	7
EKDC5	25	100	76	108	7
EKDC6	50	100	76	108	7

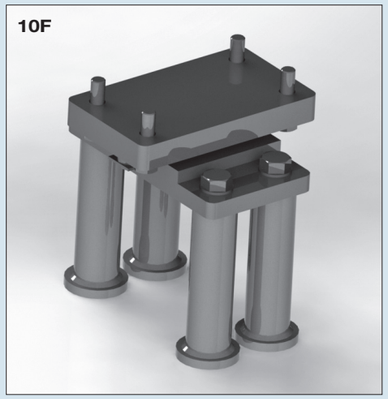
Fixed Pin and Guide Bearings (F Type)

Ekspan Ltd holds the relevant accreditation in accordance with BS5400 and EN1337-8 should these bearing types be required. If you require additional information in relation to these types of bearings please refer to the Ekspan Ltd product literature titled F type bearings.

Alternatively please contact one of our sales representatives who will be able to assist further.

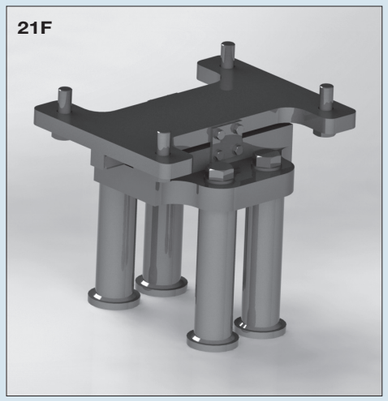
Fig. 1 Standard F Type Range

10F



11F

21F



HANDLING, STORAGE, INSTALLATION & MAINTENANCE

Installation

CONSIDER THE EFFECTS IF BEARINGS ARE NOT CORRECTLY INSTALLED

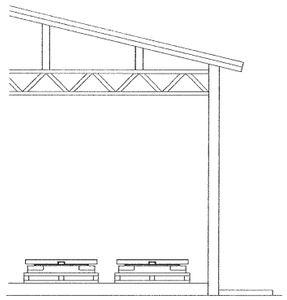
Our structural bearings are manufactured to close tolerances by skilled technicians working in clean conditions. To obtain the requisite performance from bearings it is imperative that they are properly handled at the work site and installed with the same care as when they were assembled in the factory. The following notes will assist those responsible for specifying and supervising the installation of structural bearings.
Please note that Ekspan are able to provide installation and supervision.

Bearings must be installed with precision to meet the bridge and bearing design criteria.

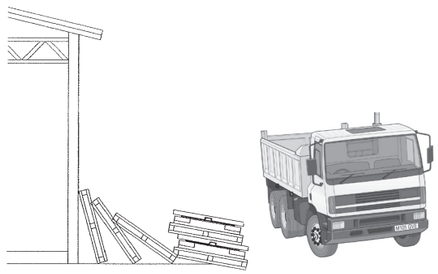
Storage

Our structural bearings are protected from contamination under normal working conditions by an efficient sealing system. Care should be taken in storage to prevent contamination and damage to the working surfaces.

CORRECT



INCORRECT

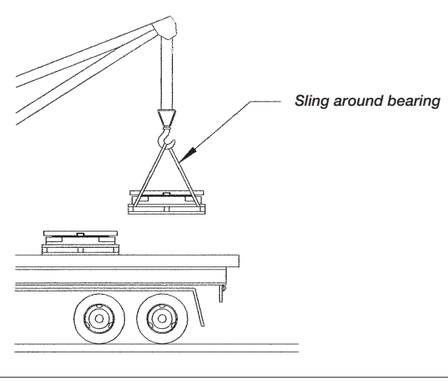


Handling

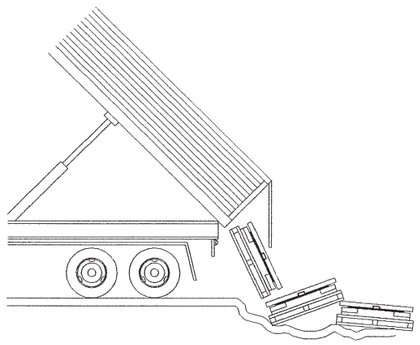
Robust transportation devices are fitted to all bearings to ensure that the components are maintained in their correct relative positions before and during installation. The devices are normally finished in red paint. Unless special devices have been specified, they should not be used for slinging or suspending the bearings beneath beams.

Due to unpredictable conditions, which may occur during transportation or handling on site, the alignment and presetting (if applicable) of the assembled bearing should be checked against the drawing. Do not endeavour to rectify any discrepancies on site. The bearing should either be returned to Ekspan or, where practical, an Ekspan engineer should be called in to inspect and reassemble. Bearings too heavy to be lifted by hand should be properly slung using lifting equipment.

CORRECT



INCORRECT



Presetting

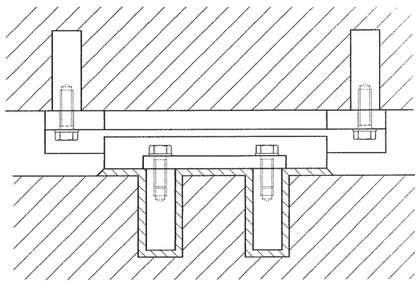
If bearings are required to be preset eg where once only large movements may occur during stressing operations, this should be specified as a requirement and should only be carried out in our works prior to despatch. Do not attempt this operation on site.

Bedding

Bearings must be supported on a flat rigid bed. Steel spreader plates must be machined flat and smooth to mate exactly with the bearings' upper and lower faces. Bearings may also be bedded on epoxy or cement mortar or by dry packing. Whichever system is preferred for the particular structure it is of extreme importance that the final bedding is free from high or hard spots, shrinkage, voids, etc.

Unless there is a specific design requirement, the planar surfaces must be installed in a horizontal plane. The correct installation of bearings is vital for the bearing performance. Costly repairs become necessary all too often due to inadequate specification or poor site supervision. The bearings should not be loaded until the bedding mortar has cured.

Fixing bearings to concrete using permanent anchor plates

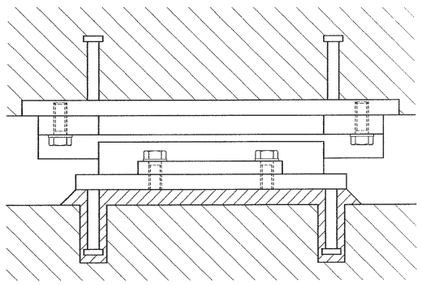


Cast-In-Situ Structures

Care must be taken to ensure that the bearings are not damaged by the formwork or contaminated by concrete seepage. The interface between the top plate and the formwork should be protected and sealed.

Owing to the loading effects of a wet concrete mass, the top plates should be propped to prevent rotation and plate distortion.

Fixing cast-in-situ structures ensure that the bearing working surfaces are protected and supported to prevent distortion and rotation.



Bearing Removability

Where possible, bearings should be fixed in such a manner as to facilitate removal. Our bearings have generally been designed with this in mind. However, when selecting the bearing type preferred, the removability feature should be highlighted in your enquiry.

Removal of Transport Brackets

These brackets, normally painted red should only be removed once the bearing is properly installed and ready for operation.

Bearing Installation Check List

DO -

1. Handle carefully and where necessary with adequate craneage.
2. Store in a clean dry place.
3. Ensure that the bearings are installed in the correct location and orientation.
4. Ensure that the bearings are installed on a flat rigid bed before the design loads are applied.
5. Ensure that the fixings are uniformly tightened.
6. Complete any site coatings and make good paint damaged during handling and installation.
7. Protect working surfaces during the placing of in-situ concrete.
8. Keep the bearings and surrounding areas clean.
9. Remove any temporary transit clamps etc. before the bearings are required to operate.
10. Take special care to support top plates when casting in-situ concrete.

HANDLING, STORAGE,
INSTALLATION & MAINTENANCE

DO NOT -

1. Dismantle the bearing on site.
2. Leave bearings uncovered.
3. Attempt to modify without our approval.
4. Install without qualified supervision.

Site Coating

Care should be taken to ensure that working surfaces are not damaged in any site coating operation. After installation damaged coatings must be repaired irrespective of any call for site coatings. Exposed fixing bolts should be protected after final tightening. Any tapped holes exposed after removal of transportation brackets etc. (coloured red) should be sealed with self-vulcanizing silicone sealant.

Routine Maintenance of Bearings

1. Immediately following installation bearings shall be inspected to ensure that all aspects of 'Installation of bearings' have been adhered to and bearings shall subsequently be re-inspected not less frequently than every two years after their installation.
2. Paint and /or other specified protective coatings must be maintained in good and efficient condition and free from scratches or chips. Any areas of the protective coating showing damage or distress must be rectified.
3. Areas surrounding the bearings must be kept clean and dry and free from the adverse effects of external influences such as airborne debris or water/salt (for example emanating from leaking joints).
4. The wearing surfaces of the bearing must be checked to ensure that they are continuing to operate efficiently.
5. Fixing bolts must be checked for tightness.
6. Any bedding material showing signs of distress or ineffectiveness must be replaced and the reason for its failure investigated and corrected.
7. Routine inspections shall include a check that translational and rotational capacities of the bearing have not been exceeded and show no sign of being likely to exceed the requirements specified at the design stage.

Elastomeric Bearings & Industrial Products

NOTES

CONVERSION TABLE

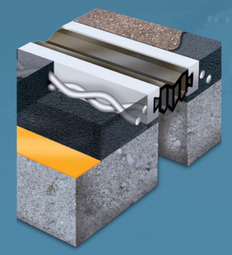
METRIC

Length	1 mm	= 0.03937 in
	1 m	= 3.281 ft
	1 m	= 1.094 yd
Area	1 mm^2	= 0.00153 in^2
	1 m^2	= 10.764 ft^2
	1 m^2	= 1.196 yd^2
Force	1 N	= 0.2248 lbf
	1 kN	= 0.1004 tonf
Stress and pressure	1 N/mm^2	= 145 lbf/in^2
	1 N/mm^2	= 0.0647 $tonf/in^2$
	1 N/m^2	= 0.0208 lbf/ft^2
	1 kN/m^2	= 0.0093 $tonf/ft^2$

IMPERIAL

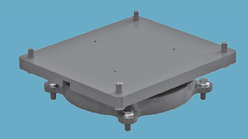
Length	1 in	= 25.4 mm
	1 ft	= 0.3048 m
	1 yd	= 0.9144 m
Area	1 in^2	= 645.2 mm^2
	1 ft^2	= 0.0929 m^2
	1 yd^2	= 0.8361 m^2
Force	1 lbf	= 4.448 N
	1 tonf	= 9.964 kN
Stress and pressure	1 lbf/in^2	= 0.0068 N/mm^2
	1 $tonf/in^2$	= 15.44 N/mm^2
	1 lbf/in^2	= 47.88 N/m^2
	1 $tonf/ft^2$	= 107.3 kN/m^2

USL EKSPAN - PRODUCT RANGE



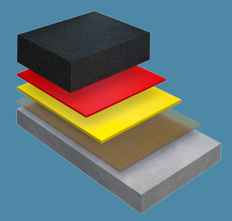
EXPANSION JOINTS - CD 357

Uniflex - Buried
BP1 - Buried
FEBA - Flexible Plug
Britflex NJ - Nosing
EC & EW - Joint Seal
Transflex & Transflex HM - Mat
T-MAT - Mat
Britflex BEJ - Modular
Britflex MEJS - Modular
LJ - Longitudinal Joint
ES - Joint Seal Aqueduct/Immersed Joint
Open Type Joint - Rail Joint
Britflex UCP - Footbridge Joint
Finger Joint
Roller Shutter Joint



STRUCTURAL BEARINGS

EKE - Elastomeric (EN1337-3)
KE - Pot (EN1337-5)
DE - Linear Rocker (EN1337-6)
GE - Spherical (EN1337-7)
FE - Restraint & Guide (EN1337-8)
EA - Sliding Bearing
D - Linear Rocker (BS5400-9)
F - Restraint & Guide (BS5400-9)
G - Spherical (BS5400-9)
J - Roller (BS5400-9)
K - Pot (BS5400-9)
Link Bearing (BS5400-9)
EKR - Rubber Pad & Strip
EQF - Sliding Bearing
Bespoke Bearings

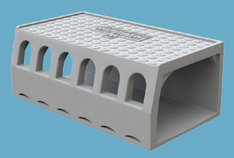


STRUCTURAL WATERPROOFING - CD 358

Pitchmastic PmB
Polyurethane (Pu) Waterproofing System
Britdex MDP
Methyl Methacrylate (MMA) Waterproofing System
Britdex CPM Tredseal
Combined Waterproofing and Anti Skid Surfacing (MMA)
Uradeck BC
Combined Waterproofing and Anti Skid Surfacing (Pu)

SUB-SURFACE BRIDGE DRAINAGE

Ekspan 325 Channel
Ekspan 302 System
ES Seal System
DriDeck



SURFACE BRIDGE DRAINAGE

Envirodeck

GROUP BRANDS

A world wide service offering effective solutions in:-

Inspection • Design • Manufacture • Supply • Installation • Commissioning • Planned Maintenance

E&OE Issue 01 - June 2020

CONTACT US

Türkiye Office .
Barbaros Mah, Ak Zambak Sok. Uphill Towers
A106, Ataşehir , Istanbul, 34750

t : +90 (216) 804 7722

UK Office
Kingston House, 3 Walton Road, Pattinson North,
Washington, Tyne & Wear, NE38 8QA, UK

t : +44 (0) 191 416 1530

Sales & Manufacturing
Cavendish House, Unit 1 Enterprise 36
Tankersley, Barnsley, S75 3DZ, UK

t : +44 (0) 113 841 8861

e : info@servetusl.com

w : servetusl.com

A USL INFRASTRUCTURE SERVICES Company