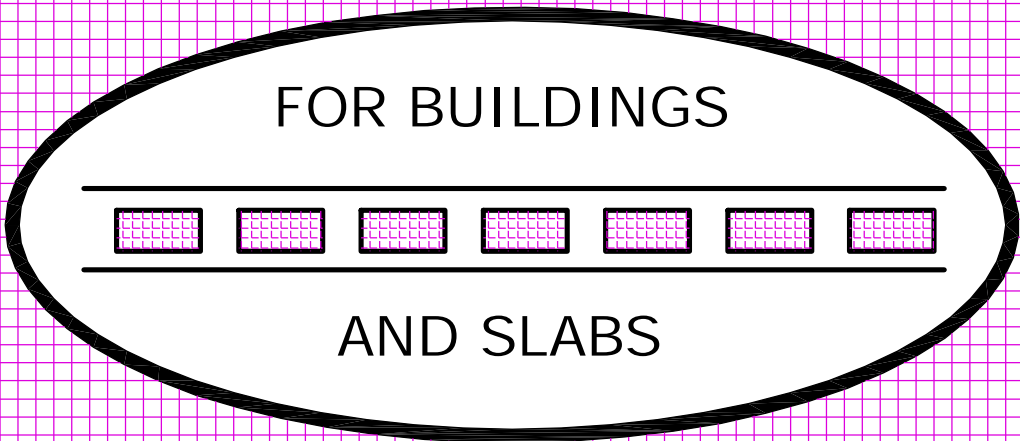


BK SERIES STRIP BEARINGS





STRIP BEARINGS FOR BUILDINGS AND SLABS

Introduction

Designers of bridges and other large structures always incorporate bearings which provide for movements and rotations in accordance with the appropriate design codes and *Bearing Technologies (BT)* have a wide range of products to cater for these requirements.

However, the need to accommodate movements in buildings and slabs is frequently overlooked or underestimated which results in cracking, spalling and sometimes more severe damage to the structure.

Bearing Technologies Strip Bearings are specially designed to avoid the development of cracks and damage to supporting walls, piers and slabs resulting from shrinkage, expansion and eccentric loading effects.

Design

As a leader in the field of Structural Bearing technology, **BT** has developed this series of bearings to provide simple, cost effective solutions to obviate the problems outlined above.

The provision of some form of ductile element between structural members is not a new concept and dates to Roman times. Traditionally lead sheet, malthoid, timber and other materials have been used to reduce forces and edge loading (eccentricity) at structural interfaces. These materials are, at least, variable in performance and as structural design becomes more sophisticated it becomes increasingly necessary to employ structural bearings whose performance can be predicted with confidence.

By applying sound design principles for Structural Bearings as prescribed in BS5400 9.1:1983, **BT** can offer products with finite and constant performance characteristics. This enables structural designers to apply reliable values to resistance forces in their structural analyses.

Applications

BT Strip Bearings are intended for use in long buildings, parking decks, large supported slabs, roof structures, reservoirs and anywhere where loads of up to 300kN/m or point loads of up to 100kN need to be supported. Movements of up to 10mm can be accommodated by **BT** Strip Bearings, beyond this limit and for higher loads other structural bearing types need to be considered (see back page).

Type BKR-For movements up to +/-3mm (see note below) and loads up to 200kN/m

This type comprises a series of synthetic rubber pads set into a continuous strip of compressible expanded polyethylene of various widths. The horizontal force applied by the shear deflection of the pads (F_s) is counteracted by the friction force between the pad and its contact faces with the structure.

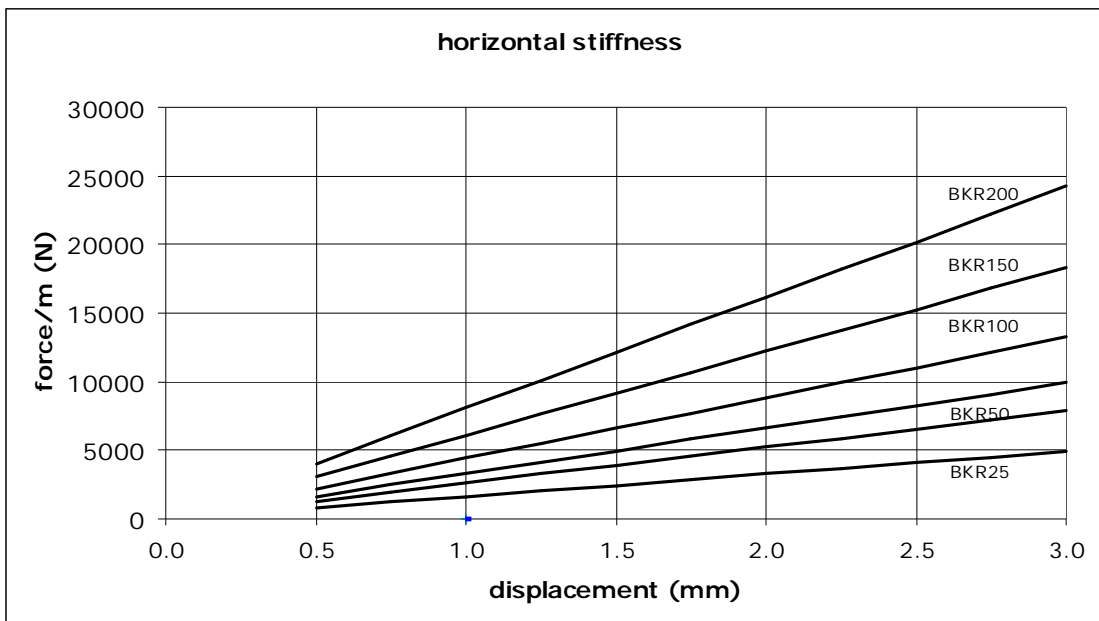
Note: The limiting condition for slippage is approximately:

$F_s \Delta = 0,25W$ where W is actual vertical load (kN/m), F_s is from the table below and Δ is actual displacement.

Bearing ref:	Max load per m (kN)	No pads per m	Max. displ + (mm)	Shear stiffness per m F_s (N/mm)	Standard widths available (mm)	Max shear force at 2mm movement (kN/m)
BKR25/*	25	3	3	1637	115, 235, 350	3.27
BKR50/*	50	3	3	2619	115, 235, 350	5.24
BKR75/*	75	3	3	3310	115, 235, 350	6.62
BKR100/*	100	4	3	4414	115, 235, 350	8.83
BKR150/*	150	4	3	6111	235, 350, 500	12.22
BKR200/*	200	1	3	8083	235, 350, 500	16.17

+ limited slippage may occur over 2mm movement-see note page 1

* suffix is width from table e.g BKS100/235



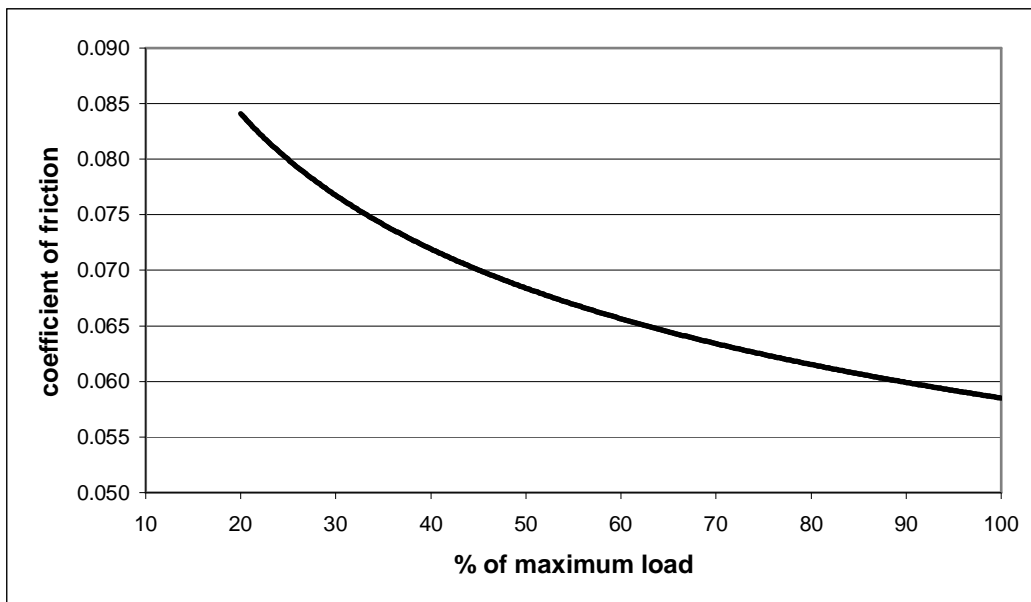
Type BKS-For movements up to 10mm and loads up to 300kN/m

This type comprises a series of PTFE (Teflon) pads sliding against surfaces of polished grade 316 stainless steel and contained within a continuous strip of compressible polyethylene of various widths. Both elements are backed by a resilient/composite layer which provides a small degree of rotation (about .001 radians).

The resistance to movement is independent of displacement and can be assumed to be 0.06-0.08 x vertical load. The coefficient of friction of PTFE increases with decreased specific pressure which can be seen in the graph on page 3.

Bearing ref:	Max load per m (kN)	Pads per m	Max. displ. (mm)	Standard widths available (mm)	Max. horiz force (kN/m)
BKS20/*	20	3	10	115, 235, 350	1400
BKS30/*	30	3	10	115, 235, 350	2100
BKS50/*	50	3	10	115, 235, 350	3500
BKS80/*	80	3	10	115, 235, 350	5600
BKS120/*	120	3	10	235, 350, 500	8400
BKS175/*	175	3	10	235, 350, 500	11500
BKS250/*	250	3	10	235, 350, 500	16000
BKS350/*	350	3	10	235, 350, 500	20400

* suffix is width from table e.g BKS100/235

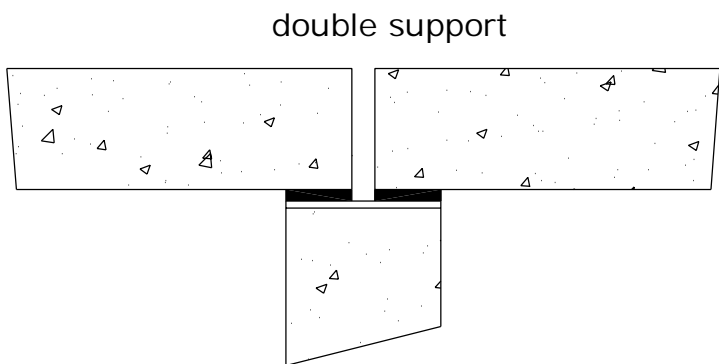
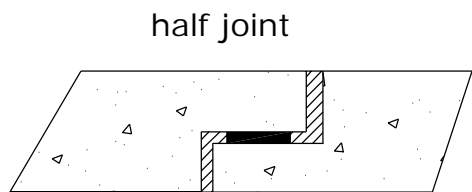
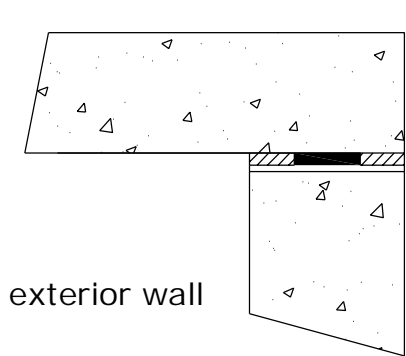
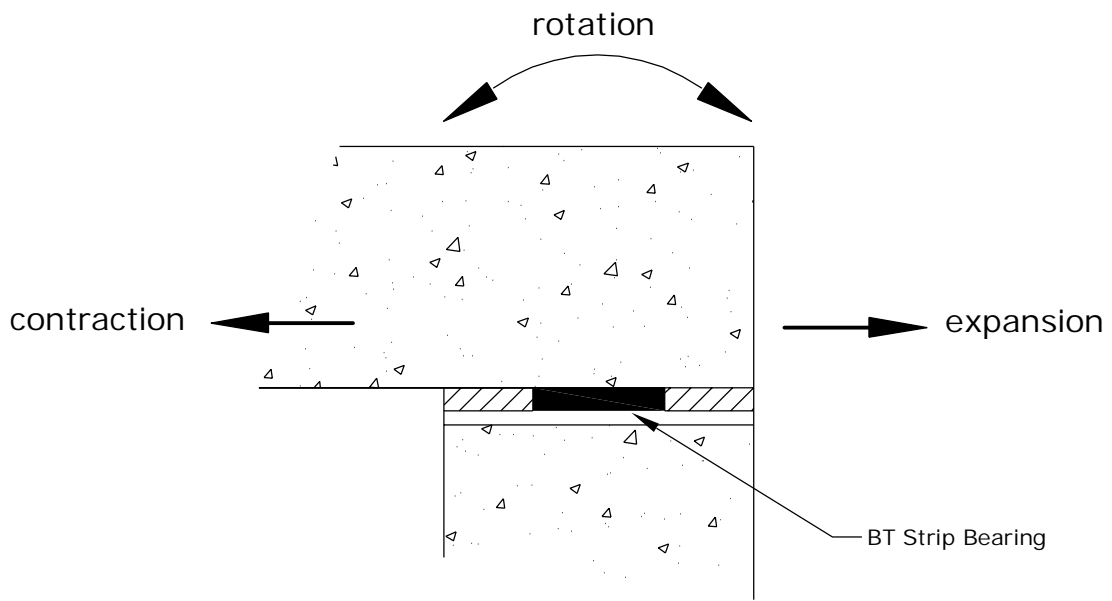


Restraint

The horizontal sliding friction forces shown in the above table could be much lower under some circumstances. If restraint to movement is required it is recommended that one end of the slab is supported on type BKR strip bearings or/and by some external restraint.

Fixing

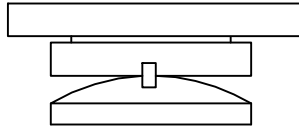
All Bearing Technologies Strip Bearings should be laid on a smooth flat surface free of loose dust and other debris. A thin layer of structural adhesive may be used to ensure no movement occurs prior to casting of the slab or other superstructure. All wall copings, ducts and other areas of possible adhesion or penetration by concrete slurry must be thoroughly protected with a flexible material such as polystyrene, rubber or paper. A fully detailed installation procedure is available on request.



examples of applications

OTHER STRUCTURAL BEARING TYPES AVAILABLE

BD series



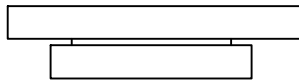
Sliding
High rotation about 1 axis
Up to 5000kN

BT series



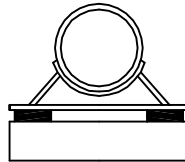
Sliding
Rotation about all axes
Up to 20000kN

BA series



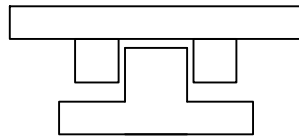
Plain sliding
No rotation
Up to 2000kN

BP series



Pipe support bearings
Rotation up to 0,04 radians
Up to 60kN
Unlimited movement

BV series



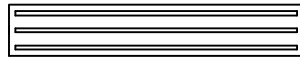
Horizontal guide
No transverse rotation
No vertical load capacity

BK series



Strip bearings
Up to 350kN/meter
Movement <10mm

BR series



Laminated rubber bearings
Limited rotation and movement
Up to 4000kN

These products are supplied by:

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BT is constantly developing these products and reserves the right to change dimensions, specifications and designs at any time without prior notice.