LAMINATED RUBBER BEARINGS—PRINCIPLES OF OPERATION

SHEAR MOVEMENT
Horizontal movement is provided by the shear deflection of the rubber. The greater the total rubber thickness the greater the movement provided. The steel shims are vulcanised to the rubber to substantially increase the vertical load capacity of the bearing compared with that of a solid rubber block of the same total thickness.

ROTATION
Laminated rubber bearings can also provide for rotation of the bridge deck about all axes. The combination of shear deflection and rotation angle determines the maximum vertical load capacity of the bearing. In addition, the ratio of live load to permanent load also influences the vertical load capacity. These factors are considered in the load and movement limits shown in the table on page 5 which are calculated for SLS loading according to BS5400 Pt9.1 requirements.

STIFFNESS
The vertical and horizontal stiffness of laminated rubber bearings are an important consideration for bearing selection. The respective values for each bearing size are shown in the table on page 5 and should be considered in determining maximum acceptable deflections and fixing arrangements.