

No. PL-67 (20)/76

Dated the 26th March, 1977

To

The Chief Engineers (All State PWDs/UTs)

Sub: Use of Rubber Bearings-Plate Bearings-Instructions regarding

It has been observed during inspections by the Officers of this Ministry that the space around the bearings **fixed on the substructure** of some of the bridges on National Highways is generally full of extraneous materials **such as grit, sand and droppings from concrete (while casting) etc.**, which is a hindrance to the proper and satisfactory functioning of the bearings. The very purpose of allowing free movement to the superstructure, whether translation or rotation, for which the bearings are provided is, therefore, defeated.

2. In the case of bridges provided with rubber bearings, it can be easily appreciated that the aforesaid **materials** will not permit the elastomer to experience the desired shear strain and volumetric strain under the **designed vertical load and horizontal forces** and thus prevent the rubber bearings from functioning in the **fashion as assumed in the design**. This may lead to very heavy horizontal forces on the substructure and foundations which apparently would not have been designed for such a condition.

3. It is, therefore, impressed upon all concerned that for proper functioning of the bridge bearings, the space **surrounding the bearings** should always be kept free from such materials at all times by the maintenance field staff. Further, the installation instructions as listed in the Standard Drawing No. BD/4-75 for 'Elastomeric Bearings for Girder Bridges' circulated vide Ministry's letter No. PL-67 (5)/74 dated 30th September 1975, **should also be rigorously enforced**.

4. Often to provide for adequate working space between the bottom of the main girders and top of the pier/abutment caps, as well as to facilitate lifting of the superstructure for replacement of bearings at a later date, **R.C. pedestals** are provided. These R.C. pedestals shall be of adequate size, properly designed as per codal requirements and built monolithic with the pier/abutment caps.

5. A rapid survey of all the bridges on the National Highway system may be made to clear the above defects, **if any**.

6. These instructions shall apply to all the bridges on the National Highways and other roads financed **either in full or in part from the Central funds**.