



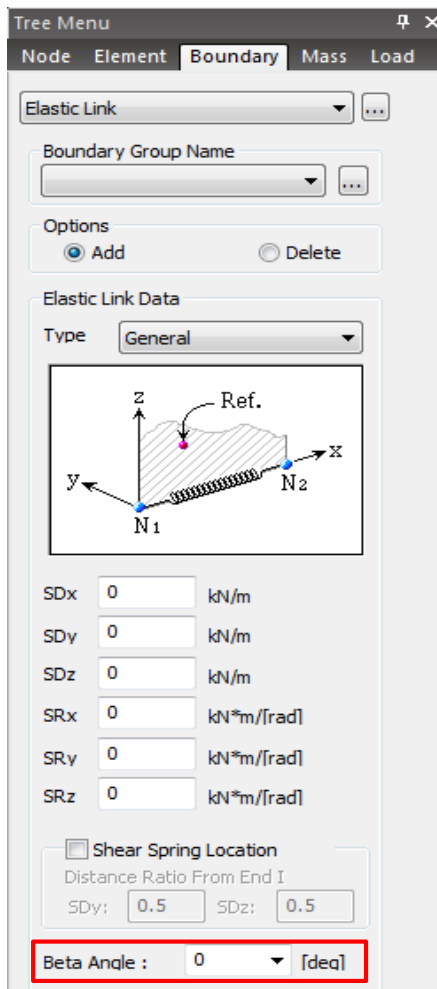
# How to model bearings? How to rotate bearings in case of curved bridge?



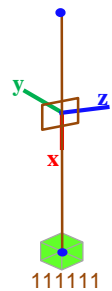
**Elastic Links** are used to model bearings connecting the bridge substructure and superstructure.

From Main Menu select **Boundary > Link > Elastic Link**

Enter the Displacement stiffness (SDx, SDy, SDz) and Rotational stiffness (RDx, RDy, RDz) for the elastic link to simulate the bridge bearings.



The image below on right, shows the elastic link local axis direction, positive x axis being in the connecting direction of the two nodes. It is important to note that the displacement and rotational stiffness are assigned along elastic link local axis direction.



In case the exact stiffness values are not known, arbitrary stiffness values could be assigned to reach a better approximation of result. For example, neoprene bearings have high axial stiffness (SDx) and hence could be high, say  $10^7$  kN/m and lower shear stiffness (SDy and SDz), say 100 kN/m. For guided bearings (like POT-PTFE bearing), high values for SDy and/or SDz could be assigned to simulate high lateral bearing stiffness.

## Bearings for Curved Bridges

In case of curved bridges, beta angle should be assigned to these elastic links to change the bearing local axis orientation, either aligned tangentially to the curve of in line with the fixed

support, as depicted in the image below. Beta angles could be assigned while creating the elastic link or later from the tables.

