

### 3. Basic Static Load Rating $C_0$

If an LM system receives an excessively large load or a large impact when it is stationary or operative, permanent deformation occurs between the raceway and the rolling element. If the permanent deformation exceeds a certain limit, it will prevent the LM system from performing smooth motion.

The basic static load rating refers to the static load with constant direction and magnitude, under which the sum of the permanent deformation of the rolling element and the permanent deformation of the raceway accounts for 0.0001 times of the rolling element's diameter in the contact area where the maximum stress is applied. With an LM system, the basic static load rating is defined for the radial load.

Therefore, the basic static load rating is considered the limit of the permissible static load.