5. Static Safety Factor f_s

When an LM system is stationary or operative, unexpected external force may be applied through inertia caused by vibrations, impact or start/stop. To cope with such an applied load, it is necessary to consider and determine the static safety factor.

The static safety factor (f_s) is determined by the ratio of the load capacity (basic static load rating) of an LM system to the load applied on the LM system.

$$f_s = \frac{C_o}{P} \quad \text{or} \quad f_s = \frac{M_o}{M} \qquad \cdots\cdots\cdots\cdots\cdots\cdots (1)$$

where

f_s	: Static safety factor	
C_o	: Basic static load rating	(N)
M_o	: Permissible static moment	(N-mm)
P	: Calculated load	(N)
M	: Calculated moment	(N-mm)