

Application of total productive maintenance to reduce non-stick on pad problem in IC packaging.

Abstract

Focus improvement activity was employed to improve front-end assembly yield in integrated circuit packaging. The top three yield losses in parts per million (ppm) in front-end assembly were contributed by the following defects: non-stick on pad (NSOP) (2715 ppm), chip and crack (782 ppm) and missing wire (687 ppm). NSOP was due to floating die, bonded ball small in size, foreign matter on pad and glassifications. Floating die contributed 48% of the NSOP defect. Detailed explanation on how focus improvement activity used to reduce NSOP due to floating die is demonstrated. Upon identifying the root cause of die floating, which was due to no support and weakness in the vacuum system, actions were taken to eliminate and to control the identified causes. As a result NSOP due to floating die was reduced from 1300 ppm to 650 ppm, a reduction of 50% within one year.

Keyword: TPM