

Design and Estimation of Double Acceptance Sampling Plans for Stochastic Dependent Production Processes

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Abstract

The design of acceptance sampling plans for dependent production process is generally very complex. In this paper, an efficient design procedure and estimation of the double sampling attribute plans is developed for the dependent production process models that can be simulated. In addition, an analytical procedure has been developed when the distribution of the number of defective items is given analytically. Using the special properties of the probability structure of double sampling plans, the number of actual evaluations can be reduced remarkably. The experimental study reveals that at most 0.01% of the total exhaustive enumeration is needed to select the best sampling plans. The comparison with analytical methods verifies that the result by the simulation method has enough accuracy for all practical use.