

DESIGNING WEIGHTED GROUP ACCEPTANCE SAMPLING PLANS UNDER VARIOUS DISTRIBUTION USING MINIMUM ANGLE METHOD

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Abstract

Sampling plans often used to determine the acceptability of lots of items. Although in recent years more emphasis is placed on process control and offline quality control methods, acceptance sampling remains as a major tool of many practical quality control system. In acceptance sampling, if the quality variable is the lifetime of an item, the problem of acceptance sampling is known as the reliability sampling, and the test is called the life test. In this paper Weighted group sampling plans for truncated life tests are developed using minimum angle method, when the life time of the items follows some selected distributions. The design parameters of the sampling plan are determined for pre-determined acceptance number by satisfying two risks at the specified quality levels simultaneously. The tables of design parameters are provided for various test termination time and mean ratio for some selected distributions. The operating characteristic values are also provided in the table. Some comparisons are made among the selected distributions. The results are explained with examples.

Key Words : *Rayleigh, Generalized exponential, Weibull and gamma distribution, Weighted group acceptance sampling, Consumer's risk, Operating characteristics, Producer's risk, Minimum angle method.*