ABSTRACT

The acceptance sampling plan plays a significant role in maintaining the quality of the products. A good acceptance sampling plan not only reduces the cost of construction inspection, but also increases the accuracy of acceptance decision. In this research, probability of acceptance, sample size with minimum ASN with different alpha and beta risks are calculated by using the repetitive sampling plan using process yield based on simple linear profiles and within profiles no autocorrelation. There are developed parametric values of the proposed sampling plan under the different values of quality characteristics and different levels of explanatory variables. It is concluded that as we increase number of profiles or number of explanatory variables levels, the ASN will be minimum for different values of alpha and beta and when we increase consumer's risk for the fix producer's risk, ASN has the decreasing trend and if we vary the producer's risk and fix the consumer's risk, ASN also has the decreasing trend. It is important to note that the repetitive sampling plan using process yield based on simple linear profiles and within profiles autocorrelation and no autocorrelation gives less sample size as compared to single sampling plan and the repetitive sampling plan using process yield based on simple linear profiles within profiles autocorrelation gives less sample size and ASN values as compared to repetitive sampling plan using simple linear profiles based on simple linear profiles within profile no autocorrelation.