

THE SAMPLE CONTROL CHART USING THE STATISTICS \bar{c} AND s_c

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Abstract

The control chart, have found a widespread use in the concrete industry as a tool for quality control. The construction of a control chart is made based on knowledge of the probability distribution of a random variable X . In this paper as a random variable I have chosen the coefficient of variation c (see Appendix below). Based on the values of the coefficient of variation, the production of concrete can be divided into two classes: on one we put the production in technological conditions and to other production outside technological conditions. The part θ_0 out technical conditions is determined by the coefficient of variation such that $c > c_0$ where c_0 is determined by the specific technical criteria. Our goal is to control the portion out technical requirements in the given party. In this context the research question on which is based the paper is: Is it possible to construct a control chart using the statistics \bar{c} and s_c to control if a party meets the technical criteria? From the methodological point of view, work is a quantitative analysis of primary data taken by the company Ferro-Beton. The defective rate for the party under control, referred coefficient of variation and according to technical conditions is $\theta_0 = 3\%$. Technical rate for the coefficient of variation is $c_0 = 5\%$. In the end, was constructed a control chart which enables us to conclude for the population with a certain probability, based on a sample with "n" elements.

Keywords: *control chart, quality control, statistics, probability distribution*