The expressions to obtain the probability with which the sample Cpk values exceed a threshold

A. F. Costa[1]

[1]Department of IEPG, UNIFEI, Brazil

The index Cpk was created to quantify the ability of the process to produce products within specified limits, but in recent studies the sample estimator C of the capability index Cpk has also been used to control processes and to decide whether a lot should be accepted or not. In this article, we discuss the different expressions that are used to obtain the probability Pr [C < k], where k is the threshold that decides the lot acceptance, or the upper control limit of the Cpk chart.

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