Gomal.Univ.J.Res.
Vol. 7.No. 1&2 pp 77-89 (1987)

Printed in Pakistan

OPERATIONAL CALIBRATION OF A SIEVE MESH

M. AYUB KHAN YOUSUF ZAI
Department of Applied Physics, University of Karachi, Karachi.

Received 19-5-87
Accepted 19-7-87

ABSTRACT

A technique has benn developed for calibrating a sieve mesh. This is done by inspecting the sieve mesh through the image shearing microscope in order to find the sieve aperture distribution of the sieve. This distribution is shown to be Gaussion function. Operative size of the aperture was not justified because all the wires of the sieve mesh do not lie in the same plane, hence the maximum size of the fineparticles passing the sieve is larger than the aperture size. Leshonski [9] argued that lightly trapped finepaticles should be sized to define the operative access diameter of the powder placed on the sieve. The measurements reported in the paper for sieve aperture, glass beads and coal fineparticles trapped in the sieve apertures, after specified period of sieving on Ro-Tap sieving machine, are used to calibrate the given sieve mesh. The average width of each powder distribution corresponds to the nominal size of the sieve apertures.

INTRODUCTION

Sieves have been used extensively in ancient and modern Technology. Heywood [1.2] one of the pioneers of fineparticle. Science and Technology refers to sieving as a cinderells of the fineparticle characterization Laboratory.

The use of sieves to characterize the size distribution function of a powder is a relatively recent development [3,4]. A real sieve contains a range of aperture sizes, which is referred to as the sieve aperture distribution cut size of the sieve are equivalent terms for the size of holes in a sieve.

It has been shown by Statistical test [5,6] that a Normal or Gaussian probability distribution function can be used to approximate the distribution of the aperture sizes in a wire-