E 58 PREDICTING THE SOUNDNESS OF CERAMIC BODIES WITH A KNOWLEDGE OF THEIR RESONANT FREQUENCY

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An investigation was undertaken on some Ceramic Bodies to determine their Modulus of Elasticity by the Sonic testing method.

(a) In the case of perfect ceramic items the resonant frequency could be used to calculate the Modulus of Elasticity. This property which is extremely sensitive is of value for quality control purposes as it shows a definite correlation with firing temperature.

(b) In the case of a defective item (overfired, underfired, cracked or warped) the determination of the deviation of its resonant frequency will help to identify the defective items.

(c) In the case of greenware, the resonant frequency will help to identify the defective item, provided the greenware is perfectly dried.

The investigation revealed that the application of the Sonic Modulus of Elasticity could be used successfully in the local industry for quality control work as it is a low-cost, non-destructive and rapid method for testing of ceramicware.

This programme of research was carried out under the direction of Prof. P.C.B. Fernando of the University of Sri Jayewardenepura.