

A METHOD FOR TESTING PLASTER - WATER RATIOS
IN USED CERAMIC MOULDS

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Plaster of Paris is used in large quantities for mould making in the Ceramic Industry. Sri Lankas' requirement is imported. The control of water - plaster ratios in mould making is considered important for quality control purposes. The water - plaster ratio controls the strength of moulds, their life time and casting properties. The normal water - plaster ratio used is 1:1.4. If a mould does not complete its required cycles of use, the failure is invariably due to improper water - plaster ratios used for making the mould. The present investigation aims at calculating the water - plaster ratios used in mould making after the prepared mould has been subjected to a series of cycles of use. If at any time a mould fails, it is possible to check whether an incorrect water - plaster ratio has been used by the mould maker, which is an important aspect for maintaining proper quality control. The method involves drying (below 45°C) a part of the mould to constant weight and placing it under vacuum for one and a half hours and thereafter immersing it in kerosene oil (while under vacuum) and then weighing. These two readings are used in a simple formula allowing for average volume expansion, hydration factor and the impurities present in plasters to obtain the water - plaster ratios used at the time the mould was made. As Plaster of Paris is an expensive item, used in industry, the values so obtained is a key factor in determining whether correct water - plaster ratios have been used by mould makers.