

THE FITNESS OF A GLAZE AND BODY IN EARTHENWARE MANUFACTURE

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An account is given of the development of the fritted glazes in the ceramic industry, to be used in earthenware bodies by the study of their thermal expansion behaviour. Glazes are weak in tension and strong in compression. If the glaze has a higher thermal expansion than that of the body, on cooling the glaze will go into tension and show the network of cracks known as crazing. Very high compressive stress on a glaze, also results in breaking away of the glaze, known as peeling. It is also undesirable to have a body and glaze with similar thermal expansion, as delayed crazing can occur. The correct adjustment of a glaze, so that its thermal expansion will "fit" that of a ceramic earthenware body, is discussed and it is shown that the ideal situation would be to use a glaze which has a slightly lower thermal expansion than that of the body. Results of tests reveal that the earthenware bodies produced at the Negombo and Piliyandala factories with a water absorption of approximately 8 percent, require a glaze with a thermal expansion of 0.02 percent to 0.04 percent less than that of the body at 500°C.

References

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Singer, F. and Singer S.S., (1979) Industrial Ceramics, Chapman and Hall, London.

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