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Reg. No. 181

**SHALE FOR EXTRUSION TESTS**

by F. C. Gillespie

**SUMMARY**

A sample of crushed shale from Austins Ferry submitted by the Hobart Brick Company, has been tested for suitability for brick-making by de-aired extrusion. The material proved to be suitable for this purpose, but was considered to be somewhat inferior in working properties to a previous sample from the same deposit. (Reg. No. 933/59).

A feature of shale of this nature is loss of water while passing through the de-airing machine. This could easily lead to frequent blockage of the die under normal industrial operating conditions, where accurate moisture control is difficult. Blending with a small proportion of plastic clay would considerably reduce this moisture loss, and in addition would improve other working properties in the shale.

#### DESCRIPTION

Buff-coloured semi-plastic shale, moistened and crushed in preparation for semi-dry press brickmaking.

#### PREPARATION AND TESTING

The shale was passed through high speed rolls, and sufficient water added to obtain optimum plasticity. This mixture was thoroughly pugged, and extruded with de-airing into briquettes, which were oven dried at 110°C. and fired for two hours at 1050°C.

#### Results

Extrusion Moisture Before	Extrusion Moisture After	Ignition Loss	Drying Contraction	Firing Contraction
14.7%	12.8%	5.8%	3½%	4¼%

The corners of the extruded column were slightly notched, and unsoftened grains of shale interfered slightly with cutting-off. Wet briquettes were firm and easily handled without damage, and did not crack during drying. Fired briquettes were strong and sound with fairly smooth surfaces, the fired colour being dark red.