

TR 10-142

R. 500, R. 501

WYNARD BRICK COMPANY: BRICK MANUFACTURING TESTS

Samples

Two samples from the vicinity of Wynyard were received from the above company for brick manufacturing tests by stiff plastic pressing. The samples were defined as follows:—

- R.500 Red Clay (foot of hill near rifle range).
R.501 Blue brown Clay (from 10 feet on flat area).

The samples were received in a rather wet condition and contained a number of small quartz boulders, amounting to a significant quantity in R.500, Red Clay. Both samples showed good plasticity.

Sample Preparation

Because of the presence of the quartz boulders it was decided to test the effect of both coarse and fine crushing in the preparation of the samples. Accordingly, the samples were partially dried and portions roll crushed to minus $\frac{1}{4}$ inch and minus 10 mesh.

The required amounts of water were then incorporated by hand mixing followed by a pass through a Rawdon pug mill.

Pressing

Bricks were pressed from the stiff plastic pug prepared in the above manner. No difficulty was encountered in pressing and the green bricks were well formed and left the die cleanly. Some surface imperfections consisting of slight indentations and lines were observed. These were not pressed out because of the inherent strength of the materials.

Drying and Firing

The pressed bricks were allowed to dry naturally for several days and finished in an electric oven at 110°C.

The dried bricks were then fired at a temperature of 950°C, soaking for two hours at this temperature.

In the case of bricks prepared from the more coarsely crushed material, the swelling of the coarse quartz particles has resulted in much cracking and local deformation in the fired ware. This is particularly so in sample R.500, the red clay, and the bricks are of unsatisfactory quality.

Bricks from the finer material are of considerably better appearance although still exhibiting the slight surface imperfections noted in the green specimens. Bricks from the finer material are considered to be of moderate quality.

Firing at 950°C appears adequate; the bricks are rust red in colour and all specimens show some degree of lamination.

The moisture contents of the green bricks, drying and firing contractions and firing losses are shown in the following tabulation.

Sample No.	Per Cent				Firing Loss
	Moisture in Green Brick	Contractions		Firing 950°C Total	
		Drying 110°C	Firing 950°C		
R.500	21.9	6	1	7	7.7
R.501	18.4	6	1	7	5.5