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CANADA

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

OTTAWA

Mines Branch Investigation Report IR 58-61

TESTING OF FIRECLAY BRICK
"P.C.P." AND "CHIEF" BRANDS
FOR
A.P. GREEN FIRE BRICK CO. LTD.

by

S. Matthews

Industrial Minerals Division

April 10, 1958

TEST DATA

Sample No. 93
Product Fireclay Brick; High Duty Class
Brand Name P.C.P.
Submitted by A.P. Green Fire Brick Co. Ltd.

	<u>A.S.T.M. Nomenclature</u>		<u>Results</u>
C 16 - 49	<u>Deformation Under Load</u> Heating Sch. No. 2; 1350°C	-	5.8%
C 24 - 46	<u>Pyrometric Cone Equivalent</u> Approx. temperature	-	32 - 1717°C (3123°F)
C113 - 46	<u>Permanent Linear Change</u> Reheat Sch. B; 1400°C	-	0.7% Contraction
C107 - 47	<u>Panel Spalling Loss</u> Preheated at 1660°C	-	4.3%
C133 - 49	<u>Cold Crushing Strength</u>	-	1930 p.s.i.
	<u>Modulus of Rupture</u>	-	640 p.s.i.
C 20 - 46	<u>Water Absorption</u>	-	10.5%
	<u>Apparent Porosity</u>	-	21.7%
	<u>App. Spec. Gravity</u>	-	2.65
	<u>Bulk Density g. per cc.</u>	-	2.07

TEST DATA

Sample No. 94
Product Fireclay Brick; High Duty Class
Brand Name CHIEF
Submitted by A.P. Fire Brick Co. Ltd.

	<u>A.S.T.M. Nomenclature</u>		<u>Results</u>
C 16 - 49	<u>Deformation Under Load</u> Heating Sch. No. B; 1350°C	-	9.5%
C 24 - 46	<u>Pyrometric Cone Equivalent</u> Approx. Temperature	-	31 - 32 1683 - 1717°e (3061 - 3123°F)
C113 - 46	<u>Permanent Linear Change</u> Reheat Sch. B; 1400°C	-	1.3% contraction
C107 - 47	<u>Panel Spalling Loss</u> Preheated at 1600°C	-	3.6%
C133 - 49	<u>Cold Crushing Strength</u>	-	1300 p.s.i.
	<u>Modulus of Rupture</u>	-	490 p.s.i.
C 20 - 46	<u>Water Absorption</u>	-	11.6%
	<u>Apparent Porosity</u>	-	23.6%
	<u>App. Spec. Gravity</u>	-	2.65
	<u>Bulk Density g. per cu. cm.</u>	-	2.03

REMARKS

Tests reported on Samples #93 and #94 of fireclay brick were carried out in accordance with A.S.T.M. Standard procedures and the results checked for compliance with C.G.S.B. Specification 10-GP-1A, Class A; High-Heat Duty.

"P.C.P." brand, sample No. 93, was found to meet all the requirements for Class A in the above specification.

The results obtained on "Chief" brand, sample No. 94, do not conform to the tolerance limits for Deformation Under (Hot) Load and Modulus of Rupture; therefore; this sample does not meet the specified requirements for Class A.

SM/LED

S. Matthews