Table 2
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U.S. Geological Survey
open file
1961

61-153

Table 2.--Summary of usability tests for clay samples in the Pine Ridge Indian Reservation, S. Dak.

Sample No.	Constituents (percent; tr, trace)										Properties												Test bricks				Pottery																	Bloating	Potential use
											Raw				Slow fired												Unfired									Fired (2000°F)										
	Montmorillonite	Mixed layer clay	Illite	Chlorite	Kaolinite	Quartz	Feldspar	Calcite	Zeolite	Glass	Working (p, plastic; s, smooth; f, fatty; g, gritty; m, mealy; st, sticky; sh, short; v, very)	Water of plasticity (percent)	Drying defects (* must be dried slowly)	Shrinkage (percent)	Firing temperature (°F)	Hardness	Shrinkage (percent)	Porosity (percent)	Specific gravity	Firing temperature (°F)	Shrinkage (percent)	Porosity (percent)	Specific gravity	Water (percent)	Workability	Smoothness	Displacement	Water acceptance	Wet strength	Dry strength	Drying characteristics	Shrinkage (percent)	Shrinkage (percent)	Absorption (percent)	Color		
														1800	Crumbly---	6.0	14.8	2.67	2100	2.9	9.4	2.71																	Chimney flue brick; pottery, mixed with other clays.
														2000	Fair------	9.5	16.4	2.60	2200	3.3	8.8	2.65																	
														2100	Hard------	9.5	13.6	2.79																					
1-5 (A)	----	10	5	-----	50	35	----	----	----	----	p, s-------	25	None----	6	2200	---do-----	10.5	13.3	2.78					30	Fair------	Smooth-	Fair------	Good-	Average-	Average-	Good-	10	3.5	11.3	light buff	--------	
														2300	Very------	10.5	8.1	2.55																					
														2400	---do-----	10.5	7.7	2.23																					
														1800	Fair------	8.5	14.2	2.65																					Good face brick at 2100°F, better with 10 percent sand.
														2000	Steel-----	12.5	6.4	2.56																					
														2100	---do-----	12.5	2.2	2.47																					
$(A)_{50}$ $(B)_{50}$	----	----	----	----	----	----	----	----	----	----	p, s-------	29	---do----	6.5	2200	---do-----	15.0	1.2	2.40	----	----	----	----	--	----------	------	----------	----	-------	-------	-----	-----	----	-----	------	--------	
															2300	---do-----	12.5	1.5	2.37																					
															2400	Expand----	----	-----	2.16																					
$(A)_{50}$ $(F)_{50}$	----	----	----	----	----	----	----	----	----	----	----------	----	---------	-----	----	----------	----	-----	----	2000	4.0	6.0	2.59	33	Good------	Fairly smooth.	Fair------	Good-	High----	High---	Good-	13.5	6.0	3.5	Red---	--------	Best clay tested for pottery.
																			2050	4.7	4.2	2.54															
$(A)_{50}$ $(N)_{50}$	----	----	----	----	----	----	----	----	----	----	----------	----	---------	-----	----	----------	-----	-----	----	----	---	---	----	35	Fair------	---do---	Poor------	Poor-	---do---	---do--	Fair-	12.0	6.7	4.5	--do--	--------	No good; heavy scum.
$(A)_{50}$ $(F)_{50}$	----	----	----	----	----	----	----	----	----	----	----------	----	---------	-----	----	----------	-----	-----	----	2000	6.0	8.0	2.67	--	----------	-------	----------	-----	--------	-------	-----	----	-----	----	------	--------	
																			2050	6.4	6.8	2.64															
														1800	Fair------	10.0	13.2	2.63																					Brick and tile with fine sand
														2000	Steel-----	16.0	.5	2.52																					
														2100	---do-----	16.5	.2	2.47																					
1-3 (B)	----	15	30	----	25	30	----	----	----	----	p, s, f---	36	None-----	9.5	2200	Glazed----	14.0	.1	2.33	----	---	---	----	--	----------	-------	----------	----	--------	-------	-----	-----	-----	-----	------	Negative-	Brick and tile with fine sand.
														2300	Expand-----	12.5	6.9	2.10																					
														2400	---do-----	-----	5.3	2.01																					
														1800	Fair------	6.5	12.1	2.62																					
														2000	Steel-----	11.5	2.2	2.46																					
														2100	Glazed----	11.5	1.9	2.48																					
$(B)_{80}$ $Sand_{20}$	----	----	----	----	----	----	----	----	----	----	p,s, g-----	25	---do----	4.0	2200	---do-----	12.5	1.7	2.37	----	---	---	----	--	----------	-------	----------	----	--------	-------	-----	-----	-----	-----	------	--------	Brick and tile.
														2300	Expand----	8.5	7.4	2.16																					
														2400	---do-----	----	12.2	2.10																					
$(B)_{70}$ $Sand_{30}$	----	----	----	----	----	----	----	----	----	----	----------	----	---------	-----	----	----------	----	----	----	1900	2.8	7.1	2.68	--	----------	-------	----------	-----	--------	-------	-----	----	-----	----	------	--------	Suitable for common brick, poor color.
																			2000	3.1	6.3	2.66															
1/ $(B)_{60}$ $Fla._{40}$	----	----	----	----	----	----	----	----	----	----	----------	----	---------	-----	----	----------	----	----	----	----	---	---	---	--	----------	-------	----------	-----	--------	-------	-----	----	-----	----	------	--------	Do.
														1800	Hard------	10.0	11.8	2.65	1900	7.1	3.2	2.59																	Bricks and good pottery, particularly with 10-20 percent sand.
														2000	Steel-----	13.5	2.8	2.51	2000	7.9	1.6	2.55																	
														2100	---do-----	14.5	.2	2.44																					
2-5 (C)	---	25	10	---	40	25	----	----	----	----	v p, s, st--	29	None----	7.0	2200	---do-----	14.5	.0	2.45					30	Fair------	Fairly smooth.	Fair------	Poor-	High----	High---	Fair-	15	9.5	0	Red---	Negative-	
														2300	Glazed----	14.5	1.0	2.32																					
														2400	Expand----	----	4.0	2.25																					
														1800	Fair------	8.5	17.1	2.40	2000	1.9	14.1	2.50																	
2-4 (D)	----	30	10	----	10	20	----	30	----	----	p, s-------	29	---do----	6.0	2000	Hard------	8.5	14.5	2.29	2050	1.8	14.2	2.52	---	----------	-------	----------	-----	--------	-------	-----	----	-----	----	------	Negative-	None--heavy scum.
														2100	Melt------	----	2.0	1.84																					
														1800	Fair------	9.0	----	----																					None--(D) has too much calcite.
$(D)_{50}$ $(F)_{50}$	----	---	----	----	----	----	---	---	----	----	----------	----	---------	-----	2000	Hard------	9.0	----	----	----	----	---	----	---	----------	-------	----------	-----	--------	-------	-----	----	-----	----	------	--------	
														2100	---do-----	10.0	----	----																					
														1800	Fair------	12.0	16.6	2.63																					
														2000	Very------	16.5	5.0	2.47																					
														2100	Steel-----	17.5	3.9	2.52																					
7-3 (E)	20	20	15	-----	20	25	-----	-----	----	----	p, s, st, f-	44	None-----	8.0	2200	Glazed----	17.5	4.3	2.47	----	----	---	----	---	----------	-------	----------	-----	--------	-------	-----	-----	-----	----	------	Negative-	None.
														2300	Expand----	16.5	5.4	2.12																					
														2400	---do-----	14.0	5.9	1.96																					
														1800	Crumbly---	8.0	16.3	2.62																					
														2000	Fair------	11.0	9.3	2.55																					
														2100	Hard------	12.5	8.7	2.55																					
$(E)_{80}$ $Sand_{20}$	----	----	---	---	----	----	----	----	----	----	p, s, g----	30	---do----	4.5	2200	Glazed----	12.5	8.3	2.48	----	----	----	-----	---	----------	-------	----------	----	--------	-------	-----	-----	-----	---	-----	--------	None--cracks when fired.
														2300	Expand----	10.0	7.5	2.26																					
														2400	---do-----	7.5	8.0	2.01																					
														1800	Fair------	13.0	12.3	2.54																					
														2000	Steel-----	18.5	2.8	2.48																					
														2100	---do-----	18.5	1.4	2.25																					
26-1 (F)	15	30	15	tr.	10	30	----	tr.	----	----	p, s-------	42	(*) None--	11.0	2200	Glazed----	12.5	9.8	2.03	----	----	----	----	---	----------	-------	----------	-----	--------	-------	-----	-----	-----	---	-----	Negative-	Cracks when fired.
														2300	Expand----	9.5	12.4	1.94																					
														2400	---do-----	8.5	17.1	1.91																					
														1800	Fair------	7.5	12.7	2.64																					
														2000	Steel-----	13.5	4.8	2.53																					
														2100	---do-----	13.5	4.1	2.44																					
$(F)_{80}$ $Sand_{20}$	----	----	---	----	----	----	----	----	----	----	p, s, g-----	30	None-----	7.0	2200	Glazed----	13.5	3.8	2.29	----	----	----	----	---	----------	-------	----------	----	--------	-------	-----	-----	-------	----	-----	--------	Good for brick or pottery.
														2300	Expand----	10.0	7.2	2.09																					
														2400	---do-----	----	13.1	1.97																					